



JÖNKÖPING UNIVERSITY
International Business School

Collaboration within Supply Chains

Can conflicts be attributed to the different roles of
logistics companies?

MASTER THESIS WITHIN: *Business Administration*

NUMBER OF CREDITS: *30 Credits*

PROGRAMME OF STUDY: *International Logistics and Supply Chain Management*

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JÖNKÖPING *May 2016*

Master Thesis in Business Administration

Title:	Collaboration within Supply Chains: Can conflicts be attributed to the different roles of logistics companies
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Date:	23/5-2016
Subject terms:	Supply Chain Management, 3PL, 4PL, Collaboration, Conflicts

Abstract

Introduction – Supply chains increase in size and complexity, more actors are becoming involved and an increased collaboration among actors are a necessity. Still, undesired conflicts occurs and are unavoidable in a collaboration. There are ways to reduce the negative effects and improve management of conflicts provided by previous researchers focus on conflicts and conflict management in general. However, this thesis emphasizes on investigating what conflicts that occur within different collaboration setups that can be attributed to the type of logistics company involved. Therefore, the following purpose is stated:

Investigate what types of conflicts occurring during collaboration that can be attributed to the different roles of 3PL and 4PL companies.

Methodology – To answer the purpose a single case study was conducted which involved a focal firm and its collaboration with two different logistics companies (a 3PL and a 4PL) within the same economical climate. Due to the uniqueness of the case, a multiple methods qualitative study was performed and to strengthen the validity of the data collected both documentary analysis as well as semi-structured interviews were conducted. Respondents were handpicked based on knowledge of both collaboration setups, to ensure quality of the data collected. Gathered data were summarized and categorized using Mamad and Chahdi (2013) conflict factors, and later analyzed to accurately detect key points to generate a result and answer the research questions.

Result – To summarize the result, findings of what we discovered through our data analysis generated similarities and differences in conflicts occurred within both collaboration setups. These conflicts are linked to Mamad and Chahdi (2013) conflicts factors regarding collaboration among actors, in order to clarify why and which conflict area these conflicts occurred in.

Analysis – From the conflicts identified in the result, further analysis were conducted. Where, previous literature regarding logistics companies (3pl and 4PL) were applied in order to enable attribution of conflicts to company types.

Conclusion – Through the analysis, many conflicts that occurred are based on factors such as operational structure, problem solving and company policies which are not affected by the company type. However, three conflicts and problem areas can be connected to be generally more common either with 3PL companies or 4PL companies. The first lies within the commitment area where 3PL companies can generally be seen as less committed. The second area is communication where important information were more often late due to passing through more actors, causing more conflicts when collaborating with a 4PL. The last problem area were within formalization where findings suggests that there are conflicts caused by 4PLs using several carriers which causes problems such as varying regulations and truck dimensions from carriers.

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1 Introduction

This chapter provides an introduction to the current research in this field. Initially background will explain key motives of the thesis, which breaks down to a more detailed problem description. Then the purpose of the thesis as well as the two research questions is presented.

1.1 Background

In today's globalized economy, single companies no longer compete with other single companies, instead competition has moved towards whole supply chains competing with each other, even on a global scale (Coyle, Langley, Novack and Gibson, 2013). The traditional definition of supply chain is centered on the idea that a supply chain covers the entire flow from the first supplier to the final customer (Jespersen and Skjøtt-Larsen, 2005). The academic research results have overtime point in the direction that a key success factor for supply chains is its ability to integrate all the involved actors and manage the supply chain as a whole (Bowersox, Daugherty, Drøge, Rogers and Wardlaw, 1998; Council of Logistics Management, 1995; New, 1996; Lee, 200; Christopher, 2005). Integration can be described as a way of handling relationships, sharing information and resources, as well as coordination between actors (Lee, 2000). Furthermore, managing global supply chains involves collaboration with several actors, which during the last decade has led to supply chains becoming increasingly complex (Bode and Wagner, 2015). As former vice president of supply chain operations from Coca-Cola North America (Gilmore, 2008) stated, "If you are in supply chain management today, then complexity is a cancer you have to fight". One of the roots regarding this increased complexity is firms' strategy of focusing on core competencies to operate more effectively and efficiently within their own processes (Coyle et al., 2013). Due to this, outsourcing have become a more or less a standard solution in order to focus on core competence and share risks (Dinu, 2015) This has amplified the necessity for actors in supply chain to collaborate in order to achieve an efficient and effective supply chain by bringing in special competency through outsourcing (Ellram and Cooper, 1990; Horvath, 2001).

