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**The Development of Swedish Road Transport Companies
-Incentives and its affect on the truck-**

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Abstract

Volvo Trucks has in recent years noticed a development where some of their smaller customers have developed from traditional haulers into something that more looks like third-party logistics providers. From having only a small number of employees, they are becoming larger both in terms of employees, assets and offered services. They invest in logistical services such as their own terminals and distribution systems. The purpose of this report is to map the incitements behind this kind of development and to see what potential impact this has on the perception of trucks and its features. Is the truck still a focal point of these companies, or is it just another asset? By using data from both deep interviews and a quantitative survey the authors have gathered a base of information to compare and analyze together with existing statistics, research and theory. The results indicate that there are more than one way to develop as a transport company, and that the incentives behind the development might differ depending on which type of company you run. Regardless, the respondents and existing theory in our research agrees upon the fact that we are moving towards fewer and larger entities on the market, potentially leading to less focus on the truck.



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1 Introduction

1.1 Background

In Sweden and in Europe as a whole there is a strong connection between the amount of transported goods and economic growth.¹ Because of Sweden's dependence on foreign trade and of its relative distance to foreign markets, transportation of goods is of vital importance. The well being of the nation's citizens depends on prosperous trade with other markets, otherwise we wouldn't be able to acquire the products and services needed for growth in our country.² The fact that consumption and production of goods often takes place in separate parts of the world lays out a platform for increasing demand for advanced logistical operations and services at low costs.³

Since the 1960s the total amount of goods transported in Sweden has increased by 135 percent. During this period road traffic has increased its share of the total amount from 16 percent in 1960 up to 40 percent in 2006, while goods transported by rail and sea stands for 22 percent and 37 percent respectively.⁴ General cargo is the class of goods in Sweden that has increased the most up to a transport performance of 10 billion ton-kilometres.⁵ Half of the transport performance in Sweden is carried out on distances shorter than 100 km. On these distances there are basically no other mode that can compete with the flexibility and speed of the truck.⁶ In 2007 there were over 500,000 registered trucks in Sweden, 59,000 of these were heavy trucks with a minimum weight of 3.5 tons.⁷ Over 90 percent of the transport performance on road in Sweden today is performed by heavy trucks, most of them in long haul traffic.⁸

In 2007 there were about 9000 companies in sectors related to road transports of goods in Sweden which together employed 62,000 people. This market is characterized by a large number of smaller businesses, mainly contract haulers, with just over 3 employees on average. Only 1 percent of the companies have 50 employees or more. There is no dominating actor in the market and the largest company in 2006 generated a net turnover that corresponded to 11 percent of the sector's total.⁹

Volvo Trucks has in recent years noticed a development on the transport market where some of their smaller customers have gone from traditional haulers into starting to invest in other logistical services such as their own terminals and distribution systems. There seems to be a trend towards small haulage contractors developing into what more looks like third-party logistics providers; from having only a small number of employees, they are becoming larger both in terms of employees, assets and offered services. Traditionally a hauler is contracted by different third party logistics providers and forwarders and do not come in contact with the shipper, however when expanding their logistics services they are able to provide a full door-

¹ SIKA 2008c

² Björnland, Persson, Virum 2003

³ SIKA 2008c

⁴ SIKA 2008a

⁵ SIKA 2008b

⁶ Björnland, Persson, Virum 2003

⁷ SIKA 2008a

⁸ SIKA 2008c

⁹ SIKA 2008d



to-door service to the customers and can therefore target new customer segments. This would mean that the haulers suddenly find themselves in a competitive situation with their former customers.¹⁰

1.2 Problem formulation

For a traditional hauler the truck is the single most important tool in the company. Trucking is for many drivers a way of life more than a job. In addition to technical features and functions on the truck, such as power train, engine, driver environment et cetera the truck itself has great symbolic value: brand, aesthetics, how well the truck is maintained, its size, all of these factors affect the driver's status within the trucking community.¹¹ As haulers grow and expand their services to the customer the truck may no longer be the focal point of the business. In a logistical network it may become one of many tools the company use in order to create value for its customers.

For companies like Volvo Trucks, that builds its business around these companies it's crucial to be aware of what factors that drive this development and if it affects preferences concerning the trucks features and image. The possibility that the company no longer is "tied" to the truck may create greater flexibility regarding brand or even mode of transportation. As environmental issues are becoming more important the use of e.g. rail and intermodal transport systems might be considered to a greater extend. According to SIKA's statistics the biggest haulers already have logistical solutions where road transports is combined with other modes or services.¹²

1.3 Research questions

1. What incentives and driving forces lay behind the expansion of road haulers on the Swedish transportation market?
2. Does this development affect the perception of the heavy truck and its features?

1.4 Purpose

The purpose of this report is to analyze and map the incitements that steers the development on the road transport market in Sweden today, and to see what potential impact this development has on the perception of the truck and its features. The research will examine what factors that have made these companies evolve and whether this change affects company priorities, in this case in regards to the truck.

1.5 Delimitations

In order to get an appropriate and workable scope on this project we have limited the research into the following areas:

- **The Swedish market**
Due to limited time and resources this research will only cover companies operating on the Swedish road transportation market.

¹⁰ Volvo 3P

¹¹ Nehls 1999

¹² SIKA 2008d



- **Long haul transport- and logistics system operators**

There are numerous types of trucking operations utilising vehicles such as tank trailers, sanitation trucks, crane trucks, and other special vehicles. In order to get relevant data in regards to our problem formulation the research in this report will be limited to long haul transports and logistics system operations. In this report a logistics systems operator is a company that in addition to moving goods from A to B performs other value adding services such as warehousing activities, break/bulk operations et cetera. The focus will be on general cargo, industrial goods, consumer goods and daily commodities, i.e. goods that can be handled in logistical networks with previous mentioned services like storage, consolidation of goods, break bulk operations et cetera.

- **Heavy trucks with a minimum weight of 3.5 tons**

The report will focus exclusively on heavy trucks above 3.5 tons in weight since these are the main product produced by Volvo Trucks, and because these trucks stand for the majority of the transport performance on our Swedish roads today.

These delimitations help to exclude trucking operations outside our scope of interest. They were developed through several discussions with people with profound experience of the transport market. We also make the assumption that the readers of this report have previous knowledge on the field of logistics and transport management.



2 Research method

In this chapter we will explain which methods that were used during our research and how we implemented them in order to suite our purpose. We describe the data collection process and our research objects together with an analysis of the validity and reliability of the report.

2.1 Research Design

The report is based on data collected from actors on the Swedish road transportation market both through interviews and self completion questionnaires. From the results of these empirical findings together with information found in existing literature we have drawn more general conclusions about the development of haulers in the Swedish transport market and how this development has affected the companies' perception of the truck. That is, the authors have based their analysis and conclusions on empirical findings where attitudes and opinions from a fairly small number of people have generated new theories about the road transport market as a whole. This method usually characterizes inductive approaches where empirical studies lead to more general knowledge about the theory behind a certain phenomena.¹³

However, even though theories or hypothesis have not been established before studying the research object, the research is still characterized by the authors frequently moving from theoretical level to empirical level and back. In order to obtain knowledge about the research problem we needed to study theories related to our field before studying the research object itself. We needed to get a good theoretical background and knowledge about the area in order to know what to focus on and what questions that would be relevant for our interviews. In this sense our research is better described with an abductive approach where theory and empirical data is used parallel and support each other throughout the process.

Further, both qualitative and quantitative methods are used as the authors found that a combination of the two would be the best alternative to answer our research questions. Our report is to some extent divided into two different parts due to the different nature of our questions and it was early decided that both quantitative and qualitative methods would be needed.

Regarding the development of the road transport market and the incentives behind it a qualitative approach was used. In qualitative methods the purpose is to "understand" a certain phenomena, not just to "describe" it. You want to create a deeper understanding of the problem you investigating and how it relates to more general theories.¹⁴ As this part of the study required an in-depth research of different actors in the market, and opinions from people in the business we found that a qualitative method would be the preferable choice in order to truly understand the reasons behind the development of Swedish haulers.

As for our second part of the study where the perception of the truck regarding specific features was investigated a quantitative method was better suited. In quantitative research the primary goal is to find causalities and make comparisons regarding a number of preset conditions which are chosen based on the research question, possible answers can therefore be estimated in beforehand. The method also lets you make comparisons and analyses in a

¹³ Andersen 1998

¹⁴ Holme, Solvang 1998



structured and formalized way and is characterized by selectivity and distance to the source of information.¹⁵ As the authors wanted to see if there were any differences between different types of companies regarding a number of predetermined features we found that a quantitative approach would be the best alternative to obtain reliable results. Also, obtaining this information would require large samples in order to validate possible differences between the companies, a quantitative method was therefore needed as time and resources were limited.

The two parts of the study have however complemented each other where findings from the qualitative interviews have been used to support the analysis of the results from the questionnaires and vice versa.

2.2 Collection of data

The findings from our research are mostly based on primary data collected from actors in the Swedish road transportation market through qualitative interviews and self completion questionnaires. We have also had numerous discussions and interviews with people with great insight and knowledge in relevant areas, both inside and outside of Volvo. The paper's secondary data consists of existing literature in areas of interest where we have reviewed relevant information in the form of literature, branch publications, earlier thesis work, government reports et cetera to get an external view of the situation.

2.2.1 Qualitative data

The qualitative data was gathered through semi structured interviews, conducted in a discussion like way. In these types of interviews you usually have some theoretical and empirical knowledge about the phenomena you studying. A questionnaire or interview guide was used as there were a number of predetermined areas the authors want to enlighten at the same time as you are open to new ideas and inputs from the respondents. This method is preferable when discussion is the goal of the interview.¹⁶

The questions and areas of interest for our qualitative interviews were decided through conversations with our tutors and other people within Volvo 3P with expert knowledge in their fields. The interviews were characterized by rather open questions so that the respondents could answer freely without feeling restricted to specific preset answers. The questionnaire used for these interviews can be found in Appendix 8.1. The interviews were all recorded and then summarized by the authors directly afterwards, notes were also taken as backup to the recordings. The meetings all took place out at the companies' facilities and lasted about one hour each.

The authors also met with Håkan Larsson, guest professor at Handelshögskolan in Gothenburg and former CEO at Rederi AB Transatlantic as well as Schenker AG. Mr Larsson has great experience and knowledge in the transport and logistics sector and was able to give us a deeper understanding of the Swedish road transport market; how it is structured and how the different actors operate.

Definition of target population and sample

¹⁵ Holme, Solvang 1998

¹⁶ Andersen 1998



Because of the qualitative nature of our interviews we were able to collect sufficient information from a relatively small sample which consisted of 6 companies operating in the Swedish road transportation market. As the purpose of the report was to find incentives behind a development in the market it was important to talk to companies who actually had undergone this kind of development and could explain the reasons behind it. However, in order to prove that possible findings regarding incentives behind a development were unique for these types of companies we needed to make comparisons with actors at the other end of the “ladder”. The sample therefore consists of 4 larger companies, which except for offering traditional hauling services have extended their operation to include other value adding activities such as warehousing, forwarding, distribution et cetera, and 2 smaller companies which mainly operate as contracted haulers.

The larger logistics companies were chosen from a list of 9 companies in total provided by Bo Franzon, Competitor Analyst at Volvo 3P. He had good insight in the road transportation market and had been in contact with several actors in his previous line of work. After conversations with our tutors at Volvo we came up with a number of criterions the companies had to correspond with. Most important were that they should offer some kind of additional logistics services besides hauling operations and that they should be of significant size; meaning that they, at least to some extent, had undergone the development explained in the background. Based on these requirements Bo managed to find 9 companies suitable for our study. As all of these companies were of interest we did not make any conscious choice about which of them to include in the study, the ones included were basically the companies we managed to come in contact with.

The two other companies who operated as contracted haulers were found through the quantitative survey where the authors, by looking through the respondent’s background information, managed to find two companies we considered to be relevant for the study.

More information about the companies included in the qualitative part of the study can be found in chapter 4.1.1.

2.2.2 Quantitative data

The quantitative data was collected via a questionnaire where respondents had to make decisions regarding different truck features. The method used for this quantitative survey is called Analytical Hierarchy Process and helps putting the importance of different features in relation to each other. The authors found this to be a suitable method as it allowed us to include a fairly large amount of features and that it let the respondents to evaluate the importance of each feature in relation to each others, not just one at a time. More information on this method can be found in appendix 8.3.

The layout and content of the questionnaire was decided after numerous discussions with our tutors at Volvo. The different features we chose to include are based on requests and directions given to us by our tutors. Volvo has their own standardized classifications of the truck’s features where they have broken down the truck into several different areas in order to create comparability between different projects through standardized measurements. Our tutors were therefore interested to see how the development had affected the companies’ perception of the truck regarding these specific categories. As the categorization is based on more technical aspects of the truck the questionnaire mainly only includes these types of



features. The authors found this layout to be suitable for the study and had no objections to the features suggested by Volvo. More information about the different features and the layout of the questionnaire can be found in chapter 4.2. The questionnaire was then sent by e-mail to the respondents who filled it out and e-mailed it back to us. We chose e-mail because of our limited resources and short time span. In order to raise our response rate we sent a reminder to the companies that did not answer, this was done 2 times and was proved to be effective. The complete questionnaire in the form it was sent to the respondents can be found in Appendix 8.2.

Definition of target population and sample

The target population for our study was Swedish haulers and logistics companies operating in road transports of general cargo. As a sampling frame the authors used the web based company databases Kompass and Proffstransport, the latter is provided by The Swedish Association of Road Haulage Companies. Both these databases allow the user to search and categorize companies by offered services, size, location et cetera. By the use of these databases the authors managed to find nearly 300 companies included in our target population of Swedish haulers and logistic providers concerning road transports of general cargo. From these 300 companies we got 35 responses, giving us a response rate of about 12-13 percent.

As the purpose of this part of the study was to see how the development in the market affects the perception of the truck we needed to see if there were any differences in how the features of the truck were ranked between different types of companies. The companies were therefore divided into two different categories primarily depending on what services they offered their customers.

- Category number 1 (Haulers): includes traditional haulers who only transport goods from point A to point B, many times on behalf of larger logistics companies such as DHL and Schenker.
- Category number 2 (Logistics companies): includes companies who offer other value adding services such as warehousing, distribution, forwarding etc.

Based on the background information included in the questionnaire and information found on the companies' websites we managed to categorize them into the two groups described above. The first group which includes companies with pure hauler operation consists of 15 companies while the second group which includes logistics companies consists of 20 companies. More information about the companies included in the quantitative survey can be found in appendix 8.6.

2.3 Validity

To understand what you are studying isn't always given, it may sometimes differ between what you want to study and what you actually are studying. The validity tells you how well these two areas correspond.¹⁷

Qualitative study

¹⁷ Holme, Solvang 1997



The questions for our interviews and what areas we wanted to cover was decided after a long and thoughtful process where the authors had numerous discussions with our tutors as well as other people at Volvo with expert knowledge in areas related to the study in order to ensure that the questions would be relevant as well as understandable to the respondents. Also, as this part of the study included personal interviews the authors had some influence over the respondents and could steer them in the right direction in order to cover areas of interest and to get relevant answers. The number of interviews was fairly small which usually contributes to higher uncertainties when drawing conclusions. The interviews were however quite extensive and we managed to obtain large amount of data through the 6 interviews we conducted. The companies which are included are very relevant to the study and most of them had in fact undergone the development that is described in the report. The people we talked to were owners, founders or CEO:s had very good experience and knowledge about both the history of the company as well as their current operations. They also had very good insight in the transportation market as a whole and were eager to share their opinions.

The validity can however be questioned in some areas. Our sample consists mainly of larger companies both in terms of employees, trucks and range of services as we were not able get in contact with haulers with one or two truck operations. The owners of these companies are usually working as drivers themselves and are therefore difficult to reach as they are out on the roads during the weeks. Even the smaller companies included in the sample are significantly larger than the average company in the road transport sector, at least regarding size of truck fleet, employees and turnover. The authors were also unable to get in contact with any independent haulers with single task operations that were not contracted by larger logistics companies. The fact that we have not managed to collect information about these types of companies may have an affect on the validity as their opinions and observations might differ from those included in the study. However, as we mentioned earlier many of the companies in the sample had in fact undergone the development described in the report and had started their businesses as small haulage contractors. The fact that many of our respondents also were the founder, or at least had been with the company for a very long time, meant that they themselves had experienced all stages of their development and therefore had both sides of the story.

Quantitative study

Before sending out the questionnaire the authors conducted a small pre study involving a number of people with insight in the business of road transportation and trucks as a product to ensure that the questions asked were relevant and of importance to our topic. Here we sent out a test questionnaire to a couple of people at Volvo 3P but also to our tutor at our institution in order to make sure the questionnaire was not too time consuming and that it was easy to understand. In addition to the pre study we reviewed relevant secondary information in the form of literature, branch publications, earlier thesis work, government reports etc. to get an external view of the situation.

The validity of the quantitative study can also be questioned in some areas. Firstly, as a sampling frame of all haulers and logistics companies in Sweden was very difficult to obtain the sample is based on companies selected from a company database. These databases might not always include all of the smaller companies existing in the market and the sampling frame might not therefore be an optimum representation of the target population regarding the distribution and dispersion of the companies. This is supported by the fact that the



respondents in our study are significantly larger in terms of turnover and employees than the market average. This of course have quite large impact on the validity of this part of the study as a representative sampling frame is of great importance in order to draw valid conclusions; if the purpose is to say something about the population one must prioritize the sample being representative¹⁸. However, the main criterion when categorizing the companies was the type of services they offered and not the size of the companies, even though it would have been interesting to see if a greater number of smaller companies would have affected the result.

Also, as always when sending out self completion questionnaire it creates a distance between the researchers and the research object. Unlike the interviews we were not able to be present when the respondents filled out the questionnaires, this creates a higher risk of misunderstandings and misinterpretations by the respondents. A lack of commitment and effort to answer the questions truthfully and thoughtfully can also be a cause of low validity in the report.

2.4 Reliability

The reliability tells you how well the study and the instruments used for collection of data resists chance influences. A high reliability is achieved if a number of independent measurements of the same phenomena give identical or almost identical results.¹⁹

The fact that our data is based on personal opinions and views makes it harder to control the reliability. The human factor is a big concern and the way people answer a question or fill out a questionnaire may be different from time to time. Circumstances can differ and attitudes change, there might also be lack of concentration and commitment from the respondents when answering the questions. The risk of low reliability lies not only with the respondents but also with the researchers when transferring the data to the AHP matrix in Excel, analyzing it and presenting it. However, the fairly low sample sizes, the rigorous control of errors and the absence of complicated calculations should have contributed to a quite good reliability in the report. The different steps of the quantitative research and the possible errors connected to each step are shown in figure 1.

¹⁸ Holme, Solvang 1997

¹⁹ Ibid

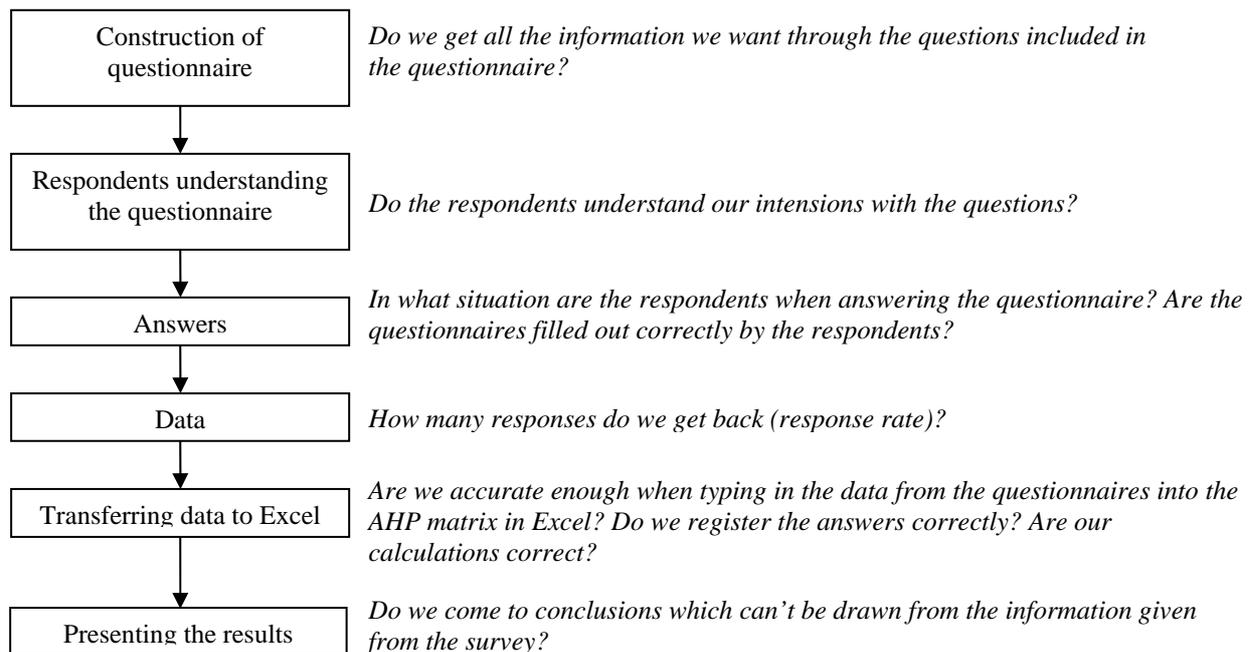


Figure 1 Problem areas in the data collection (Adaption from Holme, Solvang 1997, p 164)

3 Theory

3.1 The Market

Road haulage of goods is the dominating transport sector in Sweden today with over 62 000 employees in total and a turnover of about 110 billion Swedish kronor during 2007. The number of active companies is around 9000.²⁰ Of this the largest company stands for 11 percent of the sectors total turnover, hence there is a rather low market concentration.²¹ When measuring the market concentration one can use the Gini coefficient which is an indicator of how irregular a variable is distributed. (See appendix 8.5 for more information about the Gini coefficient) The coefficient varies between 1 and 100 percent and the variable increases when the market concentration rises. Figure 2 shows the course of the Gini coefficient for total net turnover for companies active in road transportation of goods in Sweden during a ten year period. As we can see there is a modest increase during this period.²²

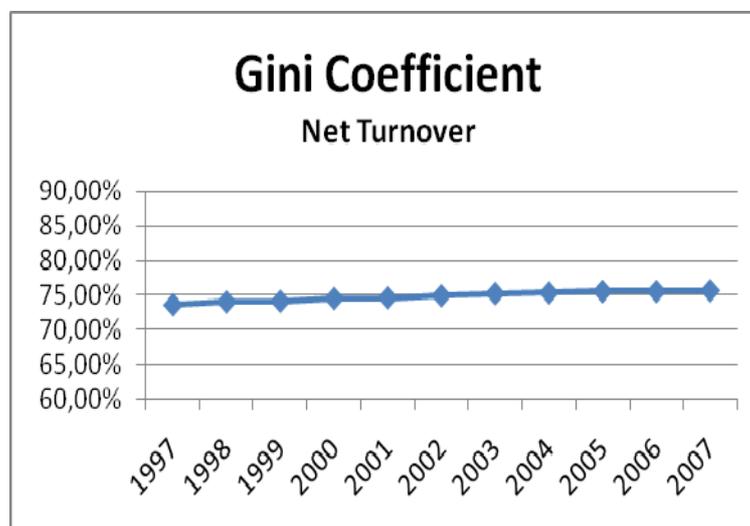


Figure 2 Market Concentration of Net turnover²³

Björnland, Persson, and Virum in their book on Logistic competitiveness from 2003, divide the active companies into three different categories in regards to what services they offer. Category 1 is made out of companies performing single task operations like the actual transport between point A and B. Category 2, multiple task operators, offers additional services like consolidation of goods, break/bulk operations, forwarding et cetera. Truck pools are also included in category 2. In the last category, category 3, the logistics company take responsibility for entire logistics functions, offering customers managing of entire warehouses, distribution planning, forecasts et cetera. These companies are called third party logistics providers. This shows that the logistics market is a varying one with a broad range of services provided by different type of actors, depending on their field of specialty. Customers can buy virtually all of their logistics operations from outside providers, as opposed to just the outsourcing of transports. The amount of services offered today is much broader, turning former transport companies into logistics providers. The authors claim that the number of

²⁰ SIKA 2009

²¹ SIKA 2008d

²² SIKA 2009, data is available in Appendix 8.4

²³ Ibid



companies in category 1 is declining. The reasons for this is in line with the development of supply chain management where closer supplier relationships are preferred, and tier one suppliers take care of a bundle of services.²⁴

They also indicate that larger logistics providers rather than small haulage operators will stand for an increasing part of the handling of goods for shippers in the future. The reason for this is, according to the book, that shippers want less, but larger and more professional suppliers that they can develop close and long term relationships with. According to these authors this allows the shipper to focus on their core activities, and at the same time reduce their logistics costs and administrative efforts. The number of simple task operators, handling only transportation of goods from A to B will therefore decrease. They also claim that the profitability of small haulers generally is low.²⁵ In Figure 3 we can see that the number of transport companies with 0-4 employees has decreased with a number equal to 8 percent during the ten year period between 1997 and 2007. The total amount has decreased from 6693 down to 6144.²⁶ These data however do not take into account what services the companies offer, just the number of employees.

