Bachelor's thesis

Business administration

International business

2012

Teemu Peltola

CHOOSING AN EXPORT FORWARDING SERVICE PROVIDER

– Case Company A

TURUN AMMATTIKORKEAKOULU
TURKU UNIVERSITY OF APPLIED SCIENCES

BACHELOR'S THESIS | ABSTRACT

TURKU UNIVERSITY OF APPLIED SCIENCES

Business | International business

June 2012 | 57 peges

Markku Heikkilä

Teemu Peltola

CHOOSING AN EXPORT FORWARDING SERVICE PROVIDER – CASE COMPANY A

This thesis deals with the transport costs in export transport and outsourcing logistics processes. Export forwarding prices of six different forwarding companies are compared in this study. The goal of the price comparison is to find best possible forwarding service provider for the commissioning company for each different export delivery.

The theory part of the thesis focuses mainly on outsourcing logistics services and characteristics of export trade from the point of view of an exporting company. The theoretical part deals with outsourcing process, special characteristics of outsourcing logistics, different export transport modes and Incoterms-rules.

When transporting goods outside the country borders, it is recommended to use professional forwarders. This makes the whole export delivery as smooth as possible. Because of the remote location of Finland the transport costs in export are higher than average from the start. This is why Finnish companies should pay special attention to the transport costs and the factors that are causing these costs.

The empirical part of the thesis consist of research made for the commissioning company, Company A. Six forwarding service providers were selected for this study. The choosing process of these service providers was made based on previous experience of the service quality that they can provide. Requests for quotations were sent to all these companies about four different export deliveries included in Company A's current projects. The quotations received were transformed into comparative form. After that the results were analyzed to chose the most favorable options for each shipment.

The result of the thesis is to recommend comparing export forwarding prices. When comparing the price between the option where all the deliveries were concentrated to one single service provider and the one where the service was in every case bought from the cheapest provider, the latter one was cheaper. Therefore, it is advised to always compare the prices between providers.

KEYWORDS:

forwarding, outsourcing, export

OPINNÄYTETYÖ (AMK) | TIIVISTELMÄ

TURUN AMMATTIKORKEAKOULU

Liiketalous | Kansainvälistyvä liiketoiminta

Kesäkuu 2012 | 57 sivua

Markku Heikkilä

Teemu Peltola

VIENTIHUOLINTAPALVELUJEN TARJOAJAN VALINTA – CASE COMPANY A

Tämä opinnäytetyö käsittelee kuljetuskustannuksia vientikuljetuksissa sekä logistiikkaprosessien ulkoistamista. Työssä vertaillaan kuuden eri case-yrityksen käyttämän huolitsijan vientihintoja. Hintavertailun pohjalta pyritään löytämään toimeksiantajayritykselle paras mahdollinen palveluntarjoaja kullekin eri toimitukselle.

Teoriaosuus keskittyy pääasiassa logistiikkapalvelujen ulkoistamiseen ja vientikaupan kuljetusten erityispiirteisiin viejäyrityksen näkökulmasta. Teoriaosuudessa käsitellään ulkoistamisprosessia, logistiikan ulkoistamisen erityuspiirteitä, eri kuljetusmuotoja vientikuljetuksissa sekä Incoterms-toimituslausekkeita.

Maan rajojen ulkopuolelle suuntautuvissa kuljetuksissa suositellaan käyttämään ammattitaitoista huolitsijaa. Näin koko vientitoimitus sujuu mahdollisimman sujuvasti. Suomen syrjäisen sijainnin vuoksi kuljetuskustannukset vientitoimituksissa ovat jo lähtökohtaisesti keskimääräistä korkeammat. Tämän vuoksi suomalaisyritysten tulee kiinnittää erityistä huomiota kuljetuskustannuksiin ja niiden syntyyn vaikuttaviin tekijöihin.

Empiirinen osa koostuu case-yritykselle, Company A:lle, toimeksiantona tehdystä tutkimuksesta. Tutkittavaksi valittiin kuusi yrityksen jo aiemman kokemuksen perusteella hyväksi toteamaa huolitsijapalveluiden tarjoajaa. Näille lähettettiin tarjouspyyntö koskien neljää eri yrityksen projekteihin liittyvää vientikuljetusta. Saatujen vastausten pohjalta koottiin vertailukelpoiset tutkimustulokset, joita analysoimalla pystyttiin valitsemaan edullisimmat vaihtoehdot kullekin kuljetukselle.

Tuloksena suositellaan vertailemaan palveluntarjoajien hintoja vientikuljetuksien yhteydessä. Kaikkia kuljetuksia yhdelle palveluntarjoajalle keskittämällä ei saatu etua, joka puoltaisi keskittämispäätöstä verrattuna palvelun ostamiseen tapauskohtaisesti eri palveluntarjoajalta.

ASIASANAT:

huolinta, ulkoistaminen, vienti

CONTENT

FIGURES

1 INTRODUCTION

The goal of this thesis is to find a forwarding service provider for Company A's export deliveries. The research problem is to find out which of the providers can give the cheapest price for a certain delivery. The comparison of different forwarding service providers is implemented as a part of project in Company A to lower the logistics costs.

I have done my work placement in Company A as an import and export assistant as a part of my studies. After my work placement period I was offered to do this thesis in the company. The job duties of export assistant helped me to get the basic idea of the export process.

The thesis consists of five main chapters. The first one is introduction, where information about research methods and Finland's foreign trade is told. The second chapter deals with outsourcing process and export forwarding. Different modes of transport, the use of Incoterms rules and different transport units are described in the third part. The fourth part is the empirical part. The results of the research are presented and analyzed in that chapter. The last chapter has the summary of the thesis.

1.1 Research methods

The study is equal to qualitative research, whose basis is to describe real life. Qualitative research is a comprehensive data acquisition process and the data is collected from natural real life situations. Random sample method is not used but the targets to be studied are intentionally selected. The research plan takes its final shape during the research progress. The study is conducted in a flexible manner and it can be changed in accordance with the conditions. The cases are treated as unique situations and also the material is studied in the same way. (Hirsjärvi etc. 2009, 164.)

Qualitative research is based on a real-life situations. It includes the ideat that reality is diverse area. It must be taken into account that the reality cannot be

fragmented into small parts in an arbitary manner. Events shape each other and therefore it is possible to find a variety of parallel relationships. Qualitative research tries primarily to investigate the reality as comprehensively as possible. (Hirsjärvi etc. 2009, 161.)

One of the characterizing themes in qualitative research is own observation. This has been used for doing this study. On the other hand, the study could also be quantitative because of the used quotations and prices obtained. Quantitative research emphasizes the universal laws of cause and effect. realistic ontology is always in the background of the research. According to that the reality is built on facts that are objectively verifiable. (Hirsjärvi etc. 2009, 139.)

Main themes of quantitative research are:

- Previous theories
- The conclusions of previous studies
- Presentation of hypothesis
- Definition of concepts
- Plans of data collection or the experimental procedure
- The selection of the subjects or the persons investigated
- Formation of a table of the variables and the treating of material so that it is available for statictical handling
- Making conclusions that are based on the statistical analysis of the observation material. (Hirsjärvi etc. 2009, 140.)

The study has elements of both qualitative and quantitative research.

1.2 Finland & foreign trade

Finland is located rather far away from European markets. In addition to that we have to cross the sea to get to our main market areas. Finland is often compared with an island. Finland is also the only country in the world which has

to help traffic in all of its harbours with icebreakers during normal winter season. (Karhunen 2007, 16.)

Mineral resources in Finland are very poor. We do not have any fossil fuels either. Our industry is dependent on import of these factors of production. Finland is self-sufficient only in resources of chromium, phosphorus, sulphur and raw wood material. All the other factors are needed to import from another countries. (Karhunen 2007, 16-17.) The impact of importing raw materials and energy can be seen in the chart below. The total amount of these two equal 54.3% of total import.

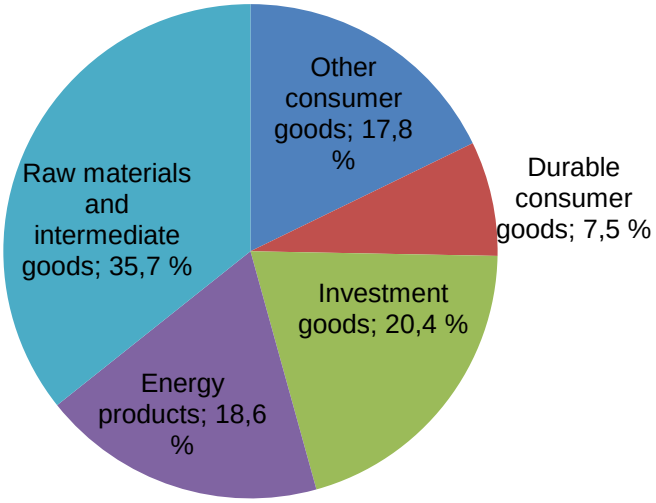


Figure 1. Imports of goods by purpose 2010 (Finnish Customs 2011).

Traditional fields of know-how in Finland are forest industry and mechanical engineering (Karhunen 2007, 17). They form 54% of the total export as can be seen in the next chart.

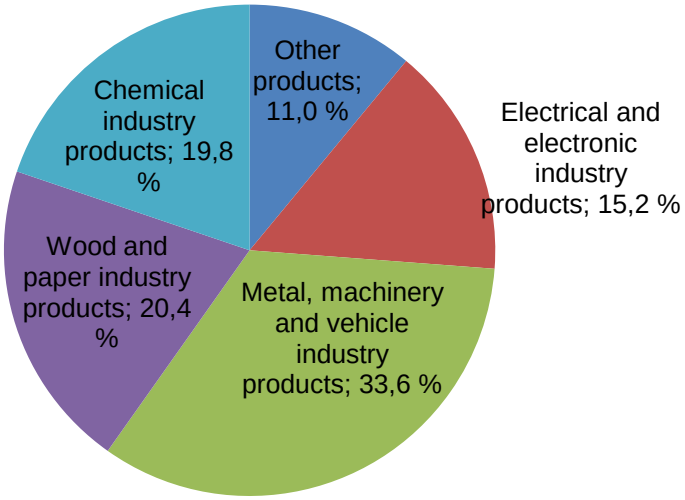


Figure 2. Exports by product category 2010 (Finnish customs 2011).

Finland had severe difficulties in the early 1990's because of the global depression and the collapse of the Soviet Union (Karhunen 2007, 17). The impact can be seen in as decreased volume of GDP and the total GDP. The trend was rising after the depression until the new recession that started towards the end of 2008. After the year 2009 the volume of GDP has again been rising. (Finnish Customs 2011.)

Finland's balance of trade has been positive since 1991. The effect of the year 2009 recession can be seen as barely positive balance of trade in 2009 and 2010 when compared with previous years. (Finnish Customs 2011.) The effect of recession can also be seen in the reduced total volume of export and import in the following chart.

Figure 3. Imports, exports and balance of trade 1990 – (Finnish Customs 2011).

The most important trade partners of Finland are Russia, Sweden, Germany, Great Britain, China, United States and Netherlands. These countries account for over half of the the foreign trade of Finland. 55% of export trade go to the EU countries. In imports the percentage is slightly higher. (Finnish Customs 2011.)

2 OUTSOURCING

Outsourcing is defined to be deliberate movement of business processes to a third party, which manages them on behalf of the company. In these movements the commercial risk and assets are usually passed to the outsourcing company. The trend towards outsourcing has been rising since 1970's and it has become big business. The technology and accessibility to shared electronic data has increased. At the same time the range of services offered by outsourcing companies has become much wider. (Waters 2007, 197-198.)

The reasons for outsourcing can be divided into five groups:

- financial
- technology
- resource management
- managerial
- personal.

The most important financial factor is flexibility of use of resources. It can be pooled with that of others, which creates better scale and marginal costs. It also ensures some independance in managing those resources. another financial factor is accessibility to investment funds. It may be possible that the outsourcing partner can borrow at a better rate. This is because the outsourcing company has a lower risk through better focus. Sometimes these borrowing costs are worth the flexibility. (Waters 2007, 199.)

