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Evaluating the efficiency of ELMs: an international backhauling perspective

The case of Poland - Sweden

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Abstract:

Title: Evaluating the efficiency of ELMs: an international backhauling perspective - The case of Poland-Sweden

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Key words: Electronic Logistic Marketplace, ELM, Backhauling, International, Evaluation, Poland, Sweden

Purpose: The purpose of this thesis is to evaluate whether ELMs can reduce the empty running of trucks and give suggestions on how the ELMs can be improved. The purpose includes developing a theoretical evaluation framework of ELMs.

Methodology: The study is qualitative with an abductive approach. We have developed a theoretical evaluation framework of ELMs based on existing theories. The framework has been applied on Poland-Sweden and two existing ELMs.

Theoretical perspectives: We have used existing theories regarding ELMs, backhauling, international business and transaction costs. Additionally, theories regarding trust on ELMs have been applied.

Empirical foundation: We conducted 14 semi-structured interviews; seven interviews with Polish carriers transporting between Sweden and Poland. The remaining seven interviews were made with Swedish SMEs exporting to Poland. Furthermore, we have analyzed official trade statistics and the websites of the two existing ELMs.

Conclusions: By applying the theoretical evaluation framework on two existing ELMs, we came to the conclusion that the ELMs can increase international backhauling to some extent. Suggestions on ways of solving the issue with imbalance in flow of goods for carriers were made by utilizing other countries' flow of goods. Additionally, we have identified the main issues with ELMs to be trust and opportunism.

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Lund 22 May, 2013

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Fredrik Dafgård *Eva-Lotta Szymkiewicz*

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Definitions and abbreviations

Backhauling - When a truck picks up a load on the return trip, after delivering the original load.

Cabotage - When a truck carries out a transport within a foreign country. A foreign truck can only perform three cabotage operations within seven days after the international transport has been unloaded, according to EU regulations. If a truck enters a foreign country without load, the truck is only allowed to perform one cabotage operation within three days (European Commission 2013a).

Carrier - The company that performs the actual transport of a good.

ELM - Electronic Logistic Marketplace, an Internet-based system linking shippers and carriers together (Wang, Potter & Naim 2007).

EXW - Ex Works, an Incoterm which only requires the seller to have the goods prepared with appropriate packaging for collection at the seller's company, and tell the buyer when and where the goods can be collected. The buyer is responsible for arranging the export/import, customs and bears the risk during the entire transport (International Chamber of Commerce 2013a).

Freight forwarder - A consolidator that collects small shipments from shippers into large loads and presents the consolidated shipments to motor or railroad carriers for intercity transport. At the destination the freight forwarder breaks down the load into individual shipments and delivers them to the customer (Coyle, Bardi, & Novack 2000, p. 298).

Incoterms - International Commercial Terms are internationally recognized standards in international and domestic contracts for sale of goods, published by the International Chamber of Commerce (International Chamber of Commerce 2013b).

Logistics - Logistics connects the firm with suppliers and customers. Transportation, inventory, information and scheduling are all parts of logistics. Resources must enter firms, which handle them, and then they are distributed to customers (Skjott-Larsen, Mikkola & Schary 2007, p. 22-24).

Shipper - The company that wants to transport goods to another place.

SME - A company is classified as a Small and Medium sized Enterprise if the number of employees is lower than 250 and the turnover is below €50 million or balance sheet total is below €43 million (European Commission 2013b).

1. Introduction

1.1 Background and problem statement

One of the greatest challenges of the transportation industry is how to reduce the empty running of trucks. It is both an environmental and economic concern. Empty running trucks contribute not only to an economic waste but are also regarded as an environmental irresponsibility (McKinnon & Ge, 2006). By reducing the empty running of trucks, the European Council´s target of reducing greenhouse gases by 20% before 2020 (Commission of the European Communities 2008), is one step closer. It is also a way to improve carriers' efficiency by increasing their fill rate. Backhauling is one way of reducing the empty running trucks. It is when trucks deliver their load and pick up freight on their return trip (Jordan & Burns 1984; Frisk, Göthe-Lundgren, Jörnsten & Rönnqvist 2010).

Poland accounts for the greatest number of empty internationally running trucks in the European Union. In 2011, this number reached 1,2 billion empty vehicle-kilometers whereas Sweden accounted for 32 million empty vehicle-kilometers (Eurostat 2013). The empty running within Poland was 36% in 2009. This was higher than the corresponding percentage in Sweden, which was 23-24% (Trafikanalys 2013a). Of the foreign trucks operating in Sweden, Polish trucks had a 20% market share in 2010 (Trafikanalys 2013b). The high number of Polish empty running trucks engaged in international transports, combined with the high market share Polish trucks have in Sweden, indicates that there should be opportunities to increase backhauling between the two countries.

The problem with empty running trucks and the possibilities of backhauling between Sweden and Poland has been recognized by Business Sweden (formerly known as the Swedish Trade Council). Business Sweden is jointly owned by the Swedish government and the private business sector. The company aims to support Swedish companies in their internationalization process and to create business opportunities, mainly for Small and Medium sized Enterprises (SME) (Business Sweden 2013).

Business Sweden's office in Warsaw has on several occasions been contacted by Polish carriers, wanting to get in touch with Swedish companies that could fill their empty trucks on the return trip to Poland. According to Business Sweden, transports to Poland are even cheaper than transports within Sweden, since the Polish carriers lower their prices, to at least cover some costs

on the way back. Backhauling is an opportunity for Swedish companies to transport goods to Poland at a lower price, while at the same time increase the Polish carriers' fill rate. By backhauling, both parties achieve benefits. Still, backhauling is not fully utilized between Poland and Sweden. This captured our interest.

Studies focusing on which truckloads to backhaul have been made (Jordan & Burns 1984; Jordan 1987). Other studies focus on the reduction of empty running trucks and on identifying the factors that are important for it to be possible (McKinnon 1996; McKinnon & Ge 2006; Lea 1998). However, imbalance in the flow of goods between two places makes it difficult to utilize all capacity of trucks (Jordan & Burns 1984). Although these studies are of great relevance to our thesis, none of these consider backhauling in an international context. Research on international transportation (Coyle et al. 2000) and global supply chains (Skjott-Larsen et al. 2007) has also been covered, but once again not specifically mentioning backhauling from an international perspective. We wanted to study the interaction and relationship between shipper and carrier, and more precisely how it can increase international backhauling.

The international aspect of empty running trucks between Sweden and Poland made us search for studies that not only focus on logistics. For example, cultural differences might be an important factor in explaining the situation. Management practices, national identities and work values are all ways of describing culture (Skjott-Larsen et al. 2007, p. 408) and might be of importance to the relationship between shipper and carrier. A lot of research has been done regarding cultural differences (Hofstede 2011) and its impact on business (Trompenaars 1993). Legislation must also be considered however Poland and Sweden are both part of the European Union, there are laws regulating cabotage.

Traditionally, carriers have backhauled goods through contacting companies by telephone or personal meetings. Business might have been done between firms for years and connections are close. Other ways of securing backhauls have been to become a subcontractor to a large forwarding firm. During the past years, IT has changed the way business is done. Supply chain management and logistics are among the most promising areas of application for IT (Lancioni, Smith & Oliva 2000) and progress within it is likely to have a major impact on backhauling (McKinnon 1996).

When investigating different backhauling solutions we came across Electronic Logistic Marketplaces (ELMs). These might reduce the empty running of trucks and enable backhauling (McKinnon 1996). By linking shippers and carriers together through an Internet-based system, ELMs aim to increase collaboration and trading (Wang et al. 2007). On the other hand, there are studies indicating that Electronic Marketplaces and Supply Chain Management might not be a

good match, since Supply Chain Management aims to achieve long lasting and close relationships (Skjott-Larsen, Kotzab & Grieger 2003). A deeper understanding of how ELMs can affect international backhauling is needed.

ELMs can be compared to marketplaces such as Ebay and Amazon which have made it possible for anyone to buy anything from anywhere in the world. Could this be repeated in the road transportation industry? And more importantly, can ELMs increase international backhauling?

Different ELMs aiming to synchronize the transports between Sweden and Poland already exist (e.g. http://en.trans.eu, www.timocom.se, www.transporeon.com, www.smartfrigo.com). When discussing this with Business Sweden, they became interested in evaluating the potential of the ELMs.

Based on the discussion above, this thesis aims to answer the following research question:
Can the use of ELMs reduce the empty running of trucks between Sweden and Poland?

1.2 Purpose

The purpose of this thesis is to evaluate whether ELMs can reduce the empty running of trucks and give suggestions on how the ELMs can be improved. The purpose includes developing a theoretical evaluation framework of ELMs.

1.3 Delimitations

Our evaluation is narrowed down to focus on two ELMs - Trans.eu and TimoCom. The study is also limited to only examine the perspective of Polish carriers and Swedish exporting firms. We have chosen to only focus on the user perspective of the ELMs. This focus is necessary in order to fit within the scale of a master thesis but also since this is where our knowledge and resources can contribute the most. By narrowing down our focus, we hope to go deeper into these areas.

1.4 Thesis disposition

This thesis is divided into 6 chapters: *Introduction, Methodology, Theoretical background, Empirical data, Analysis* and *Conclusions.* The first chapter describes the thesis in general. It aims to introduce the reader to the research and give a background to our chosen problem statement and the purpose of this thesis. In the second chapter, we describe in detail our course of action to fulfill our purpose. In the third chapter we present the theoretical background, which will be used as a foundation. Chapter three ends with a presentation of our theoretical evaluation framework. In the following chapter, we present our data from the empirical research. It consists

of both interviews and the information gathered from secondary data. In chapter five, we present our analysis and the evaluation of the ELMs. Finally, the last chapter includes our conclusions and proposition for future research.

2. Methodology

The goal of this chapter is to outline the method of this thesis. We explain our choice of theories, data collection methods and how we have carried out the evaluation. Finally, we discuss the validity, reliability and replicability of the chosen research methods.

2.1 Scientific approach

With a deductive approach, the researcher begins with finding existing knowledge from theories on the subject and formulates a hypothesis that is tested through empirical findings (Bryman & Bell 2003, p. 9-10). Furthermore, with a deductive approach, the researcher formulates expectations of how reality looks like and gathers empirical data to analyze if the expectations are consistent with reality (Jacobsen 2002, p. 34). We have developed a theoretical evaluation framework for ELMs, based on existing theories. The evaluation framework has then been tested through our empirical data, to see if it is consistent with reality. This indicates a deductive approach.

A negative aspect of the deductive approach is that the collection of data inevitably leads to that the researcher only searches for the information which he or she finds relevant. This can, in turn, lead to that the expectations attain support and important information is overlooked (Jacobsen 2002, p. 35). We are aware of the fact that this may partly be the case in our thesis. Our interview questions were constructed to make sure we received information needed to conduct our evaluation. Hence, we did search for what we found to be relevant. However, by conducting semi-structured interviews we reduced the risk of only obtaining information we believed was relevant. The risk was reduced as the interviewee had the possibility to express what he or she found relevant.

In our research we have also used inductive reasoning. In inductive reasoning *"theory is the outcome of research*" (Bryman & Bell 2003, p. 12). After doing our evaluation we made suggestions on how some theories, including our own evaluation framework, could be improved to be more accurate.

It is not uncommon that deduction has an amount of induction in it and vice versa (Bryman & Bell, 2003 p. 12). When a combination of both inductive and deductive reasoning is used, it is called an abductive approach (Alvesson & Sköldberg 1994, p. 42). Overall, the scientific approach in this thesis has been abductive.

2.2 The general research design

To accomplish the purpose of this thesis, an evaluation had to be done. By evaluating something, you try to determine the worth, or value, of it (Shaw et al. 2006, p.6). We wanted to determine the value of ELMs' contribution to the reduction of empty trucks between Poland and Sweden. Furthermore, we hoped that our evaluation could help improve the ELMs. An evaluation can be divided into two categories: formative and summative evaluation (Shaw et al. 2006, p. 6). The summative evaluation decides if the object in focus has accomplished its objectives and the formative is more focused on the quality of the object in focus (Hamilton & Chervany 1981). We have mainly used the summative evaluation to estimate the effectiveness of ELMs. In order to do this, we also needed to define effectiveness. A goal-centered view focuses on first determining the objectives of the system, and then developing criterion measures to estimate how well these objectives are fulfilled. The objectives are compared to the performance of the system to determine the effectiveness (Molnar & Rogers 1976). The goal-centered view of determining effectiveness suited our purpose well, it was also similar to the summative evaluation. In order to evaluate the effectiveness of ELMs, our first step consisted of determining the objectives of an ELM and the criteria needed to estimate how well these objectives are fulfilled.

In order to establish our objectives of an effective ELM we needed to find support for them in existing literature. We began our literature review by focusing on the largest journals covering logistics and distribution, e.g. the International Journal of Physical Distribution & Logistics Management. The goal was to find what had already been written about backhauling and ELMs, to gain an understanding of the subject and to identify suitable criteria. This broadened our focus to also include some cultural aspects, e.g. language barriers. All of the criteria were summarized into a theoretical evaluation framework. The next step of our thesis was to apply the evaluation framework on the ELMs that handle transports between Poland and Sweden. To do this, we had to collect empirical data by conducting interviews, studying websites and analyzing official trade statistics concerning transport between Sweden and Poland today. The theoretical framework was used as a foundation when conducting the interviews. The focus in the interviews was on the transports between Poland and Sweden and the use of ELMs. 14 interviews were made; all interviews were recorded and transcribed. During the transcription, the interviews were translated to English. To reduce the length of the empirical data chapter we have chosen parts from the semi-structured interviews of most importance to our analysis. During the interviews we soon realized that the two dominating ELMs for the transportation between Sweden and Poland were Trans.eu and TimoCom, which directed our focus entirely on these two. Trans.eu and TimoCom are very similar to each other.

The official trade statistics, interviews and website observations all helped in analyzing and evaluating whether the ELMs are good tools for reducing the empty running of trucks between Sweden and Poland. In the cases where the objectives were not fulfilled, we discussed possible improvements to make the ELMs come closer of fulfilling these objectives.

2.2.1 Qualitative research

We have touched upon many elements which are hard to quantify. The qualitative research method is usually preferred when the data consists of words rather than numbers (Bryman & Bell, 2003, p. 279). This is why it became our preferred research method of choice. A qualitative method in evaluations can especially be useful when you want to explain *why* something succeed, or fails to succeed, with its objectives (Shaw et al. 2006, p. 525). To be able to see *why* the ELMs are effective or not is more important than to simply evaluate whether the ELMs are effective or not - even though this too, is interesting. However, the understanding of the underlying reasons and explanations to *why* the ELMs can, or cannot, increase international backhauling is what can contribute to increase international backhauling in the future. A qualitative method will make it possible for us to gain information *why* the ELMs are effective. With this information it is possible to give suggestions on how they can be improved. This enables us to fulfill the purpose of this thesis' explorative nature.

2.2.2 Selected theories

The basic objective of an ELM is to be an effective marketplace. This, however, can be accomplished in different ways. According to transaction cost economics, ELMs are effective marketplaces if they lower the transaction costs (Howard, Vidgen & Powell 2006). This is why the transaction costs are of relevance as criteria for the evaluation.

Another criterion to measure if ELMs are effective is whether they help the users to identify backhaul markets. If ELMs help to match physical inflows and outflows of goods in a certain area and later find shippers that are willing to be a part of the system, backhauling will increase (Mentzer 1986). Additionally, for backhauling to be possible in the first place, some basic logistical conditions also need to be fulfilled. Hence, these are included in our framework as well.

Theories regarding which ELM architecture that is the most efficient, e.g. open or closed (Skjott-Larsen et al. 2003; Wang et al. 2007) and which transaction phase that should be covered (Grieger 2003) give input on how ELMs should be designed to be as effective as possible in the future.