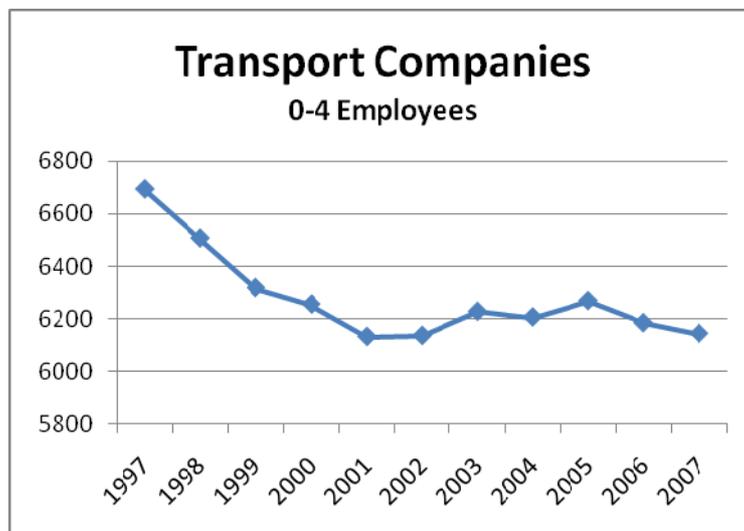


Figure 3 Hauler-/Logistics companies, 0-4 employees²⁷

The number of transport companies with 5-49 employees has on the other hand increased with 18 percent during the same period, as seen in Figure 4.²⁸

²⁴ Björnland, Persson, Virum 2003

²⁵ Ibid

²⁶ SIKA 2009

²⁷ SIKA 2009, data is available in Appendix 8.4

²⁸ SIKA 2009

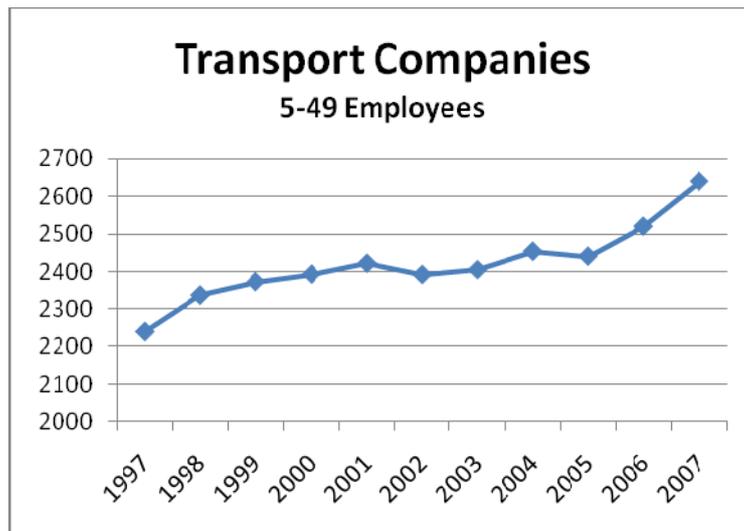


Figure 4 Hauler-/Logistics companies, 5-49 employees²⁹

The companies in Figure 5 with 50 employees or more has increased even more with around 45 percent during the ten year period between 1997 and 2007.³⁰

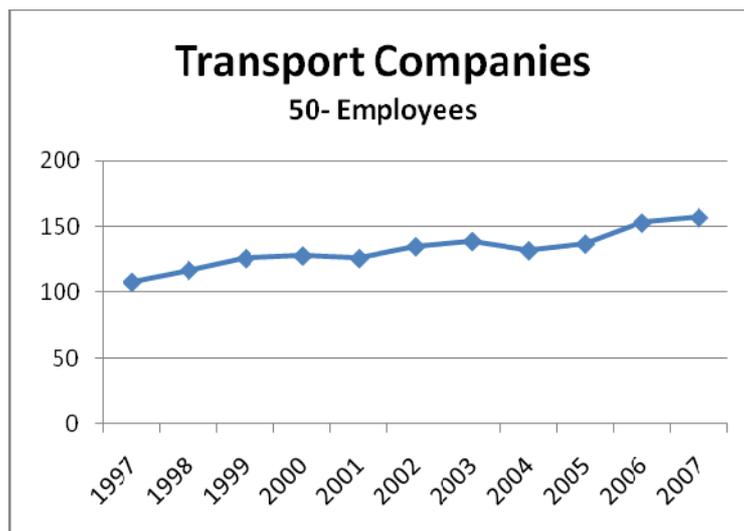


Figure 5 Hauler-/Logistics companies, 50- employees³¹

The total amount of companies, from all three figures, has according to these data dropped by just around 100 companies in ten years. Company data has been collected by the Swedish Institute for Transport and Communications Analysis, the institute's definition of transport companies comprises haulers, truck pools, and logistics companies where road transport constitute a part of a logistics system.³² Not included in these data from SIKa are the private businesses, the year 2007 they amounted to 5191 within the road transport market. The vast majority of these had between 0-4 employees, around 98 percent. Unfortunately SIKa did not provide any time series data on these types of companies so we could not map the development during the years.

²⁹ SIKa 2009, data is available in Appendix 8.4

³⁰ SIKa 2009

³¹ SIKa 2009, data is available in Appendix 8.4

³² SIKa 2009

In figure 6 we can see how the total net turnover for the overall road transport of goods has increased with 91 percent during the ten year period from 1997 to 2007.

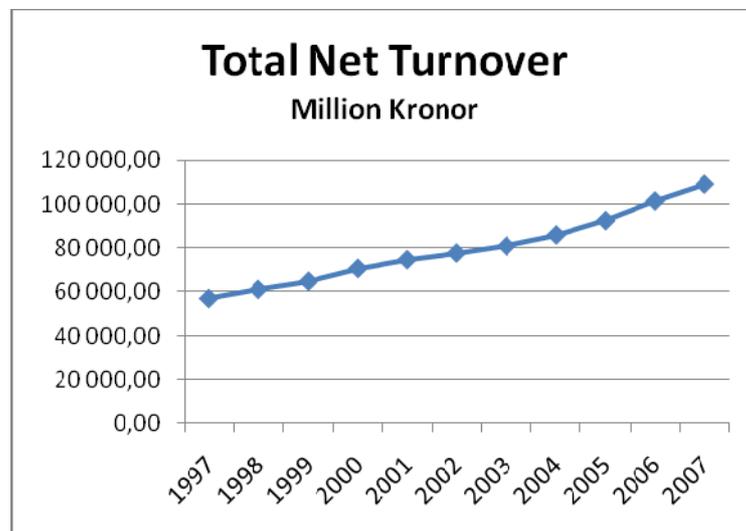


Figure 6 Total Net Turnover of the road transport market³³

Bardi, Coyle and Novack express a similar opinion as Björnland, Persson and Virum. They say that in order to reduce the number of relationships shippers use third party logistics providers. These are often defined as companies that work as a facilitator between seller and buyer, and coordinates logistics functions in the supply chain. These types of organisations have had a remarkable growth over the past several years. Apart from transportation they offer services like warehousing, customs brokerage, forwarding, labelling et cetera. They actually promote shippers to limit the number of carriers used to ship company goods. If this is followed it will result in a situation where less carriers have a larger share of customer volumes, making each carrier more important to the shipper. This reduction of relationships managed by the customer is said to result in a more efficient collaboration between the parts involved which in turn results in lower costs and expenses. The disadvantage of this trend is that the partners become increasingly dependent of each other.³⁴

Belzer describes the same development with the explanation that as manufacturing firms direct their focus to core businesses, they often outsource parts of their operations. External firms take responsibility for manufacturers' transportation departments. These third-party logistics providers organize the process using information technology to streamline information management. Belzer goes on by saying that these external providers intensify the competition among pure transportation providers as they use their expertise and technology, along with their control of the market, to engage carriers in bidding wars to secure the lowest price. This results in a situation where unorganized truckload drivers and owner operators work at well below the average rate.³⁵

Despite this decline of small haulers these types of companies will, according to Björnland et al, always be the backbone of the logistics market. They claim that the reason for this is that

³³ SIKA 2009, data is available in Appendix 8.4

³⁴ Bardi, Coyle and Novack 2006

³⁵ Belzer 2002



companies in category 2 and 3 buy, if not all then a lot of their transport operations from these types of companies whilst they themselves operate warehousing activities and other value adding services.³⁶ Bardi, Coyle and Novack suggests that the large number of small firms active, especially in the truck load segments, tells us that small sized operations are competitive.³⁷

Hibbs provides a somewhat contradicting opinion than these previous authors in his book on Transport Economics from 2003. He says that transport companies tend to remain small. The reason for this is that it is, according to Hibbs, very important that decisions about market strategies are taken by managers close to the market. This is difficult for large companies. The competitive nature of the business provides continuing pressure to ensure that the interests of the consumer receive priority. Hibbs claims that the industry of road transport has through time seen a number of firms growing too big, just to be forced into reconstruction or disappear.³⁸

3.2 Cost Structure

A good understanding of company costs is a necessity in order to run a successful business, even if simpler tasks can be undertaken without complete analysis of costs. Each traffic mode has their own cost structure, e.g. the fixed costs associated with rail are much higher than in road transports due to the high cost of rails and terminals. Road transport with their trucks usually has higher variable cost in relation to fixed costs incurred in their operations.³⁹ The majority of costs in simpler trucking operations are associated with daily operations, like fuel, wages, maintenance et cetera. More complex companies that handle goods in reloading terminals or offer additional value adding services naturally have higher fixed costs.⁴⁰ Generally for carriers handling small-sized shipments the fixed costs are higher since these operations often require terminals and warehousing activities in order to be profitable. Bardi, Coyle and Novack claim that smaller shipments also require additional management that increases overhead expenses. The average cost per produced units will decrease as volume increase. So even if there usually are no apparent economies of scale in trucking it is achieved in less than truckload operations where terminals, information systems and management specialists are used to a greater extend.⁴¹ In figure 7 we can see a cost structure model which shows the differences between a fixed cost and a variable cost model.

³⁶ Björnland, Persson, Virum 2003

³⁷ Bardi, Coyle and Novack 2006

³⁸ Hibbs 2003

³⁹ Björnland, Persson, Virum 2003

⁴⁰ Bardi, Coyle and Novack 2006

⁴¹ Ibid

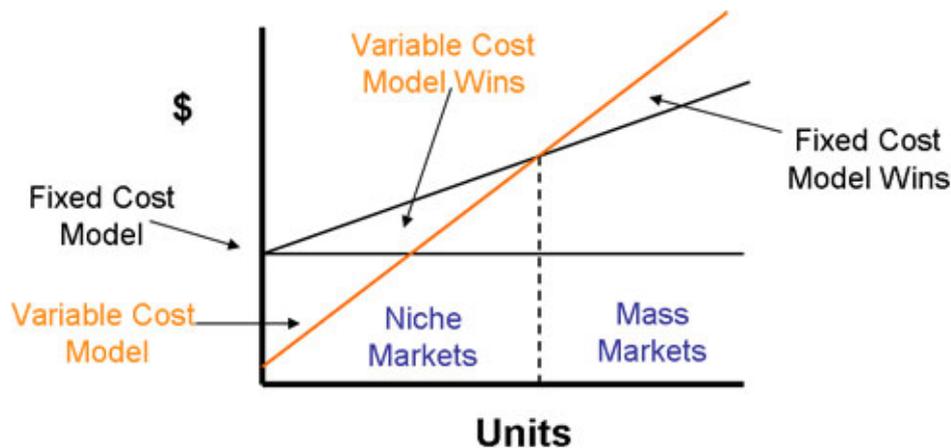


Figure 7 Cost structure model⁴²

In such a highly competitive industry as trucking, with a large proportion of small firms, many of whom at any one time may be at the margin of profitability, knowledge of costs is essential for survival.⁴³ Björnland, Persson, and Virum claims that transport companies in general have poor knowledge about their costs.⁴⁴

When variable costs are great in relation to the fixed costs, as in many transport companies, increased volumes doesn't necessarily mean increased profits. This means that increased volumes is not equal to better results. On the contrary increased volumes of unprofitable activities may hurt the business even more. It may also add fixed costs to the business in forms of new personnel, training et cetera as volumes increase.⁴⁵ It is vital to be knowledgeable about what activities that create profit in order to steer the business towards success.⁴⁶

3.3 Trucking Culture

Eddy Nehls has done an ethnological study of the truck-driver profession. The purpose of the study was to look at this occupation from a cultural perspective. According to the Swedish Transport Workers union 95 percent of the employees are made out of men and Nehls found that there was a widely spread resistance to change within this group. In several cases truck driving had been a child hood dream for the truckers interviewed by Nehls. A large number of the drivers were in the ages between forty and sixty, whom most of them had been introduced to the job by relatives or other people close to them. The younger generation off drivers talk about it as a coincident how they ended up in the business, but they often had friends or relatives in the same occupation.⁴⁷

Within the truck-driver community Nehls found a hard, disloyal type of competition between the drivers. Nehls writes about a general conception among his interviewees that it is each man for him self in the trucking business. The consequence of this is a strive to only focus on

⁴² Kates 2009

⁴³ Hibbs 2003

⁴⁴ Björnland, Persson, Virum 2003

⁴⁵ Sveriges Åkeriföretag 2004

⁴⁶ Sveriges Åkeriföretag 2009

⁴⁷ Nehls 2003



individual benefits which in the long run hollows out the market as competitors constantly underbids each other, i.e. more work is done for less money.⁴⁸

Despite of the mentality of the business and the risks involved many of the informants express a dream of owning their own truck or at least strive to be head driver of a truck on the trucking company. This means that the driver gets head responsibility for a specific truck. This benefits both the drivers and the truck companies since drivers who feel that they have the responsibility for a specific truck tend to take better care of it.⁴⁹

Nehls found that there was a sort of hierarchy among the drivers. The next step after head driver of a truck is to own your own truck and business. This hierarchy shows indication of how important it is for truck drivers to have responsibility for a specific truck which might explain the large number of truck companies with just one or a few trucks. A lot of the drivers were pedantically caring of their trucks. One of the informants in Nehls study talks of spending every Sunday washing and polishing his truck. Modifications for esthetical reasons were not uncommon either and the extra cost of this was not considered important. Even in the cases of head drivers where the driver doesn't own the truck they still talk about it as a personal possession, they identify with their trucks. Many times the driving itself wasn't considered work at all, only the loading and unloading.⁵⁰

Nehls talks about the truck drivers' perception of freedom as a way of life, they work under a responsibility/reliability relationship. They have to be responsible for the employer to trust in them and assign them work, responsibility for trucks et cetera. Within this relationship there is a sense of freedom for the drivers as they drive alone in their trucks. As long as the goods arrive in time at the customer the driver is free to improvise in which roads to take, when to eat and so on. Experience is the way to gain this knowledge, the drivers interviewed had a rather negative view on theoretical education.⁵¹ Among the older informants Nehls found that demands for education were almost seen as frightening. Experience was the way to go, and the thing that distinguished a driver.⁵²

As technology advance in the form of GPS and satellite tracking it gets easier to control and plan the movements of the trucks and coordinate the distribution of goods. This in turn can save money for the transport companies and agents. The question is how this development will affect the trucking community and its perceptions on knowledge and freedom.⁵³

3.4 Considerations and Values of Transport Buyers

There are a number of researches concerning transport buyer considerations when deciding on transport provider. They cover variables like transportation cost, transportation time, risk of damaged goods, delivery precision, environmental impact et cetera. Lundberg show that transportation cost has great impact on choice of transport provider. The conclusion drawn in this study is that transportation cost is by far the most important variable when deciding on

⁴⁸ Nehls 2003

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Ibid

⁵² Ibid

⁵³ Ibid



transport provider followed by risk of delay, frequency and transport time.⁵⁴ This is supported by Andersson and Widlert which came to the conclusion that transportation cost is the most significant variable. According to Lundberg the intense competition on the Swedish transport market is one of the reasons for the high price sensitivity of buyers. In relation to other variables in Lundberg's study one can see that an improvement by 50 percent in environmental impact corresponds to as little as a 2 percent decrease in transportation cost. A cost decrease of 1 percent corresponds to a decrease in risk of delay by 10 percent, or a decrease in transport time by 16 percent, or an improvement in departure frequency by 15 percent. Still Laitila and Westin said six years before Lundberg's study to have seen a trend that more and more transport buyers emphasize on environmental aspects. This however can still be true given that the positive environmental effects don't come at the expense of more important variables as transport cost and time.⁵⁵ This theory is supported by Nordisk Logistikbarometer published by Posten Logistik in 2008. That report shows that there is little room for environmental friendly transport systems if they at the same time lead to increased costs and longer delivery times. The stiff competition that predominate most markets such as industry and retail needs solutions that can combine classic logistics measurements with measurements concerning environmental impact.⁵⁶

An interesting study has been made by the Swedish road association where it was examined how large share of the transport buyers that set demands on environment and safety matters when choosing transport provider. The result shows a shattered view on how demands are set by transport buyers. Among transport buyers 30 percent of them claim to set demands on environment and safety issues when choosing transport provider. At the same time only a few percent of the transport providers claim to receive demands from the transport buyers. According to them it is mostly the large customers that have the possibility to influence how specific transports are conducted. The truck companies performing the actual delivery provide yet another picture, 67 percent of them said to receive demands on environmental standards. It is interesting how the views of the transport buyer, transport provider and truck companies differ. Comments from interviewees tell that the transport buyers hand over a lot of the responsibility of the transport to the transport providers. They trust that they know their job and takes responsibility when it comes to environmental and safety issues. Since the normal demands usually involve standards like ISO all of the transport providers researched is qualified already from the start.⁵⁷

In 2008 a report by Elisabeth Karlsson was published that gathered and concluded previous research on the area in order to get a more structured picture on which attitudes, preferences and considerations that rule the selection of transport provider. Most of the authors mentioned above were included in this compilation. The gathered conclusions that could be drawn from the previous reports was that even though environmental impact is becoming an increasingly important factor the choice of transport provider is mainly ruled by the two most important factors of transportation cost and the reliability of the service provided. Another thing is that transport buyers don't really care by what means the delivery is executed as long as the reliability and cost are at the right levels.⁵⁸

⁵⁴ Lundberg 2006

⁵⁵ Karlsson 2008

⁵⁶ Posten Logistik 2008

⁵⁷ Vägverket 2008a

⁵⁸ Karlsson 2008



3.5 Potential Shift of Goods between Transport Modes

The transport sector releases about 20 million ton of carbon dioxide per year which is 9 percent more than in 1990. A political goal is to reach the levels of 1990 in 2010⁵⁹ where a shift from road to rail transports can be an important contributor. Road transports consume 10 times more energy per ton-km compared to rail and sea, and emissions of green house gases are significantly higher compared to other modes.⁶⁰ Today the majority, 93 percent, of the trains in Sweden runs on electricity while only 8 percent use diesel⁶¹, according to SIKA a shift of 7.4 billion ton-kilometres from road to rail transport would lead to a decrease of carbon dioxide emissions with 0.24 million tons which in turn would mean a 67 percent decrease in diesel consumption.⁶²

The environmental impact is a strong political driving force behind a potential shift from road to rail transports. However, as numerous studies have shown (see chapter 3.4), environmentally friendly transports have not had the impact needed on transport buyers and other actors in the transport sector. Factors such as price, lead times and transport quality are still considered more important than environmental issues when choosing transport mode; one can therefore sense a conflict between political and commercial interests.