Technological factors in outsourcing have become more important during last 20 years. This is because the development of technology has become much faster and the pace will accelerate. Competetitive edge comes from integrating new technologies rapidly. Companies must ration their resources so it is much more reasonable to concentrate investments on the sales systems than the latest technology. Also outsourcing of maintenance is seen as a very good option since engineering companies have better skills, the latest diagnostics

and training. Another aspect is health and safety legislation and the requirements made by insurance industry. This makes outsourcing more attractive option because specialization of service and knowledge leads to lower costs and risk. (Waters 2007, 199-200.)

The usual problem with forecasts is that they are seldom right. Focusing on core resource business areas can make it easier for management to forecast resource requirements. When considering periphery areas in a company's business the forecasts are not always very exact. Outsourcing to a specialist can increase the likelihood of optimizing forecasts and therefore increase the level of service. The companies should also concentrate on the areas they can make a real difference in. Management and training skills should therefore also be concentrated on those areas. However, management should notice that when outsourcing is the answer, the new important skill to develop is the skill of choosing your partners and managing them. Personal reasons sometimes also cause outsourcing. It is rare for managers to have totally altruistic motives when deciding to outsource business processes. Managers should remember that unless there are clear strategic reasons for a change to be made, the change should not be made at all. (Waters 2007, 200–201.)

2.1 Outsourcing process

The decision whether to outsource a certain business process or not is typically a ”make-or-buy” decision. All the same principles in the decision process are valid, no matter what the process to be outsourced might be. Outsourcing is a multiphase process. At the beginning of the process the company must define its own core business areas. These are the processes with which the company can achieve remarkable superiority and create unique value to its customers. Other secondary business areas are the ones that the company can outsource. Logistics, for example, is usually not regarded as one of the company's core business areas. (Kiiha 2002, 4–5.)

Core business areas are typically competences and functions that the company can produce better and more effectively than its competitors. These competences and functions are also valued by customers. A strategy, where all the secondary business areas are outsourced, can be considered rather risky. This is because these outsourced areas can have major indirect effect on the core business areas. (Pastinen etc. 2003, 140.) The different stages and tasks of the outsourcing process are described in the following table.

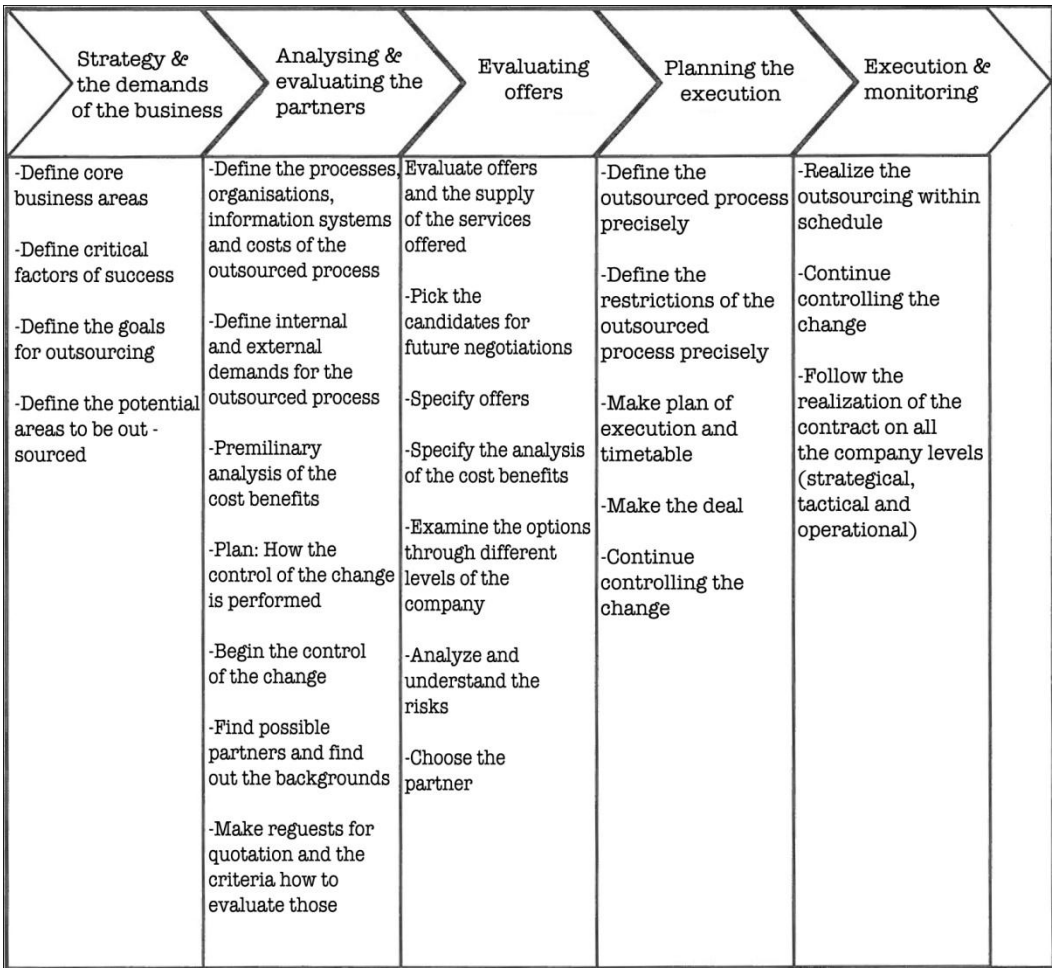


Figure 4. Outsourcing process (Pastinen etc. 2003, 141).

After critical definition of the company's factors of success, it is necessary to clarify the goals of outsourcing and the areas to be outsourced. Then the outsourced business areas and the potential future partners are analyzed thoroughly. At the same time the company must evaluate the costs of

outsourcing and the demands it will cause to the structure of the organisation and the information systems. (Pastinen etc. 2003, 140.)

Before the company can execute decision of outsourcing, it must consider the reasons of outsourcing certain business areas. The needs of the services that are bought must be analyzed. It is also necessary to decide which services are bought and which are produced inside the company. After these aspects are clear, the company must form the criteria of choosing the future partners. Also the means of controlling and leading these partners must be thought. (Pastinen etc. 140-141.)

When all these aspects mentioned above are considered the company must evaluate the offers received from the partner candidates. The evaluation is done by comparing the costs and the coverage of service. The implementation of outsourcing must be done with caution and it must be monitored carefully. (Pastinen etc. 2003, 141.)

2.1.1 Common pitfalls

Outsourcing arrangements are about two companies joining together to provide services or a range of products. The pitfalls in outsourcing are caused by differences in strategy, culture and objectives between two companies. On a daily basis it means how the two sets of management trust and respect each other and work together. It is very important not to hide any facts in the beginning of the process. This usually causes severe difficulties and probably results in the end of the contract between two companies. The communication should be as open as possible to give both parties the information needed to start cooperation. Also any over-expectations raised by the outsourcing company will cause the contract to flounder in the early stage of its life. These over-expectations might concern timing and complexity of outsourcing service and the level of cost savings achieved when outsourcing. (Waters 2007, 202.)

Strategy, and especially marrying the strategies of two companies that are starting cooperation, is an important part of early meetings between the

companies. Managements of companies should keep in mind that both parties will have their own strategies and you must keep control of your own. Strategy is an aspect you cannot outsource. This future marriage between two strategies should be taken into consideration in the selection process of future partner. It is impossible for partners with diverging strategies to work together for long. And outsourcing should always be about long time cooperation. (Waters 2007, 203.)

Outsourcing should always bring some advantage compared with the added value gained through in-house processes. The changes between these two options must be compared and analysed carefully. It should also be determined how the success or failure of the outsourcing will be judged. (Waters 2007, 204.) Partners should agree on the key performance indicators (KPIs), methodology of measurement, and reporting arrangements. The absence of such common indicators may cause lack of common vision and abate in the ability to learn how to improve the service. These tools should be fully laid out in the contract before starting the outsorcing operation. The KPIs can include budget performance, damages to products, savings, stock losses, productivity measures, accident rates, etc. Using these indicators makes it possible to develop systems to see the requirements for redress or rewards. Bonuses for exceeding the targets agreed and sharing budget savings are good ways of intensifying partnership. Powerful ways of ensuring correct behaviour are, for example, sharing the losses and penalties for poor customer service. (Rushton & Walker 2007, 335–337.)

When number of business processes are outsourced it means that these processes need to communicate with each other. It is also necessary that these processes are linked with the rest of the company’s business processes. Not only a data linkage between these activities need to be forged, but also the administration and management of the cooperating companies need to be joined. It takes a lot of time to ensure a high degree of efficiency about the interfaces. If this is done inefficiently the increased costs and friction between two companies will result in poorer customer service and lost sales. Face-to-face meetings with outsourcing company must be accepted as part of the

contract's life and the managers must work together and respect each other. This does not mean that both sides should not challenge each other. When there is no challenge, there is no creativity. This will slowly cause the operation to fossilize. However, the challenge must be constructive. (Waters 2007, 204-205.)

2.2 Outsourcing logistics

The role of logistics has become much bigger. It is not anymore just transporting and warehousing but it is also influenced by purchases, product development, customer relations, etc. The field of logistics has also intensified. The deliveries are demanded to be faster and to have better quality. The expectations of balance between costs and profits of logistics have become much more important. Value adding services are demanded by customers and the number of services available increases rapidly. The risks and possibilities of distribution increase and the companies must be able to divide these risks and to multiple expectations. (Pastinen etc. 2003, 130.)

The changes described above take companies to a new situation. As the distribution area expands to be global only few companies are able to respond to challenges with their own transport equipment. The companies must weigh up if their current transport and service system can handle the demands of transporting goods faster and more flexibly in global market area. To avoid huge investments companies must ensure the development of the distribution network and minimize the transport of materials through effective coordination and communication. (Pastinen etc. 2003, 130.)

Outsourcing is more often considered to be a solution to answer to the new challenges. As any other strategic decision, the outsourcing must also have carefully considered reasons and precise calculations about the fact that it really is a cost-effective option. Logistics service providers often consider that industrial companies have not always consided carefully enough the objectives and facts of outsourcing. This causes service providers problems when they are

trying to offer companies services that would respond to their needs and expectations. This means that company that is outsourcing its logistics operations must first determine the current situation of its logistics. This means defining the strenghts and problems of logistics and the goals of developing the process. Without the knowledge of the current situation the task of handling the logistic operations cannot be given to a new partner company. (Pastinen etc. 2003, 130-131.)

When purchasing logistic services, the development of partnership and the search for lowest price are always the competing factors. Customers buy logistic services in very short term views and mainly try to achieve the lowest possible price for the service. The service provider is rather easily changed if the buying company gets cheaper price from any other service provider. If the main purchase criteria is the cheapest price on the market, it is rather unrealistic to expect most efficient and developed service. It would be much wiser to invest in better quality service and longer and deeper cooperation relationships. Thus, it is necessary to think which are the criteria when buying services and what kind of cooperation the company wants to develop with service providers. (Pastinen etc. 2003, 143.)

Cheapest services are usually standardized. These can be used if the delivery time is not the most important aspect of delivery. However, usually commerce and industry related transports are controlled with strict quality and delivery time criteria. Customers demand more often value adding services and the possibilities of using technology services. Producing these services is expensive and indor to operate profitably the service providers must get adequate compensations for offering these services. The customer's willingness to pay for these services is usually the problem, especially when new technological services are considered. These are, for example, track-and-trace systems, electronical ordering services and electronic invoicing. Electronical services are not concretical or physical but producing those require new systems that require big invetsments. Customers are happy to use new

interner-based services or demand those but are unwilling to pay for the use of these. (Pastinen etc. 2007, 144.)

By concentrating outsourced logistic services, companies can achieve savings in administrational and organisational costs. These consist of actions needed to negotiate costs of cooperation, delivery timetables, protocols and practices, responsibility areas, etc. When logistic activities are concentrated on few regular partners automatic processes can be created. Carrying out these processes takes much less time and effort when compared with the model where every transport is possibly planned and performed with different partner. (Pastinen etc. 2003, 145.)