Since we studied the case of Sweden and Poland, an international aspect is of relevance in the evaluation of the ELMs. Consequently, culture (Hofstede 2011) and language barriers (Hill 2011) are also added to the theoretical evaluation framework, as a potential factor which may affect the effectiveness of ELMs.

2.3 Data collection

2.3.1 Semi-structured interviews

Interviewing is the most common method in qualitative research (Backman 1998, p. 53). The semi-structured interview fitted our purpose. When conducting a semi-structured interview the interviewer has some topics that are supposed to be covered, while there still is some flexibility in how it is structured. Furthermore, the semi-structured interview helps the qualitative approach in the sense that it gives information on what the interviewee believes is relevant and helps the more explorative nature of the qualitative approach (Bryman & Bell 2005, p. 363). In our interviews we wanted not only to find information about how well the criteria were fulfilled by the ELMs, but also how the transportation between Sweden and Poland is done today. When constructing our interview questions we have had in mind the objectives and criteria of the evaluation framework. The explorative and semi-structured nature of our interviews allowed for questions to answer several criterias at the same time. Furthermore, some criteria were also measured by the help of secondary data.

2.3.2 Choice of interviewees

Our targeted group to interview has been Polish carriers. Not only because Polish trucks account for the highest market share (20%) in Sweden (Trafikanalys 2013b) but also because Poland stands for the highest number of empty running trucks in the European Union (Eurostat 2013). These statistics indicated that the problem of empty running trucks was more of a concern to Polish carriers than it was to Swedish carriers.

To get a two-sided point of view of the transport between Sweden and Poland, we also chose to interview Swedish companies exporting goods to Poland. This, in order to investigate how they arrange their transports when doing business in Poland but also to see if they were familiar with ELMs.

The Swedish exporting companies were selected from the database *Kompass (*http://se.kompass.com/) provided by Business Sweden. It enabled us to easily search for the companies suitable for our research. The companies had to export goods to Poland and be a SME (number of employees<250, turnover<50 MEUR). We conducted seven telephone interviews with

Swedish companies. Telephone interviews were necessary since the companies were located all around Sweden and we did not have the possibility to visit them.

When looking for Polish carriers to contact we started off by searching on Google in order to find a traders union for truck drivers in Poland or a company catalogue. We found the Internet catalogue http://www.poland-export.pl, where we could search for parameters such as "*preferred route of exports by country*". This way, we ensured that the carriers were transporting to Sweden. Companies were chosen for interviews based on transport frequency to Sweden, with a minimum of one month. Furthermore, companies were selected within the Warsaw area as we wished for most of our interviews to be made face-to-face. This, as interviewees tend to more easily open up and speak about sensitive matters during a personal meeting (Jacobsen 2002, p. 161).

Limiting ourselves to companies in the Warsaw area could be seen as a *convenience sampling*; it is when the respondents happen to be available for the researcher (Bryman & Bell 2005, p. 124). We needed to adopt a convenience sampling as traveling around Poland to meet companies would have made it difficult to fit within the time limit of this project but also because this is an explorative study. Additionally, some companies were chosen based on a *snowball sampling;* which is *"a form of convenience sampling where the researcher initially contacts a small group of people relevant for the research topic and thereafter uses these to contact other respondents"* (Bryman & Bell 2005, p. 126). Our choice of interviewees can in some way be described as a snowball sampling in the sense that we have found certain respondents through this procedure. Only one Polish interview was carried out through telephone, with a company situated outside of Warsaw. The telephone interview eliminated the problem of physically attending. We conducted seven interviews with Polish carriers transporting goods between Sweden and Poland. The interviews were held in Polish, this being the native language of the interviewees. We hoped that this would make our respondents feel more at ease, resulting in more accurate and open answers.

2.3.3 Secondary data

Secondary data is often a source of great benefits to students and the usability is usually underestimated (Bryman & Bell 2003, p. 213). We have used data from the Swedish road transportation department to find statistics on the empty running of trucks. This is secondary data, which has both advantages and disadvantages. When using secondary data, it is important to remember that it usually is not created for the same reasons as your own research (Jacobsen 2002, p. 187). By analysing the flow of goods between the countries we hope to get information that makes our evaluation better.

Internet and web pages can be seen as potential sources of data and a foundation for qualitative research. However, it is important to be critical in the choice of object to analyze since new web pages are created and deleted all the time. Moreover, there is little control of who has created them and why they are created (Bryman & Bell 2005, p. 516-517). In order to study the existing ELMs we collected data by manually accessing the website of Trans.eu and TimoCom. The risk of information being inaccurate on these websites is reduced, as it is the official websites of the ELMs.

2.4 Validity, Reliability & Replicability

It is important that research is valid, reliable and replicable (Bryman & Bell 2005, p. 48). Below we discuss the credibility of our methods by addressing the validity, reliability and replication.

2.4.1 Validity

Validity means that the empirical study measures what it intends to measure (Bryman & Bell 2005, p. 95). For our thesis to have high validity, our interview questions must measure what they intend to measure: the criteria in our evaluation framework. We had each criterion in mind when forming our interview questions, increasing the validity. Furthermore, after each interview a transcription was distributed to the interviewees in order for them to leave a comment or correct any inaccurate information, as a step to ensure the validity. However, it is not possible to derive each interview question to a single criterion. The semi-structured interviews allowed the interviewees to in some cases give information regarding many criteria at once. In other cases supplementary questions were needed.

Our theoretical evaluation framework can be seen as theoretically generalizable in the sense that the framework may be of use for other researchers wishing to apply it to other markets and other ELMs. However, the results from the evaluation of Trans.eu and TimoCom are not empirically generalizable as our study consists of 14 interviews. Furthermore, snowball sampling was used which is not considered to be random, further limiting us in our generalization of our empirical findings according to Bryman & Bell (2005, p. 127).

2.4.2 Reliability

Reliability describes the measurement's accuracy (Bryman & Bell 2005, p. 48). Reliability also implies that the study can be reconstructed and give the same results at another point in time (Bryman & Bell 2005, p. 48).

The Polish respondents received our questions before the interview for the purpose of being better prepared at the time of the interview and give more accurate answers. All interviews were recorded, with the interviewees consent, and shortly thereafter transcribed. The transcription was sent to the interviewees for approval. We find the methods stated above to strengthen the accuracy of the measurements since the recording allowed us to listen to the respondents' answers as many times as we needed. The recording might have restrained our interviewees from acting naturally and sharing sensitive information, decreasing the reliability. Naturally, this is not something we will know for sure.

We still find our thesis to have a sufficient level of reliability as respondents were given the possibility to correct the transcription as well as being offered to be anonymous. The reliability in the respondents' answers is also considered to be sufficient as all the 14 respondents have positions allowing them to be well familiar with logistics operations between Sweden and Poland at each firm. However, each person's position has varied depending on the company. During the interviews with the Swedish exporting companies we have spoken to transport/logistics managers, export managers and co-owners. In the smaller Polish companies we interviewed two co-owners, a manager, a transport director and a member of the board. In the larger Polish companies we interviewed a key account manager and a team leader responsible for the Scandinavian market.

2.4.3 Replicability

It must be possible to repeat a study for it to be replicable (Bryman & Bell 2005, p. 48). We have demonstrated our research approach in the former sections *The General research design* and *Data collection*. We believe this to be of help for future researchers who would like to replicate our study. They may use trade statistics, interviews, websites and the evaluation framework in the manner described in these sections. However, it is important to emphasize that our interviews were semi-structured and we may not have asked each question exactly in the same way each time.

3. Theoretical background

This chapter consists of the theories we find important for our theoretical evaluation framework. We begin by giving an overview of ELMs and how they can be designed. After that, we briefly explain TCE and how this can be connected to ELMs. The next part consists of theories regarding backhauling and international business. The theoretical background acts as a base for developing our evaluation framework, which is presented in the last part of this chapter.

3.1 Electronic Marketplaces

IT has created opportunities for new logistic services. Among these are the electronic marketplaces, which provide advantages in information connectivity and real time visibility. The electronic marketplaces are emerging rapidly; the web has reduced the complexity and the cost of implementation of the systems. In its most basic form, an electronic marketplace can be seen as a system that enables buyers and sellers to exchange product offerings and prices. It should allow for potential customers to be found and transactions to be made. One of the main functions of an electronic marketplace is to decrease customer search costs (Standing, Standing & Love 2010). They are argued to "*generate substantial savings and revenues for all participants and society as a whole"* (Skjott-Larsen et al. 2003, p. 199). Since the 1990s, the Electronic marketplaces have been named differently, such as marketplaces, electronic exchanges, electronic markets, e-hubs, electronic networks and portals (Wang et al. 2007).

3.2 Electronic Logistic Marketplaces

The Electronic marketplace which aims to facilitate logistics is referred to as an Electronic Logistic Marketplace (ELM). ELMs act as an intermediary, facilitating the exchange of logistics services. They can be defined as *"electronic hubs used by web-based systems that link shippers and carriers together for purpose of collaborating or trading"* (Wang et al. 2007, p. 1170-1171). Shippers can post their empty routes in order for interested parties to respond with a return load. ELMs allow shippers and carriers to more easily communicate by posting information directly on the web (Goldsby & Eckert 2003). Typically, a basic ELM is composed of three key parties: shipper, carrier and the technology provider. The goal is reliable deliveries to customers.

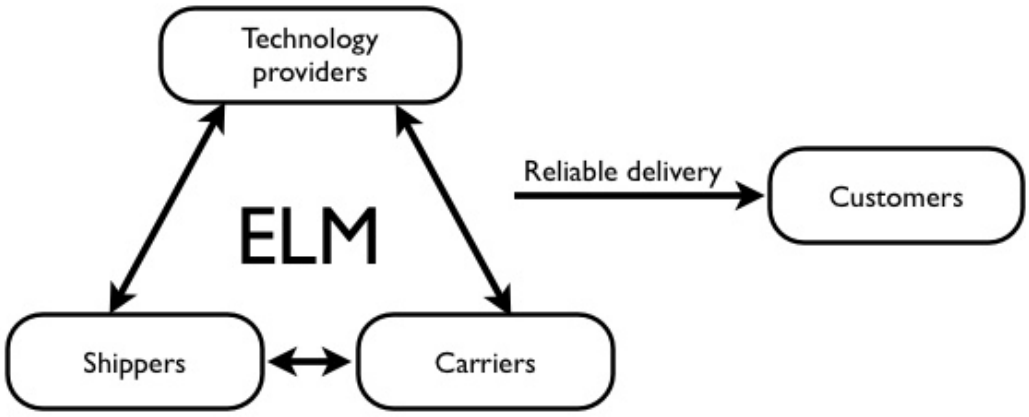

Figure 1: Basic model of ELM (Wang, Potter & Naim 2007)

Transport operations are traditionally carried out manually. Many companies still use telephone and fax, which is time consuming and could result in more mistakes due to human errors. Traditional ways of communication between shipper and carrier have been rather fragmented and the different parties have been communicating individually with each other (Wang et al. 2007). Figure 2 shows the change in supply chain structure after introducing an ELM:

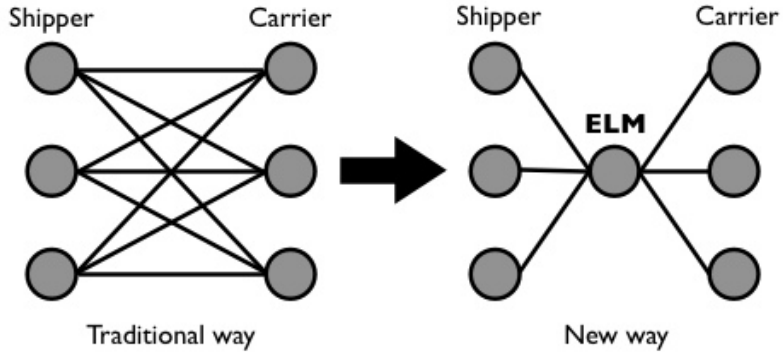

Figure 2: Communication ways between shippers and carriers (Wang, Potter & Naim 2007)

By communicating through the ELM, shippers and carriers may connect through a single interface. Through its connectivity, the ELM enables benefits, such as a wider accessibility base of buyers and suppliers, reduced searching costs, reduced transaction costs, improved flexibility, improvement in service quality and reduction of inventory cost (Howard, Vidgen & Powell 2006). ELMs can help companies not only by matching loads to enable backhauling, but also by checking credit ratings. This decreases the risks when dealing with new clients on short notice (McKinnon 1996).

3.2.1 ELM architectures

3.2.1.1 Open vs. closed ELM

Different logistic scenarios require different electronic marketplace architectures. Depending on the user and what the objective of the electronic marketplace is, there are different constellations of how an ELM can be designed. The open marketplace is most usable for goods that are transported with a single mode of transportation and not requiring additional services (Wang et al. 2007). Security and authenticity are important issues in the open marketplace as it can gain unlimited number of users. As a result the, the users do not collaborate or share large amount of information with each other. In the closed marketplace, the situation is reversed. The closed marketplace is only open for a few chosen users who already know each other, which reduces the need for security. The closed marketplace is further characterized by collaboration and high information sharing. The closed marketplace is often industry specific (Skjott-Larsen et al. 2003).

3.2.1.2 Transaction phases

A transaction consists of four phases. In the information phase, buyers identify what they need and how to get it. Sellers prepare to deliver their goods and search for potential customers. It consists mainly of information sharing. This information phase ends when an offer is made. The next phase, negotiation, begins with the reception of an offer. The buyer and seller start negotiating, with the goal to make both parties satisfied. This results in a contract, ending this phase. The settlement phase is where what was decided in the contract is fulfilled. The transaction is ended with an after sales phase. It consists of an evaluation of the transaction and, perhaps, after sales services. Usually, ELMs only focus on one of the phases, the information phase, rather than covering all of them (Skjott-Larsen et al. 2003).

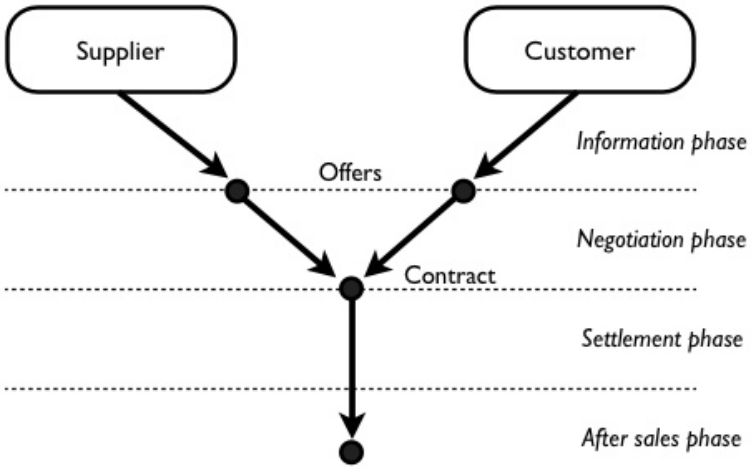

Figure 3: Phases of market transactions (Skjott-Larsen et al. 2003)

3.2.2 Trust and ELMs

In online commerce, most transactions occur even though the buyer and seller have never met. Trust is as important in online transactions as it is in traditional transactions, if not more important. If not enough security measures are taken, it is easy for a seller to be dishonest (Ba & Pavlou 2002). Online business is characterized by impersonality and little face-to-face communication, further increasing the importance of trust in online business. Trust in online business can even be defined as "*the foundation of the digital economy*" (Pavlou 2002, p. 216).

3.3 Transaction Cost Economics

Transaction cost economics (TCE), first outlined by Coase (1937) and further developed by Williamson (1979) explains why individuals choose to form partnerships. Information gathering, planning, setting up agreements and monitoring transactions is time-consuming and give rise to transaction costs. Fewer and lower transaction costs indicate a functioning market. Consequently, Williamson argues that a perfect market is characterized by non-existent transaction costs; however since humans act opportunistic, perfect markets does not exist and transaction costs arise (1979). Internet and the establishment of agreements can lower transaction costs (Goldsby & Eckert 2003).