In a study done by Transek in 2005 attitudes towards a potential shift from road to rail transports among Swedish stock keepers, forwarders and manufacturers were investigated. Not surprisingly it found that reliability in arrival times and total lead time were ranked as the most important factors by the actors included in the study. The study also revealed that intermodal road/rail transports are considered as a good solution in theory but is difficult to be put in practice. Usually price and accuracy in delivery times are what determines the companies' choice and a general opinion seem to be that rail transports cannot compete with road transport either in price or delivery times. Rail transports are by some of the respondents also seen as very bureaucratic and inflexible. Another problem for a shift to intermodal road/rail transports is the fact that many types of goods can't be transhipped in terminals as the risk of damages is too high. This means that a potential shift would only include goods that today is transported on trucks who already using terminals for transhipment, this constitutes about 40 percent of the goods handled by stock keepers but only 15 percent of the goods handled by the manufacturers. The handling of the goods at the terminals is big problem that need to be overcome and is by many associated with an increased risk of delays and damages, this is a big concern for most of the actors included in the study.⁶³

Many of the respondents in Transek's study believe however that there is a market for intermodal road/rail transports and say that they have noticed an increasing demand for these kinds of transports from their customers, mainly due to environmental concerns. Also, the transport buyers who already use rail transport of some kind are in general satisfied with it. The concept is however most attractive for long haul transports where there is greater opportunities to make profits.⁶⁴

⁵⁹ SIKA 2005

⁶⁰ SIKA 2008c

⁶¹ Ibid

⁶² SIKA 2008e

⁶³ Transek 2005

⁶⁴ Ibid



A general opinion seems to be that if the prizes go down, transport quality improves and if the problem with handling the goods at the terminals can be solved there is a great potential for increasing rail transports. Only a few of the actors in the study see no possible shift to rail transport mainly due to the risk of damaging the goods. Another problem seems to be the rail operators themselves. One of the manufacturers mentions that it is difficult to find any rail transport companies willing to take their goods and another says that they are weekly contacted by different haulers but never been contacted by any rail-road operator.⁶⁵

The resistance from the market to environmentally friendly transports can however be overcome through economical control measures where emission licenses and carbon dioxide taxes are two examples of cost-effective alternatives to reduce emissions and promote a modal shift. These types of control measures can create incitements for the actors in the market to adapt to a shift to more environmentally friendly modes of transportation.⁶⁶

However, according to SIKa the Swedish rail network is today underdeveloped and lacking of capacity. Shortage of terminals for intermodal transports and the lack of responsibility for its development are also important contributors to why railroads are not fully utilized. Large infrastructural investments need to be made in order to handle the increasing amount of goods in a possible modal shift. But even though investments are planned for the Swedish rail network to increase the capacity on the tracks it will probably have very little effect on the distribution of road/rail transport of goods as passenger trains are expected to get a higher priority than freight trains.⁶⁷

The rail road is still also suffering from low efficiency and quality concerning international transports which still hasn't reached levels acceptable by the market. Administrative, technical and cultural barriers are factors that prevent a development of international rail transports.⁶⁸ According to the white paper, which is the European commission's proposals for sustainable growth, it is important to realize the potentials of intermodal transport in order to get a competitive alternative to road transports. The focus needs to be on measures for technical standardization between different international systems.⁶⁹ In their report SIKa states that road transports are likely to increase its share of the total transport performance the next decade while rail transport probably will stay at the same levels as today. There are however a number of challenges facing road transportation where environmental issues together with the price development of oil and electricity are some of the more important factors that might have an impact on the distribution of transported goods between the different modes.⁷⁰

3.6 Environmental Aspects

Lately there has been a growing concern over the impact of transportation on the environment. A lot of people however feel that the benefits of transportation exceed the negative impacts. This topic is increasingly being investigated by environmentalists as well as by transportation planners. The Swedish road association states that goods transports as they are conducted today stands before great challenges, mostly because of the dependence on

⁶⁵ Transek 2005

⁶⁶ SIKa 2008e

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ SIKa 2008c

⁷⁰ SIKa 2005



fossil fuels. Governmental requirements have led to reduction in emission rates of motor vehicles, but as populations grow along with their economies the problems will persist. According to Bardi, Coyle and Novack the challenge for the future will be to more accurately assess the relationship between industrial benefits and their external costs in order to balance an efficient transport system with a safe and clean environment.⁷¹

There are a number of negative effects on the environment connected with road transportation. Hibbs broad classification of environmental pollution includes noise, visual intrusion, local air pollution and the disposal of obsolete vehicles. These are according to Hibbs all costs imposed on the individuals in our society, but they are very hard to quantify. Emissions however have a wider impact potentially affecting people's health. These costs are born not only by those people but by tax funded health services, the same apply for accidents. Hibbs also mentions the direct impact of emissions on the environment in forms of the green house effect and ozone depletion.⁷² In the transport sector most of the greenhouse gases released into the air is carbon dioxide, but if the share of bio fuels increase the rate of dinitrogen oxide, more known as laughing gas, will also increase significantly. The use of alternative fuel has tripled since 2004 but it still constitutes a very small part of the Swedish truck fleet.⁷³ Transport systems today stands for 30 percent of the Swedish emissions of greenhouse gases, 6 percent of these gases is produced when transporting goods. It should be noted that while personal traffic has ceased to increase its share, the transport sector has increased its emissions into the air by 8 percent the last fifteen years.⁷⁴

The European council states that the far most important measure in transport policy for a sustainable society is to see to it that the polluter pays for the costs generated. The price for a transport must reflect the real cost that it induce on the environment and the health of the people.⁷⁵ Within the European Union there is an ongoing work with the aim to calculate the marginal cost for the different transport modes and their various effects on the society. The view of Swedish transport policy has long been that the fees and costs, for infrastructural use, on the transport market should be based on these marginal costs. A total internalization of these costs would have a prominent affect on the costs of transports, especially road transports.⁷⁶

The marginal cost of road traffic is the variable cost produced by adding one additional vehicle to the transportation system. This includes costs for accidents, wear and tear, traffic jams, pollution, noise et cetera, it is basically about allocating the rightful costs for usage of the road infrastructure and its surrounding affects on our environment.⁷⁷ Or as earlier mentioned, internalize external costs. The external cost is the difference between the cost allocated to the user of the infrastructure and the cost allocated on society as a whole because of this usage. This means that the real cost of usage is not carried by the user, this in turn can lead to excessive use of resources. The goal with the transport policies is to decrease the excessive use of, in this case road infrastructure by e.g. economic control measures. The goal

⁷¹ Bardi, Coyle, Novack 2006

⁷² Hibbs 2003

⁷³ SIKA 2005

⁷⁴ Hedenus 2008

⁷⁵ SIKA 2008c

⁷⁶ SIKA 2008d

⁷⁷ SIKA 2001

of such control measures is to equal out the cost allocated to the user and the costs allocated to society, and at the same time prevent excessive use of the infrastructure.⁷⁸

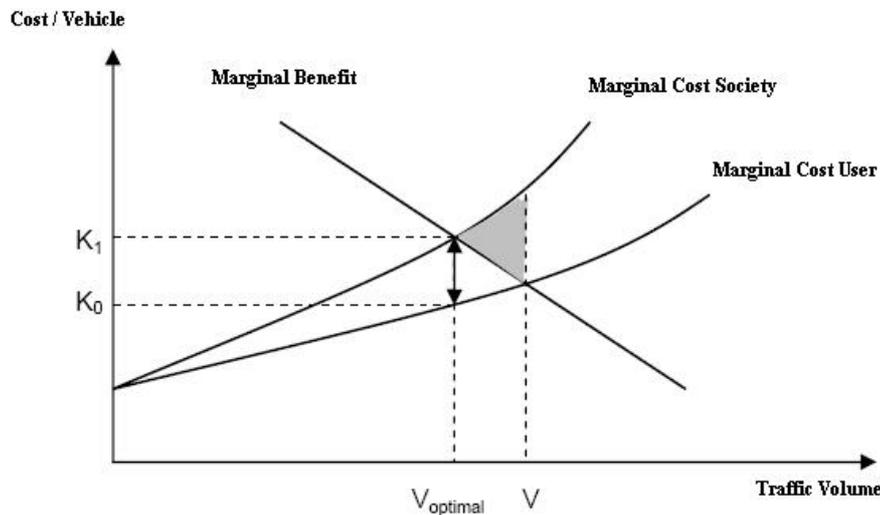


Figure 8 Marginal cost pricing⁷⁹

In the picture above one can see the marginal cost in relation to the marginal benefit for a travelled distance. We assume that the marginal benefit decrease for each additional trip and that the marginal cost increase. The marginal cost is assumed to increase as traffic volume raises, this because additional traffic in an already occupied system is likely to increase accidents and traffic jams. A transport company will continue to make the trip as long as the marginal benefit is larger than the marginal cost. However there is a difference between the marginal cost of an individual user and the marginal cost allocated to society. This difference is the external cost of transportation carried by others than the actual user. In the picture this is illustrated as $K_1 - K_0$ at V_{optimal} . By transferring this cost to the actual user, the cost of the user will correspond to the cost of society, thus internalizing external costs. Since the traffic volume is assumed to cease at the intersection of marginal cost and marginal benefit, the total traffic volume will be at V_{optimal} if external costs were to be internalized. If not however the traffic volume will end up at V and the loss of society would correspond to the shaded area in figure 8.⁸⁰ There are also control measures that aren't affected by the number of vehicles on the road, for example road tax, traffic insurance et cetera. These fees elevate the fixed costs in the companies and can affect the choices companies make, e.g. when subsidies are made to promote trucks with alternative fuels.⁸¹

⁷⁸ STMØ 2008

⁷⁹ STMØ 2008 p.39

⁸⁰ Ibid

⁸¹ Ibid



4 Empirical data

The empirical data is divided into two main sections. One were the material from the interviews are presented and one with data from our quantitative survey.

4.1 Interview Material

This first section will in summary describe the interviewed companies in regards to their history, current operations, visions and strategy, views on the truck and views on the market. We will also present attitudes and opinions from people with special knowledge of the business.

4.1.1 Transport Companies

4.1.1.1 Company A

History

Company A started out in 1974 through an acquisition, as a pure hauling operation with one customer representing up to 80 percent of company business. This customer went out of business just a few years after the start up resulting in a decrease from a 16 truck operation down to 6 trucks. After this Company A started with some warehousing activities in the former customer's old warehouse. This lead to further investments in warehouse property connected to the company premises, today clients occupy the full 35 000 m² warehouse now owned by company A. However they only store goods, there is no inventory management of stock levels, order quantities et cetera, neither do they use the warehouse for own purposes except for occasional reloading. As the company developed they also invested in a close by harbour operation, connected to its premises. So during the years the company has expanded their services from just hauling from A to B into offering warehousing, and handling incoming/outgoing goods by sea in their own harbour for storage or reloading onto trucks for further distribution. The expansion of the company has been the result of business opportunities and demands from customers.

Current operations

They only handle direct customers i.e. they don't receive any orders from forwarders. Company A operates 17 Scania trucks which they own and outsource 30 percent of their trucking business to external haulers. This is according to the owner a good way to keep a buffer of capacity that one can regulate after the fluctuation of market demand, so in times of lower demand they can decrease the number of external haulers.

Since Company A have a broad range of services they compete with all kinds of operations, from small haulage operations to big well known actors like DHL and Schenker. The owner thinks that his organisation fits well into the perception that Volvo has of smaller hauler developing into something that more looks like logistics service providers.

Strategy and visions

For the future the company aims at performing more local transports since it is hard to make money on long haulage. Purely from a company perspective the owner is open to outsourcing all of the road haulage and by doing so releasing all responsibility for driving regulation and so forth. However he states that a fleet of company owned trucks secures a lowest limit of capacity to offer the customers. When outsourcing all of the operations you have less control



over the capacity that you can provide to your customers. He is in addition to this very open for the possibility of rail services as a compliment to trucks. The company has even offered to help finance the repair of an old rail track on their grounds but the Swedish National Rail Administration did not approve. The lack of standardization between rail systems and the bureaucracy involved makes it hard to use rail in an easy way according to company A.

The truck

As mentioned before company A's entire truck fleet of 17 vehicles consists of Scania trucks, all of them fully owned by Company A. The owner himself says he is a bit of a tech freak and is very interested in, and knowledgeable about the trucks. He has always liked Scania ever since his days as a driver and has always received good customer service from them. However the company performs all of the reparations themselves so they are not loyal Scania in that sense. In the decision of which trucks to buy the drivers get a say but he also has a list of criteria that has to be fulfilled. Every time they update the truck fleet he buys the latest available trucks on the market.

The market

The owner of Company A says that every road transport company can provide transport from A to B, and this makes it hard to be profitable by doing only this. He also says that these companies, whose only value adding service is the movement of goods, will be very vulnerable in times of low demand. This creates a fierce competition where many of the actors have bad knowledge of their costs which increases the problem. He thinks that in the future you either run a small haulage operation contracted by agents and forwarders or you have to expand the range of logistical services and control at least 15 trucks, otherwise you won't be able to handle direct customers. More and more shippers are centralizing their purchase of transport and logistical solutions as they are reducing their supplier base in general. This makes it impossible for smaller haulers to contract direct customers who demands coverage all over Sweden. It is important even for medium/big size companies to have good connections in order to be able to cover larger areas and compete for direct customers with companies like DHL, especially when it comes to general cargo. Centralized decisions from shippers also brings a increase dependency to these customers, since they narrow their supplier base the contracted company gets a bigger part of their business so if they lose this business it often has severe affects on company turnover.

Given that you can offer the services the shipper needs it often comes down to price in order to seal the deal. There has been an increase in demand for environmental friendly solutions, but when push comes to shove it is all about price according to company A's owner. For internal benefit they do monitor fuel consumption on every truck and driver, this has had positive effects. They also educate their drivers in eco driving. As fuel prices rise actions like this becomes more and more important.

The owner of Company A has notices a big difference between the younger and older generations of truck driver. In the older generation you started out with distribution and strived towards getting to drive the long haul operations and be out in the truck for days. Nowadays it is almost the other way around, it is easier to get drivers for distribution routes with standard working hours and harder to get drivers for the long hauls.



4.1.1.2 Company B

History

The company started in 1986 through an acquisition of an existing hauler that was on the verge to bankruptcy. This company was bought for a symbolic value providing that the debts were overtaken by company B which therefore started with large deficits and had to struggle during their first years in order to survive. The reason for the acquisition of an insolvent company was mainly the restrictions regarding international hauling existing at the time. Through the acquisition the company was able to take over the license for carrying out transports in Western Europe, something that otherwise would have been very difficult to obtain.

The owner soon started to realize that a clear business plan was needed in order to move the company forward. After attending a lecture at the Swedish Chamber of Commerce about France as an important future trade partner to Sweden it was decided that the company was going to create a niche towards transports between Sweden and France, this was in 1987. After about a year they decided that they needed to establish themselves in France which in 1989 led to the acquisition of a French family business performing national transports. At this stage the goal was very clear; become world leaders in transports between Scandinavia and France. The company now continued to grow; they were very aggressive and willing to invest as they saw a possibility to take market shares.

In the mid nineties the owner managed to put together a very competent board of directors consisting of people with great knowledge both in logistics as in marketing and business. The owner means that this board has been a key factor to the success of the company as they very early started to work with the company's visions and goals and how to reach them, he says that this approach is not very common in smaller transport companies. He further states that the board forced him to sit down and really think of what he wanted to do with his company. Since then the company has always been very clear in terms of visions; where they want to be in the future and how to work in order to get there.

In 1993 they had a turnover of 22 million Swedish kronor which in 1995 had increased to 40 million Swedish kronor. In 1997 the company invested 10 million Swedish kronor in a new terminal allowing them to offer a broader range of services and in 2008 they moved the company to new facilities from which they operate today. The owner says that some of these investments would not have been made without the pressure from the board.

Since 1997 the company has "refined" their services, by among other things focusing more on speed. Today they have departures every twelfth hours from each terminal, something that has led to new customers in the form of car producers and suppliers in the automotive industry. In addition to this they have also started to utilize rail transports to some extent.

In 2006 they established yet another company abroad. This time it was in Luxembourg, a strategic geographical location due to the proximity to France and the harbours in Belgium and Holland. Luxembourg also had other advantages in form of a low price on diesel and skilled labour.

Current operations



Company B offers transport services mainly between Sweden and France. Their most common type of goods is general cargo and industrial goods. Besides hauling they offer distribution and warehousing in both countries, they also handle many of their customers' inventory management. They have two affiliates located in France and Luxembourg in order to be close to the French market. The company employs 70 people and has a turnover of about 200 million Swedish kronor. Around 10 Swedish companies are considered as competitors, the biggest competition comes however from France and Belgium.

The majority of their customers are producing companies, mainly larger industrial corporations while 20 percent are other forwarders and logistic providers. Around 70 trucks per week are driven between France and Scandinavia of which 75-80 percent are driven by other haulers contracted by Company B. These haulers are contracted to be available with a guaranteed capacity. The company owns around 100 trailers which mean that even the contracted haulers drives with the company's own "colours". The owner means that it is important for the drivers to represent the company in a professional way and also mentions that all drivers have to wear the same company clothing, he means that this creates a feeling of team spirit and pride. They also invest quite a lot in education of their drivers regarding language, hazardous cargo et cetera, this also includes their contracted haulers.

Frequent and quick deliveries are important marketing tools for the company which means that they send most of their goods through Denmark as using ferries takes longer time. They also have a driving schedule where drivers are switched every ninth hours; the owner compares it to a relay run where the cargo is delivered from one driver to the next without stopping. The company has for this purpose invested in a large apartment in Germany for their drivers to stay overnight.

The company performs follow ups of key performance indicators such as transport reliability, occupancy levels, driven kilometres et cetera. He says that these days there is a lot more focus on the utilization of the trucks at the same time as high filling degrees always has been very important to the company.

Strategies and Visions

The company has from the beginning worked active regarding having a clear vision and business concept and everyone in the company today know what they are and how to work in order to reach them. They early on decided that they wanted to become world leaders in transports between Scandinavia and France and have always wanted to continue to grow. The owner mentions however that it has been important not to try to reach too high too fast, but instead have a more conservative attitude where focus lies on a stable growth each year, something they have managed to do successfully as the business has expanded about 5-15 percent every year.

A lot of focus has been on profitability as the company started out with large debts and the owner says that they have strived to create a good solidity and a strong balance sheet. The development of the company is mostly a result of their own strategies and decisions; the owner means that they have tried not to look at their competitors and other actors in the market in order to not just follow in their footprints.



Company B started out as a traditional hauler but later noticed that other logistical services were demanded from customers. The company therefore decided to develop towards third party logistic operations. Today they offer transportation, warehousing with inventory management, along with distribution at all three facilities.

The company tries to shift the customers focus away from the price and more on speed and accuracy, the owner says that these things are usually higher valued by their customers and they can therefore charge a higher price; a necessity as Company B's production costs are relatively high. He also says that the customers value their understanding of the French culture and their way of doing business and that the company works very hard with helping to solve their customers' problems.

The Truck

The company does not own any of their vehicles, instead they rent the entire truck fleet which in Sweden mainly consists of Volvo and Scania while in France Renault is the most dominant brand. The fact that the trucks are rented was a result of a low cash flow in the early days of the company; a proposal to rent the trucks was presented to Volvo and Scania which they accepted. The trucks are rented three years at a time for an agreed price per kilometre and the contract includes all service and repairs of the trucks. The company tries to put as little internal resources on maintenance and purchasing of trucks as possible.

The owner is not at all interested in trucks and doesn't know much about technical features. He considers cost per kilometre and reliability to be the most important features in a purchase decision. The company has however a vehicle expert who gives information to the owner about fuel consumption, load capacity et cetera, and plays an important part when deciding on what trucks to choose. The drivers' opinions are also considered; through a survey they have a chance to express their wishes and thoughts about the truck.

The owner says that as the company has grown other assets have become more important, today the focus lies more on the hubs and warehouses than on the truck. The owner sees the truck merely as a production tool and says that he has focused more on what is behind the cabin. He further states that such things as expensive paint jobs and other design improvements don't add any value to the company.

The company has also noticed an increased focus on the environment from their customers. The owner says that they are trying to be proactive regarding environmental thinking, they have for example started to send some of their trailers by rail. He also mentions that the fact that their vehicles are rented on three year contracts means that their trucks always comply with the latest emission standards. This is also economically beneficial as a couple of years ago trucks not conformed to the latest emission standards were imposed an increased road tax of 97 percent.

He means that road transportation is not an end in itself and that if the services can be produced as fast or faster with for example high-speed trains this could be a very favourable alternative. There is however a very slow development of European rail networks regarding speed and standardization which still makes it hard for railroad to compete with road transportation, especially in a company where the focus lies on speed and agility.



The Market

The owner agrees with the development of the transport market as described in the report. He says however that smaller haulers will always exist, these are companies where driving a truck is more of a lifestyle and a big interest or hobby of the owners.

He finds the transport business to have a very low status in relation to the important role it plays in society. He means that people only see the smelly, loud trucks and the negative affect they have on the environment, this has made it hard to find competent and skilled labour. They almost even started their own driver education program as it has been very hard to find new younger drivers.

Regarding the drivers he has noticed a very distinct difference between the old generation and new generation. Younger drivers have a completely different focus on their social life and prioritize their family much more than the older generation. Younger drivers are also more willing to try different occupations and employers while older tend to stay at the same place for a longer time.

4.1.1.3 Company C

History

The company started in 1953 as a regional hauler with domestic transports. In the seventies the founder's son joined the company; described as a very driven man and a great entrepreneur. His contributions soon gave result and the company started to expand. He was also a key factor to why they in the beginning of the eighties started with transports to and from Spain which soon became somewhat of a hallmark for the company. They continued to grow rapidly and established themselves in new European markets, today they transport goods in a West European corridor including Germany, Benelux, France and Spain.

In the beginning of the nineties the son took over the company from his father and now the business really started to flourish. The turnover increased enormously, during some periods almost 20 percent per year and in 2000 it had reached 200 million Swedish kronor which in 2006 had tripled to 600 million Swedish kronor. In just a couple of years the new owner had managed to build up the company from a small business with only a couple of trucks to a company with a truck fleet of 180 vehicles.

The success of the company did not go unnoticed and in 2005 Company C was sold to an investment firm. Up until this point the company had been ran as a family business which meant that a lot of the competence and knowledge sat with the owner. This became very clear when he left the company in 2006 as the following three years were not characterized by the success and growth as previous years. The CEO mentions that they had grown too fast which meant that their information system could not keep up with the expansion of the company. In 2006 they therefore decided to stop all proactive selling in order to be able to handle the volumes at hand and invest in a new information system. They started to work with making their processes more effective and in 2008 the new information system was implemented, the company had at this time managed to turn the previous three years decline into profit.

Current operations

Company C see themselves as a hybrid between a hauler and a forwarder. They produce most of their services themselves but during peak periods they also contract other haulers when



their own trucks can't cover the demand. When the company was at its most successful 40 percent of the transports were performed by contracted external haulers. Some of their commissions are also sold to outside companies. Because of the ongoing recession their current production pace is about 20 percent below normal. There are today 330 employees at the company, 110 of these are Swedish drivers, 95 German and 15 Polish, 200 drivers in total.

They mainly transport part loads which is cargo ranging from a couple of tons up to about ten tons, besides this they also transport general cargo and full loads. The Company has at the moment two terminals located in Sweden which they mainly use for transshipments and break bulk operations. They don't own any terminals or distribution centres abroad, instead they use their partners' facilities. The same goes for distribution which is usually performed by their agents and partners. The company has however relatively high fixed costs as they have a very large truck fleet.

Apart from truck transports they have also invested in an intermodal transport solution where goods are transported by train from Helsingborg, Sweden to Herne, Germany. The CEO mentions that because they only pay a fixed price for each lot on the train they don't have any variable kilometre costs. Transporting goods by rail also means they don't have to pay any German road taxes. He says that so far they have only had good experiences from the rail transports and haven't really noticed any negative effects. The only thing he mentions is that if a train is delayed it has a greater negative impact as it carries a larger amount of goods compared to the truck, this is however seldom a problem as delays are rare.

One part of the business where they have noticed great possibilities to grow is in line haul operations where they today transport a large amount of goods for a larger food retailer. The company then only provides their trucks, drivers and transport planning as they use their customer's terminals.

Regarding the competition he says that it is hard to keep track of as there, because of the low entry barriers, always are a lot of newcomers in the market who try to take market shares. International haulers also pose a threat when these are trying to find goods to transport on their return home.

They continuously monitor important key performance indicators (utilization degrees, performance, quality defect costs et cetera) through the business system Mobilast and also connect these to their goals and visions.