The development of information technology and electronical business has made it easier to get information about logistic services. The price comparisation has also become fast and effective. However, comparing different service providers is problematic because of the diversity of the service concepts. The service providers offer different pricing policies, services and information systems. This diversity of services and pricing is part of the competing means of the logistic companies. Offering direct comparison between providers is not for their best interest. Each provider tries to differ by offering different service concepts, value adding services and technical applications. The production of evaluating systems is done by the customer companies. (Pastinen etc. 2003, 145.)

2.2.1 Development of logistic services

Until 1970’s it was common to use company’s own transport equipment and personnel in their export deliveries (Karrus 2001, 129). Companies wanted to stay independent from outside service providers. It was also seen as a matter of honor to be able to keep the expertise inside the company. Realities of the business world, such as demand for profitability and productivity, have forced companies to specialize, focus on their core competence and to use outside partners. As the environment of the business world has changed, the

outsourcing of logistic services has gradually become more common. (Pastinen etc. 2003, 131.)

The mode where company takes care of its own logistical needs can be called First Party Logistics (1PL). This mode was supported when the operating environment of the company was very limited and transport distances were short. The competition was based on products or their qualities and the competition between prices was rather little. (Pastinen etc. 2003, 131-132.)

Outsourcing of logistic services started in the 1970's when single services were bought from transport companies. Tightening competition forced companies to operate in broader market areas. This brought challenges when using company's own transport equipment. It soon became inadequate to deliver goods to customers. Price competition made costs a more significant factor in competition. Companies were able to give up partially or entirely on its own transport equipment when they bought services from outside providers. The flexibilty of transport capacity became also an advantage when outsourcing services. This mode of logistics is called Second Party Logistics (2PL). (Pastinen etc. 2003, 132.)

In the third phase, called Third Party Logistics (3PL), companies outsource and centralize their logistic activities to a few chosen logistics service providers. These providers are also called third parties. In this phase, the co-operation between the customer company and the logistics service provider is closer when compared with traditional buying of services (2PL-phase). Operative processes of both the customer and the service provider are pursued to integrate to make regular co-operation more effective. Services provided are usually routine services like warehousing and transport services. The customer company is still responsible for management and direction of the logistics. Third party operates as a middleman between the sender an the receiver. Ownership of the goods stays with the sender. (Pastinen etc. 2003, 132.)

The fourth phase of development is called Fourth Party Logistics (4PL). It is formed when the value chain networks. So called logistics integrator has the

most central role in this phase. Its function is to link single services and the users of these services into one single network. The difference between the 3PL logistics company and the 4PL logistics integrator is that integrator coordinates the operation of different logistics companies and offers the service to the customer company so that it forms a service package. The customer does not have to use its resources to direct multiple logistics companies even though the goods travel through multistage route around the world. This means that logistics integrator can serve all the logistcal needs of the the customer company. Integrator can product these services itself or buy these from other companies. (Rushton & Walker 2007, 352–354.)

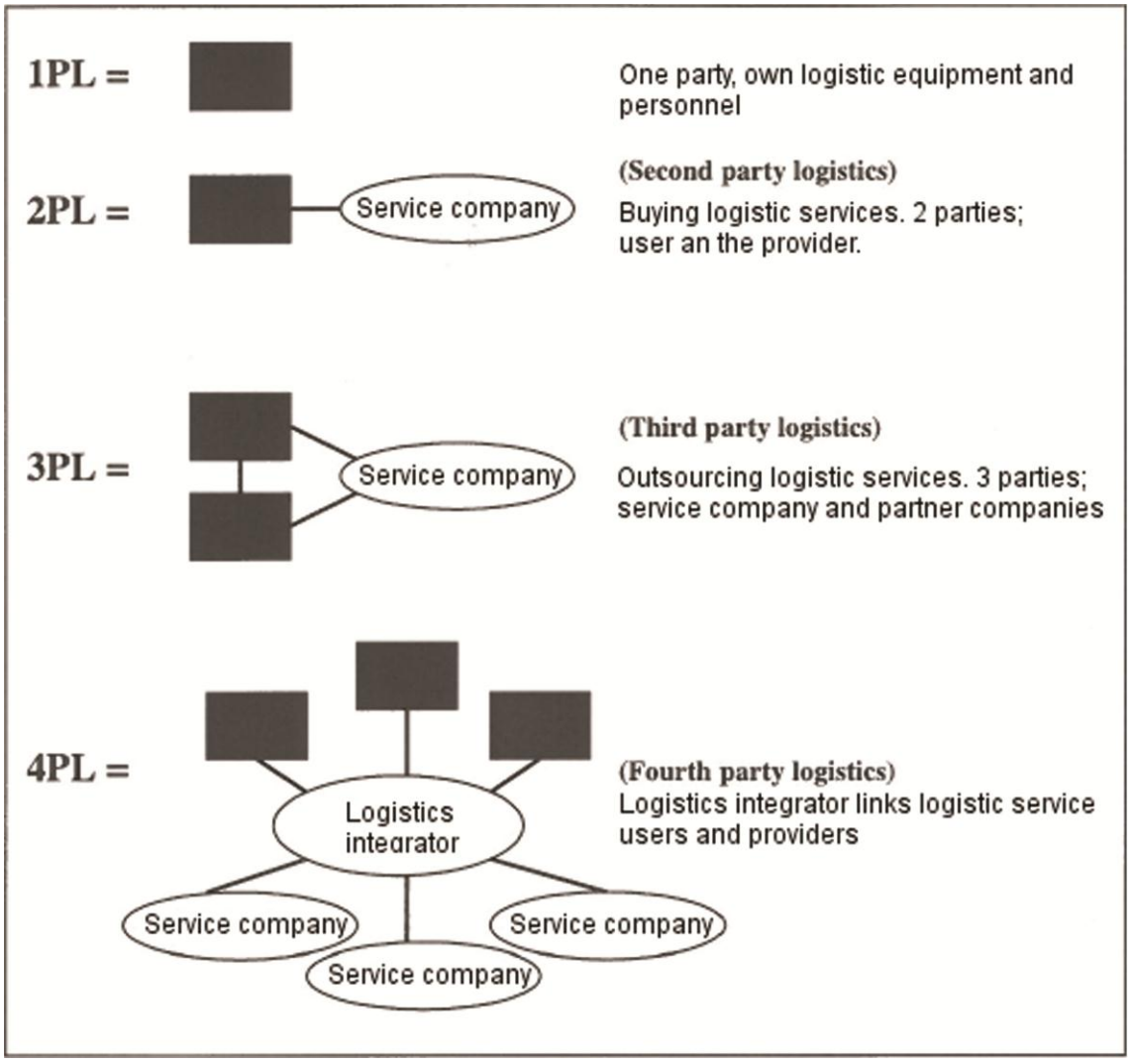


Figure 5. Development stages of outsourcing logistics (Pastinen etc. 2003, 133).

2.2.2 Forwarding

it is almost impossible for an individual seller in international trade to be familiar with all the different transport possibilities or regulations, and taxes or formalities relating to import and export trade. This is why professional forwarders are needed. The range of services varies from a single customs clearance task to a comprehensive implementation of the transport package. The main task of the forwarder is to ensure that the whole supply chain operates smoothly. The forwarder deals with concrete transport activities. This gives the customer more time to concentrate on his other business areas. (Pastinen etc. 2003, 148.)

The main task of the forwarder is to handle all the necessary actions regarding the international transport of the goods. These can include, for example, handling the procedures of import and export customs clearance, paying customs tariffs and handling statistical procedures. (Selin 2004, 194.) The forwarder has the following obligations towards the contractor:

- deliver the goods
- check the physical condition of the goods
- obey the given instructions
- keep the buyer informed of the whereabouts of the goods, sailing schedule, etc.
- remain loyal. (Pastinen etc. 2003, 148.)

The forwarder operates as he were the contractor. He must choose the best possible way of handling the delivery. It is also possible that the forwarder negotiates with the contractor the different options and the prices of these options before making the final decision about which one to use. The forwarder must be able to handle dozens of documents and to take into account various regulations and procedures of several different countries. (Pastinen etc. 2003, 148.)

The need for forwarding services is declining because of the possibility of using electronical documentation and the liberalization of the world trade. This means that also the information becomes more and more electronical and this way it is easier for everobody to access it. Also the enlargement of the European Union makes the need for forwarders less and less. This is because of the universal rules that apply inside the EU and the more simple documents used in internal trade. (Pastinen etc. 2003, 148.)

It is common for forwarding companies not to own their own transport equipment. Rather, forwarding companies make contracts with transport companies and use their equipment and personnel. This is a common strategy especially for small forwarding companies. (Pastinen etc. 2003, 150.)

Forwarding companies can also use special warehouses, called free warehouses. The principle of the free warehouse is that the taxes of the goods stored there have not been paid. The taxes are paid when the goods are tranferred somewhere else than another free warehouse. It is the best policy for the seller of the goods not to pay the taxes until the goods the goods are sold. The buyer pays the final price, including taxes, so it is easy for the selletr to pay his taxes to the tax authorities. This makes the the capital turnover faster for the selling company. (Pastinen etc. 2003, 151.)

3 INTERNATIONAL TRANSPORT

When goods are transported across borders of different countries and the transport distances become longer, the role of transport becomes more important. There are many different aspects that must be taken under consideration. These are, for example, the mode of transport and the contracts under which the goods are transported. These aspects are presented in chapter 3. At the end of the chapter there is also information about different transport units that are commonly used in international trade.

3.1 Transport modes

The mode of transportation in export varies depending on the shipment. There are five modes that are used. These are road, air, rail, maritime and intermodal transport. In urgent cases exporters can also use couriers. (Selin 2004, 186.) Almost 90% of export is done by maritime transport. Road transport accounts for about 8% and rail less than 3% of total export transport as can be seen in the following chart.

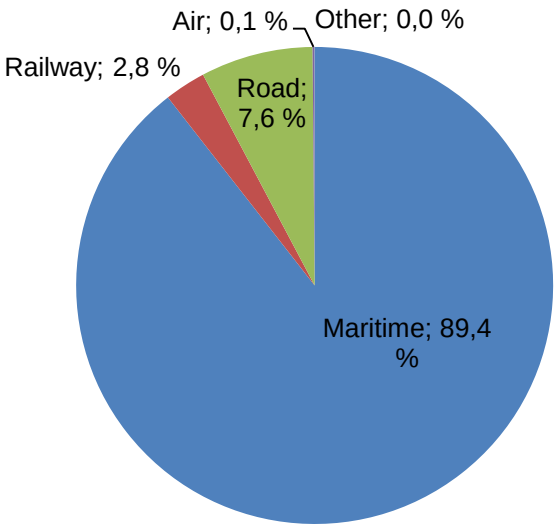


Figure 6. Export by the used mode of transport 2010 (Finnish Customs 2012).

Transport costs vary depending on the destination country, transport mode and characteristics of the goods transported (Selin 2004, 186). Export transport costs usually account for about 5% of the value of the goods. (Ministry of Transport and Communications 2010, 78). When choosing the mode of transport, following things should be known and considered:

- quantity, dimensions and gross/net weights of the packages
- total weight of the shipment
- the dimensions of the shipment and estimated cargo space needed
- type of packaging
- tariff number of the goods
- location of the buyer and the seller
- conditions of loading and unloading
- time reserved for transport
- value of the goods
- transport route and speed
- need or possibility for intermediate storage
- special characteristics of the goods that could cause additional costs
- reliability of the transport
- ability to monitor and track the shipment (Rautauoma & Korhjonen, opiskelumateriaali, 45).

3.1.1 Road transport

Road transport is a good option in break bulk transport. Transport equipment is nowadays flexible and versatile. Usually, when talking about road transport equipment, we mean trailer trucks or semi-trailer trucks. A trailer truck has two separate cargo spaces and the combined volume of these is 105 m^3. It has maximum loading capacity of about 30 tonnes of cargo and the maximum length of the trailer truck is 18.75 meters (Selin 2004, 186-187.) A semi-trailer truck has only one cargo space which has a length of 13.4 meters (European Council 96/53EY.) The volume of the cargo space is about 90 m^3 and the

maximum loading capacity is about 24 tonnes. The maximum length of semi-trailer truck is 16.5 meters. Because of the longer cargo space, a semi-trailer truck is a better option when transporting longer packages. (Selin 2004, 186-187.)