3.3.1 The decision to use an ELM based on the TCE framework

In the decision to use an ELM one may, according to Goldsby & Eckert, use TCE. The typical *make* versus *buy* decision is usually directed towards a service in general and involves questions such as: "*should one use a private trucking operation or outsource that task to a for-hire carrier?*"(Goldsby & Eckert 2003, p.190).

In Bowersox & Cooper's (1992) transaction cost framework, factors of transaction costs are identified (as cited in Goldsby & Eckert 2003). Goldsby & Eckert have further embodied these to the ELM decision (2003). With the help of the transaction cost framework a company can facilitate the decision of whether to outsource the transportation function to an ELM or not. Goldsby & Eckert (2003) distinguish and describe the following factors below.

3.3.1.1 Assembling information

ELMs offer the advantage of gathering large information efficiently at a low price. They invite carriers to bid on the freight on a load-by-load basis and are thus particularly attractive when the choice of carrier is of little importance. However, the "faceless" transactions might be less appealing if the shipment is of high value, fragile or time-critical. In these cases shippers rather engage in search for qualified carriers that they may meet face-to-face. Despite the fact that finding information through ELMs enables low cost, shippers may still choose to do the search

by themselves. As long as the information is sufficient for the shippers to choose a carrier, the ELMs will satisfy the search requirements at a low cost (Goldsby & Eckert 2003).

3.3.1.2 Bargaining

The ELMs has the potential of saving time and costs in the bargaining process as they offer no face-to-face negotiations. Shippers post available loads with their specifications and wait for a replying bid. The lowest bid wins. The ELM eliminates the traditional process of tracking down available carriers through telephone (Goldsby & Eckert 2003).

3.3.1.3 Monitoring performance

Most ELMs do not take responsibility for the actual transport; the aim is to match shippers and carriers. This is mainly because of the unwillingness to become involved in disputes concerning performance measurement and the lack of appropriate technology required to make the communication possible. There are few ELMs which offer freight bill processing and payment. The cost of monitoring are likely to be comparable between the ELMs to the situation if the shipper were to do it by own means (Goldsby & Eckert 2003).

3.3.1.4 Opportunism

Williamson (1979) defines opportunism as *"self-interest seeking with guile"*. ELMs can reduce opportunism by making the transactions transparent to all parties by eliminating asymmetric information from market players. However, there still remains a potential for opportunism as users may limit or falsify information provided to the ELMs. By other means, Goldsby and Eckert argue that the ELMs can only prevent opportunism if it develops a way to verify the information provided to the ELMs or if the information is completely transparent so nothing can be misunderstood (Goldsby & Eckert 2003).

3.4 Backhauling

Jordan & Burns were early in their research on the topic of how to reduce the empty running of trucks. According to them, backhauling is when trucks *"pick up and deliver freight on their return trip"* (1984, p.487). They studied backhauling in a simplified way, with only two terminals delivering to many customers.

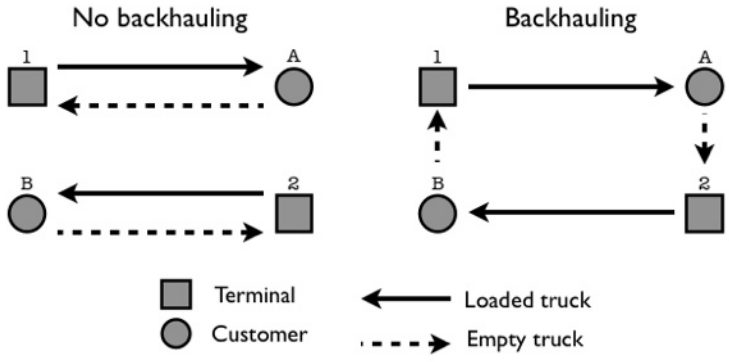

Figure 4: Backhauling (Jordan & Burns 1984)

Backhauling utilizes the balance in flow of goods to reduce the empty running of trucks. As shown in figure 4, one truck can deliver loads to both customers by backhauling. The reduced empty running for customer A is be the distance from terminal 1 to customer A minus the distance from customer A to terminal 2. If the distance between customer A and terminal 2 is shorter than between customer A and terminal 1, backhauling reduces the empty running (Jordan & Burns 1984). In reality, however, it is rarely as simple as with two terminals only.

3.4.1 Economic implications of backhauling

The connection between productivity and profitability is strong. Increased productivity means that fewer resources are used to do the same work. Hence, the costs are also decreased since fewer resources are needed (Lumsden 1998). When referring to productivity in transportation it highly depends on how many kilometers a truck operates empty or partly full, as cost per kilometer of operating a truck depends on the quantity of goods in the truck (Jordan & Burns 1984). Both the carrier and the shipper must have an economic incentive to carry through with the backhaul. It can, for example, be to cut cost per kilometer or increase revenues.

Coyle et al. has a fictive example of how backhauling can minimize economic losses. After a carrier has delivered a load it has the option to backhaul goods. To cover the costs, the carrier puts a price of €90 to backhaul the load. The market does not accept this and the carrier will be forced to return empty, resulting in a loss of €90. Instead, the carrier can put a price of €80 on the backhaul, enabling the backhaul to be accepted by the market. It is €10 below the marginal cost, but the carrier has minimized its losses by only losing €10 instead of €90. By doing this, the carrier can become more competitive in its pricing of the main load, since the total revenues of a delivery is increased (2000, p. 301-303). However, if the backhaul is not big enough, it might not be worth picking up, for example if gas costs are higher than the price. In such a case, it can be more beneficial to the individual company to run empty (McKinnon & Ge 2004).

3.4.2 Different ways of backhauling

There are different ways of backhauling which each have different exposure to risk. The bilateral form is the least risky. It is simple and does not require any extra trips or deliveries but is often not possible in reality. The nature of the risk varies depending on way of backhauling and the possible sources of delay also vary. The more advanced the way of backhauling is, the more risky it is and has a bigger chance of causing delays (McKinnon & Ge 2006).

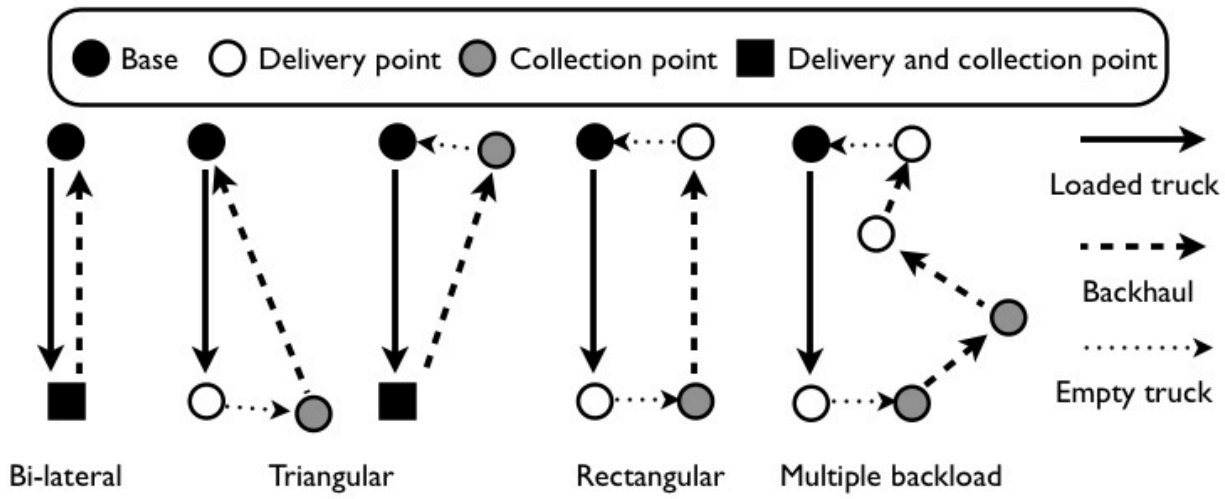

Figure 5: Different ways of backhauling (McKinnon & Ge 2006)

3.4.3 Determining which backhaul to choose

When a company has many alternative backhauling opportunities, it is important to choose the alternative with the most benefits. The conical backhaul principle can act as guidance. It suggests that backhauling should be made far from the shipping point but as close to the delivery point as possible. The further the backhaul is from the shipping point, the longer the acceptable deviation is from the original route. However, it is still important to not forget that there could be backhaul opportunities close to the shipping point as well (Mentzer 1986).

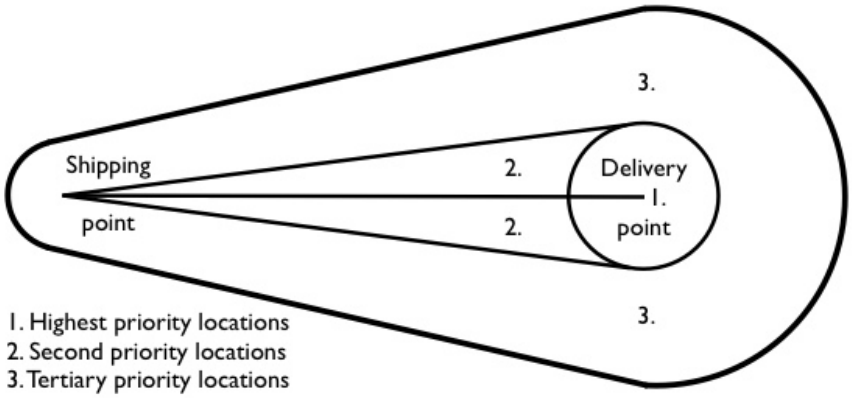

Figure 6: Conical backhaul principle (Mentzer 1986)

3.4.4 Identifying backhaul markets

A more practical viewpoint of how to handle backhauling is presented by Mentzer (1986). He has developed a model for how to identify backhaul markets and to create a backhaul information system in order to reduce the empty running of trucks. The backhaul information system is created through several steps where physical outflows are matched to physical inflows in areas and to find shippers that are willing to be part of the system (Mentzer 1986).

We have been inspired by Mentzer (1986) and simplified the steps in the model to make it more suitable for our purpose. The first step is to *identify high-delivery counties* to find high-traffic routes and areas that the company delivers large amounts of goods to. The second step is to *identify net producer counties* where more products are going out than in, allowing backhauling possibilities. The third step is to match the net producing counties with counties that the company delivers heavily to. A county is perceived as key county when a match is possible, enabling backhauling possibilities. The fourth step is to *identify shippers operating in key*

counties followed by the fifth step which is to *qualify shippers* that are suitable. The last step is to *contact qualified shippers and negotiate to enhance backhauls*.

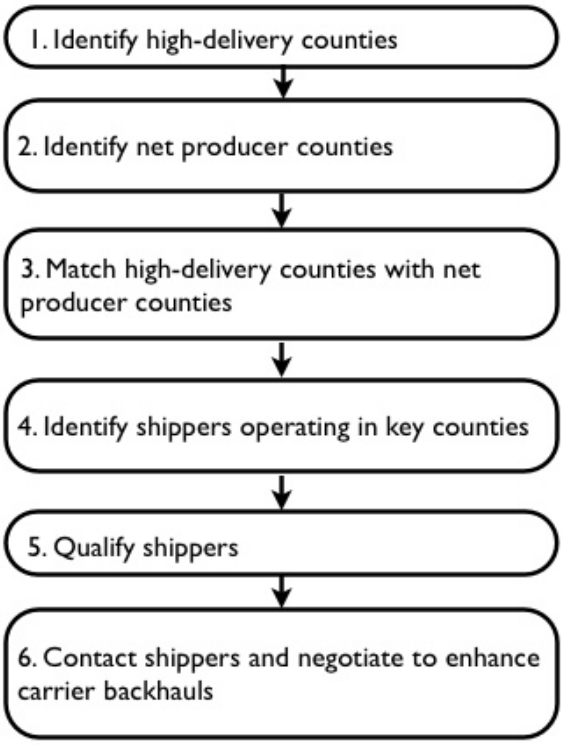

Figure 7: Simplified model for identifying backhaul markets (Mentzer 1986)

3.4.5 Factors influencing backhauling

3.4.5.1 Distance to the backhaul

The distance between a potential backhaul's pick up point has to be close to the original delivery point. Cundill & Hull stated that as the length of the journey increases, the proportion of empty running is decreased, since the economic gains are bigger when the distance is longer (as cited in McKinnon 1996). The length of the empty run is important. It has to be of a certain length, otherwise there are little benefits of a backhaul (McKinnon & Ge 2006). This is further strengthened when considering the conical backhaul principle (Mentzer 1986).

3.4.5.2 Truck capacity

The truck has to have enough capacity available to pick up the backhaul or it will not happen (McKinnon & Ge 2006). However, the available excess capacity might not be enough to satisfy a firm that is seeking backhaul opportunities (McKinnon 1996).

3.4.5.3 Vehicle compatibility

Different types of trucks are needed to transport different types of goods. This reduces potential backhauling possibilities between different types of goods (McKinnon & Ge 2006; Lea 1998). The vehicle has to be compatible with the backhaul it is supposed to pick up. In the grocery sector, for example, the need for refrigeration is often essential and without this, a backhaul will not be possible (McKinnon & Ge 2006). Furthermore, different types of transport are sometimes used for inbound and outbound transportation of goods (McKinnon 1996). In those cases, the possibilities of bi-lateral backhauls are decreased.

3.4.5.4 Information

Many potential backhauling opportunities are lost due to lack of information regarding loads that are fit to backhaul. Even though a transporting company has capacity to backhaul a load, if it does not get information regarding a suitable load, it is impossible to arrange it. Both the shipper and carrier must provide information regarding the potential backhaul (McKinnon & Ge 2006).

3.4.5.6 Balance in flow of goods

If there is an imbalance in the flow of goods between two places, the potential of backhauling is reduced since there are not enough goods in one direction to fill the trucks (Lea 1998). Seasonal fluctuations can also be problematic since most companies tend to want year-round arrangements rather than only short term solutions (McKinnon 1996).

3.4.5.7 Trust

Trust can be one of the most important elements in any buyer-seller relationship. If incomplete buyer and seller information is present on an exchange, trust is critical. Trust is the reliance upon information that is given from another person regarding uncertainties in a situation. It is a mutual requirement, both buyer and seller has to trust each other for a transaction to occur (Hawes et al. 1989).

3.5 International business

When business is done in an international context additional elements affecting how business is done are present. In the case Poland-Sweden the legal aspects are less of an issue since both countries are members of the European Union. However, there might be cultural aspects and linguistic barriers affecting the way business is conducted between the two countries.

3.5.1 Culture

Culture is a multifaceted expression. Management practices, education, work values and relationships are all examples of definitions. Many factors within management practice can affect behavior, such as language and time orientation (Skjott-Larsen et al. 2007, p. 408). Other

definitions speak of the values and norms that are shared by a group. Values are what people believe are good and desirable. Norms are the unwritten guidelines and rules that describe how people should behave in different situations (Hill 2012, p. 100).

3.5.2 Language barriers

Language is one of the most important parts of culture. Even though English is more and more becoming the international business language, language barriers can create confusion and problems in international business. Improper translation can create confusion as one word can mean something completely different in another language. However, most people prefer to use their native language and in such situations the ability to speak the local language can be very important when doing business in another country (Hill 2012, p. 118-120).

3.6 Theoretical evaluation framework

Based on the presented theories, a framework has been compiled to be able to evaluate the ELMs Trans.eu and TimoCom. In order to suggest how the ELMs can be improved, a short analysis of the ELM architecture needs to be done first. It is important to determine the architecture in order to be able to suggest improvements. This can be made by relying on the first table.