The increased need of specialized services and firms' focus on their own core competencies, outsourcing of logistics services and activities have also grown substantially over the past decade (Bagchi and Virum, 1998; Knemeyer and Murphy, 2004; Ashenbaum, Maltz and Rabinovich, 2005; Langley, Albright, Morton, Wereldsma, Alf, Swaminathan, Smith, Murphy, Deakins and Peters, 2009) both domestically and globally (Coyle et al., 2013). In addition to this, customers being more demanding and market competition escalating, further strengthen the need for outsourced services (Kotler, 1997). One service which companies often outsourced is the logistics business function of handling and managing the flow of goods. This is often addressed by the use of a third party (3PL), or fourth party (4PL), logistics service provider.

A 3PL company can be seen as a middleman, providing logistics services for other firms, however 3PL companies have expanded, providing more and more services within supply chains and have transformed from merely focusing on transporting and handling goods to providing strategic and value-adding services throughout the supply chain such as merge-in-transit, consolidation and administrative services (Skjøtt-Larsen, Halldorsson, Andersson, Dreyer, Virum and Ojala, 2006; Maloni and Carter, 2006; Mortensen and Lemoine, 2008, Marasco, 2008).

The 4PL is generally viewed as having more of a consultant role, providing no physical assets themselves but rather building, managing and operating supply chains through administrative work (Bumstead, 2002; Hertz and Alfredsson, 2004; Stefanson, 2006; Burnson, 2011).

There are different levels of integration and different supply chains as well as actors themselves handle integration differently depending on their goal. This creates a wide variety of types and levels of collaboration and integration. As explained by Stefansson (2006), logistics companies can be divided into different categories, namely carriers, logistics service providers (3PL) and logistics service intermediaries (4PL). Stefansson (2006) classifies the carriers as providers of transportation and the most basic services, 3PL's as a more advanced service provider who in addition to the basic services also provides more advanced logistics services as well as administrative and operational services. The classification of a 4PL is the role of a consultant who builds and manages the logistics operations, however without their own physical assets (they outsource physical activities). Hertz and Alfredsson (2003) provides a similar type of framework of classifying different logistics firms, which shows that there are a wide variety of logistics service providers operating, who all provide different types and levels of integration and services.

Whereas integration has been proved to be beneficial to performance, integration, cooperation and communication between actors it has also been confirmed to be difficult (Childerhouse and Towill, 2011). With the increase in size and complexity of supply chains, more actors are becoming involved and collaboration between actors increases. Shaiq, Shaikh and Ahmed (2015) state that conflicts are an undesired but unavoidable phenomenon of functional interaction, when collaborating within a company or with chain partners such as suppliers or logistics service providers. Furthermore, according to Razmi and Haghghi (2014) buyer-supplier relationships and collaboration is a sensitive issue since it can provide benefits for both parties while at the same time trigger conflicts and problems due to differences. In addition to this and due to the unavoidable nature of conflicts, Shaiq et al. (2015) found that 91% of managers in their study had faced conflicts with one of their supply chain partners.

While conflicts might not be completely avoidable, ways to reduce the negative effects and improve the handling and management of conflicts as well as the area in general have been extensively studied in previous literature (Gaski, 1984; Ayoko, Ashkanasy and Jehn 2014). With the many different type of collaboration partners that exists, there are several types of collaboration setups that can be seen within different supply chains. Previous research have focused heavily on conflicts and conflict management in general, however there are little research regarding the differences of how collaboration setups work depending on what type of logistics partner that is involved.

1.2 Problem Description

As mentioned in the background, supply chains have increased its complexity due to firms increased focus on core competencies (Coyle et. al., 2013; Bode and Wagner, 2015). Collaboration with actors within the supply chain are a necessity to sustain an effectively and efficient supply chain (Ellram and Cooper, 1990; Horvath, 2001). Furthermore, Lee (2000) stated supply chain integration as one key element of cooperation, including handling of relationships, sharing of information and resources as well as coordination between actors.

Several studies highlight the importance of integration and collaboration within supply chains. Hardy, Phillips and Lawrence (2003) stated that collaboration can develop, maintain and even enhance competitive advantage. Additionally Ireland and Webb (2007) arguing that relational issues such as trust and power should be simultaneously managed among members for firms to become fully committed to supply chain efficiency and effectiveness. Furthermore, the advantage of cooperative relationships can be seen as synergy gained through shared expertise and resources, exchange of information, better planning and support, and joint problem solving (Stank, Crum and Arango, 1990).