Visions and strategies

The company is at the moment trying to develop new ways of production; the CEO mentions that it might not longer be the optimum choice to put a driver in a truck all the way down to Spain. As mentioned they are trying to shift some of their transports from road to rail and are at the moment working on developing new intermodal transport solutions which he also says is a good marketing tool as environmental issues are becoming more important to the customers.

The CEO mentions that a big dilemma in the transport market today is to know and understand what you actually are selling and what type of company you are. The company has in later years focused on developing services instead of being just a hauler which transport



goods from A to B. They are at the moment working on trying to market their services more as products, something that hadn't been done before the new CEO entered the picture. Today they already offer three different products called standard, express and exclusive which are different transport and logistics solutions based on the needs and requests of the customers.

The company has broken down their strategies and visions into quantifiable measurements giving them a very clear picture of what needs to be done in order to reach them, something that is very new to the company. They are at the moment also developing an internal management system where they can see all their key performance indicators in real time, the owner says that this is very unusual in the transport sector.

The Truck

Lately the company has purchased MAN trucks, before they've had both Volvo and Scania. The CEO mentions that the reason to why they decided to switch to MAN was mainly a better price and a good after sales service; he says that these two factors are the most important in a purchase decision. He also mentions that it is getting more important for the truck manufacturers to offer "package deals" where service and repairs are included in the price.

Because of the size of the company and the number of employees the drivers have very little input in what type of trucks to buy and what options to be included. The CEO mentions that some drivers request to drive Scania or Volvo but there are just too many wills to take into consideration and the drivers therefore have to accept what the management decides upon. The utilization of the trucks has also changed as each driver no longer has his own truck, instead the truck fleet is shared among all drivers. This has however meant that the drivers don't take as much responsibility for the truck when they don't consider it as their own leading to more damages and higher repair costs. The CEO says that he hasn't noticed any real difference between younger and older drivers.

Even though a lot of the employees have different opinions about the truck and how they want it to look like the management needs to put the image of the company first. The CEO says that the company needs to be perceived as a uniform entity meaning that their trucks have to look the same and represent the company in a professional way. This is something that has changed significantly since the beginning and there are many people within the company that still perceive it as a small family business and might not understand the importance to give a professional and uniform perception to the customers. In fact there are customers who put explicit demands on the appearance of the truck fleet, especially some of their direct customers. In the case when the company contracts other haulers these are not allowed to use Company C's logotype if the truck is not in uniform with their own fleet, a certain standard needs to be withheld.

Regarding the possibility to decrease their truck fleet he says that as long as it is more profitable to produce the services with own drivers and trucks they see no need in contracting other haulers. However, when you can buy the service for the same price as performing it yourself this is definitely a possible alternative. He means that driving with own trucks is no end in itself and is open to other alternatives.

90 percent of their trucks are running on rapeseed oil which is better for the environment and also cheaper than diesel.



The Market

Regarding what the customers find most important the CEO mentions that it always comes down to the price. Even though higher demands have been put on environmental issues in later years, the price is still what matters. He says that many customers put high demands on environmental friendly transports but are at the same time not willing to pay for it. As an example he mentions that because of them using rapeseed oil as fuel the customers use this as an argument to lower the prices; because of the rapeseed oil being cheaper than diesel the customers think that the transports should be cheaper as well.

Another factor that has become more important to the customers is to have a proactive approach regarding reporting disruptions in the deliveries. The CEO mentions that this is a big problem in the industry today and is often mentioned in customer surveys. He says that the haulers must become better in monitoring order status and visualize it in business systems. Today it is mainly the larger logistics companies that have integrated systems where the customers can follow their shipments and immediately be notified if a disruption occurs. He further states that in order to be competitive in the future the company needs to be able to offer these kinds of additional services to their customers and means that an effective business system is the key. Company C has already started to look in to this and has realized the importance to be proactive in their communication with their customers.

The CEO agrees with the development of the road transportation market described in our report. He says that it is getting harder to survive solely by offering hauler services, this might have been possible before but because of the downward pressure of transport prices the companies now need to offer other additional services in order to be profitable. He also mentions that although the prices of transports have gone down the price for each delivery has gone up due to the additional services included. Many companies have also started to focus more on third party logistics services where they for example control and store their customers' inventory in order to be able to tie the customers closer to the company and create long term relationships.

Company C feels that they also need to develop in this direction when merely driving goods from A to B no longer is profitable.

They have also noticed that for specific markets transport buyers are using fewer haulers and choose to a larger extent than before to make centralized purchases. Regarding international transportation the CEO says that it is impossible to compete with the larger logistics providers such as DHL as their network is so extensive.

4.1.1.4 Company D

History

The company started in 1990 by two persons who had decided to quit their jobs at the hauling company where they worked as drivers and instead open up a business of their own. The business of the company from which they came was in decline and they made an agreement with their former employer to take over part of his traffic for ASG. The company had in the beginning three trucks and was driving exclusively for ASG, later to become DHL. In the first ten years the business remained fairly static and they had about 3-4 trucks during the whole nineties. In 1999 one of the founders left the company and the respondent became the sole owner. After this the company slowly started to expand and has since then increased its truck



fleet with one vehicle per year which has up to this point resulted in 11 trucks shared by 15 drivers.

Current operations

The company mainly perform domestic transports for DHL but also has a smaller number of direct customers. They sometimes contracts external haulers when demand is high, this constitutes however a very small part of their total commissions. They mostly transport part loads ranging from 1000 kg up to full truck loads and their goods consist of all types of cargo including paper, timber, car parts, food et cetera.

The owner basically perform the transport planning himself without the help of any computer system, instead he keeps information about routes, trucks and drivers in his head. The company rents a section of a nearby terminal which they only use for transshipment and do not store any goods for their customers.

They see Schenker as their biggest competitor, not so much other smaller haulers. He says that once you written a contract with DHL there are really no renegotiations and as long as you fulfil your obligations it is very unlikely that you will lose your contracted routes.

Strategies and visions

The owner says that they haven't had any clear visions or strategies for the company, the development is more a result of demands and requests from the customers. They do not actively work with finding new customers as this is not allowed when driving for DHL. On the other hand DHL realize that their haulers sometimes need other customers in order to survive.

The owner says that he doesn't have any clear vision regarding the future of the company or how they will develop, he says that a lot has changed lately due to the recession in the economy. He feels however that the company is strong and that they are capable to bring in more customers. He thinks that they are going to continue to increase their truck fleet and that they will continue as a hauler for DHL also in the future, even though they've had thoughts about offering other services besides hauling in the past.

They don't really do any follow-ups of the business or measure key performance indicators besides fuel consumption, the owner says that he keeps track of these things in his head. He means that measuring performance indicators doesn't really add any value as it is hard to make reliable comparisons between different measurements.

The Truck

The company owns all their trucks which are financed through credits from both the truck manufacturers and banks. The owner says that after sales service and price are the most important factors in a purchase decision and mentions that a big reason to why they lately have bought Volvo is their better opening times at the repair shops. This is however an area where the truck manufacturers have not kept up with the development as the haulers must utilize their trucks more efficiently today compared to ten or twenty years ago. The owner says that the trucks needs to be out at the customers during the weeks and service and repairs must therefore be done in the weekends or during the night. He means that many of the truck



manufacturers are still living in the eighties as their service stations are mainly opened during the day.

They don't transport any goods on rail road mainly due to the lack of nearby terminals. Would however investments be made in more accessible terminals, rail transports could be an interesting alternative.

He also takes the opinions from his drivers into consideration in a purchase decision

The Market

The owner agrees with the development of the road transport market as described in the background and thinks that smaller haulers with just one or two trucks are going to have a hard time to survive. He means that in order to be profitable and to offer additional services you need at least 10-20 trucks. He has also noticed that haulers tends to focus on direct customers to a larger extent and starting to offer extensive door to door services which is more and more appreciated by the customers. He mentions that forwarders are becoming more "lazy" and wants to cut down on their own assets by outsourcing more services on the haulers.

He beliefs that when the economy is flourishing the customers are more willing to buy full door to door services from one company, during times of recession they start to cut costs and looking through other alternatives and different suppliers. Lately the prices have gone down due to the recession in the economy.

Regarding what factors the customers find most important when buying transports he says that the price has been the dominant factor in later years, about two years ago the focus was more on transport quality. Even though environmental issues have become more important he thinks that other factors such as price and quality are still significantly more dominant in a purchase decision. He says that it is easier for the customers to decrease the environmental impact by better planning of transports which would lead to a better utilization of the trucks for the haulers.

He hasn't really noticed any differences between younger and older drivers.

4.1.1.5 Company E

History

Company E is an old family business founded in 1946 by the father of the current owner who also is our respondent. The son joined the company when one of the leading figures quit and was called in by his father. The company started as a pure hauler operation with three trucks right after the end of World War 2 when the demand for transports was high. In the beginning they had a lot of contact with farmers and therefore transported large amounts of milk. In the fifties and sixties they started to move into bulk goods such as oil and gravel. During the sixties they were contracted by ASG, later to become DHL, and quickly started to transport large amount of goods for them. It was now the company really started to expand and soon had line haul operations between many cities in Sweden. The growth of the company continued through the seventies and eighties.



During the years the company has acquired several small and medium sized haulers, the owner says that at least 15-20 haulers have been bought up by Company E and the largest acquisition involved a company with a truck fleet of 25 trucks.

The development of the company has been characterized by a steady increase in number of transports during the years and despite the undergoing recession the owner has a positive attitude towards the future of the transportation business. The company has undergone several different stages concerning what type of goods they have transported; before they've drove large amounts of construction equipment, this part of the business was however taken over by one of the partners while the current owner focused on their long haul traffic. In 1991 they also became large within liquid bulk goods through an acquisition of a company operating in this business, this company was later sold off. A new company within liquid bulk transports was however acquired four years ago.

Current operations

Today 50 percent of their transports are line haul traffic for DHL, this involves domestic transports to and from DHL's own terminals. They also perform distribution on behalf of DHL where goods up to 2 tons are transported. The company also has their own customers to which they offer long haul transports, these include among other one of the larger food retailers in Sweden and a large manufacturer of construction vehicles. The latter is a big customer to the company for whom they also laid out improvement plans regarding the logistical flow between two of their factories in the mid nineties. This led to higher efficiency in their deliveries by using custom built trailers.

The company has its own warehouse where they offer storage of goods to both existing transport customers as well as other external customers for whom they don't perform any transportation. The company can also provide inventory control services as well as repackaging and labelling of goods when requested by the customers. The warehouse is also used as a transshipment terminal in order to make the transports more effective.

Only a very small part of their transports are performed by external haulers, the owner says that they try to use their own drivers and trucks as much as possible. The company many times rejects offers for transports that are not considered profitable. The owner mentions that it is impossible to compete with smaller haulers who do not understand their own cost structures, he says that some haulers can drive eighty hours per week without making any profit.

The company holds an ISO certificate which means that their quality control and follow-ups of the business are quite rigorous where key performance indicators such as fuel consumption, filling degree, occupancy level and damages on both vehicles and goods are reported.

Along with another hauler Company E also gives courses where both internal and external drivers are educated in areas such as eco driving and safety. They are also in charge of all the practical courses for the truck driver education at a nearby high school, the owner says that this is a good way to attract new and younger drivers to the company.

For their DHL operations the owner means that their competitors are mainly the same as to DHL, i.e. the larger logistics companies such as Schenker and DSV. When driving for DHL



each hauler have their own routes for which they are responsible for, it is therefore no competition among the companies contracted by DHL.

Strategies and visions

Most of their customers are a result of good references and recommendations, the owner says that as their reputation has grown it has generated new customer relations. Today they have started to work more actively on finding new customers compared to before when they mostly relied on their good reputation as a professional hauler.

Up to the mid seventies the company was driving for a truck pool, this was however not considered to be a good corporate form for a larger hauler. Instead they started to focus on finding their own customers in long haul transports, the owner says that this was an active choice of strategy. Beside that he thinks the development of the company is mainly a result of coincidences and chance.

The Truck

The company owns all their trucks through a separate company, today they have 80 trucks in total. He thinks that the truck is still a central part of the operation as their transport services are the most dominant part of the company. When buying a new truck the price is the most dominant factor, the owner means however that the truck manufacturers have quite similar price settings. Beside the price, environmental class and fuel economy are two very important features. He says that Volvo has a disadvantage compared to Scania as you in their trucks which are classified as Euro 4 and 5 have to add a substance called Eurea. This has been an important contributor to why they in later years mostly bought Scania. He also says that other brands such as DAF, MAN and Mercedes have almost caught up with the premium brands like Volvo and Scania regarding quality and performance; before nobody wanted them he says, but that attitude has now changed dramatically.

When buying their trucks they continuously listen to opinions from their drivers. However, regarding what options to choose the owner says that the trucks already are very generously equipped as they come and he says that the options included in the trucks today are almost more than what is demanded.

Up to 12-13 years ago they handled the service and repair of the trucks themselves through their own repair shop, after that the local Volvo dealer took over the shop including personnel. The owner means that the problem with having their own service station was the fact that it affected the daily operations too much; many times they had to change their delivery schedule in order to get trucks to service. He says that service is a very important factor and they have for example put demands on the repair shops and service stations to offer better opening hours. This is something they have been very slow to adapt to but are now starting to understand the importance of.

In order to utilize the vehicles as much as possible the company use three drivers per truck of which one has the main responsibility, in the past it was very common that each driver was responsible for one truck. The owner agrees with the fact that as each driver no longer is responsible for his or hers truck, the feeling of responsibility for the vehicles may diminish.



Regarding the possibility to use intermodal transport solutions the owner says that this is not an option as they transport goods on quite short distances. He says that in order to make rail transports profitable the distances need to be at least 300 kilometres, at these distances he definitely thinks that rail transports have several advantages. He also mentions the lack of nearby terminals to be a big problem if the company would want to switch goods from road to rail.

The Market

The owner agrees with the development explained in the report and thinks many haulers with only one or two trucks will have a hard time to survive; he says that a lot of them are driving long distances and many hours per week for very little money. Many of these haulers are also contracted by larger forwarders and might therefore have to travel long distances to different parts of the country which is hard to make profitable with just a few trucks. He thinks that expanding your business by offering other services is definitely a good way to tie the customers closer to the company.

Regarding what the customers find important when buying transports the price is still the most dominant factor. There may be a lot of talk about environmental issues but the owner mentions that they still might be outrivaled by haulers with significantly older trucks. He agrees with the fact that customers are becoming more willing to put larger volumes on fewer number of transport providers. He has also noticed that they are requesting other services such as warehousing and inventory management to a larger extent. He also says that the modern traffic control systems existing today allows haulers to have better control of their transports and can therefore do business with direct customers in a better way instead of having to drive for other forwarders or logistics companies.

The owner has noticed some differences between younger and older drivers and says that, without making too sweeping statements, younger drivers are not as responsible as many of the older are.

4.1.1.6 Company F

History

The company started in 1994 by the husband to the current owner who is our respondent. They started out only having one truck and were at that time driving for a truck pool. They slowly started to expand and soon got a contract with Schenker to operate one of their lines. In 2002 they took over yet another route on behalf of Schenker and with that doubled their operation in one day, at most the company had 27 employees. However, the company couldn't adjust to the sudden growth and soon had to reduce their operation by letting go off the route they had obtained just a few years earlier. Today they are still operating only one of Schenker's lines.

Current operations

Today they are performing long haul transports for Schenker between the western and northern parts of Sweden, they have 7 trucks and 17 employees. They transport part loads ranging from 1 ton up to full loads and the transports usually go directly from customer to customer without being transhipped at terminals. Food constitutes a large part of their transported goods where two larger manufacturers can be found among their customers. The company does not own any terminals but has a repair shop which they also can use for



transshipment if necessary, this is however very unusual. They have focused their business on refrigerated cargo where all of their trucks today are equipped with refrigeration units.

Apart from Schenker they also have a number of direct customers. These must be approved by Schenker who takes commissions on the transports performed for the company's external customers as well. As it is hard to find transports going from north to south the company continuously try to find customers in the northern parts of Sweden in order to get full truck loads in both directions. This is usually approved by Schenker as long as the company is able to fulfil its obligations to them. The owner says that they wouldn't be able to survive purely on the commissions from Schenker, they need other external customers as well. The company does not work actively with finding customers in the western and southern parts of Sweden, the transports they get from Schenker are more than enough. They do however from time to time get some requests from other customers whom they usually have to refuse or refer to Schenker. Schenker pays a fixed price for each transport which is based on a complicated price setting system. The owner mentions that if the company uses Schenker's terminals the profits reduce significantly and therefore the optimum transports for company F is direct transports from customer to customer without using any terminals.

Regarding the competition the owner says that some of the newcomers in the market might be considered as a threat as they many times dump prices and in that way might be able to take market shares. DHL is also mentioned as a competitor. They don't however have any international competitors as these companies usually don't transport goods to the northern parts of Sweden.

They do follow ups of the business where fuel consumption, number of hours worked and kilometres driven are measured each month while the occupancy level of the trucks is checked on a yearly basis.

Visions and strategies

The owner says that they are always interested in expanding the operation; the most likely scenario would be taking over another of Schenker's nearby routes. At the moment they are waiting for another hauler, operating one of Schenker's routes to retire. Because they already operate on behalf of Schenker they have the right of precedence over other companies to be contracted for this route. They are hoping they can grow in a moderate pace which allows them to successfully adapt the operation to the growth of the company. They see themselves working under Schenker also in the future.

The owner says that service and transport quality are most important to their customers, where factors such as precision in deliveries and reliability are highly valued. Then the owner adds that price, of course, is also a very important factor. Environmental issues have also become more important to many of their customers and Company F has worked a great deal with decreasing their environmental impact where for example all trucks are equipped with on-board computers measuring fuel consumption, average speed et cetera.

The Truck

The company has today seven trucks; six Scania and one Volvo. Three of the trucks they own themselves and the rest are leased through Scania Finance. The proximity to service stations and reliable, good service and repair deals are the most important factors to why they mainly



use Scania trucks. These are also the most important factors when buying a new truck according to the owner. It is considered very important that the services and repairs are in synch with the daily operations. Now their trucks are always serviced on Saturdays in order to not disrupt their weekly operations.

Other important features of the truck are, according to the owner, the driving environment and the accessibility to the cabin; how easy it is to get in out the truck. Environmental issues are also important as Schenker puts rather high demands on their haulers where trucks have to conform to certain Euro classifications regarding emissions and pollution. As these requirements continuously are updated the company can not keep a truck for more than eight years as it than no longer meets the requirements from Schenker.

The drivers are usually consulted when buying a new truck, the owner says however that the trucks today are of very high standards and well equipped meaning that no matter what type of truck they buy it usually meets the requirements of the drivers. Also, the trucks can't be customized to specific drivers as all trucks are shared among the employees.

The owner says that they have never really considered the possibility to use other modes of transportation. It is not considered a possible option since they transport large amount of frozen food which is difficult to put on railroads when this usually requires transshipment activities. However, the owner has a positive attitude towards rail transports in general.

The Market

The owner believes that there is going to be more focus on the possibility to trace the cargo and the trucks and continuously be updated about the status of the shipment and the location of the driver in order to make the transports more efficient and provide higher visibility to the customers.

The owner also believes that there are going to be fewer and larger companies, the larger logistics companies such as Schenker contribute a lot to this development as when you are a hauler already driving for Schenker you have a priority in taking over existing routes and therefore grow bigger and bigger.

Company F has seen some differences between younger and older drivers as younger drivers are more adaptable to things such as eco driving. Older drivers thinks they already know how to drive and don't accept changing their behaviour as easily. The owner doesn't agree with the fact that you are able to attract better drivers when having trucks with a better image and higher status.

The owner agrees with the development described in the report and with the fact that as transport prices have decreased it has become more important to companies to offer other logistical services besides transport goods from A to B. Company F mentions their niche towards refrigerated and frozen cargo as an example. They also think that there are not many smaller haulers with only a few trucks who are able to transport goods for their own direct customers. This is very difficult as there are a lot of other activities beside transportation the company has to get involved with in order to offer a full door to door service. Smaller haulers therefore need to be connected to a truck pool or a drive on behalf of a forwarder who are

responsible for finding and having contact with customers, transshipment activities, warehousing et cetera.

Finally the owner says that driving for companies like Schenker creates a feeling of stability as once you are contracted for a specific route you are basically guaranteed to keep it is long as you fulfil your obligations. However, there are given very few opportunities to grow and expand your business as taking over other routes basically requires the company operating that route to either liquidate or retire. There are also difficulties for smaller haulers to take over existing routes as this many times requires large investments in new trucks; there are given no possibilities to grow in a moderate pace.

4.1.2 Other Sources

Here we will present the opinions of qualified personnel at Volvo and also the views of Mr Håkan Larsson, guest professor on the logistics department at Handelshögskolan in Göteborg who has great experience from the transport market.

4.1.2.1 Volvo Trucks

Volvo Trucks have in recent years seen a development on the transport market where small customers have gone from traditional haulers into what more accurately can be described as logistics service providers, starting to invest in for example their own terminals and distribution systems. There seems to be a trend towards small haulage contractors developing into what more looks like third-party logistics providers. From having only a small number of employees, they are becoming larger in terms of employees, assets and offered services. Traditionally a smaller hauler is contracted by forwarders and do not come in contact with the shipper, however when expanding their logistics services they are able to provide a full door-to-door service to the customers and therefore target new customer segments. A simplified picture of the development is shown in figure 9.

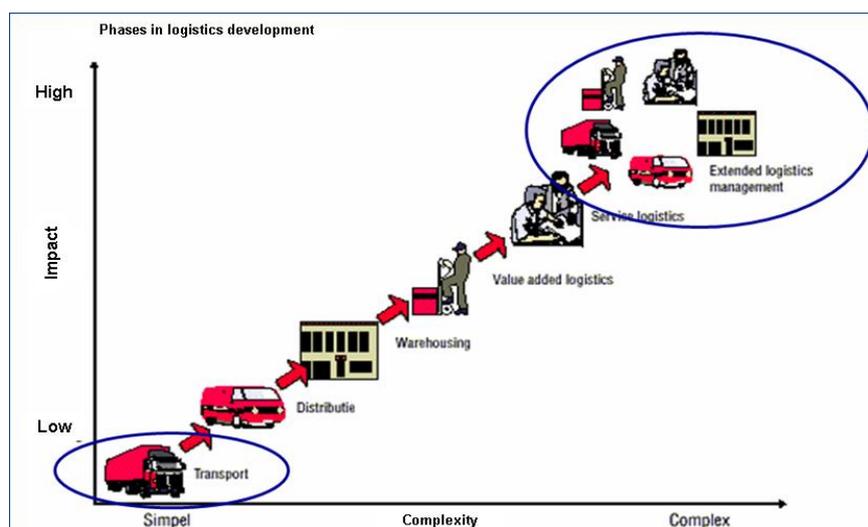


Figure 9 Phases in logistics development⁸²

⁸² Volvo 3P



4.1.2.2 Håkan Larsson

Håkan thinks that Volvos view of the development is interesting, but spontaneously one has to consider the structure of the market before making any general conclusions. What types of companies are there? Do they handle direct customers, are they members of a truck pool or do they operate through third party logistics providers like Schenker for example. No hauler is big enough to handle full door-to-door services covering all of Sweden by themselves. To do this one must use the large networks available through DHL, Schenker et cetera. Haulers that do handle direct customers and offer full services are therefore mostly local, regional or niche companies. Generally speaking Håkan believes that we in fact are moving towards bigger entities in all businesses, and the transport business is no exception. The big actors become bigger and the smaller ones has to focus on local/regional or niche markets, if you get stuck in the middle you will be “eaten” from both sides.