	ELM architecture	
1	Is the ELM open or closed?	Wang et al. 2007, Skjott-Larsen et al. 2003
2	Which transaction phases does the ELM cover?	Skjott-Larsen et al. 2003, Grieger 2003

Table 1: Determining ELM architectures

The second table presents the compiled theoretical objectives of an effective ELM and the criteria upon which to measure how well the objectives are fulfilled.

	Objectives of an effective ELM	**Criteria to measure how well the objectives are fulfilled**	
1	Balance flow of goods	Help balance the flow of goods in both directions	McKinnon 1996, Lea 1998
2	Link trucks with compatible goods	Provide opportunities to describe the characteristics of the truck or the goods	McKinnon 1996, McKinnon & Ge 2006, Lea 1998
3	Link excess capacity in trucks with the right amount of goods	Provide information regarding excess capacity and goods	McKinnon 1996, McKinnon & Ge 2006
4	Reduce distance to a backhaul	Provide more backhaul alternatives	McKinnon 1996, McKinnon & Ge 2006, Mentzer 1986
5	Help to enable more advanced ways of backhauling	Provide information about potential backhauls	McKinnon & Ge 2006
6	Lower transaction costs	Assemble information	Coase 1937, Williamson 1979, Goldsby & Eckert 2003
		Make bargaining process effective	
		Monitor performance	
		Decrease opportunism	
7	Induce trust in the other part of the transaction	Provide tools that increase trust	Hawes et al 1989, Ba & Pavlou 2002, Pavlou 2002
8	Reduce cultural differences	Enable shared management practices	Hofstede 2011
9	Reduce language barriers	Provide tools for users to communicate easier	Hill 2012
10	Help to determine backhaul markets	By facilitating the process of determining backhaul markets	Mentzer 1986

Table 2: Theoretical evaluation framework of ELMs

4. Empirical data

In this chapter, we present our empirical data. The goal is to present information needed to evaluate the ELMs. It is divided into three parts. First, we present the currently dominating European ELMs. Second, we present official trade statistics between Sweden and Poland. Finally, we present the findings from our interviews with the Swedish exporting companies and the Polish carriers.

4.1 Dominating European ELMs

4.1.1 Trans.eu

Trans.eu is a European freight exchange for carriers, freight forwarders and logistics. It was founded in 2004 and today, around 100,000 offers are posted every day. Each offer contains information regarding weight, length and type. The more than 200,000 users are from 18 countries. Trans.eu supports 20 languages. A 12-month subscription costs €79 but a 30-day free trial is also available. The portal offers relating services to strengthen the usability of the exchange. It is possible to gain quick information about a company and to rate companies after a transaction is made. The internal rating system is aimed at reducing the risk of fraud. To further increase security, Trans.eu has its own Financial Risk Management Department. The department calculates a risk index, based on how often a company has paid in time and how active the company is on the exchange. A messenger function allows the users to chat in real-time. Moreover, an interactive map enables the user to plan an optimal freight route, calculate transporting costs and to search for return loads in specific areas (Trans.eu 2013).

4.1.2 TimoCom

TimoCom is a European freight exchange founded in 1997 in Germany. Up to 300,000 international freight offers are posted daily on the website. TimoCom is available in 44 European countries and the site supports 24 languages. When posting an offer, information regarding the weight, length and type is added. There is not only a freight exchange on the ELM; there is also a tendering platform. The tendering platform, companies that want to transport something can post an offer and the transportation companies can bid on the available goods. All companies are examined before a registration is completed to check their financial credibility. Users are asked to inform about fraud and if a user does not follow the regulation on the website or does not pay after a deal is done, the user is blocked. Another security function on TimoCom is their in-house

debt collection department. The department aims to resolve unpleasant debt collections when invoices are overdue in time as an alternative to expensive court proceedings. (TimoCom 2013).

4.2 Trade between Sweden and Poland

4.2.1 Total trade

In 2010, Sweden exported goods to Poland with a value of 29,0 billion SEK. This makes Poland the 12th biggest export market for Sweden. The value of imported goods from Poland was 30,9 billion SEK in the same year, making Poland the 13th biggest import country (Statistiska centralbyrån 2013). 12% of the goods that left Sweden by truck in 2010 were transported to Poland. Of the goods that were transported to Sweden in 2010 by trucks, 9% came from Poland (Trafikanalys 2013c).

Top 10	Goods imported from Poland to Sweden	Tonnes	Value (kSEK)
1	33 Petroleum, petroleum products and related materials	293737	1375694
2	32 Coal, coke and briquettes	213223	245064
3	52 Inorganic chemicals	142632	184551
4	63 Cork and wood manufactures (excluding furniture)	127728	817268
5	64 Paper, paperboard and articles of paper pulp, paper or paperboard	106992	745834
6	82 Furniture, and parts thereof	100197	2124995
7	24 Cork and wood	68333	227149
8	66 Non-metallic mineral manufactures, n.e.s.	66902	783565
9	78 Road vehicles (including air-cushion vehicles)	60165	4024484
10	69 Manufactures of metals, n.e.s.	56123	1216411

Table 3: Goods imported from Poland to Sweden (Statistiska centralbyrån 2013)

Top 10	Goods exported to Poland from Sweden	Tonnes	Value (kSEK)
1	27 Crude fertilizers and crude minerals (excluding coal, petroleum and precious stones)	468461	112626
2	64 Paper, paperboard and articles of paper pulp, paper or paperboard	402712	2584972
3	67 Iron and steel	169083	1662190
4	25 Pulp and waste paper	153482	643188
5	33 Petroleum, petroleum products and related materials	118225	513278
6	68 Non-ferrous metals	94487	2480228
7	57 Plastics in primary forms	81402	822356
8	03 Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates and preparations thereof	76224	3253416
9	52 Inorganic chemicals	67369	220925
10	59 Chemical materials and products, n.e.s.	56259	244858

Table 4: Goods exported to Poland from Sweden (Statistiska centralbyrån 2013)

5,3 million tonnes of goods were exported from Sweden to Poland in 2010. 68% of this was transported by sea, 31% by trucks and 1% by rail. 5,8 million tonnes of goods were transported from Poland to Sweden in 2010. 74% was transported by sea, 23% with trucks and almost 3% by rail (Trafikanalys 2013d).

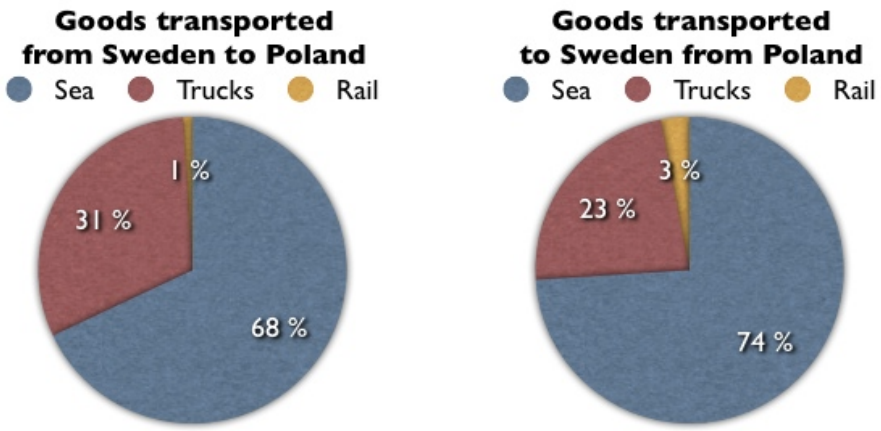

Figure 8: Goods transported between Sweden and Poland (Trafikanalys 2013d)

Of the goods that are transported by sea between the two countries, a large part is unknown. Of the goods transported by sea to Poland, 77% is unknown. From Poland, the corresponding number of unknown goods is 56% (Trafikanalys 2013d).

4.2.2 Road transports

1,6 million tonnes of goods were transported from Sweden to Poland with trucks. 1,4 million tonnes were transported from Poland to Sweden by trucks during the same time. (Trafikanalys 2013d).

Polish trucks transported 4,6 million tonnes of goods totally in Sweden in 2010, transits excluded. 2,1 million tonnes were transported exported from Sweden with Polish trucks and 1,8 million tonnes were imported to Sweden with Polish trucks. 0,7 million tonnes were cabotaged within Sweden by Polish trucks. Polish trucks accounted for 19% of the total cabotage in Sweden (Trafikanalys 2013b). Nearly all of the transports between Sweden and Poland is carried out by Polish trucks (Trafikanalys 2013c).

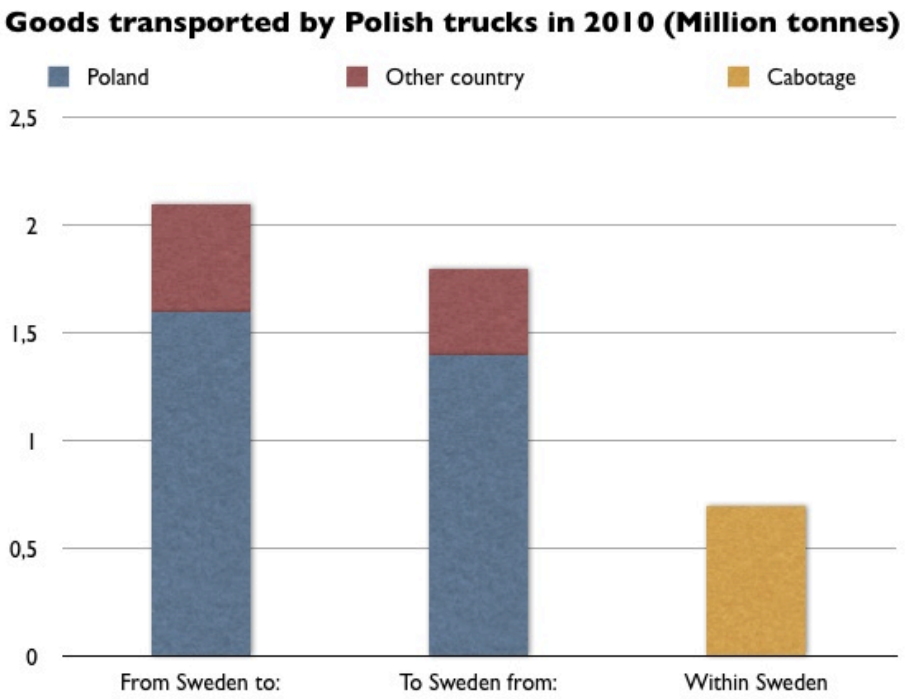

Figure 9: Goods transported by Polish trucks in 2010 (Million tonnes), (Trafikanalys 2013b)

Most of the goods that were transported with trucks from Sweden to Poland in 2010 were *"Fabricated metal products, except machinery and equipment"* (26%), *"Wood and products of wood"* (25%) and *"Chemicals"* (9%). A small part of the chemicals were transported by Swedish trucks, the rest was transported with Polish trucks. The goods that were transported with trucks from Poland to Sweden in 2010 was *"Wood and products of wood"* (23%), *"Non-specified goods"* (13%) and *"Other non-metallic mineral products"* (12%) (Trafikanalys 2013d).

In 2010, 20% of the goods that were transported to Poland by trucks were loaded in Skåne. Västra Götaland accounted for 17%, Östergötland for 13% and Stockholm for 8% of where the goods were loaded before being transported to Poland. Of the goods that were imported from Poland, 18% were unloaded in Skåne, 17% in Kronoberg, 15% in Stockholm, 12% in Östergötland and 9% in Västra Götaland (Trafikanalys 2013d).

4.3 Interviews with Swedish exporting companies

The Swedish exporting companies were found through the database Kompass http://se.kompass.com and had to be SMEs. All the Swedish companies were interviewed by telephone, due to the fact that they were located all around Sweden. The interview period was between 4th and 16th of April 2013. Below is a complete list featuring the interviewed Swedish companies and company details:

Company	Interviewee	Position	Turnover	Employees
Andrénplast	Tobias Ödgren	Responsible for logistics & delivery	16,7 MEUR	58
Colorex Sweden	Ulf Larsson	Responsible for transports	13 MEUR	46
Ehrenborg & Co	Maria Plantin	Responsible for export	11 MEUR	21
Izomaskin	Nils-Erik Helmersson	Manager & Member of board	1,5 MEUR	9
Lars Carlsson Trävaru	Anders Carlsson	Co-owner	4,2 MEUR	13
Malmsten	Eva-Marie Håkansson	Exportchef	30 MEUR	60
Thorén Värmepumpar	Thomas Thorén	Owner	1,2 MEUR	7

Table 5: Interviews with Swedish exporting companies

4.3.1 How do you arrange the transport when doing business in Poland?

"Our customer in Poland has full responsibility of the transport i.e. hiring a forwarder, which usually is Polish. We have a contract with the Incoterm EXW. This means that we are responsible that the goods are packaged and ready to be

transported while the Polish customer is responsible for insurance and the actual transport to Poland. The customer is fully responsible of hiring a forwarder. We have different contracts with different countries. To some countries we are responsible for the transport but in the case of Poland it is cheaper when the customer is responsible of handling the transport."

-Ulf Larsson, Colorex Sweden

"*After our cooperation with Business Sweden in Warsaw, which helped us with our expansion in Poland, our company received a lot of attention in several nationwide newspapers in Sweden. This resulted in that some carriers contacted us and offered to transport our goods to Poland. The carriers we use today are Freja, Robtrans and Begoma. They have varied in price and it has been different which one has had the lowest price. For a while, Robtrans was cheaper than the Nordic Freja and Swedish Begoma, but it has changed over time."*

-Anders Carlsson, Lars Carlsson Trävaru

"We mainly transport via Schenker since we use them when exporting to other markets, such as Norway and the UK."

-Thomas Thorén, Thorén Värmepumpar

"We are a sub-supplier to Volvo. J-Trans picks up the goods that are going to Poland and transports this to Arendal, where the goods from other sub-suppliers are loaded together and transported to Poland. Whether it is a Swedish or Polish company transporting from Arendal, I do not know."

-Tobias Ödgren, Andrénplast

"We usually send small shipments to Poland, which is why we use Posten, TNT or Jetpack. When we send bigger shipments we use the Incoterm EXW. I would say that most of the companies I know in my industry [machine industry], around 90%, use the Incoterm EXW. This is because it is the easiest way of doing business with a foreign country. It is also cheaper for the customer since they can take advantage of the foreign transport companies that operate in Sweden today."

-Nils-Erik Helmersson, Izomaskin

"We only want to use Swedish drivers, which is why we often use Swedish forwarders."

-Maria Plantin, Ehrenborg & Co

"We are a small family company and have chosen the easy way to transport, i.e. EXW. When we looked at expanding into Poland, the agent we worked with recommended us to use the empty trucks that run between Poland and Sweden to lower our transportation costs."

-Eva-Marie Håkansson, Malmsten

4.3.2 Do you know about ELMs?

"No, it is nothing we use or know about. The Polish customer might perhaps use them when they are searching for forwarders to transport the goods between Sweden and Poland."

-Ulf Larsson, Colorex

"No, that is nothing we know about or use. It would be the Polish carriers that know about these and use them to find empty trucks. We only call our carriers and tell them to handle the transport for us down to Poland. It is easier for us."

-Anders Carlsson, Lars Carlsson Trävaru

"No, that is nothing we know of. We have, however, been offered to use something similar that was DHL's own portal. But ELMs sound like something that we actually could think of using in the future."

-Thomas Thorén, Thorén Värmepumpar

"No, that is nothing we know about since Volvo Poland handles the transports."

-Tobias Ödgren, Andrénplast

"We do not know about it since we do not have any use of it."

-Nils-Erik Helmersson, Izomaskin

"We do not know anything about it and we would not use it. It is probably something the Polish carriers are using."

-Maria Plantin, Ehrenborg & Co

"That is nothing that I know of. But our Polish agent had an idea of how these could be used to optimize the transports."