Even with all the research pointing on the advantage of collaboration, integration and relationships among actors within the supply chain, firms still struggle to involve other firms in such ways that the supply chain can gain or sustain competitive advantage (Min et. al., 2005). Shaiq et. al. (2015) claim that actors have different if not contradictory targets and missions. This has been previously studied by Barutçu, Dogan, Barutçu and Kulakli (2010) who found that involved partners in the supply chain often have different objectives, a prevailing sense of mistrust between partners, weakness in operational structure, lack of cooperating spirit and substandard quality of communication and providing insufficient information or stating half truths.

This claims that conflicts among actors are common and whether the conflict is with a supplier, with a customer or with a service provider, the nature of the majority of conflicts as found by Shaiq et al., (2015) is policy issues, contractual, financial or operational issues. The reasons of why conflicts occur as Barutçu et al. (2010) stated are well known by actors in supply chains and as stated in the background, extensive research has been performed in the field of conflict management (Gaski, 1984; Ayoko et al., 2014). However previous research often has a more general point of view of examining conflicts between a buyer and a supplier or what type of conflicts that generally occurs within a supply chain.

Previous research rarely touches upon if conflicts can be specifically derived from collaborating with different company types that covers the same area of business. By predicting and preparing before collaboration between two actors starts regarding what type of conflicts that might occur, companies can have a better starting point for their collaborations (Shaiq et al., 2015). Therefore, investigating if certain conflict types can be generalized and linked to specific logistics company types can enable prevention of conflicts at a much earlier stage in the collaboration.

This thesis will focus on a focal firm who has collaborated with two different types of logistics companies within a supply chain. As mention previously, this setup is rarely looked upon in previous research where conflicts that occurs between one focal firm and its different collaboration partners. The specific focal firm in this case has collaborated with a 3PL company and a 4PL company which are two different types of companies while still performing similar roles within the supply chain. The goal is to provide a deeper insight in the existing theory by analyzing if collaboration with a 3PL creates certain conflicts compared to collaborating with a 4PL company and identify any similarities and differences that can be linked to the role of the logistics companies.

1.3 Purpose and Research Questions

With the problem description and gap in the literature whether conflicts that occur are different or similar between different types of firms, the purpose of this study is formulated as follows:

Investigate what types of conflicts occurring during collaboration that can be attributed to the different roles of 3PL and 4PL companies.

To fulfill this purpose, two research questions will be answered. The first research question is needed to identify the areas where conflicts may occur between a focal firm and a 3PL company as well as between the focal firm and a 4PL company. Therefore, the first research question is stated as follows:

1. What type of conflicts occur when a focal firm collaborates with a 3PL company as well as when the same focal firm collaborates with a 4PL company?

Answering the first research question will provide data in order to analyze if it is possible to derive conflicts to the different roles of 3PL and 4PL companies. This leads to the second research question, which is stated as follows:

2. How can conflicts occurring between a focal firm and a 3PL company as well as between the same focal firm and a 4PL company be attributed to the different roles of 3PL and 4PL companies?

Answering these research questions allow us the possibility to fulfill the purpose of identifying conflicts occurring in different collaboration setups as well as analyzing what type of conflicts that can be derived from the different roles of 3PL and 4PL companies.

2 Theoretical Framework

This chapter initially presents the theories applied, followed by a summary of the theories, explaining how these are connected to the thesis in order to fulfill its purpose.

2.1 Introduction

The outline in theoretical framework is constructed through funneling, meaning that each theory is used in order to generate a theme. Starting with an overview perspective, this is narrowed down to the specific theories of focus in this thesis. Still, theories presented at the top of the funnel are required in order to fully grasp the theories presented at the end. Therefore, the theories are structured in following: Supply Chain Management (SCM), Network Approach, Outsourcing, Definitions of Actors, Collaboration and Supply Chain Conflicts (SCC).

2.2 Supply Chain Management

Even though SCM is well known and constantly used both in the world of academia and practice, authors still argue for different definitions of SCM, which creates a considerable confusion as to its meaning. Tyndall, Christopher, Wolfgang and Kamauff (1998) summarize that some authors define SCM in operational terms involving the flow of materials and products, some view it as a management philosophy and some view it in terms of a management processes. Furthermore, Cooper and Ellram (1993) research highlight that SCM has even been conceptualized differently among authors within the same article, stating that SCM is a form of integrated system between vertical integration and separate identities and also as a management philosophy. In additional to this, SCM can be classified into three categories: a management philosophy, implementation of a management philosophy and a set of management processes (Mentzer et. al., 2001). Due to different definitions as well as classifications the term SCM presents confusion for those involved in the supply chain in reaching the phenomena but also for those attempting to establish a supply chain to management.