The CMR-contract defines transport and liability qualifications for road transport. This contract also defines the calculation bases of rates for part load shipments. For example, the calculation basis for one loading meter is 2000 kg and for shipments that use a lot of space, the basis is 333 kg per 1 m^3. Other calculation bases are, for example, one full load shipment, which is 24 tonnes. In international transport the CMR-waybill, based on the CMR-contract, is widely used. The waybill has information about the shipment and it is drawn up in eight copies. The waybill has information about

- place of payment for the transport
- terms of trading
- restrictions given by seller about handing the goods over to the buyer
- documents which are attached to the delivery. (Selin 2004, 187.)

Depending on the nature of the cargo there might be some additional fees involved. These are, for example, costs for cold, frozen or thermal transportation. These costs should always be negotiated with the transport company before the actual transport. (Selin 2004, 187.)

Road transport is a rather fast mode of transport with export deliveries to the Nordic countries and Europe. The shipments are usually delivered in 1-4 days to the Nordic countries whereas to other parts of Europe the traveling time is 4-10 days. To shorten the time of road transport, the TIR carnet system has been developed. It guarantees free movement of sealed cargo all the way to the border of destination country. (Selin 2004, 187.)

The benefits of the road transport include flexible loading and unloading of the cargo, speed and dense network of terminals. Shipment tracking is possible and often necessary because of the urgent schedule. The relatively high costs and

the stress caused to the packages during transport are some of the disadvantages of road transport. (Selin 2004, 187.)

3.1.2 Air transport

International Air Transport Association (IATA) is a co-operation organization between airlines. IATA's mission is to consolidate air route timetables, define prices for cargo and passenger traffic and to draw up uniform terms and documents for air transport. The document that is used in air transport is called Airway Bill (AWB). This document is drawn up by IATA. AWB is drawn up in three original copies and it can only be done by shipping agents or airlines. Filling in the AWB is usually hard because one must define routes, prices and other transport costs as early as at the sending phase. (Selin 2004, 188.)

There are two possible ways to deliver the goods by air. These are regular airline service and separate cargo planes. (Selin 2004, 188.) When using regular airline service the cargo is placed under the cabin. The same type of aircraft, for example Boeing 747, is used for both regular and cargo traffic. When using only for cargo transport purposes the cabin is converted into cargo use. These planes have cargo capacity up to 700 m^3 and carrying capacity of 112 tonnes. When transporting heavier cargo there are also bigger planes, for example Antonov An 225 Mriya, which have carrying capacity of 250 tonnes and cargo capacity of over 1000 m^3. These types of planes are designed only for cargo use. (Karhunen, Hokkanen 2007, 164-165.)

Consolidated air freight is one option to deliver goods by air. This option is used when the delivery time is not the primary issue. Consolidated air freight means shipment where several smaller packages are collected from different senders. When combined into one big shipment with the same destination the unit price for one shipment decreases. The document that is used in these shipments is called Master Airway Bill (MAWB). It has information about all the shipments included in the consolidated shipment. (Selin 2004, 188.)

The price of air cargo is calculated through gross or volume weights. The price is usually given in the terms of a currency unit per one kilo. Common prices are used when the quality or weight of the goods does not justify price reductions. Air transport has several cargo classes. The price is often also calculated by using standardized cargo units like container or EUR pallet. The unit weight of these units may vary between one and six tons. In addition to normal air transport there is also the possibility of using express freight. These shipments are handled faster than normal ones and they are very often used when delivering for example documents and spare parts. (Selin 2004, 188.)

The pros of the air freight are speed, liability, a broad route network and a small number of re-loadings during shipment. It is usually the best option when the delivery schedule is urgent or the products delivered are quickly perishable. Air transport is also a good option if the price of the product is relatively high when compared to its weight. The con of air transport is the high price. (Selin 2004, 188.)

3.1.3 Rail transport

The Contract of International Carriage of Goods by Rail (CIM) is applied in several dozens of countries. The contract states that the movement of goods is performed by the same rules and terms on every railroad that is covered by the contract. The waybill used in railroad transport is based on the CIM-contract. The document is filled in at least in five copies. (Selin 200, 191.)

Calculation bases of freight in rail transport are the railroad tariffs ratified by the destination country. The base unit is usually freight per 1000 kg. For the products with large volume, the freight weight is 200-250 kg. The unit price can also be defined by railway wagons. Many countries give different kinds of discounts for transit passing through the country. (Selin 2004, 191.)

Rail transport is generally used to deliver large and heavy goods and products. This mode of transport has become more versatile in the past decade and it offers a good option to deliver goods. Rail transport is a low-priced and a

relatively reliable mode of transport. Differing track gauges between countries can, however, cause some problems. The cargo has to be discharged and reloaded to a different wagon at the border. This might cause some delays in the delivery time. (Selin 2004, 191.)

3.1.4 Maritime transport

Most international transport is carried out by maritime transport. Transport is partially arranged with the help of car ferries but most of the movement of goods is done by freighters. Maritime transport can be divided into tramp and liner traffic. Liner traffic is a mode of maritime transport where freighters travel certain lines and follow certain timetables. This is a mode where several shipping companies co-operate and competition is low. On short lines the co-operation is based on contracts of limited duration that define all the terms of shipments. However, it is often easy to deviate from these terms as needed. (Selin 2004, 189.)

A tramp traffic freighter carries full loads of cargo from one port to another. Freighters have no regular routes. They sail between ports depending on the market situation. There are different types of tramp traffic. These are, for example, voyage and time charters. Voyage charter means that the charterer hires the freighter for a single trip from one port to another. Time charter is a mode of tramp traffic where the freighter is hired for a specific period of time. (Selin 2004, 189.)

Cargo unit price in maritime transport is quoted in USD, based on 1000 kg or m^3. Shipping companies also offer full containers or pallet rates. (Selin 2004, 189.) Exporters have to pay possible shipping surcharges, which include for example:

- Bunker adjustment factor (BAF) takes into account fluctuations in the fuel oil cost

- Currency adjustment factor (CAF) takes into account fluctuations in currency exchange rates during the time of transport
- IMO surcharge is applied when the goods transported are classified hazardous by the UN
- Security charges (ISPS or SEC) that are taken into account when transporting goods to areas with unstable conditions, like warzones
- Terminal handling charge (THC) is charged by shipping company for what they do to the container before it is loaded onboard
- Heavy weight charge (HWT) is charged when containers exceed a certain weight limit
- Port congestion surcharge is charged when freighters have to stay idle in ports because of the congestion
- Peak season surcharge (PSS) is added to cargo moving from Asia during typical peak season
- Winter surcharge is an extra cost caused by harsh weather or ice conditions. This is, of course, only effective during winter period. (Kk Freight 2012)

The cargo is only loaded onboard after is has been loaded on 4-way pallets, mafi trailers or containers. Standardized units of loading are usually 20’ or 40’ (6 or 12 m x 2.34 m). The use of these units speeds up the loading and unloading the freighter. (Selin 2004, 189.)

The shipping terms of maritime transport define the duties and cost obligations of both carriers (transporters of goods) and charterers (shippers of goods). The terms are described in a charterparty document. The parties are the carrier and the charterer. The cherterparty document is usually a free-form one but it has to be always in writing. The name of the freighter, cargo, ports, time of shipping, cargo fees and all necessary info are found in this document. The main document of maritime transport is Bill of Lading (B/L). It is the document that defines the responsibility of the carrier to deliver the shipment, but it is also a receipt of receiving the goods from the charterer and often the proof of the proprietary rights of the goods. The shipper is the person who takes the goods

to freighter and receiver is the buyer or his representative. (Selin 2004, 189-190.)

The Bill of Lading can be drawn to either one person, the person named by him or to a holder. The holder of a B/L has a right to the goods. This is why the goods are only given to the receiver mentioned in the B/L and only against the original B/L delivered to the receiver. B/L can be used to collect the actual selling price via bank or carrier. This is not possible in any other mode of transport. Thus, B/L is a juridical document. (Selin 2004, 189-190.)

B/L can be clean or unclean. A clean B/L means that it has not any remarks as to delivery, packing or condition of the goods. If it is necessary to make any reservations the B/L becomes unclean. This means that the charterer cannot collect the selling price against documents. In certain cases the unclean B/L can be accepted but in these situations the shipper commits to bear all the costs of the damages caused to the goods and he gives a back letter to the carrier. (Selin 2004, 190.)

A Bill of Lading is drawn up, depending on the destination country, in as many copies as it is necessary. In addition to the original ones several copies are made. These copies do not constitute right to own the goods. A Bill of Lading is usually used when shipping goods to Asia, Africa or South-America. Its popularity as maritime shipping document is declining as new forms of documents are taking its place in sea transport. one of the new forms of documents used in maritime transport is called Liner Waybill (LWB). It is used in liner traffic and intermodal transportation. Compared with B/L, it is not needed to give the LWB to the carrier when receiving the goods and it cannot be transferred to another person. (Selin 2004, 190.)

3.1.5 Intermodal transport

Intermodal transport means the combination of two or more different transport modes. It can be divided into two different types of intermodal transport. These are multimodal and combined transport. Multimodal transport is the form of

transport where goods are transported with at least two different modes of transport under one transport contract. The goods are also moved by using different kinds of transport units, for example containers and pallets. (Karhunen 2007, 175.)

Combined transport means the mode of transport where one transport unit is moved with at least two modes of transport. The goods remain in the same transport unit, for example container, through the whole transport chain without being touched. Typical case where combined transport is used is where the goods are first moved by using truck to the port. After that the goods are loaded onboard of a freighter which takes the goods to the destination port. The goods are again loaded to a truck which takes those to the receiver. In this case road and maritime transport are the modes of transport that are used. (Karhunen 2007, 176.)

When using intermodal transport it is possible to combine the benefits of different modes of transport. The benefits of using intermodal transport are:

- speed and efficiency
- reliability (less shortages on transport capacity and more reliable schedules)
- friendliness to the environment
- optimal use of resources of every mode of transport used in transport chain
- reduced total costs of transport. (Karhunen 2007, 176.)

3.2 Transport units

In trade, and especially in international trade, there are some transport units that are commonly used to move goods from one place another. The most common ones of these are presented in the following subchapters 3.2.1 – 3.2.3.

3.2.1 Intermodal container

First containers were used in United States during 1950's to ease loading and unloading freighters. The measurements of containers are standardized according to ISO 1496-1 standard. General definition of intermodal container states that container is a transport unit which is:

- strong enough to be used repeatedly
- designed to be used in intermodal transport of goods
- equipped with devices which facilitate moving containers from one mode of transport to another
- designed to be easily emptied and filled. (Karhunen 2007, 180.)

The Customs Convention on Containers (CCC-contract) was made to simplify the customs clearance when using containers. According to this contract the container must be built and equipped so that:

- the goods inside to container cannot be removed or added without breaking the sealing
- there are no such spaces in container where goods could be hidden
- customs inspection can be made for the whole cargo space
- customs seal can be attached easily and efficiently. (Karhunen 2007, 180.)

There are six main types of intermodal containers. These are:

- Box container which is the most common type of containers. Loading is done throught doors located at the other end of the container. These are usually 20' (6058mm) or 40' (12192mm) long.
- Open top container which has roof that opens for loading and unloading. It is useful when transporting larger goods, for example big machinery.
- Open side container which has open side(s) to ease loading and unloading.

- Reefer container. It is insulated and equipped with generator to adjust the temperature inside the container. This container type is useful when transporting goods that need certain temperature, for example chemicals or food.
- Bulk container which in addition when compared to box container has hatches to load the container from the top and to unload from the bottom. It is useful when shipping free-flowing dry cargo such as grains or ores.
- Tank container which are used to transport liquid goods such as wines and chemicals.