-Eva-Marie Håkansson, Malmsten

4.4 Interviews with Polish carriers

The Polish carriers selected for interviews were first found through the Internet catalogue http://www.poland-export.pl based on preferred route of export to Sweden, then snowball sampling was used. All the companies had at least a monthly transport frequency to Sweden. Interviews were conducted in the Warsaw area in Poland during the time period 9-17 of April 2013. All but one interview were carried out face-to-face. One company interviewed by phone wished to remain anonymous in the study. Below is a complete list featuring the interviewed companies and company specific details:

Company	Interviewee	Position	Founded	Number of trucks	Employees
An Transport	Bogumiła Nowicka	Co-owner	1986	10	15
Arrowsped	Grzegorz Banaszak	Member of the Board	2000	4 own trucks & 60 subcontractors	9
B&J Auto Transport	Marzena Jaworska	Co-owner	1990	40 trucks that transport to scandinavian market	40
BIK Transport	Dawid Michalak	Manager	1990	37	10
Euro-Truck	Jarek Michalak	Transport director	1990	40 own trucks & 50-60 subcontractors	50
Raben Transport	Wojciech Jarzyński	Key Account Manager	1991	200 own trucks & 300 subcontractors	2200
Polish carrier	Anonymous	Team leader & responsible for Scandinavian transports	1991	150 own & 20-30 subcontractors	100

Table 6: Interviews with Polish carriers

4.4.1 What do you transport between Sweden and Poland?

Company	Transport Poland-Sweden	Transport Sweden-Poland
An Transport	*"Magazines & newspapers"*	*"Cellulose, steel & paper"*
Arrowsped	*"Apples, tomatoes & frozen food"*	*"Steel, wood & swings"*
B&J Auto Transport	*"Wood, glass, furniture, steel & steel structures"*	*"Aluminum, paper, stone, waste, cardboard & waste paper"*
BIK Transport	*"Pharmaceuticals"*	*"Hard to say, problems finding return loads"*
Euro-Truck	*"100% IKEA products"*	*"Air conditiong systems & fans but also 15% IKEA products"*
Raben Transport	*"Electronics, furniture & groceries"*	"*Depending on season: racks, skis & groceries"*
Polish carrier	*"Cardboard, Styrofoam, ceramics, tyres & metal plates"*	*"Waste paper, paper & metal plates"*

Table 7: What the Polish carriers transport between Sweden and Poland

4.4.2 What is your truck fill rate on return loads from Sweden back to Poland?

"We always achieve fully loaded returns."
-Bogumiła Nowicka, An Transport

"In today's competition it would not be profitable to return empty. We always return fully loaded."
-Grzegorz Banaszek, Arrowsped

"All our trucks return with a load. It varies how full they are from time to time."
-Marzena Jaworska, B&J Auto Transport

"We struggle with finding return loads from Sweden back to Poland. On average, we are able to achieve a return load on 1 of 10 routes. We transport to Sweden once a month."

-Dawid Michalak, BIK Transport

"All trucks return with a full load. However, not always directly back to Poland. From Sweden we usually transport to Holland and Germany. These clients are Swedish, Dutch and German as well as large international group as DHL."

-Jarek Michalak, Euro-Truck

"30-40% of our trucks return fully loaded."

-Wojciech Jarzyński, Raben Transport

"All of our loads return full."

-Anonymous, Polish carrier

4.4.3 How does your company do to fill the trucks from Poland to Sweden? From Sweden to Poland?

"*We have both Polish and Swedish regular clients which we have worked with closely over the years. It happens that other freight forwarders contact us on occasions as well through Trans.eu. I either call regular customers or contact forwarders at the exchange. I also cooperate with the Swedish freight forwarder Crosseurope this as they have loads and I the vehicles."*

-Bogumiła Nowicka, An Transport

"We have benefited from the contacts we have gained on the stock exchanges, Trans.eu and TimoCom. However the longer you are in the transportation business, the less significant an exchange is for your loads. We also use contacts achieved through ads on Google. Still, we do fill our returns mainly through existing contacts both in Poland, Sweden and Norway. It happens quite often that we transport goods from Sweden to Norway after dropping of loads in Sweden. On the way back to Poland from Norway (via Sweden) we transport salmon."

-Grzegorz Banaszek, Arrowsped

"Mainly through the freight exchanges TimoCom and Trans.eu and through our 23 years of experience. During this time we have developed a solid customer base

which we serve on regular basis. Customers also turn to us through our webpage."

-Marzena Jaworska, B&J Auto Transport

"We mainly use exchange portals such as Trans.eu and TimoCom."

-Dawid Michalak, BIK Transport

"80% of our shipments are in transit [not going back directly to Poland] which is how we solve the problem of empty trucks. We can return through Germany, the Netherlands or Belgium - countries that import a lot of wood from Sweden. The Polish market is too small for the trucks to only return to Poland."

-Jarek Michalak, Euro-Truck

"Mainly, our Swedish freight forwarder Leman helps us fill the return loads. However, most of the customers are Polish exporters or distributors wanting us to pick up their freight in Sweden."

-Wojciech Jarzyński, Raben Transport

"We have a large base of customers and it is usually the customers who contact us when having a return load that needs to be transported down to Poland. We possess long-term contracts with our customers and for that reason we do not have such a big problem with our return loads. Our company employs about 5-6 employees who deal with finding new customers in Poland and on foreign markets. Clients working with us today have known us for about 10-15 years, so it is a long time. We also use freight exchanges such as Trans.eu, TimoCom and Transporeon. Transporeon is the marketplace for customers to present their load and wait for the lowest bid. Usually resulting in a very low price, which is why I use Transporeon rarely."

-Anonymous, Polish carrier

4.4.4. Have you experienced any issues when transporting to Sweden? On the way back to Poland?

"The greatest difficulties are related to the low price received for transportation. On the return way it is difficult as sometimes customers barely want the offer to cover the price of the ferry back to Poland. We tend to not agree to transport for such a low price. Ferry rates and road tolls in Sweden are expensive. Fees also

exist on the Polish roads depending on a truck's ecology [if a truck is classified as Euroclass 3 or 5]."

-Bogumiła Nowicka, An Transport

"*Yes, there are difficulties as imports from Sweden to Poland are small. The Scandinavian market is generally the most difficult one in terms of return shipments."*

-Grzegorz Banaszek, Arrowsped

"Difficulties concern the absence of return loads from Sweden to Poland. The Swedish market receives a large amount of Polish goods however less is imported from Sweden to Poland."

-Marzena Jaworska, B&J Auto Transport

"Difficulties mainly concern the empty running on the way back. If a customer does not offer an adequate amount for the route we decline the offer or we simply present them with what we charge for the route and if they accept we transport, if not so be it."

-Dawid Michalak, BIK Transport

"The return from Sweden to Poland does not account for more than 700 EUR, which nearly covers the ferry, and nothing more. This due to the general lack of return loads from Sweden to Poland because of low export from Sweden to Poland. Difficulties concern the disproportion in demography and economy which lowers the amount of imports from Sweden to Poland. So the general absence of sufficient return loads is the main issue."

-Jarek Michalak, Euro-Truck

"The lack of return loads is an issue."

-Wojciech Jarzyński, Raben Transport

"Yes, we do sense difficulties because of the low amount of loads available from Sweden back to Poland. 10 years ago it was different as Polish exports were smaller and a lot was imported; now the situation is reversed. I actually see the distress with other freight forwarders who call me to ask about if I have any return loads I could give or sell them. So carriers do have problems, we try to work in best ways in order to avoid the empty running. Difficulties for us are

however associated with the constant search for new customers in order for trucks to not return empty."

-Anonymous, Polish carrier

4.4.5 Are you conducting cabotage in Sweden?

"No. However, it has happened that a Swedish client has wanted us to drive the goods to Czech Republic. Then we see to it so the truck is loaded on the way back to Poland from Czech as well, of course."

-Bogumiła Nowicka, AN Transport

"No, because we have often orders from Sweden to Norway. After dropping off the Polish goods in Stockholm we often continue with a new load from Stockholm to Norway. On the way back from Norway [through Sweden] to Poland we bring salmon. The short expire date on the fish makes it hard for us to conduct cabotage in Sweden as we must quickly return to Poland. My experience, being in the transportation industry for quite some time, is that cabotage is mainly conducted by small single Polish companies. Usually these companies have one or two trucks at their disposal or they just offer a Swedish forwarding company their truck and drive someone else's semitrailer."

-Grzegorz Banaszek, Arrowsped

"No, we have to return as fast as we can to serve our exporting clients in Poland. Besides, cabotage is not very profitable as Polish carriers conduct these at very low price already. Swedish freight forwarders offer the cabotage to a Polish freight forwarder who in turn looks for a company on the ELM who could conduct the cabotage at an even lower price. The prices for cabotage are in line with the Polish national prices so it is not very affordable. I would rather return back quickly to Poland and earn more for conducting another export/import transportation than fumbling with cabotage in Sweden. I could honestly say that when I am desperate I would rather return empty from southern Sweden to Świnoujście [northern Poland] and from there on take on a load from a Norwegian company [who delivers their goods in the harbour there] who wishes to continue inwards Poland."

-Marzena Jaworska, B&J Auto Transport

"No. It does not pay off as the distances offered to cabotage in Sweden usually are short. Short distance equals little money earned."

-Dawid Michalak, BIK Transport

"No, but the possibility exists, however we have obligations to other clients which require that our trucks return. So we need to return the truck to where it is most needed, which does not leave much room for cabotage in Sweden."

-Jarek Michalak, Euro-Truck

"As we mainly transport in southern Sweden we do not find any sense in conducting cabotage as it would force us to travel up to northern Sweden to very difficult terrain. We might get another transport there that is going down to southern Sweden again but that is not certain. In general we can only conduct three routes in Sweden after leaving Poland but we use it very rarely in Sweden. We use the possibility more often in Western Europe as we have a greater chance at matching the return loads with a client there, as there are more loads available in that region compared to Scandinavia."

-Wojciech Jarzyński, Raben Transport

"Very seldom, it often happens sporadically."

-Anonymous, Polish carrier

4.4.6 Why are you using ELMs? Why not?

"We use them when we find a need perhaps once a week. The subscription fee is 1300 PLN annually and then we have unlimited access to all countries that are on the marketplace. Usually it is freight forwarders that announce available loads which is why we tend to use the portals on the return way."

-Bogumiła Nowicka, An Transport

"Because it allows us to quickly find available goods."

-Grzegorz Banaszek, Arrowsped

"We use them to access potential loads. This helps us in our return loads to some extent. It is an easy way to connect with people and access loads."

-Marzena Jaworska, B&J Auto Transport

"Because of fast realization and negotiation of empty loads."

-Dawid Michalak, BIK Transport

“They give access to available loads and possibilities for quarterly payment rather than a percentage by each obtained load.”

-Jarek Michalak, Euro-Truck

“To look for return loads from Sweden to Poland if our client has given his consent. However we use the exchanges very seldom, perhaps in 5 % of our returns. In general we have a policy to not use them as our company is not a typical broker.”

-Wojciech Jarzyński, Raben Transport

“Yes, I use it when my sub-contractor cancels a transport in the last minute. Then I usually use Trans.eu and contact only those companies I rely on, whom I already know and have cooperated with in the past.”

-Anonymous, Polish carrier

4.4.7 Why do you choose one ELM over another?

Company	Which ELM does your company use?	Why do you choose these ones instead of others?
An Transport	*Trans.eu (Used TimoCom earlier, but stopped when the company changed)*	*"Because Trans.eu is more popular and has become the most well-known exchange over the years. There are also more announced available goods there."*
Arrowsped	*TimoCom, Trans.eu & Smartfrigo. "We recently started using Smartfrigo."*	*"Because it is more accessible* [*has more users*] *and because it allows me to filter the parameters that are of interest to me. For example, I can filter the geographic destination, dates, distance and even the maximum amount of empty running. When the portal finds a suitable load I am informed. This way, I don't have to monitor the portal for available loads all the time."*
B&J Auto Transport	*Trans.eu & TimoCom*	*"TimoCom is better known in Europe, however, Trans.eu is used by more companies and Polish companies in particular. At Trans.eu there is also more available loads."*
BIK Transport	*Trans.eu & TimoCom*	*"We mainly use exchange portals such as Trans.eu and TimoCom. There are others but these two are the best since they are used by most companies and have the largest client base."*
Euro-Truck	*Trans.eu, TimoCom & Transporeon*	*"I think that since TimoCom has over 100,000 users people are satisfied with the exchange overall"*
Raben Transport	*Trans.eu & TimoCom*	*"Because they are the most commonly used"*
Polish carrier	*Trans.eu, TimoCom & Transporeon*	*"I mostly use Trans.eu as many shippers and carriers announce their loads there. There are also more goods announced there"*

Table 8: Why Polish carriers choose one ELM over another

All of our interviewees said that the two ELMs they use are Trans.eu and TimoCom. These seem to be the two dominant ELMs that are being used in Poland. Two of our interviewees also mentioned Transporeon, but that they use it less regularly. There is a clear similarity in the answers when asking why they prefer these. Mainly, the reasons are that these two ELMs have the most users and most announced loads.

4.4.8 How have ELMs helped you in achieving return loads from Sweden to Poland?

"The rating helps to evaluate a company's reliability and if it is paying its bills. If I am unfamiliar with the company I check the opinions if it has any negative ratings. If they are negative I do not take the load. If someone has a positive opinion I will bid on the load."

-Bogumiła Nowicka, An Transport

"I may quickly find return loads through the exchange."

-Grzegorz Banaszek, Arrowsped

"They do create a certain amount of understanding of the other party and provide access to information about available loads. The online access allows us to see what happens on the exchange in real time. We can thus quickly negotiate about price through the chat function. Ranking helps us in evaluating the client. The chat history archive helps us to keep track of discussions; if our short-term memory fails we can always go back in the conversation history."

-Marzena Jaworska, B&J Auto Transport

"We do not need to phone as much and carry out negotiations through phone. We are able to quickly and efficiently close a deal for a load online. The freight exchange helps to some extent to fill the trucks that would otherwise go empty from Sweden. Sweden is a difficult market because even at TimoCom and Trans.eu there are little announcements regarding available loads from Poland to Sweden and the other way around. Today [09.04.2013] there are for example only 7 uploaded offers. In Germany there are many more."

-Dawid Michalak, BIK Transport

"The exchange helps us with our return loads but most of our return loads are achieved thanks to my existing contact at IKEA and other clients. Besides, exchanges help to gain contacts for future transports, and then we do not have to

use the exchange anymore but contact each other directly. I have perhaps obtained 5 such contacts over the years thanks to the exchange."

-Jarek Michalak, Euro-Truck

"We use the exchanges very seldom, perhaps in 5 % of our returns. In general we have a policy to not use them as our company is not a typical broker. We use the exchanges in extreme situations when searching for return loads from Sweden to Poland if our client has given his consent."

-Wojciech Jarzyński, Raben Transport

"We have to put a lot of time and effort to find the customers who want shipments from Sweden to Poland. Sometimes the freight exchange helps when our ordinary sub-contractor that we hire is sick or cannot carry out the transport. Then we search for those we know at the portal and see if they are available."

-Anonymous, Polish carrier

4.4.9 Do you find any drawbacks with using the ELMs? What is positive about ELMs?

"The easy access to loads is positive. Trans.eu has vindication of companies so if a company does not pay their bills the portal blocks the user's access. The disadvantages are that you sometimes find dishonest people operating at the exchange. However, it happens quite seldom to us as we try to evaluate the company's reliability based on the portal opinions."

-Bogumiła Nowicka, An Transport

"Pros: you can quickly find the loads, I can filter the data at desirable parameters, an alert function which notifies me when there is an available load I might be interested in. additionally, Trans.eu has a rating system which serves as a verification of companies. Cons: there are many fraudsters. The accessibility has resulted in shortage of available goods as information is being spread very quickly. This has resulted in highly competitive prices. This has benefited the customers [exporting companies] but not us carriers. The widespread accessibility has on the other hand welcomed more customers to the site, which I appreciate."