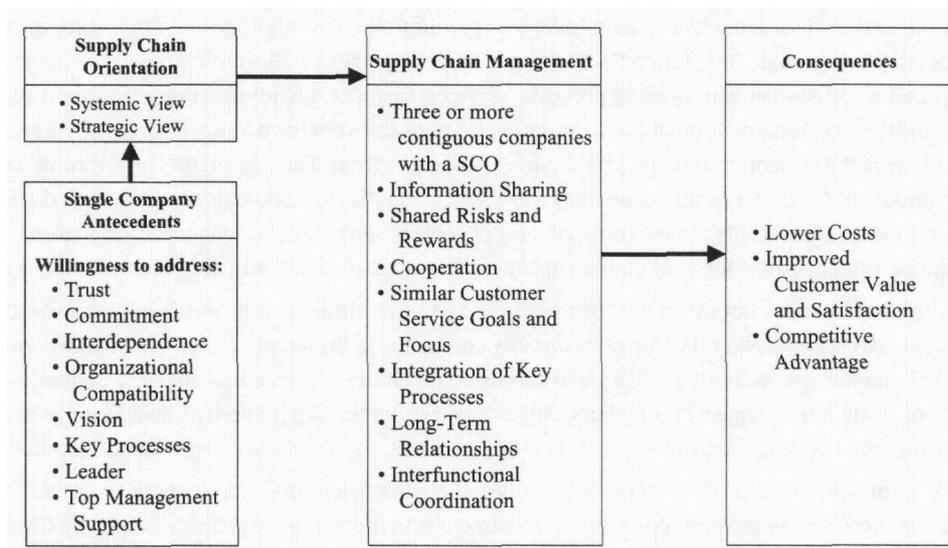


Figure 1: Supply Chain Management antecedents and consequences (Mentzer et. al., 2001)

Therefore, Mentzer, DeWitt, Keebler, Min, Nix, Smith and Zacharia (2001) as can be seen in Figure 1: Supply Chain Management antecedents and consequences (Mentzer et. al., 2001) clarifies the understanding of the term SCM, where the management philosophy refers to supply chain orientation (SCO) instead of SCM with the definition as “recognition by an organization of the systemic, strategic implications of the tactical activities involved in managing the various flows in a supply chain”. More accurately, SCM is the actual implementation of this orientation across various companies in the supply chain with the definition as “the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole“ (Mentzer et. al., 2001).

In other words, SCO is an essential for SCM, which should be interpreted as actions undertaken by actors in a supply chain in order to realize the SCO. According to Mentzer et. al. (2001), supply chains has a SCO (management philosophy) when all the key firms involved in a supply chain share the same willingness to fulfill these antecedents (see Figure 1: Supply Chain Management antecedents and consequences (Mentzer et. Al., 2001)). Through management actions, across suppliers and customers, the implementation of all the principles of the SCO can be performed and therefore called SCM. The outcome of SCM or as Mentzer et. al. (2001) refers to as consequences are lower costs and improved customer value and satisfaction to achieve competitive advantage. This is supported by Sople (2011) stating that SCM primary focus is to serve consumers with excellent goods and services against optimum costs and quick response time, in order to improve customer value and satisfaction, which is the purpose of SCM. In addition, Sople (2011) defines similar activities identified in SCM:

- ❖ Integration of customers and suppliers to business processes
- ❖ Information flow among channel member for planning, implementation and monitoring processes
- ❖ Sharing channel risks amongst partners to gain a competitive advantage
- ❖ Co-operation among channel members to effectively manage the distribution process
- ❖ Integration of processes for synergistic effects
- ❖ Building and maintaining long-term relationships with partners

The fundamental of SCM is based on the idea of partnerships with suppliers, marketing channel members and other service providers with the goal to maximize profit through enhanced competitiveness, imparting benefits to all partners in the supply chain (Sople 2011).

2.2.1 Network approach

A network consists of several actors linked together through their relationships, which Håkansson and Snehota (1989) explain that this web of relationships can be seen as a network. The relationships that create a network are usually complex and multifunctional and require a method to tackle this, which is called the network approach. Ekman, Thilenius and Windahl (2014) stated that the network approach focuses on the complex or multifunctional relationships among actors and their activities and resources connected within the network. Furthermore, Holmlund and Törnroos (1997) used the definition of relationship to define the network approach as follows “an interdependent process of continuous interaction and exchange between at least two actors in a business network context”. According to Håkansson and Snehota (1995) these interaction and exchange can vary from processes, activities or resources that bonds actors together.

Snehota (1990) and Tikkanen (1996) argue that the network approach has a high compatibility with the inter-organizational business environment firms’ encounter in their everyday

operations. It creates a “visible hand”, meaning that inter-organizational exchange is visualized by the process of networking, linking together with various market actors and their complex activities and heterogeneous resources (Arnd, 1979; Cova 1994; Forsgren and Johanson, 1992; Håkansson and Johanson, 1993; Mattsson, 1985; Snehota, 1990; Thorelli, 1986).