“There is an ongoing trend that will result in less and larger companies in the transport sector”

However if Håkan is right a lot of the companies will do so in collaboration with larger forwarders and without expanding their services. It is hard for small haulers to operate without truck pools or forwarders, the times when the owner himself drove the truck at day and did the administrative work at night is as good as gone. Håkan is also of the opinion that shippers in the transport business, as customers in a lot of other businesses, are narrowing down their supplier base which will result in larger entities on the market taking advantage of scale economies.

Companies that manage to expand independently without operating through forwarders are often driven by individual entrepreneurs. Håkan says that out of there entrepreneurship other value added services apart from transports might develop, such as for example warehousing, packaging, inventory control et cetera. These companies however, as mentioned, mostly compete on local, regional or niche markets. He also thinks that the company should have an established customer base demanding this kind of additional services before investing in for example a warehouse, otherwise it is to risky.

For companies operating under forwarders like DHL or Schenker, Håkan thinks that Volvos view of the development is very rare when it comes to the part of expanding services. This has to do with the fact that the forwarder offers the additional services to their clients and that contracted haulers are forbidden to perform any operations that might compete with the forwarders business. But there are examples of companies that have ended their contracts with the intention to compete. However companies that have succeeded with extensive logistical services on specific markets outside the network of forwarders are, according to Håkan, very few. It is very hard to compete with the big forwarder networks even on a local scale, especially when it comes to smaller shipments.

4.2 Quantitative Survey

This section will present the data collected from our quantitative research regarding the truck features.

4.2.1 Truck Features

The features investigated in the quantitative survey are divided into three levels which can be seen in figure 10 below. Under the figure a short explanation of each feature is presented.

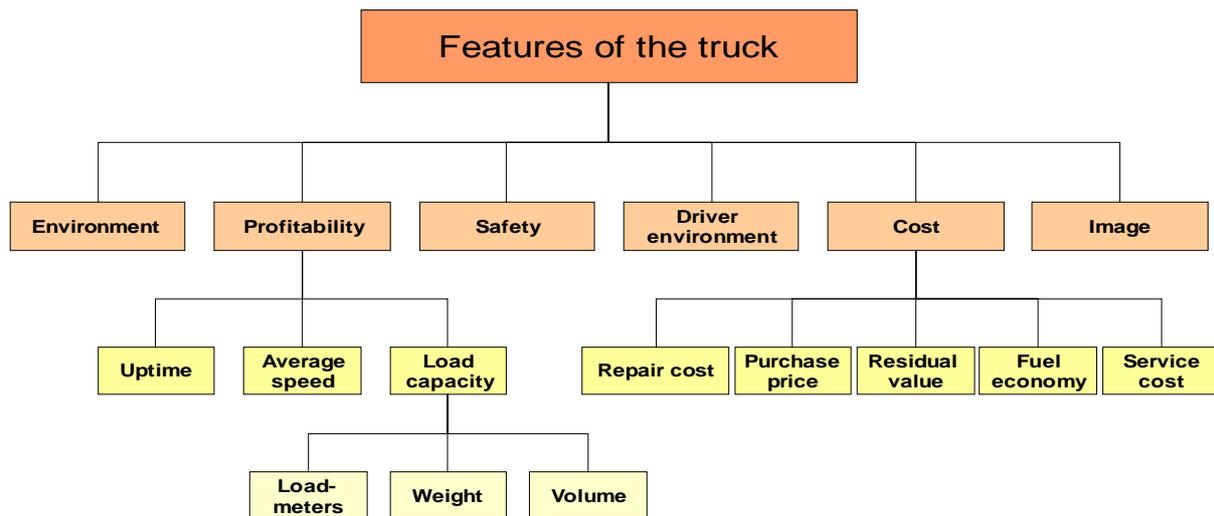


Figure 10 Features of the truck

Environment: How environmental friendly the truck is, e.g. which EURO class it has.

Profitability: The trucks ability to create value for the business, divided into three sub categories.

- **Uptime:** The amount of time that the truck is active, i.e. that it can run without e.g. service or repairs.
- **Average speed:** Which average performable speeds the truck is able to hold.
- **Load capacity:** How much goods the truck can load, divided into three sub categories
 - **Load meters:** How many meters in length the truck can load
 - **Weight:** How heavy goods the truck can carry
 - **Volume:** How big volumes the truck can handle

Safety: How safe the truck is considered to be

Driver Environment: How comfortable and functional the truck is for the driver



Cost: How much cost that is associated with a specific truck, divided into five sub categories

- **Repair cost:** How costly the specific truck is to repair
- **Purchase price:** How expensive the truck is to purchase
- **Residual value:** How much value you get from the truck on a secondary market
- **Fuel economy:** How much fuel the truck consumes
- **Service cost:** How costly the specific truck is to service

Image: How important the image of a truck is

4.2.2 Feature Prioritization

Below follows a compilation of how the different features of the truck was ranked by the respondents. The value seen next to each feature in the graphs is the mean of all priorities given by the respondents in each group. This priority is the percentage of the points given to a specific feature in relation to the sum of the points given to all features in that group; the higher the value the more important the feature is considered to be. The question asked to the respondents was:

What features do you consider to be most important in a purchase decision?

The questionnaire used can be found in appendix 8.2 and detailed information about the results from the questionnaires can be found in appendix 8.6.

4.2.2.1 Main Group

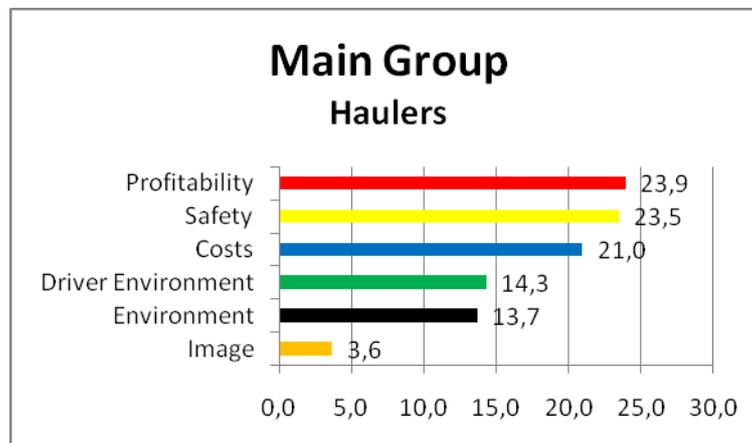


Figure 11 Hauler Prioritization of Main criterions

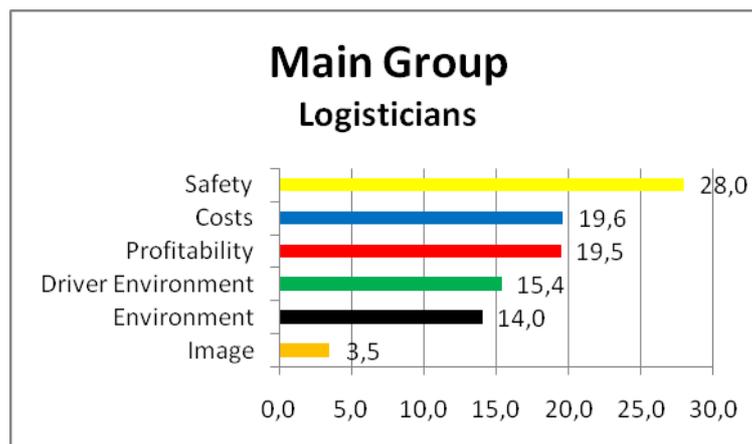


Figure 12 Logistician Prioritization of Main criterions

As we can see there are some differences between the two groups concerning the main criterions. Haulers have rated profitability as the most important feature on the truck whilst the logisticians have rated safety as their most important feature. Remember that these are averages from the data collected from our survey.

4.2.2.2 Sub Group Cost

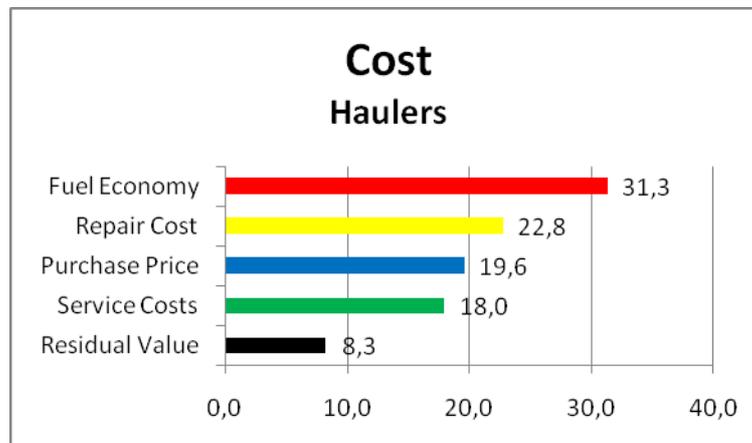


Figure 13 Hauler Prioritization of cost sub criteria

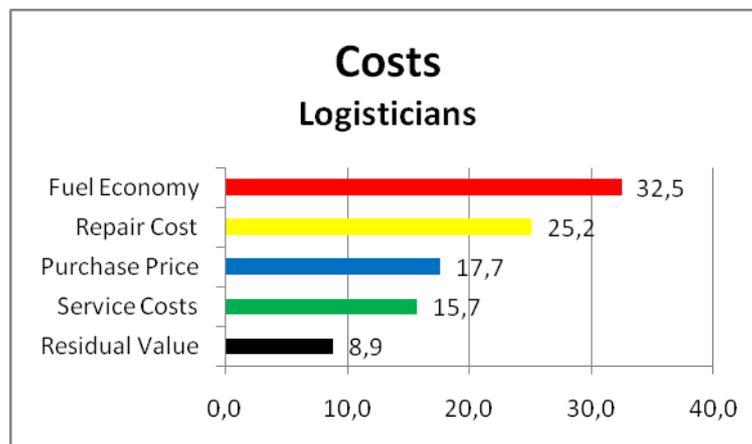


Figure 14 Logistician Prioritization of cost sub criteria

In the sub group cost the two groups have very similar results. Fuel economy is ranked the highest followed by repair- and purchase cost. It should be mentioned that these criteria have been weighted against each other on a local level without regards to the main group.

4.2.2.3 Sub Group Profitability

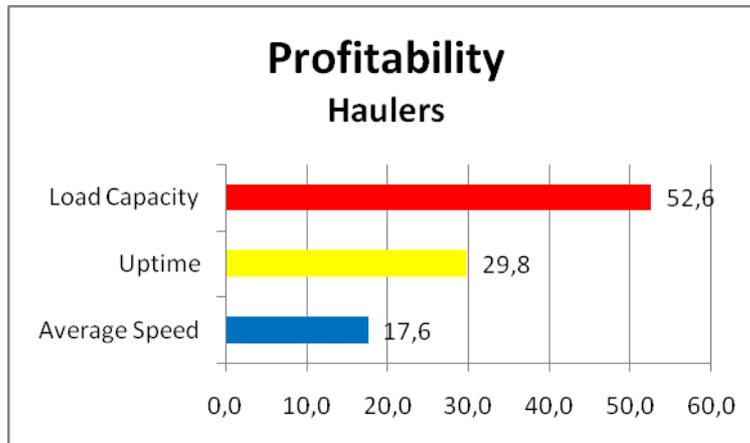


Figure 15 Hauler Prioritization of profitability sub criteria

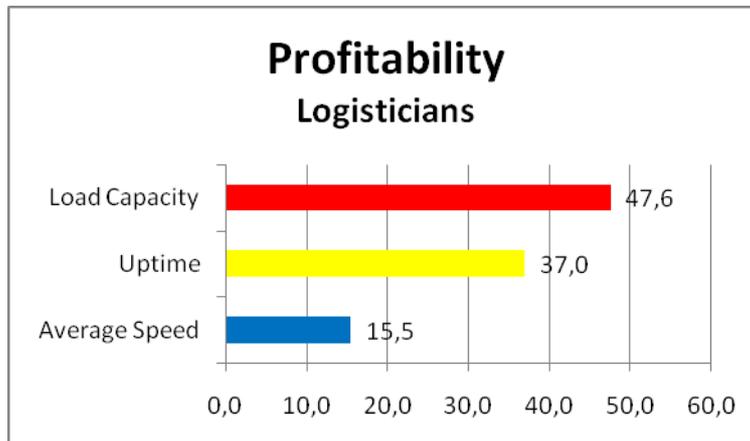


Figure 16 Logistician Prioritization of profitability sub criteria

In the sub group profitability the two groups again have very similar results. Load capacity is ranked the highest in both groups followed by uptime and average speed. Again it should be mentioned that these criteria have been weighted against each other on a local level without regards to the main group.

4.2.2.4 Sub Group Load Capacity

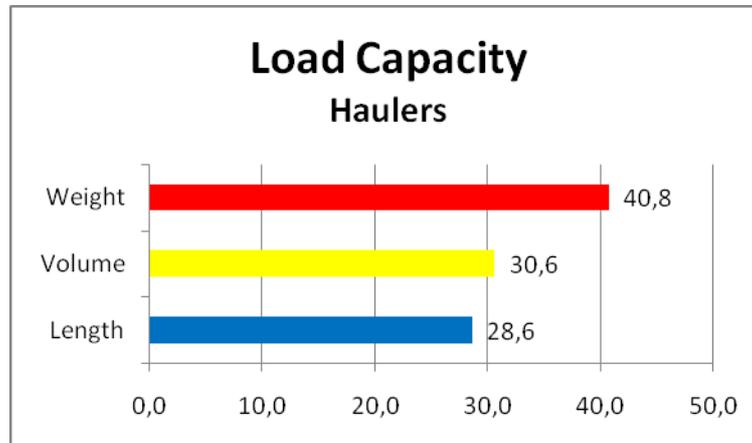


Figure 17 Hauler Prioritization of load capacity sub criterions

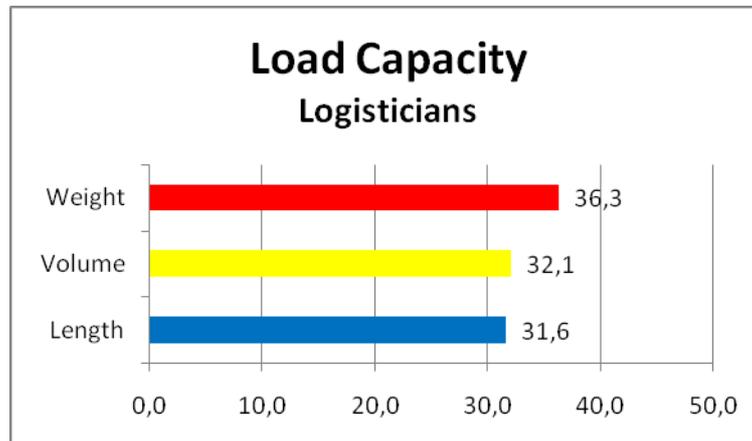


Figure 18 Logistician Prioritization of load capacity sub criterions

In the sub group rankin load capacity the two groups yet again have very similar results. Weight is ranked the highest in both groups followed by volume and lenght. Again it should be mentioned that these criterions have been weighted against eachother on a local level without regards to the main group.



4.2.2.5 Survey Statistics

Here we can see statistics gathered from the collected data of our quantitative survey.

Main Group	Haulers		Logistics companies	
	Mean	St. Dev.	Mean	St. Dev.
Environment	13,67	5,99	14,04	6,08
Profitability	23,95	8,52	19,50	6,86
Safety	23,51	9,71	27,98	7,87
Driver Environment	14,30	9,13	15,37	8,61
Costs	20,98	9,23	19,61	10,08
Image	3,60	1,61	3,49	2,18
Costs				
Repair Cost	22,79	6,22	25,18	5,55
Purchase Price	19,63	10,67	17,68	9,92
Residual Value	8,25	4,68	8,88	6,53
Fuel Economy	31,33	13,67	32,51	11,84
Service Costs	17,99	8,39	15,74	6,84
Profitability				
Uptime	29,76	19,18	36,96	21,71
Average Speed	17,62	9,06	15,45	7,29
Load Capacity	52,62	18,15	47,58	19,10
Load Capacity				
Length	28,62	13,44	31,62	14,14
Weight	40,76	23,38	36,31	15,80
Volume	30,62	20,60	32,07	13,26

Figure 19 Survey Statistics



5 Analysis

In order to build an opinion on what underlying forces that steer the market we first need to map and analyze the development according to our sources. After that we will try to analyze the reasons behind it and last but not least its affect on the truck.

5.1 The Market Development

5.1.1 Market structure

In order to analyze the market development we have to understand the market structure. To do this we look at data from our empirical sources along with the information in the theoretical framework. Theory states that the market roughly comprises of three categories of companies, remember category 1 to 3 in the theory chapter 3.1 “The Market”?

1. Single Task Operators
2. Multiple Task Operators
3. Third Party Logistics Providers

According to this view the companies from our interviews can be fitted into either category 1 or 2, see table 1 for the categorization.

Company	Operations	Category
Company A	Long Hauling, Warehousing, Harbour Activities, Forwarding	Category 2
Company B	Long Hauling, Warehousing, Inventory Control, Distribution, Forwarding, Break/Bulk, Shipments by rail	Category 2
Company C	Long Hauling, Forwarding, Break/Bulk, Shipments by rail	Category 2
Company D	Long Hauling	Category 1
Company E	Long Hauling, Warehousing, Inventory Control, Distribution,	Category 2
Company F	Long Hauling	Category 1

Table 1 Categorization of companies according to theory

Theory also states that companies in category 2 and 3 often use category 1 companies to perform some or all of their transport needs. This is supported by the empirical data in our report. When we look at current operations for the companies in category 1, company D and F, we can see that both of them are contracted by large logistics service providers that would belong to category 3 (DHL and Schenker). Basically all of their goods are provided through these third party logistics providers, and very little contact is made with direct customers. Even company E and B, in category 2, states that parts of their operations is handed to them through larger providers like DHL, Schenker or DSV.

From our interview with Håkan Larsson we can see that he agrees to the notion that one has to consider the structure of the market before making any general conclusions of the market



development. From that interview it is also possible to separate three groups of companies. However instead of dividing companies after operations he speaks about:

1. Haulers operating under contract for large third party logistics providers
2. Companies operating independently with a direct customer base
3. Large third party logistics providers like DHL and Schenker

If we use this classification on our interviewed companies we get the following result, see table 2:

Company	Operations	Category
Company A	Independent operator	Category 2
Company B	Independent operator	Category 2
Company C	Independent operator	Category 2
Company D	Contracted Hauler	Category 1
Company E	Independent operator /Contracted Hauler	Category 1-2
Company F	Contracted Hauler	Category 1

Table 2 Categorization of companies according to Håkan

It is interesting to see that even if the classification from the theoretical framework differs from Håkan's view, both points of view would give roughly the same categorization. Does this say something about what kind of companies that provides certain types of services? The reason behind company E's category 1-2 classification is that as much as 50 percent of this company's operations was conducted through contract with DHL, which is a category 3 company.

By analyzing our empirical data we can see that regardless of how we classify there are no clear lines separating the groups. As mentioned earlier company E and B, even though they belong in category 2 according to theory, do perform single task operations for third party logistics providers. This alone is standard operations for category 1 companies, but they also perform a number of other operations for direct customers which signifies category 2. We can also read from the interviews of company D and F that they apart from their contracts with forwarders both have a small number of direct customers, and on occasion forward goods in order to cope with high demands, operations which signifies category 2 companies from Håkan's perspective. Despite this the authors think that so far it is safe to say that the market can be divided into three company segments, and that a combination of the two stand points can be used to better understand the structure of the market.

5.1.1.1 Competitive situation

To further understand the structure we need to analyze the competitive situation, how do the companies view their competition? We start by looking at the multiple task operators from our interviews, all of them which are more or less independent. Company A for example says that they compete with all kinds of operations, from small haulage operators to big well known actors like DHL and Schenker. However they say that in order to compete for direct customers with these large actors, companies of their size need to have good connections with other haulers in order to cover larger areas. This is supported by the fact that Company A



forward around 30 percent of their trucking business to external haulers. It also fits with Håkan Larsson's opinions in chapter 4.1.2.2:

“No hauler is big enough to handle full door-to-door services covering all of Sweden by themselves.”⁸³

Sweden is a very large and complex area but the principle is the same for any larger area, and also, what is considered large strongly depends on what company we are talking about.

Company B's operations are focused on a very specific market, in this case transports between Scandinavia and France. Because of this focus, or niche, they have managed to narrow down their immediate competitors to just a few actors. Again Håkan Larsson's opinions in chapter 4.1.2.2 fall in sync with information from our interviews.

“No hauler is big enough to handle full door-to-door services covering all of Sweden by themselves. To do this one must use the large networks available through DHL, Schenker et cetera. Haulers that do handle direct customers and offer full services are therefore mostly local, regional or niche companies.”⁸⁴

Company C sees themselves as a hybrid between a hauler and a forwarder, between 20-40 percent of the hauling is outsourced. The company's hallmark was from the beginning transports to and from Spain, but unlike Company B they are no longer as focused on that one specific market. This might explain why they, just as Company A, feel that competition comes from a lot of different actors as opposed to Company B who had a narrow span of competitors.

Out of Company E's business today, 50 percent comes from line haul traffic and distribution for DHL. In this sense the owner means that their competitors are mainly the same as DHL's, i.e. the larger logistics companies such as Schenker and DSV. He says that when driving for DHL each hauler has their own routes for which they are responsible for, it is therefore no competition among the companies contracted by DHL. However they also compete with smaller haulers for the remaining 50 percent outside DHL business. This is hard according to the owner because a lot of the smaller actors do not understand their own cost structures, he says that some haulers can drive up to eighty hours per week without making any significant profit from it. This notion is supported by theory, in the cost structure chapter we can read that Björnland, Persson and Virum claims that transport companies in general have poor knowledge about their costs.

We can find additional explanations to the cutting of prices in our theory. In the chapter about the market we can read that Belzer believes that it is the forwarders whom with their expertise and control of the market engage carriers in bidding wars to secure the lowest price. Resulting in a situation where unorganized haulers work well below average rates. Nehls adds a cultural perspective to the same situation in chapter 3.3:

“Within the truck driver community Nehls found a hard, disloyal type of competition between the drivers. The consequence of this is a strive to only focus on individual benefits which in

⁸³ Håkan Larsson 2009

⁸⁴ Ibid



*the long run hollows out the market as competitors constantly underbids each other, i.e. more work is done for less money.*⁸⁵

When we move on to the two contracted haulers we see an interesting thing. Company D which is a single task operator that mainly performs domestic transports under contract for DHL sees Schenker as their biggest competitor. They don't view other single task operators as their competitors, instead they say Schenker which is their customer's (DHL) competitor. Company F which perform long haul transports for Schenker in their turn mentions DHL as a competitor. Could this be a general pattern for contracted operators? As we saw above, Company E which is a contracted multiple task operator also mentions Schenker and DSV as competitors regarding their DHL goods.