-Grzegorz Banaszek, Arrowsped

"I appreciate the access to available loads, the ranking system and access to other user's opinions. I like that I can come in contact with others quickly and the portals' chat history as well as uploaded documents confirming a company's reliability. The main disadvantage is the so-called "beauty contest"' that is, companies that announce their loads tend to bargain down the price for transportation to absolute minimum. Lowest bid wins the "beauty contest". Despite the fact that the portal provides documents that are supposed to raise certain confidence for the company, we still find many fraudsters. The companies are not always reliable when it comes to payment. We give our clients 60 days of payment time. It is quite long and hard to do in other way as this is how the industry is dealing with the lack of return loads. Unfortunately, we also have many on-going lawsuits regarding customers' lack of payment; many of them with court decisions not allowing us to get any money back as the company does not have anything left to pay us with."

-Marzena Jaworska, B&J Auto Transport

"There exist cases of companies consisting of one self-employed person which has taken some connections from a former employer and now operates independently. These fraudsters usually have specific nicknames and have very few positive opinions registered on their account. We tend to avoid these. There are also a lot of companies with positive opinions registered which we know we can rely on which is the positive side of a ranking system. I see the biggest drawbacks on Trans.eu. TimoCom is in comparison to Trans.eu better as it works more smoothly, perhaps because it is a more closed marketplace. At Trans.eu I see a lot of small businesses which unfortunately do not bring confidence in the marketplace or for the specific companies. Then there is the 30 day trial period at Trans.eu which allows many to register for different intentions. Transport services have become less and less profitable today; it is becoming increasingly difficult. Our service rates are the same as 10 years ago but the fuel prices have grown not to mention that taxes are a big expense. The increasing amount of freight exchange portals does unfortunately not help us as they lower our profit margin to a minimum. However, the portals do bring fast business negotiations."

-Dawid Michalak, BIK Transport

"The access to available loads is positive and that I can filter areas of interest by date, region and volume in tonnes. The portal helps in establishing new contacts and reduces the expense of international phone calls. I like that there are no disturbing ads on the portals. The negative aspect is that I do not always get an

answer when bidding on an offer. I personally have not had any problems with non- paying customers. Overall the exchanges are a pretty good tool for finding return loads."

-Jarek Michalak, Euro-Truck

"The biggest drawback is that the [producing] firms can buy a subscription and use the portal to post their goods needed to be transported. Then the firms create tenders were lowest bid wins leaving very little room for our profit. The positive side of freight exchanges is the overall access to carriers and loads. The reliability of the portals I think is quite good because we can see the history of the company, accompanied by documents when the company was founded and if it is insured. All information on the portals is quite accessible. We can also look at the reviews of individual firms as people may leave a comment if happy or dissatisfied with the transaction. This type of detailed information I have only seen provided on Trans.eu."

-Anonymous, Polish carrier

4.4.10 How could the ELMs be improved to fill your trucks from Sweden to Poland?

"I do not find any need for improvement, Trans.eu meets all my needs."

-Bogumiła Nowicka, An Transport

"I would like to see improved verification of companies. The current actions taken against non-paying companies are too poor. Sometimes you have to wait up to 10 days before the portal blocks the user; allowing the fraudsters to collect further debts."

-Grzegorz Banaszek, Arrowsped

"I would perhaps suggest to invite more companies [producing companies or exporting companies] and offer them to post their goods directly on the exchange."

-Marzena Jaworska, B&J Auto Transport

"Verification of the companies [operating on the freight exchange] should be better because the freight exchange itself does not take any responsibility for the transport. I also think that the regulations can be improved or maybe a central freight forwarder can create an own exchange. This would create a more closed

platform with fewer users but would on the other hand limit the amount of fraudsters."

-Dawid Michalak, BIK Transport

"I cannot come up with anything. I think that since TimoCom has over 100 000 users people are satisfied with the exchange overall."

-Jarek Michalak, Euro-Truck

"Freight exchanges should be kept exclusively for forwarding companies and not for individual firms [exporting companies] in order to avoid cheap tenders otherwise created by them."

-Anonymous, Polish carrier

4.4.11 Do ELMs help your company to...

4.4.10.1 Find more customers with less effort?

"The exchange makes it easy to find loads and to find them to a lower cost."

-Bogumiła Nowicka, An Transport

"They do lower cost because you can make all contact through Internet which eliminates expensive phone calls."

-Grzegorz Banaszek, Arrowsped

"Yes, they certainly do. But I would rather say they help us in finding more available loads rather than customers. In the past, more was carried out through phone calls and even direct contact. I remember times when just waiting by the phone for a customer to call back with an available load. Today the stock market helps in achieving more loads with less effort by the Internet's connectivity."

-Marzena Jaworska, B&J Auto Transport

"The freight exchanges help us to get to know the right people which we potentially could get involved with for further partnerships. Before this, we used to call our clients and large forwarding companies."

-Dawid Michalak, BIK Transport

"It helps to achieve more return loads but not more customers as they do not use the big portals, exchanges do not help in finding more customers. They do help

achieve more loads at a lower cost because we do not have to call freight forwarders abroad."

-Jarek Michalak, Euro-Truck

"The portals do not help us in achieving more customers at a lower cost, as finding client on our own through phone and personal meetings are still better. Personal contact is more reliable because the client knows who he/she is dealing with and what the company is representing. Personal contact is much better."

-Anonymous, Polish carrier

4.4.10.2 Have trust in the other party?

"To some extent yes, through the opinions and ratings. However, there will always be fraudsters."

-Bogumiła Nowicka, An Transport

"To some extent, since each company is verified when registered. We also have some parameters of our own when evaluating a company's trustworthiness. Trans.eu helps to evaluate these as it provides us with a ranking system. The verification, however, does not always work as smoothly as it should. Sometimes, it may take up to 10 days for a scammer to be blocked from the portal."

-Grzegorz Banaszek, Arrowsped

"Not necessarily since we always have fear of companies that deliberately mislead in order not to pay for transports. There is also the fact that everything on the portal happens really fast. Even if we do have access to opinions and documents proving reliability, one does not have the time to check it out carefully as we have to decide immediately if whether we take the load or not. There are always people interested in the loads and decisions need to be made instantly, during less than half a minute otherwise, someone else will take the offer."

-Marzena Jaworska, B&J Auto Transport

"Not really, because there are many fraudsters and small businesses that have only one single positive opinion registered at the freight exchange. These firms are usually fraudsters who try to get as much transported within 45-60 days without paying. They create a temporary company and use the invoicing time of 45-60 days to make as much scams as possible and then disappear. No one is really willing to go to court with these kinds of matters. We also have the companies that only register for the free trial month at Trans.eu to transport as

much as possible during that time and then they ignore to pay the carriers. Usually, one detects these kinds of companies through their nickname/portal name. We try to avoid these companies but sometimes it is better to use a company like this rather than returning empty back."

-Dawid Michalak, BIK Transport

"In repeatable transactions and if someone pays regularly, yes."

-Jarek Michalak, Euro-Truck

"To some extent yes, through Trans.eu's rating system and the attached documents verifying the company and its insurance. Only Trans.eu provides this kind of detailed information."

-Anonymous, Polish carrier

4.4.10.3 End negotiations faster?

"Yes, because information is exchanged rapidly. I can immediately ask for price and payment day in the chat. This is an advantage when negotiating as everything happens in real time. However, I still do call the customer to whom I am to transport the goods to, to check the best time for delivery."

-Bogumiła Nowicka, An Transport

"We can negotiate about the price faster through the portal than over phone."

-Grzegorz Banaszek, Arrowsped

"Yes definitely, due to the instant chat where I can get an answer fast."

-Marzena Jaworska, B&J Auto Transport

"It varies from time to time and depends on people's reactions. Sometimes negotiations can be closed quickly and sometimes it takes longer time. However the instant chat function on Trans.eu allows contacting the customer right away. If the customer is quick to respond we can get a price quickly and negotiate the terms of transport. In this way we are sometimes able to end negotiations in less than one minute."

-Dawid Michalak, BIK Transport

"The exchanges are not designed to negotiate but to find loads. If I find an available load I do not negotiate about the price, I just take it. Otherwise someone else will take it. It is hard as it is to find a return load from Sweden."

-Jarek Michalak, Euro-Truck

"No. I think that negotiating on portals is highly unprofessional. Especially for a major company like mine it is perceived as highly unreliable to conduct price negotiations online. In such situations I prefer personal contact or phone."

-Anonymous, Polish carrier

4.4.10.4 Facilitate the planning of your transport?

"To some extent, but not in order to plan for days or weeks ahead."

-Bogumiła Nowicka, An Transport

"Sometimes yes, through the parameters that I can choose upon which the portal later notifies me."

-Grzegorz Banaszek, Arrowsped

"No, because the exchange is seen as a last hope where loads are posted in last minute if available, which does not allow planning the return trips weeks or days ahead. We very rarely manage to plan for a return trip weeks or days ahead through the portal."

-Marzena Jaworska, B&J Auto Transport

"I would say it in another way – the freight exchanges help us to return less empty for little money, unfortunately. Sometimes, the customers in Sweden offer a load to Poland for poor money; at a rate that would not even be profitable on a route in Poland. The offered rates sometimes do not even cover the cost of the ferry or taxes which, unfortunately, are expensive."

-Dawid Michalak, BIK Transport

"No, because you have to make up your mind right away whether to take the cargo or not. The driver is in Sweden at the most for one day, then he returns. Exchanges help us with the returns and when we are in transit but they do not help us to plan ahead for days or weeks."

-Jarek Michalak, Euro-Truck

"Only in emergencies when my subcontractor gets sick the portal helps me to plan a substitute transport."

-Anonymous, Polish carrier

4.4.10.5 Do better business with Swedes?

"You will always find people who are dishonest no matter culture and nation. I do not feel uncomfortable when it comes to cooperating with Swedes. We communicate well in English. Additionally, there are Swedish companies employing people who speak Polish. It is usually people who have emigrated from Poland to Sweden, so that makes our contact with the Swedish side easier as well. But the typical Swede does not use exchanges as they rather contact the Polish or Swedish freight forwarder directly."

-Bogumiła Nowicka, An Transport

"Yes, because you can more easily come in contact with them but in general there are very few Swedish companies on the exchanges so it is really hard to tell. I do not feel any discomfort when doing business with Swedes; it is no difference from doing business with Poles. Language wise we manage in Polish as Swedes sometimes hire Poles in their companies or we just get along speaking English."

-Grzegorz Banaszek, Arrowsped

"I do not know as most of our clients are Polish. The reason why we do not conduct so much business with Swedes might be because the Swedish exporting companies prefer Swedish carriers. In general I see very few Swedish [exporting] companies posting on the freight exchanges."

-Marzena Jaworska, B&J Auto Transport

"Hard for us to say, because we do not have direct contact with Swedish companies. The companies we come in contact with that wish to transport from Sweden to Poland are often Polish."

-Dawid Michalak, BIK Transport

"Most of the companies on the freight exchanges are Polish so it is hard to talk about business with Swedes. We have a permanent contract with IKEA since 15 years back. The IKEA cooperation is working well and people who work at IKEA in Poland are Poles so we do not find any difficulties business wise."

-Jarek Michalak, Euro-Truck

"I find working with Swedes to work very well. We have no language barriers as everyone speaks English. Swedes have clearly defined rules and principles and working with them is not stressful. We can always come to an agreement even in difficult situations. However I do not encounter many Swedish clients or

forwarding companies on the freight exchanges. Freight exchanges on their own do not make it easier to conduct business with Swedes."

-Anonymous, Polish carrier

4.4.10.6 Increase the fill rate?

Company	Do ELMs help your company to increase the fill rate?
An Transport	*"Yes, the exchange helps me 1-2 times out of 10 in finding a return load"*
Arrowsped	*"Yes,the freight exchange helps us in about 20 % of the returns. The rest 80 % is achieved through previous contacts, some of which we originally acquired through the exchange."*
B&J Auto Transport	*"Yes"*
BIK Transport	*"Yes, but on average we only manage to fill return loads on 1 out of 10 trips to Sweden. Instead we present the customers with a price that already has calculated with an empty return."*
Euro-Truck	*"Yes, It helps us with our return loads about 3 times out of 10"*
Polish carrier	*"I think not. Not to full extent since Swedes who know we will conduct the transport reliably have no reason to turn to a freight exchange, when they already have confidence in us."*

Table 9: Do ELMs help to increase the fill rate?

5. Analysis

We will in this chapter use our theoretical evaluation framework to evaluate the ELMs. We begin by determining the architecture of the two ELMs we have focused on. Each criterion in the framework will be analyzed together with the empirical data to determine how well the ELMs fulfill their objectives.

5.1 ELM architecture

5.1.1 Open or closed?

Open marketplaces are characterized by exchanging transportation of goods with a single mode of transportation. Trans.eu and TimoCom are freight exchanges solely focused on linking road transports with various goods. Both ELMs have the possibility to gain a large number of users as any company can register given they pass the verification process. Different security actions are taken by both ELMs in order to secure authenticity. The above along with the limited amount of collaboration and information sharing among users indicate that Trans.eu and TimoCom, are more open marketplaces. The only argument that could indicate that Trans.eu and TimoCom are closed marketplaces is the verification process, which can exclude companies. Overall, both ELMs are open marketplaces.

5.1.2 Which transaction phases are covered?

Both Trans.eu and TimoCom covers the *information phase* by providing a way of sharing information. The *negotiation phase* is covered in two ways. The possibility to chat between users is one. The other is when a user uploads an offer and other users are invited to bid on it, then the negotiation is managed to a higher extent on the ELM. Trans.eu, however, also covers the *after-sales phase*, since their rating system can be seen as an evaluation of the transaction. The most important phase that Trans.eu and TimoCom focuses on is the information phase. Without that phase, the most basic goal of an ELM cannot be achieved.

5.2 Evaluation of Trans.eu & TimoCom

5.2.1 Balance the flow of goods

The total value of the goods that are imported from Poland to Sweden have a higher value than the exported goods, indicating an imbalance in the flow of goods. However, looking only at the

value does not give an accurate view, since some goods are more valuable (in SEK) than others with the same weight. With both the value and the weight of the goods transported between the two countries taken into account, there seems to be a slight imbalance in the total flow of goods between Sweden and Poland. More goods are imported to Sweden than exported.

The flow of goods between Poland and Sweden by trucks is different from the total flow of goods. The goods exported in 2010 from Sweden to Poland, by trucks, weighed 14% more than what was transported in the opposite direction. Unfortunately, we have not been able to find any statistics regarding the value of goods transported by road. Looking at the weight only, which can be misleading, there should not be any trouble finding return loads for Polish trucks. This is inconsistent with the responses from our interviewees. Five of the interviewed Polish carriers emphasized the lack of goods from Sweden to Poland as an issue. There is a logical explanation to the conflicting indications. The goods that are transported from Sweden to Poland have a higher density than those that are transported in the opposite direction. More trucks transport goods to Sweden from Poland than the other way around and the imbalance makes it difficult to fully utilize the trucks transporting between Sweden and Poland.

The ELMs can make it easier to transport goods internationally but it is the basic demand of international goods that determines the actual flow of goods. However, it is out of the ELMs control to affect the flow of goods between two countries, as it is determined by the basic demand of international goods. In the case of Sweden and Poland the objective is not fulfilled, but it is not because of a failure in the design of the ELMs.