In order to create a network with this network approach, two different setups can be used, the network approach can be based on the complete network (Tikkanen, 1998) or take the focal firm viewpoint that is acting in the network (Hertz, 1993; Li 1995; Salmi, 1995). According to Edward et. al. (2013) this network can be modeled with set of “nodes” that represent firms and set of “links” that connect the firms with each other within the supply chain. Furthermore, Edward et. al. (2013) argue that these links between nodes represent exchange relationships and underlying contracts if there are any. This can easily create several types of links between firms but the most critical types of connections are presence of contracts, various flow types including material flows, information flows and financial flows (Edward et. al., 2013). All with the greater purpose in mind of creating products or services (Edward et. al., 2013).

2.3 Outsourcing

Actors that are included in the supply chain are chosen due to their specialization within a certain area as well as adding a value to the chain. This allows companies to focus on their core competencies and operate more effectively and efficiently within their own processes (Coyle et. al., 2013). There are different ways to establish which actors that cooperate within the supply chain. According to Lysons and Farrington (2012) this can be done through vertical integration or horizontal integration, where vertical integrations refers to which extent an organization expands upstream into industries that provide input (backward integration) or downstream (forwards integration) into industries that distribute the organization’s products. Within vertical integration, a focal firm can outsource to industries upstream or downstream in the supply chain, which according to Lyson and Farrington (2012) can be defined as “a management strategy by which major non-core functions are transferred to specialist, efficient, external providers”. Jonsson and Mattsson (2011) support this by stating that outsourcing is an opportunity to focus on core competence as well as that the activities outsourced can be performed more cost efficient by other companies. Therefore, several firms outsource their external transports and warehouse activities to 3PL companies (Jonsson and Mattsson, 2011) as well as 4PL companies, since manufacturing industries or other companies do not see distribution or warehousing as their core competencies. This has lead to more actors being involved in the supply chain network and therefore in order to attain an efficient logistics, it has been an increased focus on how each actor is connected with one and other (Jonsson and Mattsson, 2011).

According to Dinu (2015) the main factors for why companies outsource are generally lower operational and labor costs, lack of own employee specialization, accessibility to cheaper labor, ability to focus and concentrate on core competencies and risk sharing. Therefore, actors within a supply chain entail to collaborate in order to achieve an efficient and effective supply chain by using special competency through outsourcing (Ellram and Cooper, 1990; Horvath, 2001).

As mentioned above companies now more often outsource their logistics business function of handling and managing the flow of goods, which often are addressed by 3PL or 4PL companies. In order for logistics companies to handle and manage the flow of goods, the collaboration is crucial in order to create value for the whole supply chain which is mentioned by Wang, Persson and Huemer (2014). To further support this, Simatupang and Sridharan (2002) define collaboration as occurring when “two or more independent companies work jointly to plan and execute supply chain operations with greater success than when acting in isolation”. Collaboration also focuses on the long-term relationships among actors, which according to Min

et. al. (2005) implies that collaborative strategies focus on joint planning, coordination, and process integration between suppliers and customers and other partners in a supply chain, such as a logistics company.

2.4 Definition of Actors

This thesis encounters three actors within a supply chain, therefore a literature review regarding each actor's definition are presented, starting with theories about third (3PL) and fourth (4PL) party logistics providers, which is then followed by distribution center (DC) theory.

2.4.1 3PL and 4PL Companies

Third (3PL) and fourth (4PL) party logistics providers have emerged as a result of the increased demand for specialized logistics services. As mentioned in the background, 3PL companies can be seen as a form of middleman company providing logistics services for other firms by being the link between a supplier and a buyer/customer. The definition of 3PL companies have changed over time due to 3PL companies providing more and more service to fulfill customer demands. Originally 3PL companies focused on providing the transportation and handling of goods from one point to another, however now they tend to be strategic partners providing value in administrative services in addition to the physical handling of goods (Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Mortensen and Lemoine, 2008, Marasco, 2008). There are a wide variety of 3PL firms depending on their focus they provide value and services in different ways. According to Persson and Virum (2001), examples of how different 3PL companies strategizes and provide services can be identified by looking at what they base their business around. Some 3PL companies are based around physical warehouses with their business revolving around logistics functions such as inventory management and storage connected to their warehouses. At the same time, other 3PL companies can be based around distribution networks with the main focus of providing channels for distribution through terminals and transportation (Persson and Virum, 2001). There are many different variations of 3PL companies and definitions of what each type of logistics company actually is and what they do vary from author to author. The same confusion and different interpretations from author to author applies to the term of 4PL companies. However the 4PL term has its origin from Andersen Consulting (today Accenture) and their definition of a 4PL company was (Bumstead and Cannons, 2002, pp. 79):

“An integrator that assembles the resources, capabilities and technology of its own organization and other organizations to design, build and run comprehensive supply chain solutions.”