In addition to these six main types there are also flat and mafi containers. (Rautauoma & Korhjonen, opiskelumateriaali, 36-37.) The dimensions and volumes of different container types can be seen in the following picture.

inside dimensions (L x W x H) in m	door opening (W x H) in m	roof opening (L x W)	tara in kg	volume in cbm	loading capacity in kg
20' Standard-Container					
5.92 x 2.34 x 2.38	2.29 x 2.28		1,900	33.0	22,100
40' Standard-Container					
12.06 x 2.35 x 2.28	2.29 x 2.28		3,107	67.3	27,373
40' Hi-Cube Container					
12.06 x 2.34 x 2.68	2.29 x 2.58		3,265	75.8	27,215
20' Open Top-Container					
5.92 x 2.34 x 9.0	2.29 x 2.25	5.42 x 2.22	2,177	31.6	21,823
40' Open Top-Container					
12.04 x 2.34 x 2.37	2.29 2.25	11.35 x 2.09	4,445	64.0	26,067
20' Open Side-/Open Top-Container					
5.93 x 2.32 x 2.26	2.29 x 2.16	5.35 x 2.12	2,775	31.0	21,225
20' Flatrack					
5.94 x 2.40 x 2.27			2,560		21,440
40' Flatrack					
12.07 x 2.42 x 2.10			5,550		25,220
20' Reefer-Container					
5.38 x 2.24 x 2.29	2.24 x 2.12		3,209	24.1	17,111
40' Reefer-Container					
11.21 x 2.25 x 2.18	2.22 x 2.12		4,840	49.3	26,640

Figure 7. Dimensions and volumes of different containers (Logwin Logistics 2012).

Most common freight basis in container shipping are Full Container Load (FCL) and Less Than Container Load (LCL). FCL is the option where sender of the goods delivers full container to the carrier. The carrier then delivers the conatiner to the receiver. LCL means the option where sender delivers the goods to the port or terminal and the carrier loads them to the container. The goods are again unloaded from the container at the destination port. (Pehkonen 2000, 121.)

3.2.2 Unit Load Device

Unit Load Device (ULD) is unit used in air transport. There are two forms of ULD's. These are air containers and pallets. international Air Transport Association (IATA) has standardized different types of ULD's in their release "ULD Technical Manual". This manual also tells which and how many ULD's fit into certain type of aircraft. Air Transportation Association of America (ATA) has also released its own type codes for ULD's. These are, for example, LD-3 and LD-9. Corresponding units codes of IATA are type 5 (LD-3) and type 8 (LD-9). Both of these type codes are used in air transport. (Karhunen 2007, 168-169.)

The volumes of air transport containers vary between 4.5 m^3 and 30m^3. When comparing air transport containers and pallets the benefits of using containers are cheaper prices, lower packaging costs and easier loading and unloading of goods. (Rautauoma & Korhjonen, opiskelumateriaali, 37-38.)

3.2.3 Pallet

Pallet was the most revolutionary invention of the 20th century concerning material handling techniques. It was introduced in the United States during 1930's and it spread fast all over the world. Using pallets made cargo handling substantially more effective. Also the need of labour was reduced. The use of pallets also brought some problems. The pallets were usually disposable and the amount of waste was increased. (Karhunen 2007, 52.)

Rail road companies were interested in developing system for pallets. This was because it would bring savings in costs for them. The system was developed gradually. Nowadays the pallet is seen as a part of the packaging. The trading and billing of the pallets is negotiated between the buyer and the seller. (Karhunen 2007, 52.)

In international trade, and especially in Europe, the CEN (Comité Européen de Normalisation) pallet standards are used. There are also different pallets in different regions, for example Australia and North America, but the CEN pallets are the ones that are used most commonly. (Karhunen 2007, 53.)

The pallets are made of wood, plastic, metal or paper. Most common material is wood. In internatonal trade the use of wood materials is restricted in intercontinental traffic. Restrictions concern both pallets and packaging. This is done to prevent the spread of disease and insects between continents. The Food and Agriculture Organization (FAO) of the United Nations has published a standard that deals with the use of wooden materials in international trade. The standard addresses the need to treat wood materials used to ship products between countries. The pallets and materials that are treated acceptably should be stamped or branded. These standards are used in i.a. EU, North America, Japan, Australia and many countries in South America. (Karhunen 2007, 54-55.)

3.3 Incoterms 2010

Because of the global economy, businesses have got broader access to markets all over the world. Products and goods are sold in greater variety, in larger quantities and in more countries. This means also increasing possibilities for misunderstandings and costly disputes when using inadequately drafted contracts. The Incoterms rules, drafted by the International Chamber of Commerce (ICC), facilitate the conduct of global trade. If the sale contract has reference to a certain Incoterms 2010 rule, the obligations of the parties' of

trade are clearly defined. This reduces the risk of legal complications. (ICC 2010, 120.)

The collection of Incoterms rules has been regularly updated to keep pace with international trade's development. The 2010 rules take account of continued spread of customs-free zones, changes in transport practices, heightened concern about security in the movement of products and goods and the development of electronic communication. (ICC 2010, 120.)

The Incoterms rules explain a set of three-letter trade terms that reflect the practices in contracts for sale of goods. The tasks, risks and costs involved in the delivery from sellers to buyers are described in the rules. They say:

- which party to the sale contract has to arrange carriage or insurance
- what is the point at which the seller is regarded to have delivered the goods to the buyer
- which costs each party is responsible for.

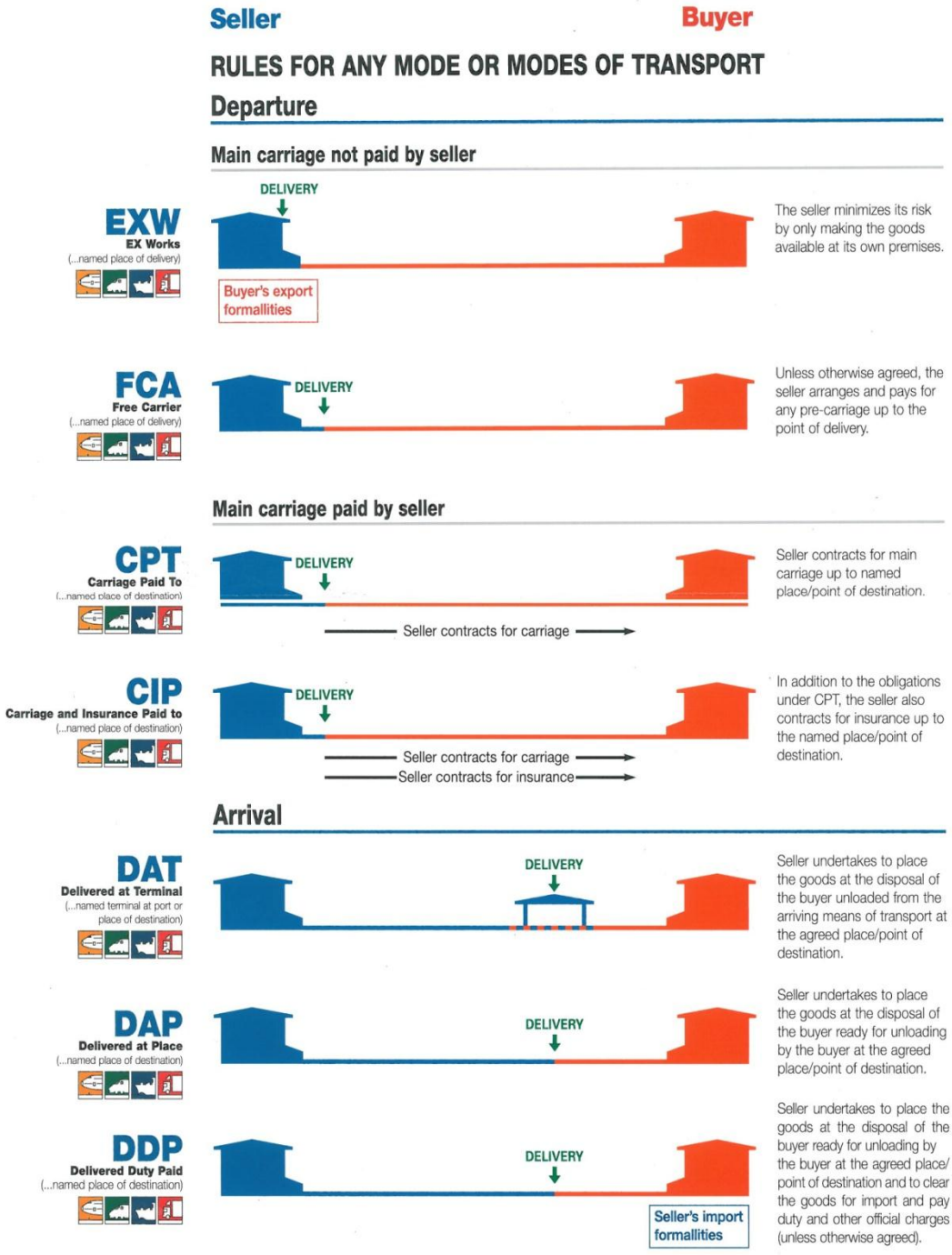
However, they say nothing about the selling price or the method the price is paid. Neither do they deal with consequences of breaching the contract or tranfering the ownership of the goods. These matters are dealt with throught terms in the sale contract or in the law that governs the contract. Mandatory law may also override any any part of the contract, including the Incoterms rule that has been chosen. (ICC 2010, 121-122.)

The 11 Incoterms 2010 rules are divided into two classes (Picture X below). The seven rules that belong to the first class can be used regardless of the mode or modes of transport used. The rules that belong in this class are EXW, FCA, CPT, CIP, DAT, DAP and DDP. The second class retains rules FAS, FOB, CFR and CIF. When using these rules, the point of delivery and the place to which the goods are carried to the buyer are both ports. This gives them label sea and inland waterway rules. (ICC 2010, 123.)

Incoterms® 2010

by the International Chamber of Commerce (ICC)

TRANSPORT OBLIGATIONS, COST AND RISKS



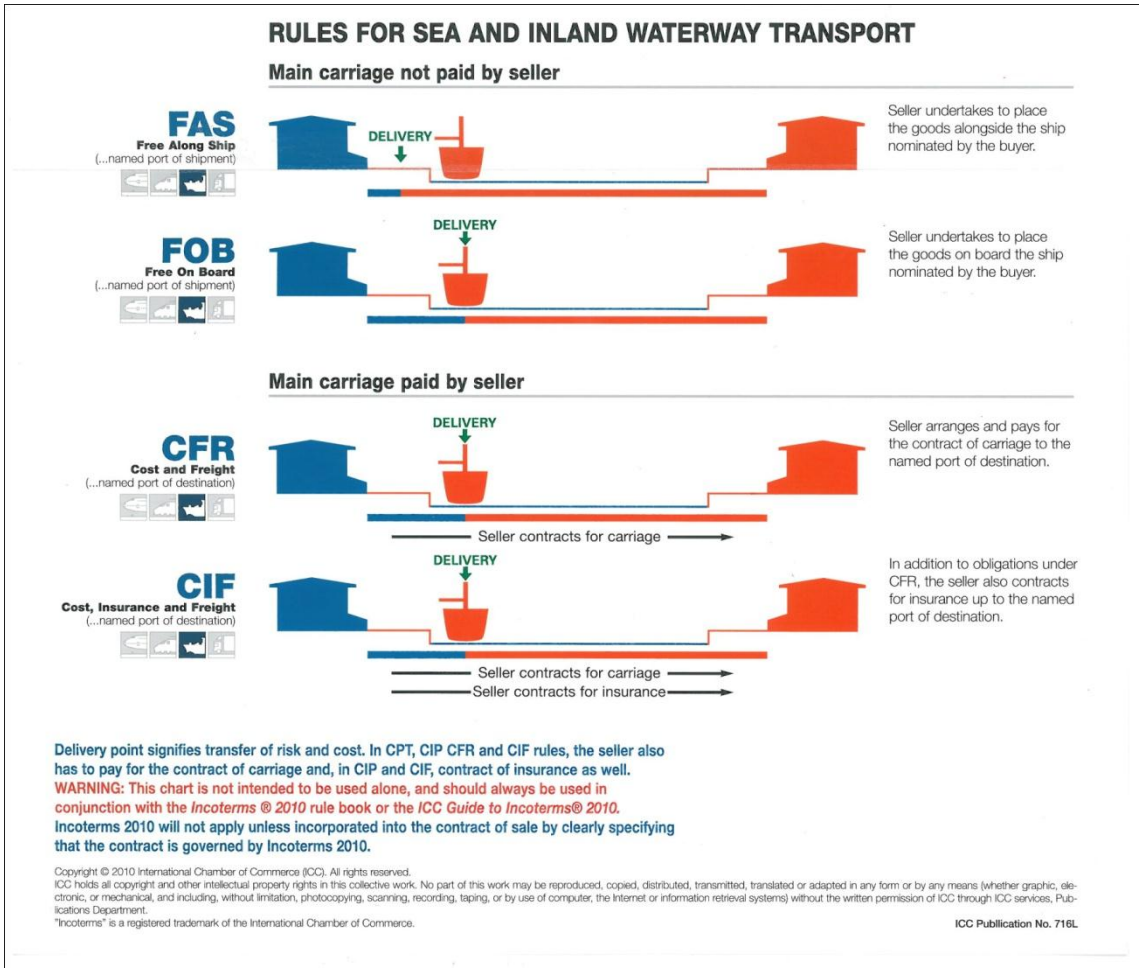


Figure 8. Incoterms 2010 (ICC 2010).