5.2.2 Link trucks with compatible goods

In order for goods to be transported by truck, the goods and the truck have to be compatible with each other. If the flow of goods between the countries is of the same type, then chances are that the compatibility is good as well. No compatibility issues seem to exist between the goods and the trucks that transport between Sweden and Poland. All of the carriers we have interviewed transport different goods in each direction. Even Arrowsped, which transported food in one direction, could transport steel and wood products on the way back. There are opportunities to link trucks with goods that are compatible, and the ELMs do provide help to exploit these. When posting on both Trans.eu and TimoCom the users have the opportunity to describe the characteristics of the truck or the goods, to ensure the compatibility. This objective is fulfilled.

5.2.3 Link excess capacity with the right amount of goods

The basic idea of an ELM is to post the excess capacity a carrier has or how much goods a shipper wants to transport. We have examples of how this is fulfilled in our interviews. The

anonymous Polish carrier responded that they especially use ELMs when something unexpected happens and a transport is cancelled. In those situations they use ELMs to quickly find an alternative. It is an example of how the ELMs are faster than the more traditional ways, e.g. personal contacts or telephone calls, when time is limited. As mentioned earlier, it is possible to post the capacity or amount of goods that are to be transported on both TimoCom and Trans.eu. This objective is fulfilled and shows that both ELMs might be more effective than the traditional ways of finding backhauls, especially when something unexpected happens and time is limited.

5.2.4 Reduce distance to a backhaul

Each carrier's situation is different when searching for a backhaul. For ELMs to reduce the distance to a backhaul, they have to provide backhaul alternatives that are close to the original delivery point. The distance to a potential backhaul must be close to the original delivery point to be more attractive, according to the conical backhauling principle (See figure 6). ELMs can reduce this distance by ensuring that as many transports as possible are posted. The more offers that are posted on an ELM, the bigger are the chances that a carrier finds a backhaul that is closer. The fact that both TimoCom and Trans.eu have more than 90,000 offers posted each day indicates that they help carriers to get information about more potential backhauls than the more traditional ways of finding backhauls. Theoretically, this objective is fulfilled, but we cannot prove it empirically. We have unfortunately not received any information from our interviews if the carriers' actual distance to a backhaul is reduced.

5.2.5 Help to enable more advanced ways of backhauling

Many different ways of backhauling seem to be in action between Sweden and Poland. Most carriers mainly backhaul from Sweden to Poland through the rectangular way of backhauling (See figure 5).

Only one of the interviewees answered that they perform cabotage in Sweden and that it was very seldom. There are many reasons why the Polish carriers did not perform cabotage in Sweden. One reason is that the distance offered to cabotage in Sweden is generally short, resulting in a low profit. Another reason is that the carriers focus on their regular clients. Therefore, they return the truck to where it is needed as soon as possible. Interestingly, the official statistics show that Polish carriers do perform cabotage in Sweden. One of our interviewees had an explanation. The carriers performing cabotage are usually small single carriers that only have one or two truck. None of the carriers we interviewed were that small, which explains why we did not encounter any Polish carriers conducting cabotage in Sweden.

Two carriers that mainly used rectangular backhauling had problems finding return loads. Three other carriers used the rectangular way of backhauling and succeeded with finding return loads. Hence, the rectangular way of backhauling has the potential of fully utilizing trucks. The carriers' ability to fill their trucks is not only dependent on which way of backhauling that is used. Other factors influence as well, such as existing client base and strong relationships with customers. The two carriers that had problems finding return loads might gain more return loads by utilizing more advanced ways of backhauling. Since the distance between the shipping point in Poland and the delivery point in Sweden is far, it also allows a longer acceptable deviation from the original route to pick up a backhaul.

Two companies had other strategies. After delivery in Sweden, Arrowsped sometimes picked up a backhaul destined for Norway. In Norway, Arrowsped delivered the backhaul and picked up another backhaul for transportation to Poland. Arrowsped backhauled more than once before returning to their base in Poland. This is an example of multiple backhauling (See figure 5).

Euro-Truck had a different strategy. They solved the problem of finding return loads to Poland by having their trucks return through Germany, the Netherlands or Belgium. This also is an example of multiple backhauling. Both of these companies answered that they always returned full, showing that multiple backhauling works well and has the potential to fully utilize trucks. By using Trans.eu and TimoCom more advanced ways of backhauling are available. They give access to a greater number of offers, not only in Sweden. Both Trans.eu and TimoCom can help carriers to achieve the contacts that are necessary to become more advanced in their backhauling operations. The objective is fulfilled.

5.2.6 Lower transaction costs by:

5.2.6.1 Assembling information?

One of the benefits of IT systems is the possibility to gather and process large amounts of information. At both TimoCom and Trans.eu it is easy to search through thousands of offers in a matter of seconds. The Polish carriers believe that the ELMs manage to collect information about loads in a convenient way. *"It allows us to quickly find available goods"* as Grzegorz Banaszek at Arrowsped mentioned. The carriers can reduce the number of international telephone calls that were formerly made. One Polish carrier responded that they use the ELMs in cases when something unexpected happens and they quickly need to find a new load. Another Polish carrier responded that they still used phone and personal meetings because it was more reliable, despite the fact that it might be more expensive. Overall, both Trans.eu and TimoCom assemble

information faster than the traditional ways of assembling information regarding potential backhauls.

5.2.6.2 Making the bargaining process more effective?

One Polish carrier said that they sometimes were able to sell a load in less than one minute, which must be seen as quite amazing. However, one carrier believed that negotiating on a portal was highly unprofessional and preferred to rely on the traditional bargaining. The ELMs are helping to accomplish a faster negotiation phase, according to our interviews. The instant chat function on both Trans.eu and TimoCom seems to be the main cause.

5.2.6.3 Monitoring performance?

The rating system that Trans.eu has and the corresponding system at TimoCom, where users inform if a company does not fulfill its financial obligations, are both examples of how ELMs monitor the performance of users. These services focus mainly on monitoring the financial aspects of the performance of a company. If users do not fulfill their financial obligations Trans.eu and TimoCom provide the security measure of suspending users from the ELM.

Trans.eu provides on the contrary to TimoCom a rating system which helps users monitor each other. This additional security measure helps to evaluate a company's credibility. Our interviews have shown that the Polish carriers take the ratings seriously and do not do business with anyone who has received bad ratings. Overall, both ELMs seem to help monitor the performance of the users. However, Trans.eu's rating system provides an additional security measure which makes its monitoring of performance slightly better than TimoCom.

5.2.6.4 Decrease opportunism?

The security measures taken by both Trans.eu and TimoCom reduce some of the opportunistic behavior by the users but not completely. Fraud is still a big problem on both ELMs. The security measures aim at increasing the transparency between the users. 4 of our interviewees mentioned fraud as a problem when using the ELMs. The possibilities to act opportunistically are greater on the ELMs. It is easier to withhold information or falsify information, compared to when doing business in more traditional ways in the transportation industry. David Michalak mentions companies that register for the free trial month at Trans.eu to transport as much as possible during that time and then they ignore to pay the carriers. It may take up to ten days for the portal to block a scammer. According to the respondents the security measures taken by TimoCom and Trans.eu are not good enough to decrease opportunism.

5.2.7 Induce trust in the other part of the transaction

Many of the Polish carriers appreciate the security functions available on Trans.eu and TimoCom. However, they are still very careful when using the ELMs and do bear in mind the great amount of fraudsters. The verification of companies at Trans.eu and TimoCom are security measures that help to induce trust in the other party, by controlling every company's financial credibility at the registration phase. One company mentions that, although information which could help to increase the trust in a company is available, they do not always have time to check a company's verification documents. The reason behind this is because decisions need to be taken immediately when negotiating. This example shows how Trans.eu and TimoCom have provided information to help increase the trust but the user chooses not to take advantage of it.

Trans.eu has taken the security measures one step further by providing its users with a rating system. After each transaction the user is given a possibility to give his or her opinion about the carrier or shipper. These opinions are visible on the ELM to other users and serve as indications about the user's credibility. TimoCom does not provide such a rating system.

Overall, trust is a very important part for the ELMs to work well and it seems that users are not satisfied enough. One of the interviewees even mentioned ongoing lawsuits due to former ELM-clients' unpaid debts, indicating that traditional ways of obtaining backhauls through personal contacts induce more trust in the other party than contacts obtained through the ELMs. Security measures, such as TimoCom's in-house debt collections department, still need to be improved in order to be an effective alternative to court proceedings. Neither Trans.eu nor TimoCom completely fulfill the objective of inducing trust.

5.2.8 Reduce cultural differences

When Swedish companies export goods to Poland the Incoterm EXW is mostly used, according to the Swedish companies we have interviewed. By using the Incoterm EXW, the Swedish companies transfer all responsibility to the Polish company to arrange the transport of the goods from Sweden to Poland. Only one Swedish company was responsible for arranging the transport to Poland. Another company claimed that 90% of the companies in the machine industry use EXW when transporting to Poland. Overall, it seems that the use of EXW is widely spread when exporting to Poland and it is the Polish carriers that are responsible for the transportation between the two countries. Data from the Swedish road transportation department confirm that only Polish carriers transport between Sweden and Poland.

One Swedish interviewee said that they use different Incoterms when trading with other countries but that EXW is the most advantageous when exporting to Poland. This, because Polish carriers are cheaper than their Swedish counterparts. It is therefore in the interest of both the

Swedish and Polish companies' to use the Incoterm EXW as both parties can lower their cost of transportation. Hence, Polish companies hire Polish carriers and the total cost of transportation is decreased.

With only Polish carriers operating the route Sweden-Poland there is too little interaction between Poles and Swedes to determine whether the ELMs can reduce cultural differences or not. The interviewees did not indicate cultural differences as an issue when doing business with Swedes, due to the fact that Swedish exporting firms are not present at Trans.eu or TimoCom. It is thus hard to draw any conclusions about whether Trans.eu or TimCom reduce the cultural differences between Sweden and Poland. Consequently, the objective is not of relevance when both carrier and shipper are from the same country.

5.2.9 Reduce language barriers

For the same reasons as with the cultural differences, language is not an issue when transporting to Sweden. The Polish carriers rarely interact with Swedes, according to the Polish carriers. Also, there are Swedish companies employing Polish speaking personnel according to Bogumiła Nowicka. Both Trans.eu and TimoCom support many languages and they might reduce the language barrier. Unfortunately, we cannot draw any conclusions regarding their effectiveness. The objective is not of relevance when both parts share the same native language.

5.2.10 Help to determine backhaul markets

If an ELM is to help identify backhaul markets, it must facilitate the steps in the model (see figure 7) inspired by Mentzer (1986). Neither Trans.eu nor TimoCom can help *identify high-delivery counties*, *identify net producer counties* or *match high delivery counties with net producer counties*. However, the last three steps may be facilitated by Trans.eu and TimoCom. Step four, *identify shippers operating in key counties,* is essentially the goal of the ELMs - to identify shippers in certain locations. Both Trans.eu and TimoCom have a verification process that supports step five, *qualify shippers*. The last step, *contact shippers and negotiate to enhance carrier backhauls,* is also facilitated. The chat function on both ELMs helps users to quickly contact each other and negotiate. David Michalak confirms this by saying: *"The instant chat function on Trans.eu allows contacting the customer right away. If the customer is quick to respond we can get a price quickly and negotiate the terms of transport. In this way we are sometimes able to end negotiations in less than one minute."*

The ELMs do not make the entire process of determining backhaul markets easier. However the last three steps of the model; *identify shippers operating in key counties, qualify shippers, contact shippers and negotiate to enhance carrier backhauls* are facilitated by using Trans.eu

and TimoCom. Overall, Trans.eu and TimoCom partly fulfill the objective of helping to determine backhaul markets.

5.3 Evaluation framework applied on Trans.eu and TimoCom

Table 10 and 11 presents our evaluation framework applied on Trans.eu and TimoCom as a summarizing part of the *Anlysis* chapter.

	ELM architecture	Data collection	Trans.eu	TimoCom
1	Is the ELM open or closed?	ELM websites & interviews	Open	Open
2	Which transaction phases does the ELM cover?	ELM websites	Information phase, negotiation phase & after-sales phase	Information phase & negotitation phase

Table 10: ELM architecture framework applied on Trans.eu and TimoCom

	Objectives of an effective ELM	Criteria to measure how well the objectives are fulfilled	Data collection	Objective fulfilled?	
				Trans.eu	TimoCom
1	Balance flow of goods	Help balance the flow of goods in both directions	Official statistics & interviews	Not possible to fulfill	Not possible to fulfill
2	Link trucks with compatible goods	Provide opportunities to describe the characteristics of the truck or the goods	Interviews & ELM websites	Yes	Yes
3	Link excess capacity in trucks with the right amount of goods	Provide information regarding excess capacity and goods	Interviews & ELM websites	Yes	Yes
4	Reduce distance to a backhaul	Provide more backhaul alternatives	ELM websites & interviews	Insufficient data	Insufficient data
5	Help to enable more advanced ways of backhauling	Provide information about potential backhauls	Interviews & ELM websites	Yes	Yes
6	Lower transaction costs	Assemble information	ELM websites & interviews	Yes	Yes
		Make bargaining process effective		Yes	Yes
		Monitor performance		Yes	Yes
		Decrease opportunism		No	No
7	Induce trust in the other part of the transaction	Provide tools that increase trust	Interviews & ELM websites	No	No
8	Reduce cultural differences	Enable shared management practices	Interviews	Not applicable	Not applicable
9	Reduce language barriers	Provide tools for users to communicate easier	Interviews	Not applicable	Not applicable

10	Help determine backhaul markets	By facilitating the process of determining backhaul markets	ELM websites, interviews	Yes	Yes

Table 11: Evaluation framework applied on Trans.eu and TimoCom

6. Conclusions

This chapter presents the conclusions from our evaluation of Trans.eu and TimoCom. We also suggest improvements of the ELMs and raise critique towards our theoretical evaluation framework. Finally, we present suggestions for future research based on our study's results and limitations.

In our research question we asked whether ELMs can reduce the empty running of trucks between Sweden and Poland. To answer this question, we identified objectives of an effective ELM, based on existing theory and created a theoretical evaluation framework. By analyzing which of these objectives that are fulfilled, we have been able to evaluate Trans.eu's and TimoCom's ability to increase international backhauling. Our explorative study suggests that the ELMs do provide some opportunities to increase international backhauling. Furthermore, Trans.eu and TimoCom should be seen as a complement to the traditional ways of doing business. More detailed results and conclusions can be found in the previous chapter.

6.1 Fulfilled objectives

Trans.eu and TimoCom *link trucks with compatible goods*. Furthermore, the objective *link the right excess capacity with the right amount of goods* is fulfilled by both ELMs.

Trans.eu and TimoCom can help to execute the last three steps in *determining backhaul markets* (figure 10). Those three steps are essentially the basic mission of the ELMs.

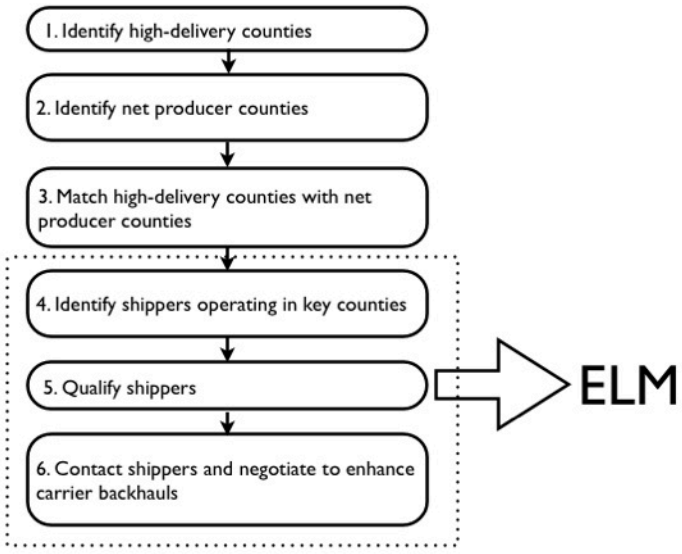

Figure 10: Development of model by Mentzer (1986)

Trans.eu and TimoCom can *help to enable more advanced ways of backhauling* by providing carriers with necessary contacts and information regarding users and available loads. When interviewing the Polish carriers we realized that the model presenting different ways of backhauling (figure 5) was not detailed enough to reflect reality. We have thus developed the model to fit an international context more accurately (figure 11). These developments are introduced as an attempt to explain how some of the Polish carriers solved the problem of finding return loads from Sweden to Poland.