While this definition provides a picture of what a 4PL company does, it does not provide enough information to clearly separate the term 4PL from the term 3PL. Examining the literature provides a general view that a 4PL operates more as consultant where their goal is to make their customers gain economical benefits and by doing so gaining benefits themselves by providing no physical assets but rather act as managers and controllers, taking over other firms logistics functions (Bumstead, 2002; Hertz and Alfredsson, 2004; Richardson, 2005; Stefanson, 2006; Burnson, 2011; Lumsden, 2012). In addition to this, Win (2008) emphasizes that 4PL companies are heavily focused and measured by how much value they provide to their customers while 3PL companies are much more measured by how much their services costs.

Hertz and Alfredsson (2003) provides a framework, which divides 3PL (third party logistics providers) by the characteristics “General problem solving ability” which is essentially the ability to solve problems in terms of providing services to solve said problems and “Customer adaption” which is the degree of customized services that a company provides. This result in

four different types of 3PL firms, Standard TPL (third part logistics) provider, Service developer, Customer adapter and Customer developer (see Figure 2: Hertz and Alfredsson (2003)).

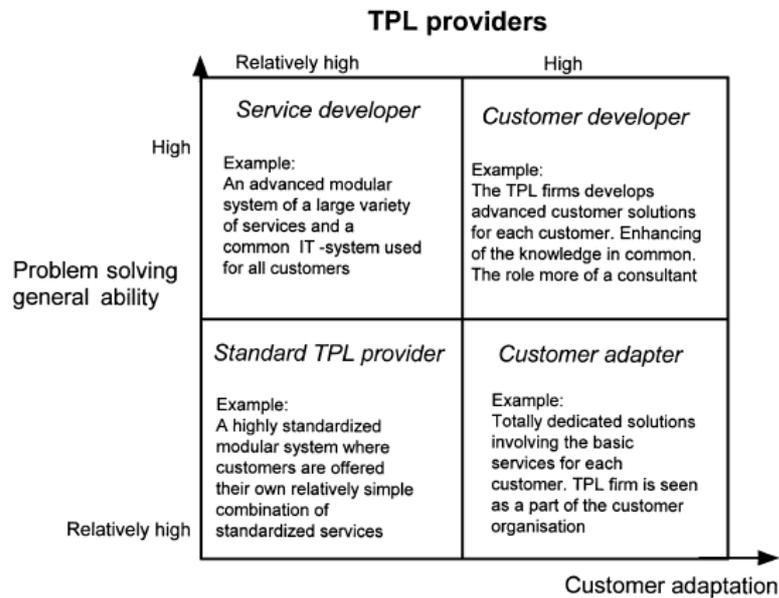


Figure 2: Hertz and Alfredsson (2003)

With Hertz and Alfredsson's classification in mind, Stefansson (2006) provides a framework for classifying logistics companies in general, without the focus on 3PL companies. Stefansson analyzed companies and found that the main differences between the logistics companies were its scope of services and their degree of customization. This resulted in a framework (see

Figure 3: Customization of third-party services (Stefansson 2006)) where logistics companies are divided into three main categories, Prime asset providers such as carriers, Logistics service providers and Logistics service intermediaries.

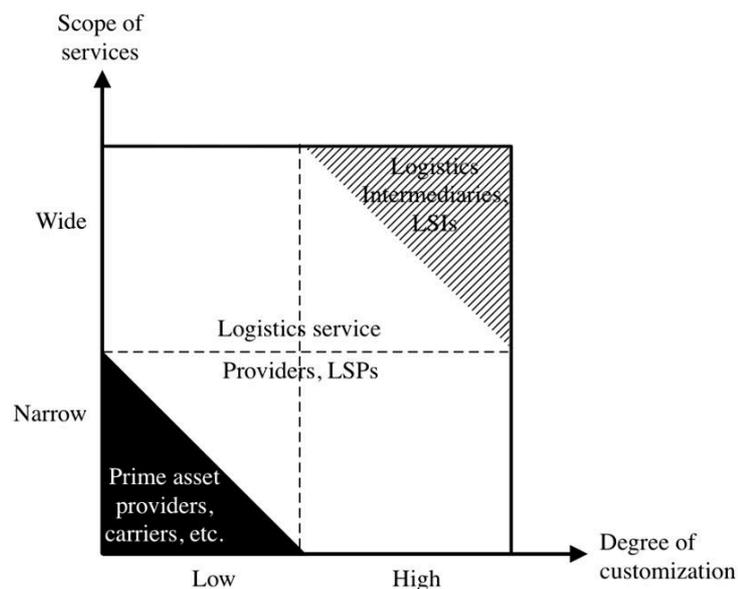


Figure 3: Customization of third-party services (Stefansson 2006)