The fact that the companies view their competition differently supports the idea that a combination of criterions, to categorize companies, should be used to better understand the structure of the market. It is not enough just to look at services offered since they have completely different needs to expand their service range. As we can see all of the multiple task operators mention small haulage operators when we ask them about their competitors. But judging from the interviewed contracted single task operators they do not compete with these actors.

Operating fixed routes for companies like DHL and Schenker seems to have great impact on how the competition is viewed. It is especially interesting since the literature does not seem to have taken this in mind at all. Even though it says that category 2 and 3 companies use category 1 companies for simple operations it does not talk about how this affects the competitive situation. Theory from a lot of different perspectives talks about a fierce competition amongst all single task operators, a cut throat environment even. It is because of the culture, or it is because of third part logistics providers et cetera, however, judging from our two interviews of these types of companies, having fixed routes changes this situation.

*"They see Schenker as their biggest competitor, not so much other smaller haulers. He says that once you written a contract with DHL there are really no renegotiations and as long as you fulfil your obligations it is very unlikely that you will lose your contracted routes."*⁸⁶

If we take all of the above information into account there are indications of a market with four groups instead of three as we concluded in the previous chapter: Contracted single task operators, independent multiple task operators, large third party logistics providers, and in addition to these three, independent single task operators. Unfortunately we do not have any independent single task operators amongst our interviewees, it would have been very interesting to ask them about their opinions on these matters. They would probably agree more to the fierce competitiveness described in theory, and supported by the fact that all of our independent multiple task operators mention these types of company as competitors.

*"Companies whose only value adding service is the movement of goods, will be very vulnerable in times of low demand. This creates a fierce competition where many of the actors have bad knowledge of their costs which increases the problem"*⁸⁷

⁸⁵ Nehls 2003

⁸⁶ Company D

⁸⁷ Company A



5.1.2 The Development

5.1.2.1 General Directions

As we began telling you in the background Volvo has in recent years noticed a development on the transport market where some of their smaller customers have gone from traditional haulers into starting to invest in other logistical services such as their own terminals and distribution systems. They suspect that there is a trend where small haulers expand both in terms of size and in terms of services offered to the customers. When growing in size and services they are able to target new customer segments. By studying our empirical data and reviewing our theory we will try to analyze whether this is a general trend on the road transport market.

In chapter 3.1 the authors Björnland, Persson, Virum 2003 claim that the number of companies in category 1, single task operators, is declining which could be an indicator of a trend towards either bigger companies and/or less companies in total. According to these three authors the reasons for the decline is the development towards supply chain management where closer supplier relationships are premiered, and tier 1 suppliers take care of a bundle of services.⁸⁸ Other authors in chapter 3.1 more or less agree to this development. From our interview with Håkan Larsson we see that he also is of the opinion that shippers in the transport business, as customers in a lot of other businesses, are narrowing down their supplier base which results in larger entities on the market, taking advantage of scale economies.

Statistics from SIKA shows that the largest portion of transport companies, the ones with 0-4 employees has decreased with 8 percent during the period 1997-2007 (Figure 2 in 3.1). At the same time the number of companies with 5-49 employees (Figure 3 in 3.1) and 50 and up (Figure 4 in 3.1) has increased its numbers with 18 and 45 percent respectively. This could be yet another indicator that there is an ongoing shift towards bigger companies. However since the data excludes private businesses we can not be certain that the number of companies with 0-4 employees actually has decreased. If, for say, it has become more favourable to run a private business when the company is of small size, this could generate a situation where the statistics here shows a decrease when it is not certain that there actually has been one. On the other hand it could also affect the data the other way around.

If we disregard private businesses, there has been in total a decrease with around 100 companies from 1997-2007, if we compare company data with the total market turnover for these companies we can calculate the average net turnover per company. The development during this ten year period results in a 93 percent increase of average net turnover per company, from 6.3 million Swedish kronor in average to just around 12.2 million:

⁸⁸ Björnland, Persson, Virum 2003

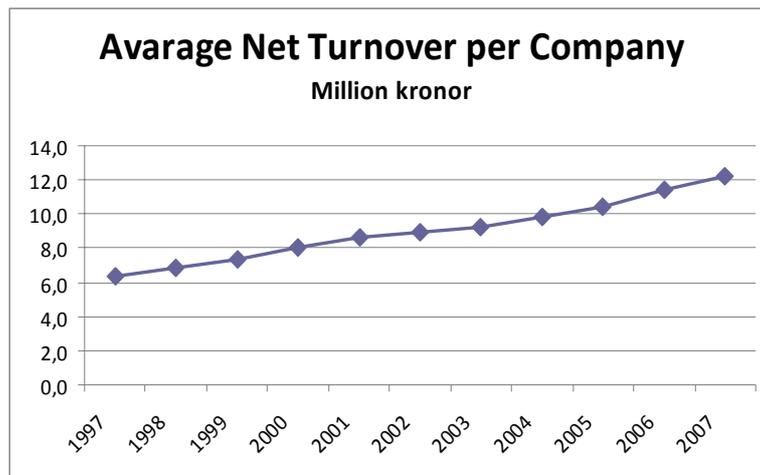


Figure 20 Average Net Turnovers per Company⁸⁹

If we take into account the market concentration in chapter 3.1, which had a modest increase during this period, these two indicators together supports the idea of a general expansion of companies. This notion is supported by both theory and our interviewees whom all of them stated that the market is moving towards fewer and larger entities. Statistics and opinions on company size however does not take into account what services they offer or whether the companies are independent or not, information which is very interesting for our research. We will illustrate its relevance through an example:

Example

Imagine a shipper that wants to send goods from point A to B, in addition to this the shipper wants the same supplier to provide repackaging and distribution from point B out to consumers. As a tier 1 supplier an independent single task operator would not be able to satisfy this need without expanding its range of services, and if doing so follow Volvos perception of the market trend. However, as a contracted tier 2 supplier a single task operator could still profit from the same demand without expanding its services. Given that their customer, in this case the tier 1 supplier, could fill the other needs of the shipper. The point here is that there seems to be more than one possible direction to develop in, either you expand your services on your own or you focus on single operations through third party logistics providers.

This is nothing new, it is simply a pure hauling operation under contract performing a single task operation for a forwarder or third party logistics provider. But theory tells us nothing about the possibility to expand under these circumstances. Is it impossible to expand under contract for a forwarder or third party logistics provider? We will come back to that.

Let's look at our interviewees' opinions and experiences. Company A started in 1974 through an acquisition of a pure hauling operation. During the years they have expanded into offering a broad range of services and they have always operated towards direct customers. Not surprisingly the owner thinks that his organisation fits well into Volvos perception of haulers expanding both in size and product range as they develop. He also thinks that in the future you either run a small contracted haulage operation or you have to expand the range of

⁸⁹ SIKA 2009, data is available in Appendix 8.4



logistical services, otherwise you won't be able to handle direct customers. So Company A has gone from an independent single task operator to a multiple task operator, serving several needs for a direct customer base. From a company perspective the owner is open to outsource all of the hauling operations, moving towards a third party logistics operation. As we can see both the history and future visions of Company A supports Volvos view.

Company B also started through an acquisition of a pure hauling operation in 1986 and therefore has a similar history, but has developed even more services. Today they offer full solution operations with hauling, warehousing with inventory control and distribution at three facilities. In addition Company B has a similar opinion of the future market structure as Company A. They also mentioned that small haulers always will exist which is in line with theory in chapter 3.1. So Company B has also gone from an independent single task operator to a multiple task operator, serving several needs for direct customers. In addition they have done so by focusing on a very specific market, much in accordance with Håkan Larsson's view about independent companies being restricted to local/regional or niche markets.

The third independent actor, Company C, started as early as 1953 as a regional hauler. We can see that they started to focus on long hauling to and from Spain in the eighties. After that they continued to grow rapidly into other market segments as well. So Company C also gained from focusing on a niche market. The CEO just as in Company A and B agree to Volvos description. Company C has followed roughly the same path when it comes to service expansion as the previous companies. So again an independent single task operator that has expanded during the years into a multiple task operator with full solution services for direct customers.

So far the directions and opinions have been rather similar, independent single task operators that over the years have developed into multiple task operators on local/regional or niche markets. All of them are under the opinion that road transport companies in the future, apart from the big actors like DHL and Schenker, are either small contracted haulers or independent actors with a broad range of services. This supports the signs that Volvo has seen and it fits to the theory in chapter 3.1. Håkan Larsson added a dimension to this discussion by making the distinction between contracted and independent actors.

If we just look at theory and the development Volvo has noticed you get the feeling that the only way to grow is by being independent and offer a broad range of services, and that small haulers generally suffers from bad profits and so on.

“Every road transport company can provide transport from A to B”⁹⁰

So back to the question, is it impossible to expand as a company if you are contracted by DHL or Schenker for example? Is the direction described by theory and seen by Volvo as well as by Company A, B, and C the only way to go if you want to grow as a road transport company, i.e. grow both in size and in terms of offered services? We will now see what our remaining interviewees has to say, all of them which were categorized by us as either contracted or something in between contracted and independent.

⁹⁰ Company A



Company D mainly performs domestic transports for DHL, they have a small number of direct customers. They have since the start up in 1990 been under contract for DHL, former ASG, and they have had basically the same services since the start. Therefore they are categorized as a contracted single task operator. The owner thinks that the company will continue to increase their truck fleet and that they will continue as a hauler for DHL also in the future, even though they've had thoughts about offering other services besides hauling in the past. An interesting thing is that Company D also agrees to the development described by Volvo and the previous companies, that haulers tends to focus on direct customers to a larger extent and start to offer extensive door to door services, this despite being a contracted hauler. The owner also believes that in the future it will take at least 10 – 20 trucks in order to run a profitable company, regardless if you are independent or not.

Company E was founded as early as 1946 when they transported milk for local farmers. During the sixties they were contracted by ASG, later to become DHL. After this the company really started to expand with line hauls operations between cities in Sweden. Today their operations for DHL involve transports to and from DHL terminals and also regional distribution. During the years they have developed warehouse operations in which they offer inventory control. In addition to this the warehouse is used as a transshipment terminal in order to make the transport network more efficient.

So how do we categorize Company E, it started out as an independent single task operator, then got contracted, and has developed into what only can be described as a semi-independent multiple task operator. So here we see that it is in fact possible to develop a broad range of services even if the company is contracted by a forwarder or third party logistics provider. Given that it does not violate the contract. In addition the owner agrees with the development, as the other companies, and adds that many haulers with only one or two trucks will have a hard time surviving in the future. A lot of them are driving long distances and many hours per week for very little money. If they also are contracted by larger forwarders they might have to travel long distances to different parts of the country, which is hard to make profitable with just a few trucks.

Company F started in 1994 as a pure haulage operation and part of a truck pool, soon after they got contracted by Schenker to handle one of their routes. During a shorter period Company F took over a second route for Schenker, but it cost more than it produced and had to be let go. Today they continue to operate the original long haul line for Schenker but also maintain, just like company D, a small amount of direct customers. The direct customers are handled with Schenker's consent, they even charge commission for the external customers. So Company F has been a contracted single task operator since the start. As a company they are always interesting in expanding. To do this the most likely scenario would be to take over another route for Schenker, preferably one close to the one they have in order to create synergy effects. They see themselves working for Schenker also in the future. The owner, as the others, believes that there are going to be less and larger companies in the future. Larger logistics companies like Schenker is one reason for this development, when you are contracted by Schenker you have first pick in taking over existing routes and that way grow bigger.

It is interesting to see that the three contracted haulers more or less agree to the development just as the independent companies did. Even though they agree we can see that both Company



D and F intend to continue expanding under contract. Company F however give the impression that it is hard to do so under Schenker since companies are practically bound to their routes. From our interview with Company D, which is contracted by DHL, we see nothing of this. They plan to continue expanding under DHL, but without expanding their product range.

Could it be that they see them selves as part of a system together with their employers, the third party logistics providers? Remember that both of them considered their employers, the tier 1 suppliers, competition as there own competition.

Of the three contracted companies, Company E stood out the most. In addition to their operations for DHL they offered a broad range of services to direct customers. The fact that they have been in business for 63 years, compared to 19 and 15 years in Company D and F might be an explanation. What is clear is that Company E is not an independent actor and definitely not a small single task operator.

So from our interviews we can see that the general perception is that we are moving towards a market with fewer actors and broader services. However the views on the possibility to expand under contract differ between the companies. Company E was definitely a company that had managed to do this, and both the other contracted haulers planned to continue growing as tier 2 suppliers.

Since the term expand/grow is very subjective and the number of years the companies have been active affects how we view their development so far we thought it would be a good idea to clarify the different companies status in a table:

Company	Years Active	Current Truck fleet
Company A	35	17
Company B	23	70
Company C	56	180
Company D	19	11
Company E	63	80
Company F	15	7

Table 3 Company status

As we can see in figure 3 Company C and E have been around for quite some time compared to for example Company F. What this shows is that we can't compare the different developments straight off, this would not be fare because of the different time frames. We have to consider each company's history and the opinions of their current owners in their own context in order to get a good picture of the market directions.

5.1.2.2 Customer Demand

When talking about the development in customer demand for our interviewed companies Company A said that there has been an increase in demand for environmental friendly solutions, but added that when push comes to shove it is all about the price. Company B has also noticed an increased focus on the environment from their customers. They have during the years tried to shift the customers focus away from price and more to speed and accuracy.



The owner says that these things are usually higher valued by their customers and they can therefore charge a higher price.

Company C agrees with that it always comes down to price. Even though higher demands have been put on environmental issues in later years, the price is still what matters. He says that many customers put high demands on environmental friendly transports but are at the same time not willing to pay for it. Another factor that has become more important to the customers is to have a proactive approach regarding reporting disruptions in the deliveries, such as integrated systems where the customers can follow their shipments and immediately be notified if disruptions occur.

Company D says that the price has been the dominant factor in later years, about two years ago the focus was more on transport quality. Even though environmental issues have become more important the owner thinks that other factors such as price and quality are still significantly more dominant in a purchase decision.

Company E says the same thing, price is the most dominant factor. Despite talk about environmental issues they still must compete with haulers using significantly older trucks. The owner also mentions that customers are putting larger volumes on fewer number of transport providers. In addition to this they are requesting broad range services like warehousing and inventory management to a larger extent.

Company F says that service and transport quality are most important to their customers, where factors such as precision in deliveries and reliability are highly valued. Then the owner adds that price is also a very important factor. Just like the others they claim that environmental issues have become more important in recent years.

The statements of the companies fit well with theory in chapter 3.4. Price seems to be a very important variable when it comes to buying transport services. This has not changed over the years even if there has been an increased focus on the environment. Elisabeth Karlsson drew the conclusion in the theory that even though environmental impact is becoming an increasingly important factor the choice of transport provider is mainly ruled by the two most important factors of transportation cost and the reliability of the service provided. As you can see this fits very well with the statements from our interviewees.

We can also see signs of the development towards less and larger suppliers and that customers demand additional services apart from pure transports. The large focus on price could be a contradiction to the development towards supply chain management where long term relationships are premiered and service quality is central.

5.1.2.3 Cultural Aspects

The owner of Company A has noticed a big difference between the younger and older generation of truck drivers. In the older generation you started out with distribution and strived towards getting to drive the long haul operations and be out in the truck for days. Nowadays it is the other way around, it is easier to get drivers for distribution routes with standard working hours and harder to get drivers for the long hauls. Company B also sees differences and states that younger drivers today have a completely different focus on their social life and prioritize their family much more than the older generation. Younger drivers



are also more willing to try different occupations and employers while older tend to stay at the same place.

The CEO of Company Con the other hand hasn't noticed any real difference between younger and older drivers. However the utilization of trucks has changed as each driver no longer has responsibility of his own truck, instead the truck fleet is shared among all drivers. This has resulted in that the drivers take less responsibility for the truck, leading to more damages and higher repair costs.

What Company C said is an interesting point. When we look at Company E the owner has noticed some differences between younger and older drivers and says that:

“Without making too sweeping statements, younger drivers are not as responsible as many of the older are.”⁹¹

Could this have to do with the fact that the older generation drivers has been working in a corporate culture where you consider the truck almost as your own possession? And now when several drivers share a truck, that sense is still there somehow? Whilst the younger generation of drivers always has shared truck and don't have those feelings for it.

In chapter 3.3 we can see that Nehls found that, even in the cases of head drivers where the driver doesn't own the truck they still talk about it as a personal possession. The drivers identify with their trucks. Maybe this could be an explanation to why younger drivers seem less responsible for the vehicles?

Nehls also talks about the truck drivers' perception of freedom as a way of life, they work under a responsibility/reliability relationship. They have to be responsible so that the employer to trust in them and assign them work, i.e. responsibility for the truck et cetera. As long as the goods arrive in time at the customer, the driver is free to improvise in which roads to take, when to eat and so on. According to Nehls this sense of freedom is vital for especially the older generation of truck drivers. In our research almost every one of the interviewees monitored fuel consumption, average speed et cetera, and a lot of them had trucks equipped with on-board computers. Company E says that the modern traffic control systems that exist today allow haulers to have better control of their transports. This might create an environment where this sense of freedom and choice disappears, and where the new generation of drivers view this as any other job instead of a way of life.

Among the older informants Nehls found that demands for education were almost seen as frightening. Experience was the way to go, and the thing that distinguished a driver.⁹² This is interesting because Company E for example along with another hauler gives courses where both internal and external truck drivers are educated in areas such as eco driving and safety. They are also in charge of all the practical truck driving courses in a nearby high school, the owner says that this is a good way to attract new and younger drivers to the company. Company B's owner says that they almost started their own driver education program as it has been very hard to find educated new young drivers. Company F found younger drivers to be

⁹¹ Company E

⁹² Nehls 1999



more adaptable to things such as eco driving. Older drivers think they already know how to drive and don't accept changing their behaviour as easily.

5.1.2.4 Environmental Aspects

The environmental aspects are mostly shown through the expressions of customers, however as we saw earlier in the report they are not willing to pay extra for it. We also wanted to look deeper into the more general impact of the increased focus of society on the environment. There are large numbers of reports to be found on the subject. Chapter 3.6 brings up the things that we have found being mentioned most frequently. Amongst these things are the green house effect, reliance on fossil fuels and internalization of external costs.

In chapter 3.6 we can read that governmental requirements have led to reduction in emission rates of motor vehicles. Effects of this can be seen in our interviews, almost all of the respondents state that they always buy the latest trucks available each time they update their fleet. The owner of Company F expresses this as follows:

“As these requirements continuously are updated the company can not keep a truck for more than eight years as it then no longer meets the requirements from Schenker.”

This is also shown in Company A and E:

“Every time they update the truck fleet he buys the latest available trucks on the market”⁹³

“Beside the price, environmental class and fuel economy are two very important features”⁹⁴

In addition to the governmental requirements there are also control measures designed to elevate the fixed cost in the companies and affect the choices companies make, e.g. when subsidies are made to promote trucks with alternative fuels.⁹⁵ In this case there seems to be control measures that promote trucks with low emission rates. Again we look at a statement from Company B:

“The fact that their vehicles are rented on three year contracts means that their trucks always complies with the latest emission standards. This is also economically beneficial as a couple of years ago trucks not conformed to the latest emission standards were imposed an increased road tax of 97 percent”⁹⁶

Hibbs broad classification of environmental pollution includes noise, visual intrusion, local air pollution and the disposal of obsolete vehicles. The owner of Company B expresses an opinion that trucks are seen by people as smelly, loud and negative for the environment.

Apart from the things mentioned above it is more the lack of concern that is of interest. Almost every article and publication about the environmental effects of road transport mentions the internalization of external costs. Yet none of the companies have expressed that this have affected them in any way, except for when long hauling in Germany.

⁹³ Company A

⁹⁴ Company E

⁹⁵ STMØ 2008

⁹⁶ Company B



5.2 Incentives and Driving Forces

Now that we have got a better picture of the market structure we can begin analyzing the incentives and driving forces behind the expansion of haulers. As mentioned in the previous chapter hauler operations are either contracted by larger logistics providers such as DHL and Schenker or independent operators transporting goods for their own direct customers. Contracted haulers are usually quite restricted by their employers regarding finding new customers and developing additional services. When discussing what drives a company forward it is therefore important to keep in mind that not all haulers are given the same possibilities to expand their businesses, both concerning amount of transports, number of customers and the range of services. This results in different prerequisites for different types of haulers which may affect both the possibilities as well as the will to expand and grow bigger.

“Driving for companies like Schenker creates a feeling of stability, however, there are very few opportunities to grow and expand your business.”⁹⁷

When talking about what drives a company forward the people behind it are of course a very important aspect. Do the founders or owners of the companies have clear visions and goals for the future or do they just adapt to wishes and needs from their customers as they go along? Are the managers characterized by entrepreneurial thinking and constantly on the search for new business opportunities or are their goals and visions more of a conservative nature.

The authors did in fact notice a difference between the contracted single task operators and the multiple task operators regarding the people running them. The companies which had expanded their businesses and developed other logistical services besides transportation were all ran by individuals who either were very driven entrepreneurs or professional business men with clear visions and strategies. These companies (A, B, and C) had all managed to expand their operations by not relying on other forwarders to supply them with transports, but by building up a customer base of direct customers.

The founder and owner of Company B realized very early on the importance of developing strategies and visions to aim for. The company worked actively with their visions and how to reach them and the owner clearly expressed the importance that all employees knew the goals of the company so they could “pull” in the same direction. On the other hand, the owner of Company A had not had as specific guidelines for the company to follow, the development of this company seemed more to be a result of the entrepreneurial qualities of the owner who was constantly looking for new business opportunities and was never late to take on new challenges. His strive has led to a broad range of services which included both warehousing and harbour operation.

“Companies that manage to expand independently without operating through forwarders are often driven by individual entrepreneurs.”⁹⁸

The former owner of Company C was also described as a very driven man and a great entrepreneur whose contributions had been a key factor to the rapid growth and expansion of

⁹⁷ Company F

⁹⁸ Håkan Larsson



the company in the eighties and nineties. The current manager was an experienced business man who had played leading roles in several companies before joining Company C. He had among other things contributed to the introduction of new and sophisticated management systems which let them monitor key performance indicators in real time, they had also broken down their strategies and visions into quantifiable measurements which gave them a very clear picture of what needed to be done in order to reach them. All of the multiple task operators we interviewed had some sort of system to monitor their performance indicators and had continuous follow-ups of their businesses.

“It is vital to be knowledgeable about what activities that create profit in order to steer the business towards success.”⁹⁹

When we asked the two contracted single task operators about their visions and strategies there seemed to be a somewhat different attitude from that we saw at the independent operators; here the visions and goals were not as clearly stated as in many of the larger companies.