The Incoterms rule chosen needs to be appropriate to the goods, the means of transport used and whether the parties of contract are willing to take additional obligations, such as arranging transport or insurance. The parties should also be aware that the customs particular to the port or place being used might influence the interpretation of their contract. (ICC 2010, 121.)

In the following sub-paragraphs (3.3.1 – 3.3.6) the six Incoterms 2010 rules that are most frequently used in the Company A are presented.

3.3.1 EXW – Ex Works

The EXW rule may be used regardless of the mode or modes of transport that are selected. For international trade the FCA is usually more appropriate option. ”Ex Works” means that the seller has delivered the goods when he places them at the disposal of the buyer at seller’s premises (i.e. factory or warehouse). The seller has no obligation to load the goods on any vehicle that is collecting the goods. Neither does not the seller need to clear the goods for export. The parties of trade should name the place of the delivery as clearly as possible. This practice is adviceable because to that point all the costs and risks are for the account of the seller. (ICC 2010, 131.)

When using the EXW rule the seller has minimum obligations when the transport is considered. Even though the seller has the better position to load the goods than the buyer the seller has no obligation to do it. If the seller, however, loads the goods he does it at the buyer’s risk and expense. On the other hand, the buyer has limited obligations to provide the seller with information regarding the export. The seller may, however, need this information for reporting or taxation purposes. (ICC 2010, 131.)

3.3.2 FCA – Free Carrier

The FCA rule may be used irrespective of the mode or modes of transport. In the ”Free Carrier” option the seller has to deliver the goods to the carrier or another person nominated by the buyer. The delivery happens at the seller’s premises or another named place. The parties should name the place of delivery as clearly as possible because the risk passes to the buyer at that point. The point of delivery should identify the address of those premises as the named place of delivery. When it is applicable the seller is required to clear the goods for export when using FCA rule. However, the seller has no obligation to pay any import duty, carry out any import custom formalities or clear the goods for import. (ICC 2010, 139.)

3.3.3 CIP – Carriage and Insurance Paid To

”Carriage and Insurance Paid to” means that the seller delivers the goods to the carrier or person nominated by the seller at an agreed place. The CIP rule can be used regardless of the mode of transport. The seller must also contract for and pay the costs to get the goods to the named destination. The seller has also responsibility to contract for insurance cover during the transport against the buyer’s risk of damage or loss of the goods. The seller is, however, only responsible to obtain insurance on minimum cover. If the buyer wants more insurance protection, he should make his own extra insurance arrangements or agree the terms of insurance more clearly with the seller. The seller fullfils his delivery obligations when he hands the goods over to the carrier and not when the goods reach their destination. (ICC 2010, 157.)

The rule has two critical points. One is where the risk passes to the buyer and another is where the costs are passed. The parties of the contract should identify these places as precisely as possible. If several carriers are used and nothing else is agreed, the risk passes when goods are delivered to the first carrier. The seller can choose this point and the buyer has no control over this decision. If the parties wish the risk to pass on later stage, they should specify this in their sale contract. Also the point of destination should be identified as precisely as possible. This is because the costs to that point are paid by the seller. The parties should also determine the practice of unloading the goods at the point of destination because if not agreed otherwise, the seller has to pay all the costs from the unloading the goods under his contract of carriage. (ICC 2010, 157-158.)

CIP requires the seller to clear the goods for export. However, the seller has no obligation towards import actions, such as paying duties, carrying out any custom formalities or clearing the goods for import. (ICC 2010, 158.)

3.3.4 DAP – Delivered At Place

When using the DAP rule the seller is bears all the risks of bringing the goods to the named place. The goods are delivered when they are placed at the disposal of the buyer and they are ready to unloaded at the named destination. The parties should should determine the place of destination as clearly as possible because the risks are for account of the seller to that point. The practice of unloading the goods at the point of destination should be agreed between parties. This is because if it is not agreed otherwise, the seller has to pay all the costs from the unloading the goods that are under his contract of carriage. (ICC 2010, 177.)

The goods are required to be cleared for export by the seller in the DAP rule. The seller has no obligation to clear the goods for import, carry out any import formalities or pay any import duties. (ICC 2010, 177.)

3.3.5 DDP – Delivered Duty Paid

”Delivered Duty Paid” (DDP) can be used irrespective of the mode of transport. The rule means that the seller has delivered the goods when the goods are at the disposal of the buyer. They must also be cleared for import and ready for unloading at the named destination. The seller bears all the risks and costs involved in bringing the goods to that destination. The obligation to clear the goods to both for import and export and pay duties for both. He also has to carry out all the customs formalities. Thus, the DDP rule represents the maximum obligation for the seller. (ICC 2010, 185.)

The point of destination should be specified as clearly as possible because the costs and risks are for the seller’s account to that point. The seller has to pay all the costs from the unloading the goods under his contract of carriage if not agreed otherwise. The parties should not use the DDP rule if the seller is unable indirectly or directly to obtain import clearance.If not expressly otherwise agreed

on sale contract, any VAT and other taxes payable upon import are for the seller's account. (ICC 2010, 185.)

3.3.6 CIF – Cost, Insurance and Freight

The CIF rule is only to be used for maritime transport. "Cost, Insurance and Freight" means that the seller delivers the goods on board the freighter. When the goods are on board the freighter the risk of damage or loss of the goods passes to the buyer. The seller is obligated to contract for and pay the costs and freight to bring the goods to the destination port. The seller contracts also for insurance cover against the buyer's risk during the carriage. The seller is, however, required to obtain insurance only on minimum cover. If the buyer wants more protection, he should agree about it much more expressly with the seller or to make his own additional insurance arrangements. (ICC 2010, 221.)

The seller has fulfilled his olbigation to deliver the goods when he hands them over to the carrier. The seller is not obligated to deliver the goods to the place of destination. Thus, the rule has two critical points. The point where the risk passes and the costs are transferred are at different places. The contract speficies the port of destination but it not might tell the port of shipment. This is the point where risk passes to the buyer. The parties should therefore identify the point of shipment precisely if it is of particular interest to the buyer. (ICC 2010, 221.)

The another critical point is the port of destination because the costs to that point are for the account of the seller. The seller is responsible for the costs of unloading the goods at the port of destination under his contract of transport if not agreed otherwise. (ICC 2010, 222.)

The seller is required to deliver the goods on board of the freighter. He is also obligated to clear the goods for export. The seller has no obligations to carry out any import customs formalities, clear the goods for import or paying any import duties. (ICC 2010, 222.)

3.4 Documents in international trade

In addition to the documents used in different modes of transport, for example Bill of Lading (B/L), Airway Bill (AWB) and CMR-waybill, there are some documents that are used regardless of the mode of transport. The most common ones of these are commercial invoice and packing list. (Finland Central Chamber of Commerce 2006, 1.)

The commercial invoice is the most important document in international trade. It has about 80% of the information that guides the whole export process. These pieces of information are being used by transport companies, customs authorities, forwarders, banks, etc. for their own purposes. The commercial invoice should be laid out in the language of the buyer's country or in some other common trade languages. (Finpro 2009, 4.) There is not, however, any law that regulates the form of the commercial invoice. (Finland Central Chaber of Commerce 2006, 2.) There are several international guidelines that tell the need for certain information to be presented in the commercial invoice. All these guidelines have been made because of the need shown by practice. (Finpro 2012, 4.)

The commercial invoice used in export is seldom similar with the one the company uses in its domestic trade. Export invoice should be laid out using UN LAYOUT KEY. It has own fields and places for all the necessary information. (Finpro 2009, 4.) The commercial invoice used in export outside EU should have the following information:

- Seller's complete name, address, phone and fax number and bank information
- Invoice date
- Seller's reference, Business Identity Code (Business ID)
- Buyer's reference, order number and date
- Buyer's (and the receiver's, if not same) complete name and address
- Name and address of the receiver of the goods

- Origin country of the goods
- Destination country
- Information about the transport, for example mode and route
- Delivery term (Incoterms 2010)
- Delivery date of the goods or the service or the day of the advance payment
- Delivery method
- Payment method and term
- Marks, numbers and quantities of packages
- Exact definition of the goods, usually HS tariff number
- Gross and net weight of the goods
- Value of the goods in the currency that is negotiated
- Markings if the sale is tax free (VAT 0%)
- Discounts or other possible extra fees
- Exporters signature

There might be some special regulations concerning the information in the commercial invoice made by single countries. These regulations are possible to get by contacting the state authorities of the country concerned. When trading goods inside the EU the information listed above is used by applying when needed. In addition, mentioning the CN tariff number is adviced. There needs to be also both seller's and buyer's VAT numbers and "VAT 0% (Intra-Community supply)" marking to show that the trade is VAT free. (Finpro 2012, 474-475.)

The other important document is the packing list. The document contains the information about the packages included in the shipment. This document is used when there are many packages, otherwise if the list is short it can be in the commercial invoice. The packing list should contain the information of the packages, including gross and net weights, dimensions and what kind the package is (cardboard box, pallet, etc.). The packing list has neither any form regulated by law. It is, however, adviced to also use the "UN LAYOUT KEY" to ease the handling of packing lists. (Finpro 2009, 4.)

When goods are transported and moved there is always the risk of damage or loss of the goods. It is in the interest of the party who would suffer the costs to take precautions. The common way of dealing with these risks is to take cargo insurance. The point where the risk passes from the seller to the buyer is usually determined in the Incoterms term used, or it can be negotiated separately between the parties. (Pasanen 2005, 366-367.)

When using terms CIF and CIP the seller is obligated to take the insurance in the benefit of the buyer during transport. However, the insurance only has to has minimum cover provided by Clauses of the Institute Cargo Clauses (ICC) or any similar clauses. (ICC 2010, 162; 226.)

The Institute Cargo Clauses have three standard sets of insurance terms for cargo insurance. These are called A, B and C. (Pasanen 2005, 367-368.) Instititute Cargo Clause C (ICC (C)) covers only the damage caused by:

- fire or explosion,
- vessel or craft being stranded, grounded, sunk or capsized,
- overturning or derailment of land conveyance,
- collision or contact of vessel craft or conveyance with any external object other than water,
- discharge of cargo at a port of distress,
- general average sacrifice,
- jettison (Cargoins 2012).

The Institute Cargo Clauses B (ICC (B)) includes, in addition to those mentioned in ICC (C), cover against, for example, theft, disappering, breaking, leakage or damage caused by earthquake, lightning strike and outburst of a volcano. The ICC (A) option is called all-risk insurance and it covers all the damages caused to the goods, excluding dameges caused by war, strike or defects in the transport equipment. (Pasanen 2005, 368-369.) When using additional insurances also the damages caused by war or strike can be covered (Suomen huolintaliikkeiden liitto ry. 2007, 450).

4 CASE: COMPANY A

The thesis was commissioned by Company A Ltd. The company wants to stay anonymous. This is because of the nature of the products the company is selling and the customers it is providing the products for. In the thesis the commissioning company is called Company A and the products it is selling are called Product A,B,C, etc.