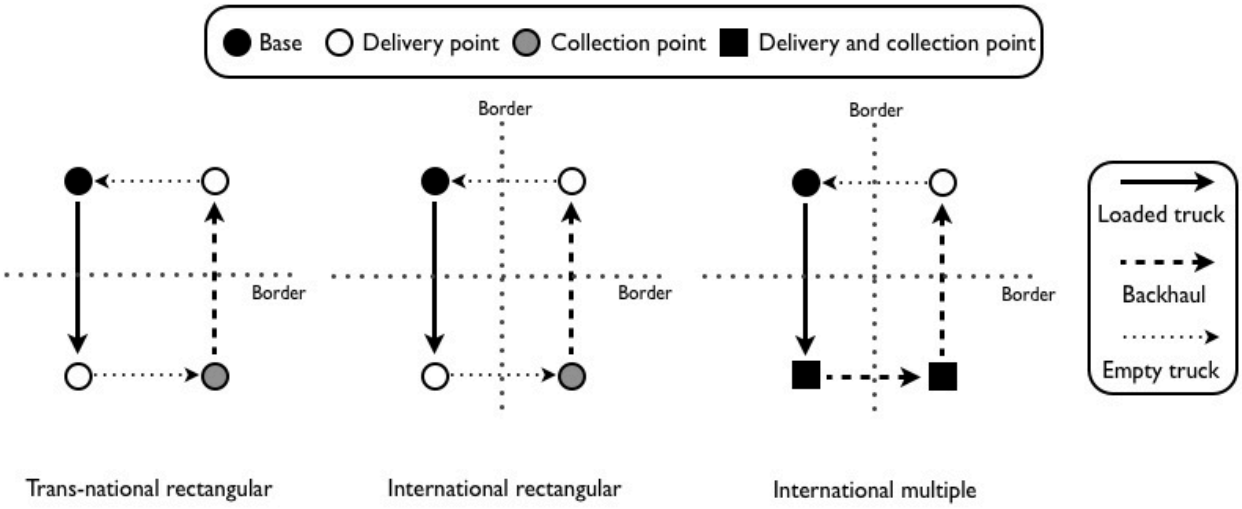

Figure 11: Development of backhauling options

If a transport is done in as many as four different countries, it could lead to a better utilization of the trucks and be more profitable for the carriers. *Trans-national rectangular* backhauling is when the carrier transports between two countries. It is the simplest way of transporting between two countries that we encountered in our interviews. Several of the Polish carriers we interviewed used the trans-national way of backhauling.

The *international rectangular* backhauling is when there are more than two countries involved. One of the Polish carriers applied the international rectangular backhauling by having the same truck transport from Poland to Sweden and then from Sweden to Western Europe before returning to Poland.

International multiple backhauling is when more than one backhaul is performed in more than two countries before returning to the base. One interviewed Polish carrier used the international multiple backhauling. After delivery in Sweden, the carrier picked up a backhaul destined for Norway. A new backhaul was picked up in Norway and transported back to Poland.

6.2 Unfulfilled objectives

Trans.eu and TimoCom can make it easier to transport goods between two places but not *balance the flow of goods*. There are other reasons determining the balance in flow of goods, such as the basic demand for international goods. Regardless of design, the ELMs cannot influence the export and import between Sweden and Poland.

We have not received sufficient data from our interviewes in order to evaluate whether Trans.eu or TimoCom can *reduce the distance to a backhaul.* The explanation for this is that we have not investigated this question further during our interviews since the carriers did not seem to consider whether their overall distance to backhauls is reduced thanks to the ELMs.

In order to evaluate if Trans.eu and TimoCom *lower transaction costs*, the transaction costs were divided into four parts. Compared to traditional ways of obtaining backhauls (e.g. personal contact), the ELMs lower transaction costs by assembling information, shortening the bargaining process and monitoring performance. However, the ELMs do not decrease opportunism. Fraudsters are evidently present at Trans.eu and TimoCom. The ELMs do not *induce trust in the other party of the transaction.*

The objectives to *reduce cultural differences* and *language barriers* became inapplicable in the case of Sweden and Poland. When interviewing the Swedish exporting companies we found out that most of them are not responsible for the transport from Sweden to Poland. By using the

Incoterm Ex Works, the Swedish companies transferred the responsibility of transport to the Polish firms. By giving up their responsibility for transportation the Swedish exporting companies have no need for ELMs, which further explains their absence on Trans.eu and TimoCom. The Polish firms hire Polish carriers, hence, only Polish carriers operate between Poland and Sweden. Consequently, we cannot draw any conclusions regarding cultural differences and language barriers.

6.2 Suggested improvements of Trans.eu and TimoCom

We have identified two main issues with both Trans.eu and TimoCom - opportunism and trust. The security systems on the ELMs need to be improved for these issues to be reduced. A more closed ELM would reduce the risk of being scammed but would on the other hand limit the amount of users which in turn will reduce the ELMs' attractiveness. One of the most important aspects when choosing an ELM according to our interviewees was after all, how many users it had. It is a difficult consideration since a more open ELM surely attracts more users but also more fraudsters, whereas in a closed ELM it is easy to have increased security but the possibility of gaining more users and available loads are decreased. The rating system provided by Trans.eu is appreciated by the users but not good enough to reduce opportunistic behavior. TimoCom should develop a similar system. By developing a rating system, TimoCom would also cover the after-sales phase of the transaction.

We argue than an open architecture is better since it allows for more users to join the ELM. Improving the rating system would keep the ELMs open, while increasing trust and security. A higher utilization of the rating system would reduce the possibilities for fraudsters. The users need incentives to utilize the rating system. A small reduction of the subscription fee for every rating that is made, positive or negative, might give the users such incentives.

6.3 Criticism of theoretical evaluation framework

After applying the theoretical evaluation framework to Poland-Sweden and on Trans.eu and TimoCom we have gained an understanding of how well it fulfilled its purpose. Critique should be raised against the framework as our objectives might be too general. By dividing some of the objectives into more detailed parts, as was done with the transaction costs, a more precise evaluation could have been accomplished. There are certainly many more theories that can help explain and evaluate ELMs that we have overlooked when doing our literature review. More detailed and extensive theories regarding culture and trust may increase the significance of the theoretical evaluation framework.

The objective to *balance flow of goods* should be excluded from our theoretical evaluation framework. Even though the objective would reduce the empty running of trucks, it is not possible for the ELMs to influence the export and import between two countries. The objective is due to this reason not relevant to evaluate.

An objective that could be included in the evaluation framework is whether the ELMs help facilitate trade barriers between countries. In the case of Poland and Sweden it is of less importance due to the countries' membership in the European Union; however if the framework is applied on two other countries it could be of relevance.

6.4 Future research

More extensive studies should be done with our theoretical evaluation framework as foundation. By using a larger sample of Polish carriers generalizations of the case Poland-Sweden can be done.

We have not been able to evaluate the influence ELMs have on cultural differences and language barriers. If our evaluation framework was to be applied to other countries and ELMs, where the transportation looks different, it is possible to evaluate whether ELMs reduce cultural differences or language barriers.

This thesis identified some important issues with Trans.eu and TimoCom. Future research should aim at investigating how trust and security can be improved in order to lower opportunism on the ELMs. Additionally, future research could investigate another point of view of the transportation between Sweden and Poland, by interviewing Polish importing companies. This could give a better overall picture of the possibilities for increased international backhauling between Sweden and Poland.

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Interviews

Anonymous respondent, Team leader responsible for Scandinavian transports, Polish carrier
09.04.2013 [telephone interview]

Banaszak Grzegorz, Member of the Board at Arrowsped
17.04.2013 [personal meeting]

Carlsson Anders, Co-owner at Lars Carlson Trävaru AB
04.04.2013 [telephone interview]

Helmersson Nils-Erik, Executive Board Member at Izomaskin AB
09.04.2013 [telephone interview]

Håkansson Eva-Marie, Export Manager at Malmsten AB
16.04.2013 [telephone interview]

Jarzyński Wojciech, Key Account Manager at Raben Transport Polska
12.03.2013 [personal meeting]

Jaworska Marzena, Co-owner at B&J Auto Transport
10.04.2013 [personal meeting]

Larsson Ulf, responsible for transport contracts at Colorex Sverige AB
04.04.2013 [telephone interview]

Michalak Dawid, Manager at BIK Transport
09.04.2013 [personal meeting]

Michalak Jarek, Transport Director at Euro-Truck
11.04.2013 [personal meeting]

Nowicka Bogumiła Nowicka, Co-owner at An Transport
11.04.2013 [personal meeting]

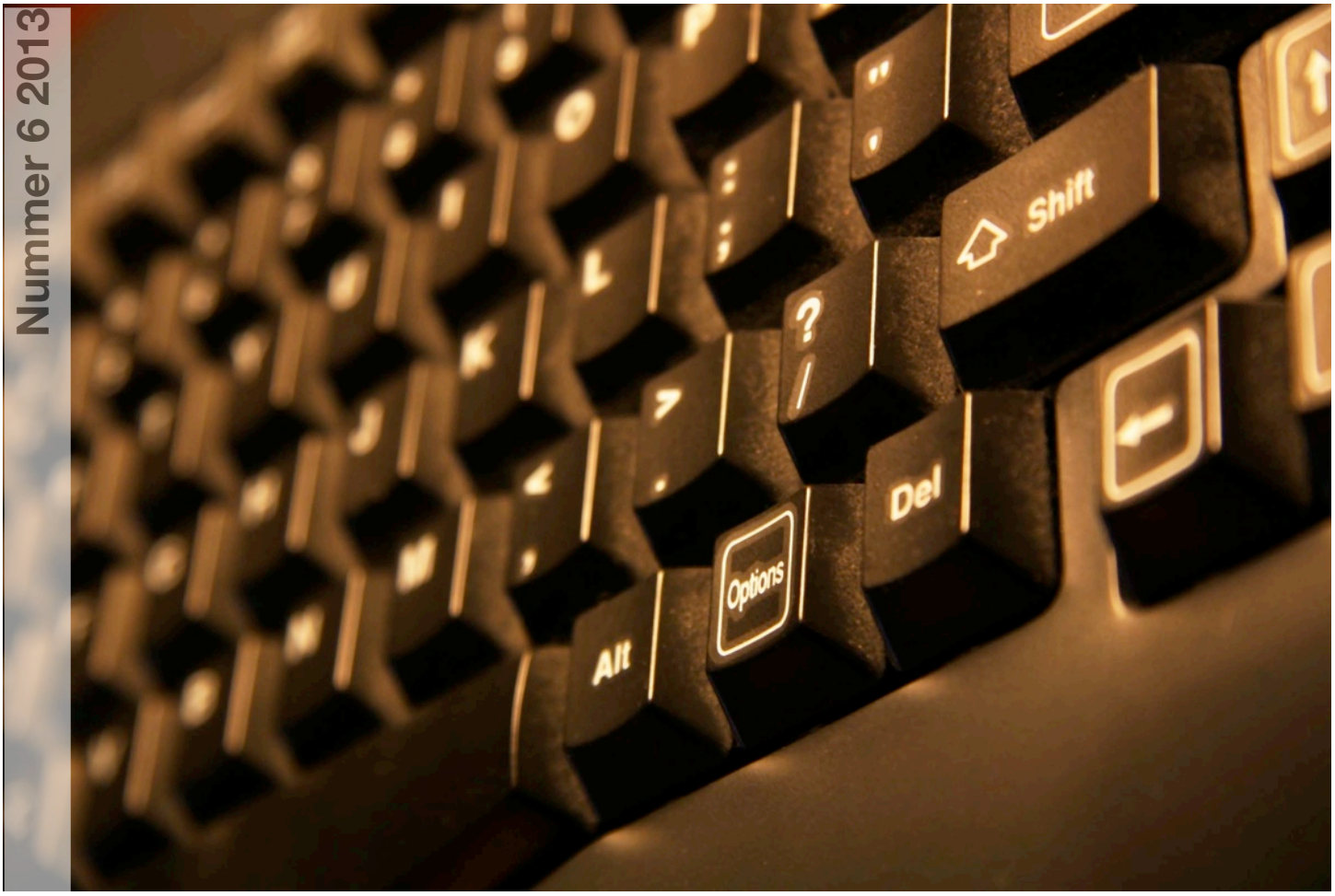
Plantin Maria, Order and Export Manager at Ehrenborg & Co AB
08.04.2013 [telephone interview]

Thorén Thomas, Owner at Thorén Värmepumpar AB
15.04.2013 [telephone interview]

Ödgren Tobias, Logistics Manager at Andrénplast AB
15.04.2013 [telephone interview]

Appendix 1- Article

Måltidning - **Transportarbetaren** - *Tidningen för dig som är medlem i Svenska Transportarbetareförbundet*



Elektroniska Logistiska Marknadsplatser fyller tomma lastbilar

Elektroniska logistiska marknadsplatser är ett effektivt sätt att hitta returlaster och används redan över hela Europa, men se upp för bedragare!

De senaste åren har elektroniska logistiska marknadsplatser (ELM) börjat växa fram. De kan liknas vid Blocket och eBay men med fokus på transportbranschen. Användare lägger upp vikt, mått, start- och slutdestination på det de vill frakta eller vilken sträcka en lastbil har extra kapacitet att köra. Andra användare kan sen ta kontakt för att snabbt få sina transporter genomförda. TimoCom och Trans.eu. är två dominerande ELM i Europa som tillsammans publicerar över 400 000 uppdrag varje dag. Marknadsplatserna inriktar sig framförallt mot transportföretag och speditörer.

Två studenter har i sitt examensarbete vid Lunds Universitet gjort en utvärdering av ELMs förmåga att reducera tomkörning mellan Sverige och Polen. Både svenska exportörer och polska transportörer intervjuades i projektet. Resultatet från utvärderingen visar att användandet är utbrett bland de polska transportörerna men att de saknar svenska bolag att göra affärer med. Många polska transportörer använder marknadsplatserna som en sista-minuten-lösning om något oväntat händer och en transport tvingas ställas in. Vidare kan användandet leda till nya kundrelationer vilket i sin tur skapar fler affärer.

Möjligheterna är stora att snabbt och billigt hitta uppdrag, men nackdelar finns. Trots säkerhetssystem förekommer många bedragare och det gäller att vara försiktig. Användare kan betygsätta varandra och så fort en bedragare har blivit identifierad blir denne avstängd. Dessvärre finns risk att någon redan hunnit bli bedragen. Användare rekommenderas därför att undersöka betyget en annan användare har innan en affär genomförs.

Ytterligare en intressant aspekt som undersökningen kom fram till är en lösning till problemet med returtransporter när det finns en obalans i godsflödet mellan två länder. Genom att frakta returtransporter till andra länder innan lastbilen återvänder till sin hemmabas, ett slags internationellt cabotage, kan detta problemet minskas. Två av sju intervjuade polska transportörer använde sig av detta för att inte behöva återvända till Polen med tomma lastbilar. I det första fallet plockade lastbilarna upp varor efter att ha levererat i Stockholm för att köras till Norge. Väl i Norge plockades varor upp för att transporteras tillbaka till Polen. I det andra fallet transporterade lastbilarna gods från Sverige till västra Europa innan återkomst till Polen.

Långsiktiga relationer är fortfarande grundstommen för en hög fyllnadsgrad och ekonomiskt stabila transportföretag. Den logistiska marknadsplatsen bör ses som ett bra komplement till nuvarande transportlösningar.