“We don’t have any clear visions regarding the future of the company or how we will develop.”¹⁰⁰

Both of the company owners believed that they were going to continue as haulers for DHL and Schenker and said that they were hoping to grow in a moderate pace. None of them showed signs of wanting to develop into independent haulers. Company F did perform follow-up of some performance indicators whilst Company D said that they did not make much difference anyway. Despite of this both of the companies did intend to expand in size if the opportunity was given.

However, when transporting goods for larger logistics companies such as DHL and Schenker companies aren’t as free to find new customers or develop new services, at the same time it can provide a sense of security. The fact that the owners in these companies did not have a clearly stated vision or strategy could tell us something about the people behind companies that expand in both size and services. On the other hand there aren’t the same needs for this when you are under contract, for them expanded services is not a necessity in order to grow. Company E has managed to grow into a multiple task operator in parallel of being contracted by DHL. Much like the independent companies they monitored a lot of key performance indicators, they also focused a lot on education and proactive thinking.

But keep in mind that the two contracted single task operators were significantly younger than Company E and most of the independent operators we interviewed; times have changed and the road transportation business is not the same today as it was when many of the independent operators we interviewed started to expand their businesses. Lower transport prices and the existents of large players like DHL and Schenker has resulted in less opportunities to grow on your own and be profitable, owners of smaller hauler operations might therefore not have the same possibilities as their predecessors.

⁹⁹ Sveriges Åkeriförbund 2009

¹⁰⁰ Company D



This leads us in to another important aspect of what drives haulers to expand their businesses. As mentioned in previous chapter all the respondents from our interviews agreed with Volvo's description of the development of the road transport market where haulers have started to offer a wider range of services than before. Many of the interviewees mentioned the affect the increased competition has had on the market development where low entry barriers attracts a lot of new actors and creates a low market concentration. As competition increases prices on transports decrease making it more and more difficult for haulers with single task operations to survive.

“Every road transport company can provide transport from A to B, this makes it hard to be profitable by doing only this.”¹⁰¹

Many of the respondents' perceptions were in line with that of the owner of company A where the CEO of Company C further states that:

“It is getting harder to survive solely by offering hauler services, this might have been possible before but due to the decrease in transport prices companies now need to offer other additional services in order to survive.”¹⁰²

A number of the respondents also mentioned that many of the smaller haulers with only one or two truck operations don't always understand their own costs. This means that they many times perform transports for which they get very little money for. The owner of Company E mentioned that it was almost impossible to compete with these types of smaller haulers as some of them are basically driving eighty hours per week without making any profits. The reflections from Company A's owner corresponds with this statement as he means that there are many actors with bad knowledge about their own costs contributing to lowered prices and fierce competition. In general, the strong competition and low transport prices was seen by the interviewees as a very important factor behind the development of haulers.

Another factor to take into consideration when trying to understand why haulers are expanding their operations is of course the demands and requests of their customers. As an independent single task operator you are more dependent on your own direct customers when not relying on actors such as DHL and Schenker to supply you with transports. It is therefore crucial for these types of companies to understand and provide for the needs and wants of transport buyers. A couple of the respondents mentioned that customers are requesting more extensive logistics solutions to a larger extent and that full door to door services are becoming more and more appreciated by transport buyers. The owner of Company B, which started as a hauler with single task operations, mentioned that he later noticed that other logistical services were demanded from his customers and the company is now offering both inventory control and distribution. A number of the respondents also mentioned that by offering additional logistical services you are able to tie the customers closer to the company and create long term relationships.

“Many companies have started to focus more on third part logistic services where they for example control and store their customers' inventories in order to create long term partnerships with their customers.”¹⁰³

¹⁰¹ Company A

¹⁰² Company C



The owner of Company E agreed with this statement and said that expanding the business by offer other services is definitely a good way to tie the customers closer to the company. These opinions also correspond with what is said in chapter 3.1. where shippers tend to use third party logistics providers to a larger extent in order to reduce the number of relationships. Björnland, Persson and Virum means that shippers want less but larger and more professional transport suppliers which they can develop close and long term relationships with, allowing them to focus on their core activities and at the same time reduce their logistics costs. In fact several of the interviewees also mentioned that they have noticed that transport buyers are centralizing their purchases to a larger extent than before.

“More and more shippers are centralizing their purchases of transport services and logistical solutions as they are reducing their supplier base in general.”¹⁰⁴

The owners of Company A, C, D, and E as well as Håkan Larsson all brought up the fact that transport buyers are centralizing their purchases, leading to fewer and larger transport suppliers. Also, as transport buyers start to centralize their purchases it creates greater challenges for the haulers; larger geographical areas have to be covered and more services need to be offered. The owner of Company A further stated that it is impossible for smaller haulers to contact direct customers who demands coverage all over Sweden. This corresponds with what Håkan Larsson mentioned when he said that an independent single task operator usually needs to focus on local/regional or niche markets in order to expand and grow.

Entrepreneurial drive, type of company, customer demand and opportunities, and market condition are all factors that come into play when a hauler expands. Are there any other forces that drive the company forward?

One thing that could have an impact later on in the development is that when companies expand their services and acquire warehouse facilities et cetera they increase their fixed costs. As we see in chapter 3.2 this is especially true for companies handling small size shipments. Companies with high fixed costs needs larger volumes in order to be profitable compared to companies with higher variable cost. While a pure hauler with low fixed costs and higher variable cost can adjust its cost level according to the amount of customer orders a company with high fixed costs must see to it that there is stable income of customer orders to be profitable.

5.3 The truck

5.3.1 The quantitative survey

From the results of the quantitative survey, shown in chapter 4.2.3., we can see that it is little difference between how the two groups of respondents have ranked the different features of the truck. The only group of features where we can see a clear difference in the prioritization between the two types of companies is in the main group where Profitability (23.9) is considered the most important feature by the haulers, closely followed by Safety (23.5) and Cost (21.0). The logistics companies have ranked Safety (28.0) as the most important followed by Cost (19.6) and Profitability (19.5). However, as one can see in section 4.2.2.5

¹⁰³ Company C

¹⁰⁴ Company A



the standard deviations are quite large while the differences are quite small. The responses are very inconsistent and hardly normally distributed. The authors already here make the decision not to try to draw any statistical conclusions of the minor differences shown in the quantitative study as the data is too inconsistent.

This in turn means that the authors are unable to prove that a development would affect the perception of the truck in regards to the features included in the survey. It is important to stress the fact that just because we are not able to prove a difference between the two respondent groups doesn't mean there actually isn't one. The large variance in the responses also makes it very difficult to make any analysis of why the means are so similar. However one might speculate that the variance could be explained by the fact that the answers collected are the opinions of individual people and might therefore not represent company views.

The response rate of 12-13 percent is rather low and could affect the validity of the survey. We noticed that the companies that answered had a net turnover well above the market average. Because of this we might have missed out on important data from smaller companies that might not have had the resources or interest to answer. This is also a reason why it is hard to draw any certain conclusions from the data collected from the survey, especially since the small companies with 0-4 employees constitutes the biggest share of companies on the road transport market today.

5.3.2 The interviews

As mentioned, the quantitative study only concerned specific technical features of the truck and how the perception of these features might be affected by a development in the market. In the interviews we have instead tried to cover other aspects of the truck which were not included in the survey. Below follows an analysis of the interviewees' opinions and thoughts about the truck and how or if their perceptions could be related to the development described in the report.

As companies expand their business by offering additional logistics services they usually need to make quite large investments in new terminals, warehouses, distribution centres, more personnel et cetera. This in turn means that the trucks constitute a smaller part of the company's total assets. Some of our respondents have stated quite clearly that as you start to become a full door to door logistics provider the truck might no longer be the obvious core of the business.

“Today the focus lies more on the hubs and warehouses than on the truck.”¹⁰⁵

This quote was stated by the owner of company B, a rather large logistics company whom had made large investments in terminals and today offer their customers a wide range of services including inventory control and distribution. Exactly what impact, if any, this might have on the perception of the truck regarding the technical features included in our survey is hard to say. However, one might speculate in as the focus on the truck diminishes less time and resources are put in purchase decisions regarding specific features and what options to include. In fact, the owner of Company B said that the company tries to put as little internal resources as possible in the maintenance and purchases of their trucks and that he sees the

¹⁰⁵ Company B



truck merely as a production tool while focusing more on what is behind the cabin, i.e. the cargo.

As the focus shifts away from the truck other modes of transportation might suddenly be considered as possible options. Some of our respondents said they do not consider using road transports as a mean in it self and two of them had already started to put part of their goods on railroads. Most of the respondents were very positive to rail transports in general but also said it is difficult to put an actual shift of goods into practice. This corresponds with the findings in Transek's study of Swedish stock keepers, forwarders and manufacturers where a general opinion was that rail transports were considered as a good solution in theory but in fact was difficult to be put into practice. The most common opinions from our respondents concern the lack of standardization and the low accessibility of rail transports. Three of them clearly express that the lack of nearby terminals makes it very difficult to use intermodal transport solutions efficiently and to make it profitable. They also say that if the accessibility would be improved rail transports would be a very interesting alternative. SIKA mentions in their report the fact that the Swedish rail network today is underdeveloped where shortage of terminals and lack of responsibility for its development are serious obstacles for a possible modal shift. SIKA also states that even though investments are planned for the Swedish rail network it will mostly benefit passenger transports as these are given a higher priority by the government.

Further, Transek's study showed that rail transports were seen as very bureaucratic and inflexible which is confirmed by many of the respondents in our own study where one of them mentioned that:

“The lack of standardization between rail systems and the bureaucracy involved makes it difficult to use rail transports in an easy way.”¹⁰⁶

The owner of Company B also mentions the slow development of European rail networks regarding speed and standardization to be a big problem which makes it very difficult to compete with road transports, especially for a company whose focus lies on speed. This is supported by SIKA's report which states that railroads are still suffering from low efficiency and quality concerning international transports and that they still haven't reached levels acceptable by the market.

Among the larger logistics companies included in our study we have seen a somewhat more active approach to the possibility of using intermodal road/rail transports than in the smaller haulers. Both Company B and C are currently transporting some of their goods by rail and Company A has offered to finance the repair of an old rail track running through their property which however was declined by the Swedish Rail Administration. The two smaller haulers we talked to were positive to rail transport in general but had not actively looked into the possibility to shift goods from road to rail. As these smaller haulers usually are contracted by larger forwarders such as DHL and Schenker they may not have the same possibilities to control their own business and means of production compared to the independent logistics companies.

Another aspect of how the development could affect the perception of the truck concerns the people responsible of truck purchases. As companies evolve and start offering a wider range

¹⁰⁶ Company A



of services it may put higher demand on the management as they not only need to understand the transportation business but also to have good knowledge in areas such as inventory management, forwarding, sales et cetera.

“Not many smaller haulers with only a few trucks are able to transport goods for their own direct customers. This is very difficult as there are a lot of other activities beside transportation the company has to get involved with in order to offer a full door to door service where a lot more recourses have to be put in finding customers.”¹⁰⁷

The owner of Company F means that because of small hauler operations usually are ran by people who work as drivers themselves it is difficult to find the time and recourses it takes to find new customers and manage terminal and distribution activities. This is confirmed by Håkan Larsson who mentions that is hard for small haulers to operate without forwarders, the times when the owner himself drove the truck at day and did the administrative work at night is as good as gone. In all the larger logistics companies we talked to, except for Company A, the managers did not have any truck driving experience but were more business oriented while at the two smaller haulers the people responsible of truck purchases both had worked as drivers themselves. Most of the larger logistics companies mentioned that opinions from their drivers were considered in a purchase decision but at the same time the managers usually had the final word and also had criterions themselves that needed to be fulfilled. The manager of Company C said that:

“Due to the size of the company the drivers have very little input in what types of trucks to buy and what options to be included. Some drivers request to drive Volvo or Scania but there are too many wills to take into consideration and the drivers therefore have to accept what the management decides upon.”¹⁰⁸

The fact that our quantitative survey did not prove any differences in how the truck is perceived between haulers and logistics companies could be evidence of that the background of the managers don't really affect the perception of the truck. Unfortunately our survey did not cover the respondents' previous experience regarding driving trucks and it is therefore difficult to make any assumptions. However, one can speculate in if managers with driver experience might have a different view on the truck than managers with a more academic background. If more and more companies start to offer a wider range of services they might need more qualified management with academic and managerial backgrounds. People with actual truck driving experience might therefore have less influence in purchase decisions. For example, the owner of Company A mentioned that he was a bit of a tech freak and was very interested in and knowledgeable about trucks. He also said that he had always liked Scania ever since his days as a driver and the company's truck fleet consisted today exclusively of Scania trucks. This shows that as a driver you might be influenced by earlier experiences and might consider other aspects when buying new trucks compared to a manager with pure academic background.

Many of the respondents also mentioned the affect the decrease of transport prices have had on their operations. As competition has increased and prises dropped they are forced to utilize their trucks more efficiently by driving in shifts, meaning more drivers on each truck, and in

¹⁰⁷ Company F

¹⁰⁸ Company C



all of the companies we visited the trucks were in fact shared among several drivers. Some of the respondents mentioned that because you no longer can have one driver for each truck the feeling of responsibility decreases and therefore damages and repair costs increases.

“The drivers don’t take as much responsibility for the truck when they don’t consider it as their own, this has led to more damages and higher repair costs.”¹⁰⁹

This also corresponds with what Nehls found in his study where he mentions that drivers who feel that they have the responsibility for a specific truck tend to take better care of it.

¹⁰⁹ Company C



6 Conclusion

What incentives and driving forces lay behind the expansion of road haulers on the Swedish transportation market?

To find out which incentives and driving forces that ruled we first needed to look at the market development. Our conclusion from this was that companies on the road transport market are under a general expansion. This is supported by the fact that average net turnover per company has doubled in ten years whilst market concentration has remained rather stable. This was also supported by theory and our interviewees whom all of them stated that the market is moving towards fewer and larger entities.

However we also noticed that there were more than one possible way to expand as a road hauler and that the forces behind the different ways differ from each other, i.e. the incentives and driving forces depend on which “path” the specific company is on. The general conception in theory and amongst our interviewees is that to expand you have to be an independent actor with a broad range of services and a base of direct customers. If not so you will be a small hauler contracted by a third party logistics provider.

We found however that it is possible to expand also under contract. Both of the contracted single task operators in our research intended to grow under their providers, and company E had developed under contract into a multiple task operator on a regional market. During our research we have seen other examples of contracted single task operators with as many as 250 trucks and a turnover of around 200 million Swedish kronor, unfortunately we have not managed to get an interview with this company.

So our conclusion is that there are two roads to choose from if you want to expand a road transport company. One is to establish a direct customer base on a local/regional or niche market and offer full service solutions to these customers. The other is to focus on pure haulage operation under a third party logistics provider and expand by taking over additional routes when the opportunity is given.

Then what are the incentives and driving forces?

Regardless of if you are contracted or not, entrepreneurial drive is an important driving force in any company. In our research it was made clear that this was a common denominator for all of the multiple task operations in our survey, and an important factor in explaining the historical growth of these companies.

The difference between walking the contracted “path” or the independent “path” is that independent companies expand both because they can do it much more freely and because they have to in order to fulfil the changing needs of direct customers. As we have seen indications of throughout the report shippers more and more demand full service solutions from fewer suppliers. Contracted companies on the other hand does not have the same necessity to broaden their services, since the tier 1 supplier offer the additional services to the shipper they can focus on their core activity, which is transport from A to B. Since the large players DHL and Schenker practically guarantee their routes to the contracted companies as long as they fulfil their duties they have the chance to expand by acquisition or takeover of



additional routes without having to worry about the intense competition mentioned in the theory chapter.

From this we can say that the driving force of a contracted hauler is basically the chance to expand and get synergy effects from taking over additional routes, and through that increase the profits.

For an independent hauler it is more complex. The fact that shippers today demand full service solutions is a strong incentive for growth of independent companies, they have to develop both in size and in terms of services in order to compete for direct customers with third party logistics providers.

Also when an independent company grow and expands their services they raise there fixed costs. Companies with high fixed costs require a stable customer demand in order to cover their expenses and turn a profit. This itself can become a strong incentive to continue develop since tight relationships and full service solutions help independent companies to “tie” customers closer to them.

Another incentive regardless if you are contracted or independent is the continuous pressure of transport prices. As an independent multiple task operator it is an incentive to expand the range of services, since it is getting harder to turn a profit on just the transport from A to B. For the contracted single task operators it is an incentive to expand in order to get synergy effects from operating several routes.

As a final conclusion we can say that in order to understand the development one needs to take into consideration all of the previous mentioned aspects and look at them together.

Does this development affect the perception of the heavy truck and its features?

From the results of the questionnaire the authors were not able to prove that a development of the road transport market would have any affect on the perception of the truck regarding the specific features included in the quantitative survey.

However, the interviews showed indications of that a development could have impact on how the truck is perceived and utilized by road transport companies.

As companies expand and offer a wider range of services the truck might no longer be the obvious core of the business. Indications showed that when investing in other assets such as terminals and distribution centres less time and resources was spent on purchase decisions. The reduced focus of the truck also corresponded with a positive attitude in general from all the respondents toward rail transports. However, among the larger multiple task operators we could see a more active approach to the possibility of using intermodal transport and where several of them already did, whereas the smaller contracted hauler mentioned that the lack of standardization and nearby terminal made it very difficult to switch transport modes. A development of the transport market where haulers expand their businesses might therefore decrease the focus and dependability of the truck and increase the use of intermodal transport solutions. However one must keep in mind that the Swedish rail network is today



underdeveloped and it would require a lot of time and resources to implement an extensive shift of goods between road and rail transport.

The study also shows that managers at independent multiple task operators tend to have business oriented or managerial backgrounds while the owners and managers of the smaller contracted haulers usually are, or at least have been, truck drivers themselves. As smaller haulers are forced or driven to expand their operations they also need a more professional and business oriented management. As the study showed that managers are usually responsible for truck purchases a development of road transport companies could mean that the purchases of trucks are less affected by opinions from experienced truck drivers.

Last the study revealed that an increased competition had led to a more efficient utilization of the trucks where in all of the companies we interviewed the trucks were driven in shifts. This had led to that the feeling of responsibility of the truck had decreased among the drivers while damages and repair costs had increased.

6.1 Further Studies

Here we have listed a few things that would be interesting to look further into

- To do a more extensive study of the market structure. Examine for example how many of the companies with 50 employees or more, that has increased by 45 percent the last decade, that are independent resp. contracted?
- Examine if there are any clear patterns in prosperity between different types of companies, are the independent companies in general more profitable than contracted companies?
- Investigate what different business set-ups that exist on the market, and how they work. For example between different haulers and third party logistics providers.
- To further include the opinions and considerations of independent single task operators, unfortunately we do not manage to get any of these amongst our interviewees



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Tommy Rosgardt, 2009. Project Manager. Volvo 3P

Håkan Larsson, 2009. Guest Professor at Handelshögskolan



8 Appendix

8.1 Qualitative interview questions

Company description

Position in the company

Size – Number of employees, number of trucks, customers, transport performance (general goods)

What products/services do you offer?

Type of customers – agents, shippers etc.??

Competitors

Company history

When and how did the company start? Why was it started, interest, business opportunities??

What did the company look like when it started?

Are there any special milestones that have had crucial impacts on the company development?

Is the company development a result of active strategies or a result of reactive behaviour from external factors?

Are there any laws or regulations that have affected the company development, now and through the years?

How has your services changed throughout the years?

How does the company attract its customers, now and in the past?

How has customer demands and needs affected the development of the company?

How important would you say the truck is in relation to other assets, e.g. logistical systems, terminals etc.?? Has its relative importance changed throughout the years with new technology and so fourth?

Current structure and strategies

According to you, what is the most important factor for your customers? – Price, precision, environmental issues etc.?

How does the company's customer order process look like?

What strategies do you have at the moment? Where do you see the company in five years?

Is there a clear "road" of development for the company?

What governs the choice of strategies? Laws/regulations, customers, profits etc.?

Does the company work actively with new strategies or do you react to changes as times goes?

Assets

Vehicles, logistical systems, terminals

How does the ownership of trucks look like? Leasing?

What does the purchasing process look like regarding trucks?

Which positions within the company can have an impact on the choice of truck to buy, the driver, purchaser, president? Has this process changed throughout the years?

Are there features on the trucks that have become more/less important since the start of the company? Are there other factors besides physical features like services/insurance that have become more/less important?

How does the company cost structures look like, fixed/variable costs? What is the biggest type of costs?



Have new investments led to new products/services or has it just made the existing procedures more efficient?

Is the truck still as central to the business as it has been in the past?

Financial measures and other KPIs

Result, turnover, costs etc.?

What quality measures do you use?

Have they changed throughout the years?

Are there any specific incidents/milestones that have led to better financial results?

The transport market

Do you see any clear trend in the business, what do companies invest in?

Have you noticed any differences between the younger and older generation of drivers/truckers?

Environmental issues

How has the increased focus on the environment affected your company, laws, customer behaviour etc.?

Are you working actively to reduce your impact on the environment?

Do you see any possibility to use other transport modes than the truck?



8.2 Quantitative Survey

Bakgrundsinformation

Datum: _____

Företagets namn: _____

Ditt namn: _____

Position/Uppgift i åkeriet: Ägare/Företagsledare Förare Annat _____

Antal anställda: _____ st

Omsättning: _____ milj kr

Vilka olika märken på lastbilar
har du/ditt företag och hur
många är det av varje märke

DAF _____ st

Iveco _____ st

MAN _____ st

Mercedes-Benz _____ st

Renault _____ st

Scania _____ st

Volvo _____ st

Annat _____ st

Totalt (ifylles ej) _____

Märke: _____

Vilka tilläggstjänster förutom
transporter mellan punkt A och
punkt B erbjuder ni?

Egen omlastningsterminal för vidare transport

Lagerhotell

Lastning/Lossning av gods

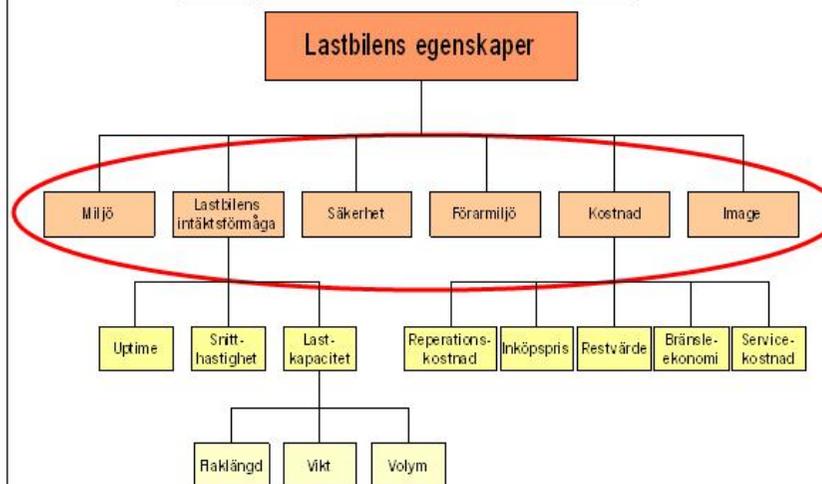
Annat



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<input type="radio"/> Säkerhet	<input type="radio"/> Kostnad	1 <input type="button" value="v"/>
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<input type="radio"/> Kostnad	<input type="radio"/> Intäktsförmåga	1 <input type="button" value="v"/>
<input type="radio"/> Miljö	<input type="radio"/> Kostnad	1 <input type="button" value="v"/>
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<input type="radio"/> Image	<input type="radio"/> Intäktsförmåga	1 <input type="button" value="v"/>

	Definition
1	Båda kriterierna är av samma vikt
3	Något viktigare
5	Betydligt viktigare
7	Mycket viktigare
9	Extremt mycket viktigare

Även siffrorna 2, 4, 6 och 8 kan användas som mellanliggande värden.