Company A was established in Finland in the 1970's as a subcontractor for engineering industry. It specialized in one specific field of engineering to develop and build these products. The basic approach and technologies to build these products were developed, and they are still functional in today's industry. Some of the products patented later on made the Company A known worldwide. The quality of the products is superior compared to its competitors. (Company A Guide for personnel 2011.)

The entire capital share was bought in the late 90's by a stock exchange listed company (Company B) from the United States. Company A became part of the Company B. It became also responsible for the operation and sales all Europe. A few years later, Company B bought other companies specialized in the same field of engineering. These companies, alongside Company A, are currently operating as one group, Group A. Group A consists of Company A's sister companies in the UK, United States and China. They are the global market leader in this particular field of engineering. (Company A Guide for personnel 2011.)

The total turnover of Company B in 2011 was about USD 694 million (510 M€). Group A made up 25.4 per cent of the total turnover. The main market areas of Company A are Europe and North America. Some business is done in Asia, especially India is a growth area. Africa is also seen as a promising market in the future. Exports account for about 65% of the sales of Company A. (Company A Annual report 2011.)

4.1 Cases

The cases to be examined were picked up from the company's future project deliveries. There were four cases that were suitable for this thesis. All these were export deliveries from Finland to other countries. The countries where the goods were transported were France, Algeria, Switzerland and Sweden. More exact info about deliveries is presented in following subchapters 4.3.1 – 4.3.5.

When comparing possible forwarders, Company A wanted to use forwarding companies which it had already had previous cooperation. This was done because the company already had clear vision about the forwarders' level of service and reliability. Possible new forwarding companies were left out of the study to avoid any unwanted problems caused by starting new cooperation. The forwarding companies choosed were Kuehne + Nagel, Schenker, Itella, DSV, Martin Bencher and DHL. The companies are presented briefly in subchapter 4.2.

The study compares the forwarding companies only from the price perspective. The level of service and delivery times were left out of the study. This is because Company A already has clear vision about the service level of these companies. Also the delivery times were considered to be equal regardless of the forwarding company.

4.2 Forwarding companies

Kuehne + Nagel

Kuehne + Nagel (K+N) has grown into one of the world's leading logistics providers during its over 120 year long history. K+N hs more than 1000 offices in over 100 countries. Company has over 63,000 employees worldwide. Company is number one global seafreight forwarder and is also among the biggest within road and rail logistic services. (Kuehne + Nagel 2012.)

DHL

DHL is the global market leader in the logistics industry. Its global network consists more than 220 countries and it has 275,000 employees. DHL is part of the Deutsche Post DHL. The revenue of the group was more than USD 72 billion (53 billion Euros) in 2011. (DHL 2012.)

DB Schenker

DB Schenker operates in some 130 countries with over 91,000 employees. The company is the world's second largest transportation and logistics service provider. It has the most extensive land transport network in Europe and the rail expertise of Europe's largest rail freight company. (DB Schenker 2012.)

Itella

Itella (Post of Finland) operates mainly in the Northern and Central Europe and Russia. With its partners it can reach also the global markets. Partner network also guarantees good sea and air transport possibilities. Itella is one of the leading operators in the Northern Europe and Russia. Company's revenue was USD 2.6 billion (1.9 billion Euros) and it has more than 28,000 employees. (Itella 2012.)

DSV

DSV has offices in more than 60 countries worldwide. It also has network of agents which makes it a truly global service provider. Company has approx. 21,000 employees. DSV's 2010 revenue was about USD 7.8 billion (5.7 billion Euros). (DSV 2012.)

Martin Bencher

Martin Bencher operates mainly with Scandinavian based customers focusing on transport to and from China. Company has 18 offices in 12 countries and it has about 75 employees. Revenue in 2008 was about USD 61.2 million (45 M€). Martin Bencher also operates with other transport companies which enables them to cover areas where they do not have their own offices. (Martin Bencher 2012.)

4.3 Shipments

The price comparison between service providers was implemented by sending request for quotations to all the forwarding companies about all the four deliveries. In the request there was information about the delivery schedule, delivery terms, estimated packing info and the date the goods are shipped from the factory city. The requests for quotations were sent to all the forwarders at the same time. More specific information about the deliveries is presented in the subparagraphs 4.3.1 – 4.3.5.

The prices presented in the cases are transformed into relative form. The cheapest price is always 1,00 and the other are presented in relation with the cheapest price. For example, if the price is 1,25 it means that it is 25% more expensive than the cheapest option. This is done because the Company A does not want to give its contract prices to the public display.

4.3.1 Shipment A: France

The shipment A was from Finland to France. The delivery term was CIP Gif sur Yvette. The measurements of the shipment were 2,500 kg and 3.0 loading meters. The shipment was sent by using a semi-trailer truck and it was a part load shipment. The estimated shipping date was March 15th. The offered prices are presented in the following chart.

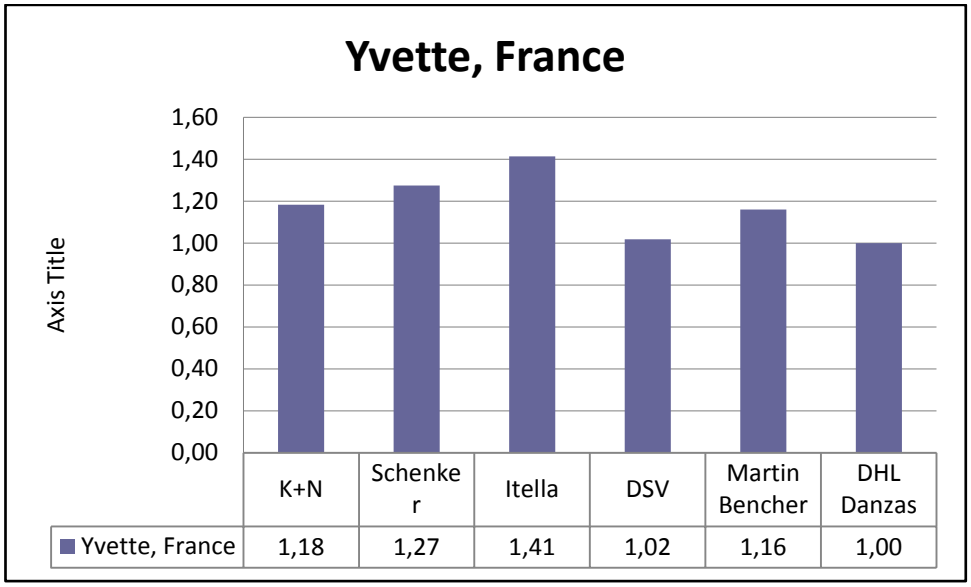


Figure 9. Forwarding costs for shipment A.

The cheapest forwarding option for sending shipment A to France seems to be using DHL Danzas. However, when comparing with DSV the difference of prices is very minimal. Also Martin Bencher is only 16% more expensive. Schenker and especially Itella are clearly the most expensive options.

DHL Danzas and DSV were the cheapest options for this shipment. If the 2% price difference between these two is not the essential criteria for choosing the forwarder, the decision can be made by comparing previous cooperation and the level of service when operating with these companies.

4.3.2 Shipment B: Algeria

The shipment to Algeria is called shipment B. This is different from all the other shipments because it has several different shipments. These are sent every two months and there are total five shipments. The delivery term was CIF Algiers free out. The additional term free out after CIF Algiers means that price includes the charges of loading cargo at the at the port of origin but not for its offloading at the port of destination. The use of this additional term is needed because of the special regulations in the port of Algiers.

When sending quotations, there were two possible options for each of the five shipments. First one was to send two 40' DC containers (á 8,000kg) and the other one was to send 40' HC container (á 16,000kg) per shipment. When comparing the prices between two DC and one HC container, which is usually more expensive to transport because of its larger dimensions, the latter option revealed to be much cheaper. Thus, the prices are for one 40' HC container per shipment.

The container was first shipped to a port in Finland by a semi-trailer truck and after that to the port of Algiers by a freighter. This shipment was a typical combined intermodal transport shipment. The offered prices for the shipment can be seen in the chart.

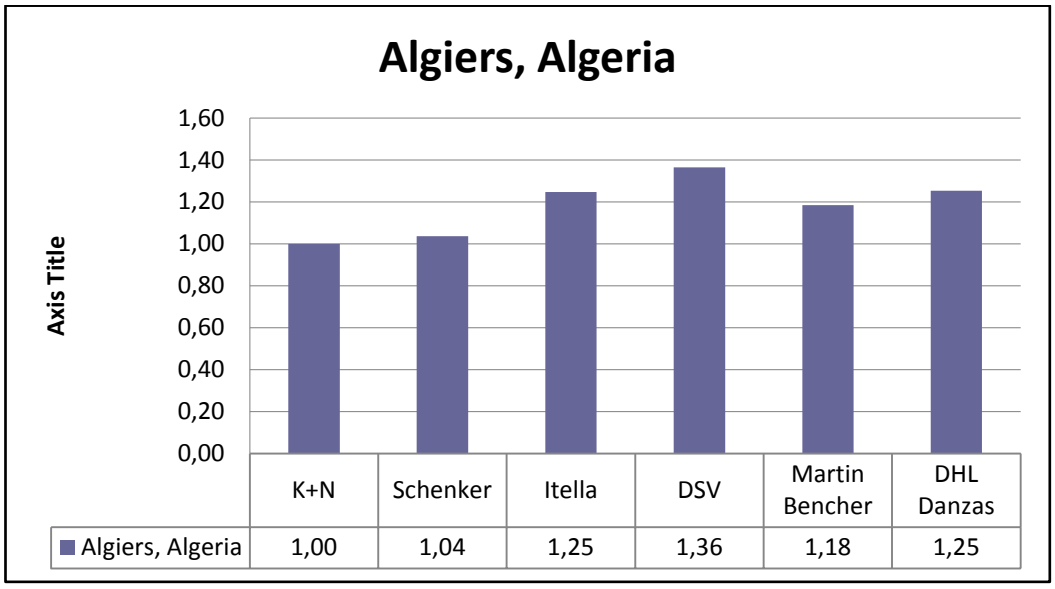


Figure 10. Forwarding costs for shipment B.

The cheapest offer was received from the Kuehne + Nagel. Schenker was slightly more expensive. Martin Bencher was almost 20% and both Itella and DHL Danzas were 25% more expensive than K+N. DSV was clearly the most expensive option.

Kuehne + Nagel and Schenker were the cheapest options for this shipment. The price difference between these tow was only 4%. If the price is not the essential criteria for choosing the forwarder, the decision can be made by

comparing previous cooperation and the level of service when operating with these companies.

4.3.3 Shipment C: Switzerland

The shipment C was sent to Switzerland using delivery term DDU Etoy. The measurements for the shipment were 3.0 loading meters and 2,500 kg. The estimated shipping date was same than for the shipment A, March 15th. Shipment C was sent by using semi-trailer truck and it was a part load shipment. Offers received from forwarding companies can be seen in the following chart.

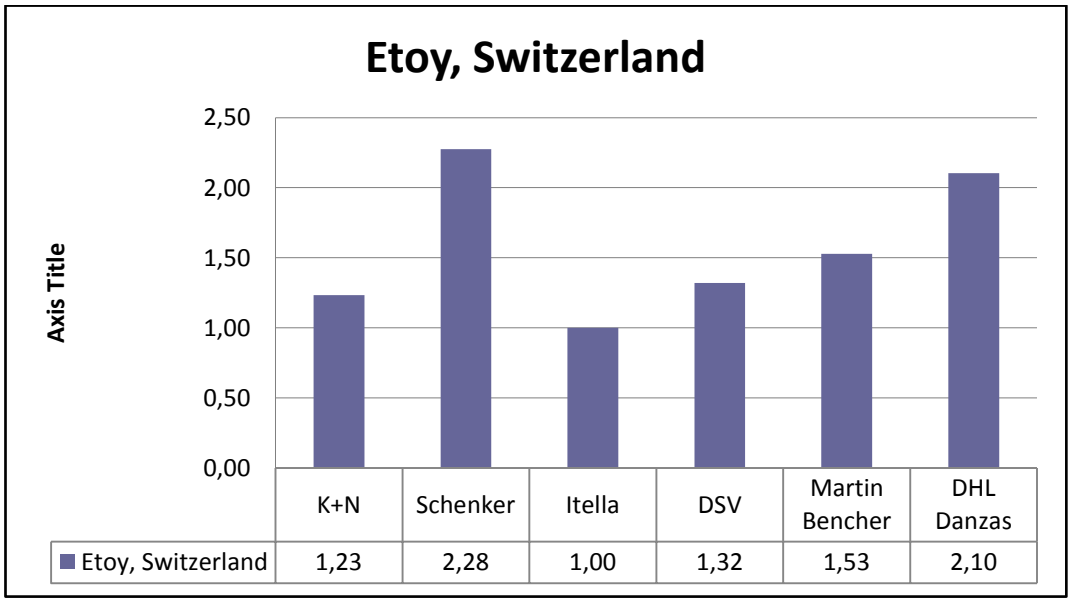


Figure 11. Forwarding costs for shipment C.