Figure 4: The CLM model (Stefansson 2004) further illustrates the different actors and their role within the supply chain. The figure shows that the material flow goes from the shipper, to the carrier, and can pass through the LSP before finally reaching the receiver. Essentially the LSP could be providing carriers services themselves or outsource the physical part to fully committed transportation companies. The figure also illustrates how the information flow connects all of the actors together meaning that information, as opposed to material affects and reaches all of the different actors. As the figure illustrates, LSI's have no connection to the material flow, which means that they outsource all the physical handling (Stefansson, 2006). Stefansson (2006) emphasizes the high level of customized services provided by LSI's and means that providing a complete list of services is unrewarding. However the general view of the operations of LSI's is that LSI's design the logistics system for their customers, contract LSP's or carriers to carry out the physical handling and activities and then perform the administrative work needed to operate the logistics system, essentially being more of a consultant (Stefansson, 2006).

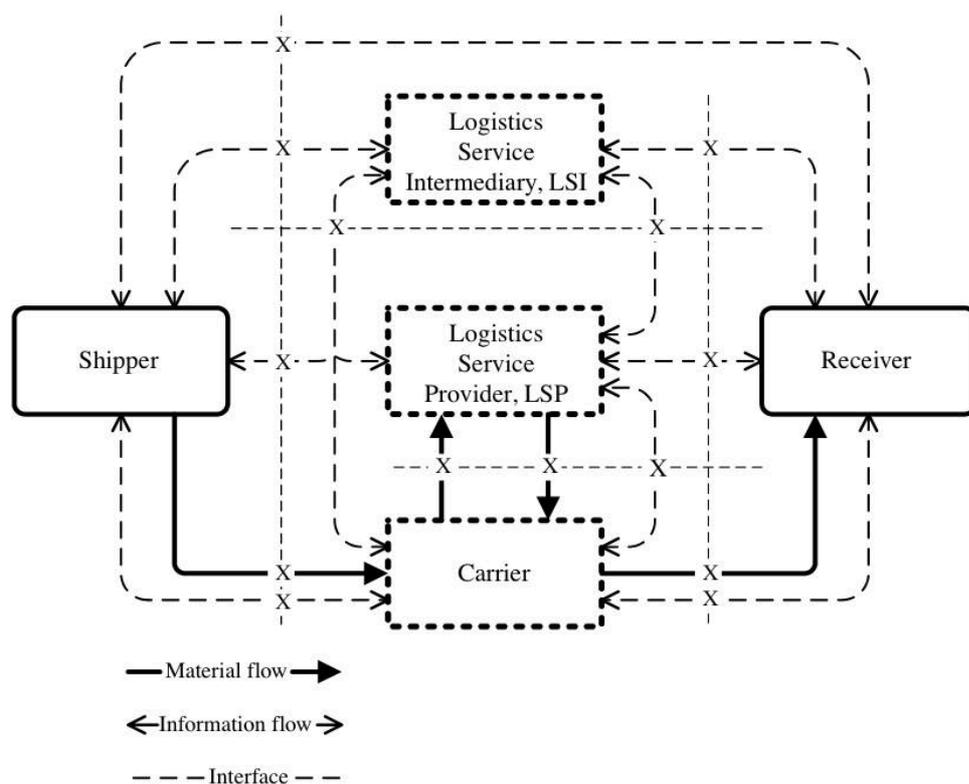


Figure 4: The CLM model (Stefansson 2004)

Analyzing the theories and frameworks provided by Hertz and Alfredsson (2003) as well as Stefansson (2004) and Stefansson (2006) gives a view of different classification and types of logistics companies. Hertz and Alfredsson's (2003) framework classifies logistics companies similar to the framework provided by Stefansson (2006) in the sense that the characteristics "general problem solving ability" from Hertz and Alfredsson (2003) is on par with the characteristic by Stefansson (2006) of "scope of services". This because of the fact that the "general problem solving ability" discussed is a company's ability to solve customers' problems in terms of providing different services. In the same sense, the second characteristic from Hertz and Alfredsson (2003) "customer adaption" is essentially the same thing as "degree of customization" from Stefansson's (2006) framework. In addition to this, our view is that the

“customer developer” company type from Hertz and Alfredsson (2003) can be seen as more of a 4PL company rather than a 3PL company as it’s described as providing more of a consultant role. This fits with the description of the “LSI” definition provided by Stefansson (2006) and further strengthens the similarities between the frameworks.