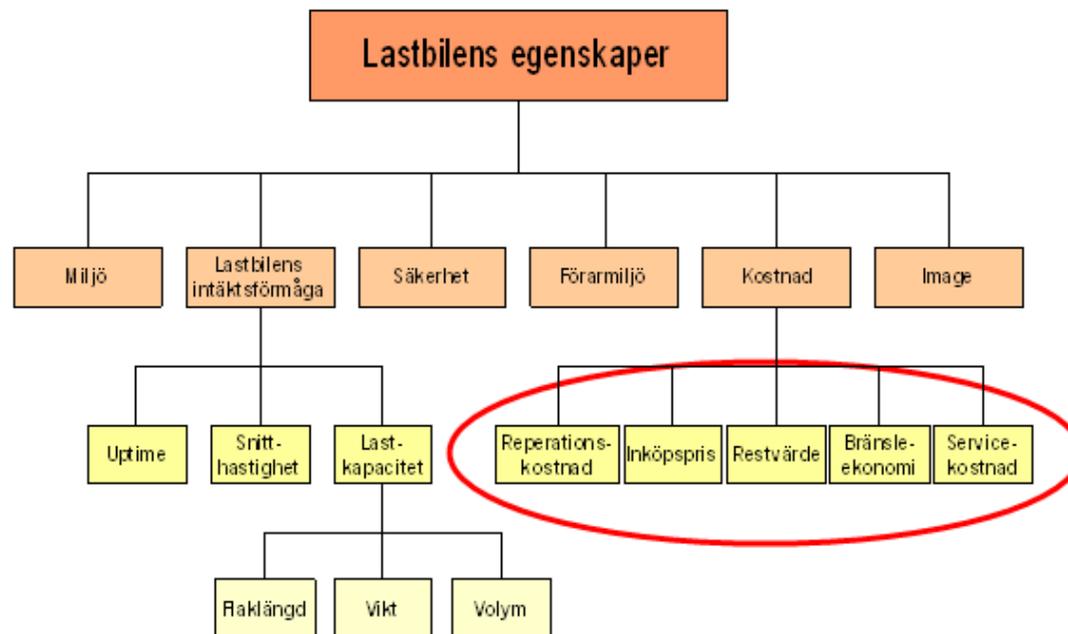


Kostnad

Kriterie	Vikt
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<input type="radio"/> Reperationskostnad <input type="radio"/> Restvärde	1 ▼
<input type="radio"/> Servicekostnad <input type="radio"/> Bränsleekonomi	1 ▼

	Definition
1	Båda kriterierna är av samma vikt
3	Något viktigare
5	Betydligt viktigare
7	Mycket viktigare
9	Extremt mycket viktigare

Även siffrorna 2, 4, 6 och 8 kan användas som mellanliggande värden.





Lastbilens intäktsförmåga

Kriterie		Vikt
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<input type="radio"/> Uptime	<input type="radio"/> Snitthastighet	1 ▼
<input type="radio"/> Lastkapacitet	<input type="radio"/> Snitthastighet	1 ▼

	Definition
1	Båda kriterierna är av samma vikt
3	Något viktigare
5	Betydligt viktigare
7	Mycket viktigare
9	Extremt mycket viktigare

Även siffrorna 2, 4, 6 och 8 kan användas som mellanliggande värden.



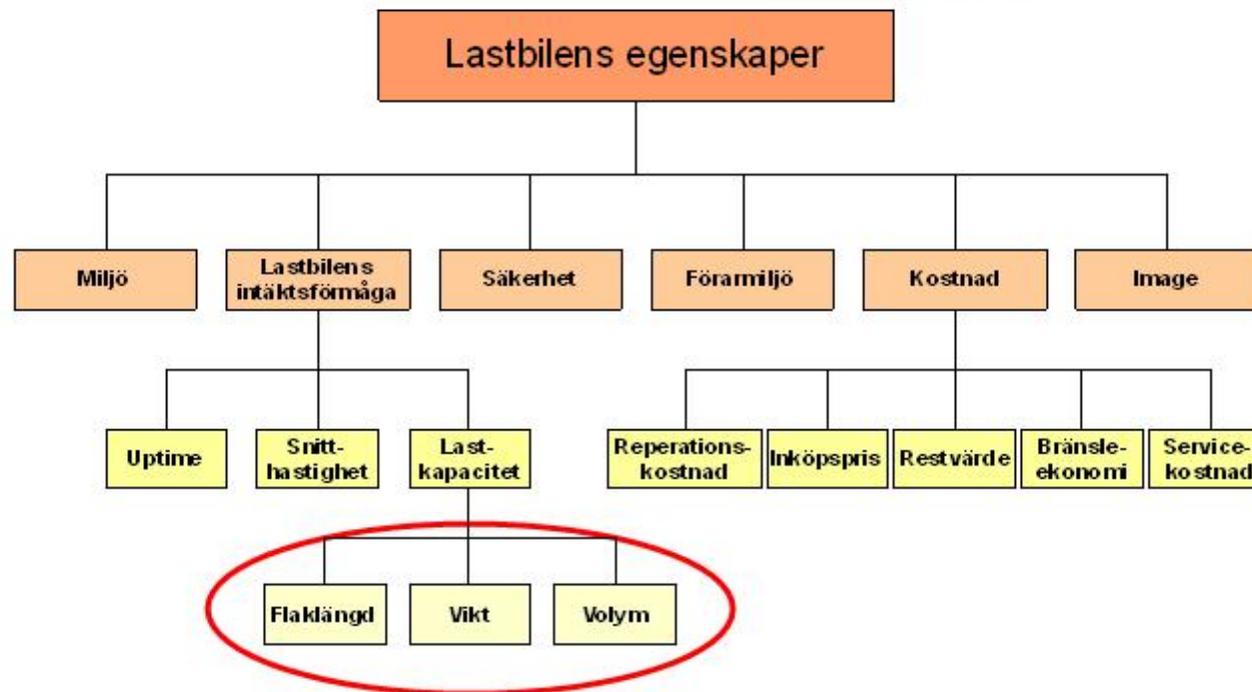


Lastkapacitet

Kriterie	Vikt
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<input type="radio"/> Volym <input type="radio"/> Flaklängd	1 ▼
<input type="radio"/> Flaklängd <input type="radio"/> Vikt	1 ▼

	Definition
1	Båda kriterierna är av samma vikt
3	Något viktigare
5	Betydligt viktigare
7	Mycket viktigare
9	Extremt mycket viktigare

Även siffrorna 2, 4, 6 och 8 kan användas som mellanliggande värden.





8.3 Analytical Hierarchy Process, AHP

Analytical Hierarchy Process (AHP) was originally developed as a tool to assist in complex decisions and to help decision makers, given a number of alternatives, choose the one that suits their needs in the best way. To find the correct alternative the decision makers evaluate a number of sub criteria that are in some way connected to the decision problem, for example price, safety and style when choosing a car. The evaluation can be based on concrete data as well as human judgements about the meaning and importance of each alternative. The fact that it helps decision makers to find the alternative that suits their needs and wants in the best way is one of the great advantages of the AHP model. However, in this paper the purpose of the model is not to support an actual decision, instead it is used as a tool to see how the features of a truck are ranked by the respondents in our survey. That is, the result of this ranking does not prescribe a correct decision for a specific truck but merely shows what features the respondents find as most important in a purchase situation. The authors have therefore not included all the steps of the AHP model and the following description only concerns the use of the model in this particular study.

AHP is based on pair-wise comparisons where the respondents evaluate each of the different criteria by comparing them to one another two at a time; the criteria are compared to as how important they are to the decision maker. All possible combinations are then evaluated by the respondents who also assign a weight to the preferable criteria. This weight is usually given on a scale from 1 to 9, called the Saaty scale (after Thomas L. Saaty), where 1 meaning the criteria are of equal importance and 9 meaning that one criteria is considerably more important than the other.¹¹⁰

Table 4

Criteria		More important	Weight
A	B	A	5
A	C	A	4
C	B	C	2

Example of how a questionnaire can be designed. The respondent is asked to choose which criteria is most important and assign a weight depending on how dominant it is; in this case the weights 5, 4 and 2 have been used as an example.

These numbers are then used as input for the AHP model and are put into a matrix where each of the weights given by the respondent are put in the corresponding cell. Through simple calculations a priority is given for each criterion. This priority shows us how important the different criteria are to each other. In table 2 we can see that criterion A (66.8 %) is considered much more important than both B (11.6 %) and C (21.6 %).

Table 5

	Criteria A	Criteria B	Criteria C	Priority (%)
Criteria A	1	5	4	66.8
Criteria B	1/5	1	1/2	11.6
Criteria C	1/4	2	1	21.6

Example of an AHP matrix. The numbers are taken from table 1 above.

¹¹⁰ Klingnäs, 2005



Because the comparisons are only made once for each combination, only half of the matrix is completed. For the remaining cells the values are therefore inverted; if A is 5 times more important than B, then B must be one fifth of importance to A. 1 is put in the cells where each alternative is compared with itself. The priority is simply the percentage of the points given to each criterion in relation to the sum of the weights in the entire matrix. The sum of the priorities is therefore always 100.



8.4 Transport-/Logistics company data

Year	Stock Company	Others
1997	5468	1225
1998	5365	1141
1999	5282	1036
2000	5292	963
2001	5251	881
2002	5284	852
2003	5375	852
2004	5393	813
2005	5445	823
2006	5444	740
2007	5411	733

Table 6 Number of Hauler-/Logistics companies, 0-4 employees¹¹¹

Year	Stock Company	Others
1997	2139	100
1998	2241	95
1999	2291	81
2000	2314	78
2001	2353	68
2002	2321	70
2003	2336	68
2004	2398	55
2005	2386	54
2006	2463	57
2007	2583	57

Table 7 Number of Hauler-/Logistics companies, 5-49 employees¹¹²

Year	Stock Company	Others
1997	106	2
1998	116	1
1999	124	2
2000	127	1
2001	125	1
2002	134	1
2003	138	1
2004	130	2
2005	134	3
2006	151	2
2007	155	2

Table 8 Number of Hauler-/Logistics companies, 50- employees¹¹³

¹¹¹ SIKA 2009

¹¹² Ibid

¹¹³ Ibid



Year	Net Turnover, Million Kronor
1997	57 060,0
1998	61 221,0
1999	64 921,0
2000	70 782,0
2001	74 760,0
2002	77 759,0
2003	80 946,0
2004	86 008,0
2005	92 485,0
2006	101 476,0
2007	109 172,0

Table 9 Total Net turnover, road transport market¹¹⁴

Year	Gini coefficient
1997	65,4%
1998	65,6%
1999	65,9%
2000	66,6%
2001	66,8%
2002	66,8%
2003	67,0%
2004	67,0%
2005	67,7%
2006	67,8%
2007	68,1%

Table 10 Market Concentration of employees¹¹⁵

Year	Gini coefficient
1997	73,7%
1998	74,1%
1999	74,2%
2000	74,6%
2001	74,7%
2002	75,0%
2003	75,3%
2004	75,4%
2005	75,6%
2006	75,6%
2007	75,7%

Table 11 Market Concentration of Net turnover¹¹⁶

¹¹⁴ SIKA 2009

¹¹⁵ Ibid

¹¹⁶ Ibid

8.5 Gini Coefficient

The Gini coefficient is a generally accepted measurement of how evenly distributed a variable is. It varies between 0 and 1, where 0 represents total equality and 1 represents total inequality. If we take the variable number of employees on the transport market for example, 0 would say that the total number of employees is equally divided between the companies, whilst 1 would say that all of the employees are gathered in one company.

As an example we have sample 1 and 2. The curves have been drawn by sorting the companies in sample 1 and 2 by number of employees, and then calculate the cumulative share of the total number of employees.¹¹⁷

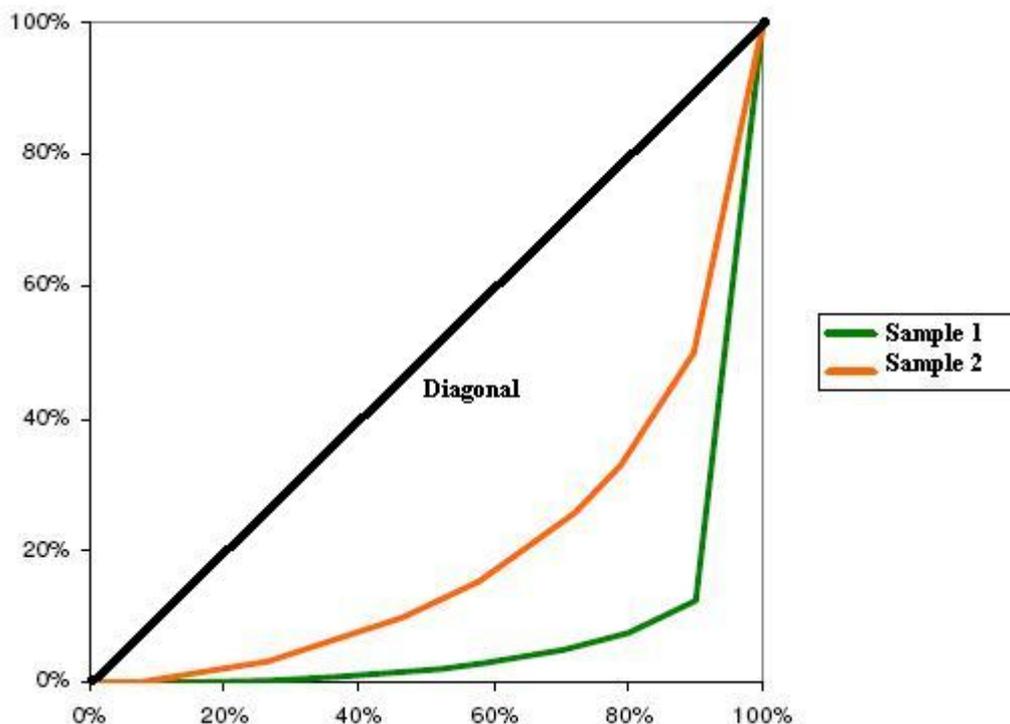


Figure 21 Curves showing the concentration of employees in Sample 1 and 2¹¹⁸

The Gini coefficient is then graphically calculated by dividing the area between the diagonal and the curve with the entire area under the diagonal. The Gini coefficient for Sample 1 is here 85 percent, and for Sample 2, 60 percent.¹¹⁹

¹¹⁷ SIKA 2009

¹¹⁸ Ibid

¹¹⁹ Ibid



8.6 Survey Statistics

8.6.1 Background information

Haulers	Company	No. of Trucks	Employees	Turnover (Msek)
	1	7	17	17
	2	4	5	6,5
	3	63	90	70
	4	65	80	75
	5	18	45	50
	6	25	32	30
	7	14	20	25
	8	19	29	46
	9	27	38	30
	10	32	55	77
	11	13	18	24
	12	11	16	
	13	42	65	82
	14	15	20	27
	15	20	18	27
Average Haulers	25	36,53	41,89	

Logistics Companies	Company	No. of Trucks	Employees	Turnover (Msek)
	16	13	10	14
	17	47	95	104
	18	12	70	60
	19	19	34	44
	20	6	16	23
	21	32	65	78
	22	46	150	170
	23	20	40	80
	24	177	320	570
	25	27	38	40
	26	117	165	170
	27	20	37	60
	28	17	19	23
	29	13	20	24
	30	36	85	75
31	34	55	33	
32	13	15	25	
33	50	80		
34	24	23	22	
35	42	130	70	
Average Logisticians	38,25	73,35	88,68	
Average All Companies	32,57	57,57	68,83	



8.6.2 Details Category 1, Haulers

Main Group	Companies														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Environment	14,45	7,51	11,68	15,47	3,94	25,26	24,37	18,01	16,21	8,07	13,77	15,00	10,45	7,05	13,86
Profitability	27,78	27,15	28,52	27,23	26,59	27,88	18,57	13,32	15,42	26,38	19,05	46,72	13,11	24,98	16,48
Safety	22,95	29,89	7,87	18,24	23,33	26,44	35,21	39,23	19,76	30,38	13,77	7,45	29,27	15,33	33,50
Driver Environment	6,40	4,34	19,63	18,24	29,28	7,12	6,94	11,84	12,95	6,58	15,91	4,92	35,18	14,80	20,30
Costs	26,42	29,38	26,99	14,36	15,58	9,42	12,81	14,10	32,81	22,37	34,46	22,25	9,26	33,83	10,63
Image	2,01	1,72	5,29	6,45	1,28	3,90	2,10	3,48	2,83	6,22	3,04	3,66	2,73	4,01	5,23
Costs															
Repair Cost	21,69	20,70	17,44	20,34	33,20	29,12	28,49	12,06	31,99	20,59	18,28	14,01	26,10	25,61	22,29
Purchase Price	13,21	16,99	33,00	40,17	16,14	9,11	14,47	8,46	5,25	23,40	37,70	23,86	17,24	24,52	10,95
Residual Value	12,52	16,21	6,54	7,39	2,14	4,84	10,91	4,05	4,91	16,64	4,62	4,61	14,33	6,68	7,42
Fuel Economy	35,34	42,09	13,67	20,34	22,99	29,12	24,49	57,78	29,88	15,96	16,38	52,74	27,36	33,42	48,40
Service Costs	17,24	4,01	29,35	11,76	25,54	27,81	21,63	17,65	27,98	23,40	23,03	4,78	14,97	9,77	10,95
Profitability															
Uptime	10,00	21,51	25,29	57,36	6,79	30,33	65,55	13,76	62,27	45,45	22,54	14,29	17,84	20,00	33,33
Average Speed	10,00	13,62	8,87	13,99	23,18	8,97	15,78	23,90	6,60	9,09	32,06	14,29	30,66	20,00	33,33
Load Capacity	80,00	64,87	65,84	28,64	70,03	60,70	18,67	62,34	31,13	45,45	45,40	71,43	51,50	60,00	33,33
Load Capacity															
Length	22,69	42,86	28,64	14,29	25,29	10,33	33,33	30,33	30,19	33,33	15,78	65,84	24,40	18,67	33,33
Weight	7,87	42,86	13,99	42,86	65,84	72,25	33,33	60,70	57,80	33,33	65,55	8,87	7,21	65,55	33,33
Volume	69,44	14,29	57,36	42,86	8,87	17,41	33,33	8,97	12,00	33,33	18,67	25,29	68,40	15,78	33,33



8.6.3 Details Category 2, Logistics Companies

Main Group	Companies									
	1	2	3	4	5	6	7	8	9	10
Environment	18,92	14,79	21,64	7,34	23,03	8,52	9,20	23,83	7,91	13,23
Profitability	8,29	24,04	18,72	39,61	14,62	14,22	21,64	9,75	18,92	12,64
Safety	17,13	23,25	36,60	15,32	32,08	28,99	38,29	29,72	22,22	24,30
Driver Environment	5,35	7,38	6,86	10,23	9,45	20,78	9,18	23,46	37,76	16,67
Costs	47,83	27,81	13,37	25,20	18,27	18,98	18,29	12,11	9,70	27,65
Image	2,48	2,74	2,81	2,30	2,54	8,51	3,41	1,13	3,50	5,52
Costs										
Repair Cost	27,79	28,49	28,65	20,00	20,58	25,89	33,61	22,90	29,26	20,00
Purchase Price	17,74	7,97	10,38	20,00	15,73	18,83	17,05	9,20	33,07	20,00
Residual Value	2,69	13,36	6,51	20,00	5,88	10,56	5,45	9,20	3,67	20,00
Fuel Economy	46,08	27,22	22,11	20,00	37,22	25,89	32,50	49,50	29,26	20,00
Service Costs	5,70	22,96	32,36	20,00	20,58	18,83	11,39	9,20	4,75	20,00
Profitability										
Uptime	66,62	62,43	65,84	29,93	33,12	11,11	31,19	5,75	9,36	33,33
Average Speed	6,31	10,85	8,87	15,90	11,96	11,11	19,76	22,67	9,73	33,33
Load Capacity	27,07	26,72	25,29	54,17	54,92	77,78	49,05	71,58	80,91	33,33
Load Capacity										
Length	8,87	26,72	14,57	33,33	42,86	33,33	29,73	33,33	33,33	33,33
Weight	65,84	10,85	26,33	33,33	42,86	33,33	53,90	33,33	33,33	33,33
Volume	25,29	62,43	59,10	33,33	14,29	33,33	16,38	33,33	33,33	33,33



Main Group	Companies									
	11	12	13	14	15	16	17	18	19	20
Environment	10,71	19,40	9,85	11,53	19,82	15,41	9,09	22,95	7,29	6,37
Profitability	21,01	21,34	15,72	24,90	19,23	23,28	22,84	18,37	26,18	14,63
Safety	25,58	27,15	46,27	24,50	39,81	26,82	29,73	24,74	17,19	29,95
Driver Environment	10,38	9,24	15,58	18,01	9,32	9,18	30,61	21,28	13,69	23,11
Costs	27,32	20,51	9,73	18,80	9,31	15,50	5,64	9,39	32,75	24,04
Image	4,99	2,36	2,86	2,26	2,51	9,80	2,10	3,26	2,90	1,90
Costs										
Repair Cost	29,23	24,11	27,76	22,89	32,68	25,02	18,85	14,31	17,40	34,27
Purchase Price	14,76	25,49	9,80	47,14	9,46	20,99	5,61	14,81	26,90	8,69
Residual Value	10,03	3,56	5,41	4,32	6,38	26,98	4,95	6,97	8,41	3,27
Fuel Economy	31,30	24,11	41,77	15,52	35,19	11,44	51,75	48,79	42,36	38,21
Service Costs	14,68	22,73	15,26	10,13	16,29	15,57	18,85	15,11	4,93	15,56
Profitability										
Uptime	42,86	48,66	66,87	48,24	28,64	57,36	14,29	8,87	60,80	13,99
Average Speed	14,29	7,82	8,82	19,48	13,99	13,99	14,29	25,29	11,99	28,64
Load Capacity	42,86	43,53	24,31	32,28	57,36	28,64	71,43	65,84	27,21	57,36
Load Capacity										
Length	33,33	33,33	68,64	33,33	10,22	25,00	33,33	33,33	15,18	57,36
Weight	33,33	33,33	21,14	33,33	68,64	25,00	33,33	33,33	64,29	13,99
Volume	33,33	33,33	10,22	33,33	21,14	50,00	33,33	33,33	20,54	28,64