Schenker and DHL Danzas offered clearly the most expensive prices. They were more than twice as expensive as the cheapest option, which was Itella. Also Kuehne + Nagel, DSv and Martin Bencher offered prices that were more expensive than the one offered by Itella.

Itella is clearly the cheapest forwarder to switzerland. Company A should use its services when sending shipment C to Etoy.

4.3.4 Shipment D: Sweden

The shipment C was delivered from Finland to Sweden using delivery term DDP Lund. The measurements were same as for the shipment A and C, 2,500 kg and 3.0 loading meters. The shipment D was also sent by using semi-trailer truck and it was also a part load shipment. Estimated shipping date was April 5th. The price comparison of offered forwarding services can be seen in the chart below.

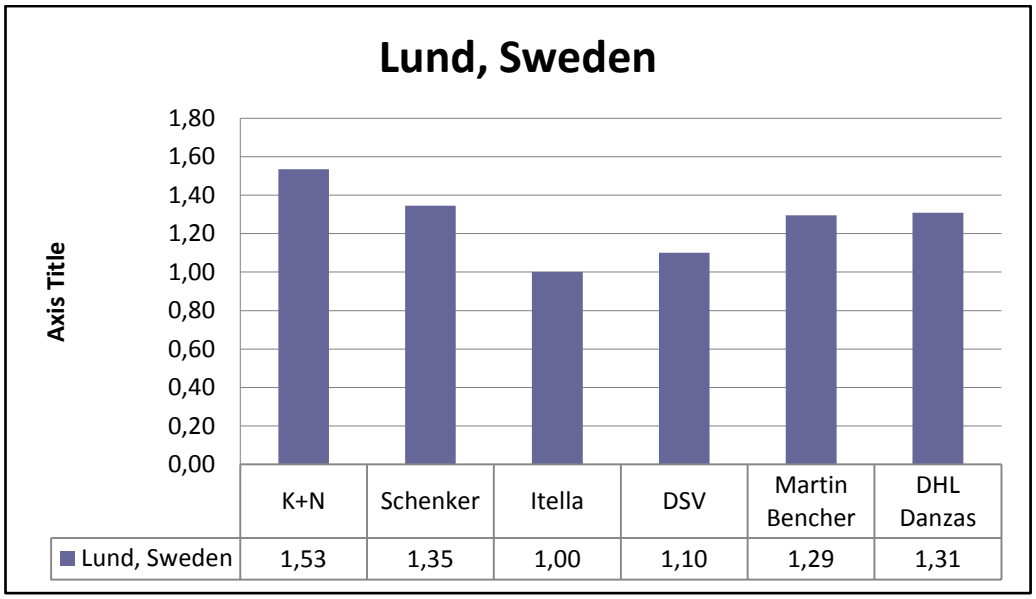


Figure 12. Forwarding costs for shipment D.

Cheapest price for the shipment D is offered by Itella. DSV is a bit more expensive. Schenker, Martin Bencher and DHL Danzas are all about 30% more expensive than the cheapest option. Kuehne + Nagel is the most expensive one, over 50% more expensive than Itella.

Company A should choose Itella's service because it is clearly the cheapest option for the shipment D to Lund.

4.3.5 Combined price for all the shipments

When starting the study there was a discussion about whether the company wanted to concentrate all its forwarding activities to one single service provider or not. Total price for all the shipments transported by one single forwarding company can be seen in the chart below.

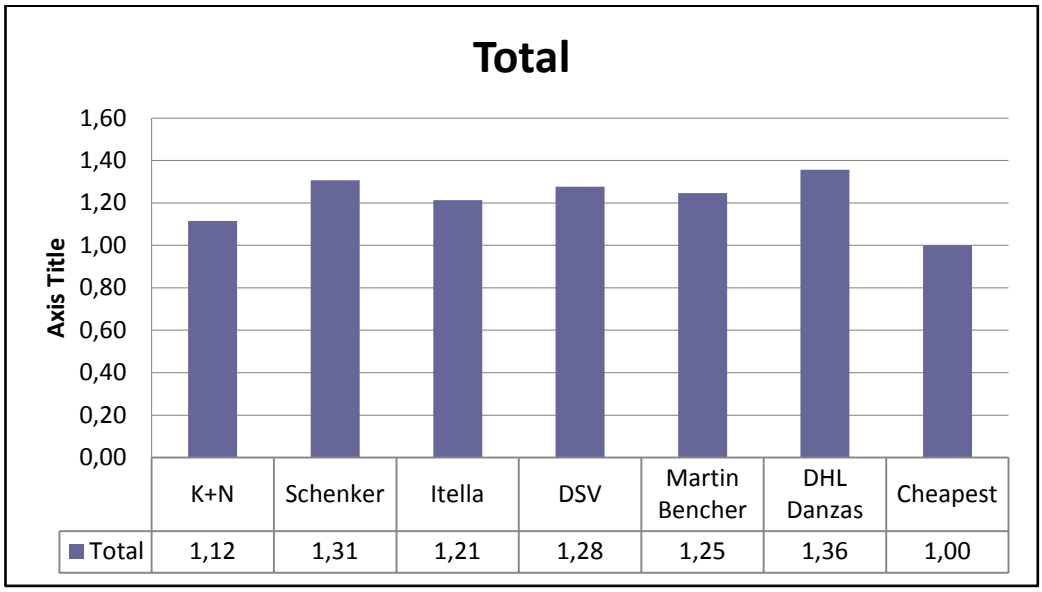


Figure 13. Forwarding costs for all shipments.

The cheapest option, where all the shipments are delivered by using the cheapest options, is called Cheapest in the chart. When concentrating all the shipments to a one single forwarding service provider, the cheapest option was Kuehne + Nagel. However, when compared with the Cheapest it was 12% more expensive. Itella was about 20%, Martin Bencher 25% and DSV 28% more expensive than the Cheapest. Both Schenker and DHL Danzas were over 30% more expensive than the cheapest option.

When viewing these results it is clear that the Company A should not concentrate its forwarding services to a one single service provider. Company A should always take competitive bidding between service providers to find the cheapest option. This is the most effective decision if the price of the service is the most important criteria when choosing the service provider.

5 SUMMARY

Because of the remote location from its main market areas, companies in Finland must pay extra attention to their transport costs. This is especially important in export transports, where the distances are very long. Some companies have dealt this situation by outsourcing either a part or all their logistics operations to professional forwarders.

When goods are transported abroad, the choosing of appropriate transport mode becomes a very important factor. Companies must analyze thorougly different options and take into notice many aspects of the shipment that is sent. The choice between different modes can cause critical differences in price of the whole shipment.

Other important factors in export transport are to choose the correct delivery term and to be aware of the responsibilities and rights caused when choosing a certain delivery term. If intrepreted incorrectly, there can be very critical additional costs to a budgeted price of shipment. Also the awareness of the risk and the responsibility towards the goods during transport must be taken into consideration.

The case shipments were picked from Company A’s project deliveries. These deliveries were going to be shipped to France, Sweden, Switzerland and Algeria. When comparing received prices from different forwarding companies there were differences in the prices. It was also impossible to concentrate all the deliveries to one single service provider if the price was the most important criteria of choice.

REFERENCES

Cargoins 2012. Institute Cargo Clauses (C). Consulted 2.4.2012 http://www.cargoins.com/institute_cargo_clauses_c.pdf

DB Schenker 2012. About DB Schenker. Consulted 30.3.2012 http://www.dbschenker.com/ho-en/about_dbschenker_new/profile_.html

DHL 2012. About Us. Consulted 30.3.2012 http://www.dhl.fi/en/about_us.html

DSV 2012. Annual report 2010. Consulted 30.3.2012 www.dsv.com > About Us > Investors.

European Council directive 96/53/EY.

Finland Central Chamber of Commerce 2006. Ulkomaankaupan kansio. Helsinki: Helsingin Kamari Oy.

FINPRO 2009. Vientiprosessiopas. http://www.finpro.fi/etusivu?p_p_auth=b0xGMiu0&p_p_id=20&p_p_lifecycle=1&p_p_state=exclusive&p_p_mode=view&_20_struts_action=%2Fdocument_library%2Fget_file&_20_groupId=10304&_20_folderId=216253&_20_name=2205

FINPRO 2012. Laivauskäsikirja 2012. Helsinki: Hakapaino Oy.

Finnish Customs 2011. Kuvioita ulkomaankaupasta v. 2010. Consulted 22.4.2012 http://www.tulli.fi/fi/suomen_tulli/ulkomaankauppatilastot/grafiikkaa/liitteet/Kuviot_2010FI.pdf

Finnish Customs 2012. Ulkomaankaupan kuljetukset v. 2010. Consulted 13.2.2012 http://www.tulli.fi/fi/suomen_tulli/ulkomaankauppatilastot/tilastoja/kuljetukset/vuodet/index.jsp

Hirsjärvi, S.; Remes, P. & Sajavaara, P. 2009. Tutki ja kirjoita. 15., uudistettu painos. Helsinki:

Tammi.

International Chamber of Commerce. 2010. ICC rules for the use of domestic and international trade terms. Paris: ICC Services.

Itella 2012. Solutions & Services. Consulted 30.3.2012 http://www.itella.com/solutionsandservices/

Karhunen, J. 2007. Kansainväliset tavarakuljetukset. Jyväskylä: Sho Business Development Oy.

Karrus, K. 2001. Logistiikka. 3., uudistettu painos. Juva: WS Bookwell Oy.

Kiiha, J. 2002. Yritystoiminnan ulkoistaminen ja sopimusvastuu. Saarijärvi: Gummerus Kirjapaino Oy.

Kk Freight 2012. Shipping Surcharges. Consulted 9.2.2012 http://www.kkfreight.com/shipping-surcharges.html

Kuehne + Nagel 2012. About Us. Consulted 30.3.2012 http://www.kn-portal.com/about_us/about_us/

Logwin Logistics 2012. Container Specifications. Consulted 10.2.2012 http://www.logwin-logistics.com/services/service/container-specifications.html

Martin Bencher 2012. Services. Consulted 30.3.2012 http://www.martin-bencher.com/services.aspx

Ministry of Transport and Communications 2010. Finland State of Logistics 2010. Consulted 9.3.2012 http://www.lvm.fi/web/fi/julkaisu/-/view/1199036

Pasanen, A. 2005. Kansainvälisen kaupan käsikirja. Helsinki: Multikustannus Oy.

Pastinen, I.; Mäntynen, J. & Koskinen, L. 2003. Kaupan ja teollisuuden logistiikka. Tampere: Tampereen teknillinen yliopisto.

Pehkonen, E. 2000. Vienti- ja tuontitoiminta. Porvoo: WS Bookwell Oy.

Rushton, A. & Walker, S. 2007. International logistics and supply chain outsourcing. London and Philadelphia: Kogan Page.

Selin, E. 2004. Vientitoiminnan käsikirja. Juva: WS Bookwell Oy.

Suomen Huolintaliikkeiden Liitto ry.. 2007. Huolinta-alan käsikirja. Vantaa: Dark Oy.

Waters, D. 2007. Global Logistics – New Directions in Supply Chain Management. Fifth Edition. London and Philadelphia: Kogan Page.