The main difference between the frameworks is the lack of prime asset providers or carriers in the framework provided by Hertz and Alfredsson (2003) and comparing it with the framework by Stefansson (2006), Hertz and Alfredsson (2003) framework could be seen as only looking at and analyzing LSP and LSI companies and disregarding the prime asset providers. Otherwise, these two frameworks provide similar definitions of different types of logistics companies which also fits the general descriptions of 3PL and 4PL companies provided by several different authors when reviewing existing literature (Bumstead, 2002; Burnson, 2011; Jonsson and Mattson, 2011; Lumsden, 2012; Lysons and Farrington, 2012).

To summarize and exemplify the differences between 3PL and 4PL companies based on the theory provided above, a shorter example can be made. A 3PL company can be seen as a provider of a wide variety of logistics services ranging from the basic transportation to cross-docking, consolidation and administrative services. Generally 3PL companies have their own assets that they use in order to provide their services, which mean that they have and operate their own trucks and transportation cars in order to fulfill their customers’ needs. A 4PL company on the other hand, can be seen as a consultant who basically takes over and operates the logistics department within their customers companies. Rather than being the providers of actual services and physical transportation and handling, a 4PL acts as a middleman who manages the logistics function by hiring transporters and building the supply chain structure. By hiring a 4PL company you basically outsource your whole logistics management and operation department who in turn will work to find and hire transporters and services to fulfill the company needs. On the other hand, when you hire a 3PL company you basically have to find, hire and secure transporters and manage your logistics operations yourself, much like a 4PL would do if you select that route. This can be seen as you either keep your logistics department and buy a essentially a “product” in terms of transportation and services from a 3PL company, or you hire a 4PL company who goes in as a consultant who manages the logistics department and you let the 4PL company buy the transportation and service “product” from others.

Different supply chains can vary greatly regarding what different actors do and as such, listing specific activities that a 3PL, respectively a 4PL is unrewarding in terms of necessity for this study. The case description will provide detailed information as to what each actor does within this specific case in order to give an overview of the detailed differences between the 3PL and 4PL in this case. However detailed description of the differences between 3PL and 4PL companies in general, beyond the above example and explanation that a 4PL is more of a consultant would simply just be a long list of different activities. It’s the backbone of these activities that is important in this case which is the difference explained above regarding that 3PL companies are asset based and 4PL companies’ non-asset based and acts as a consultant.

2.4.2 Distribution Center

To describe a distribution center you first have to define the basic version, which is a terminal and is defined by Lumsden (2012, pp. 598) as:

“A point in the material flow system where you connect and divide the flow of goods”

In addition to this definition, Lumsden (2012) as well as Jonsson and Mattsson (2011) puts heavy focus on the many functions a terminal can fulfill such as cross-docking, consolidation,

sequencing, sorting, warehousing and kitting which creates different types of terminals, depending on their focus. This essentially means that terminals can be seen as many different things, depending on what type of functions that are performed.

With the many functions that a terminal can perform, it makes it hard to describe a distribution center solely depending on its functions. However, one of the key choices that companies have to make is whether they want to use a centralized or a de-centralized strategy in terms of warehousing and where to locate their terminals, warehouses and transport routes (Lumsden, 2012; Huang, Menezes and Kim, 2012). Jonsson and Mattsson (2011) describes one of the typical strategies as a centralized strategy focusing on “delivery through distribution central/logistics central”. In addition to this, Jonsson and Mattsson (2011) describes the distribution central as a point in the material or goods flow where consolidation, picking operations and warehousing takes place. This means that a distribution center can be seen as a larger terminal within a supply chain with a centralized strategy.

Reviewing additional literature reveals that according to Coyle et al. (2013) distribution center’s carries out four primary functions in traditional distribution operations:

- ❖ Accumulation – Receiving goods from several suppliers in order to consolidate and ship complete orders.
- ❖ Sorting – Sorting goods for storage or for transfer to customers.
- ❖ Allocation – The function of being able to split/break bulk orders down to match customer demand rather than shipping large bulk deliveries which suppliers might demand when ordering.
- ❖ Assortment – The ability to have a wide variety of goods from different suppliers available for shipment to customers. Consolidation of goods from different suppliers creates a mixing capability for the distribution center.

While these might be the most traditional functions according to Coyle et al. (2013), they much like Lumsden (2012) and Jonsson and Mattsson (2011) emphasizes the wide variety of functions that a terminal acting as a distribution center can fulfill.

When a distribution center is involved in a retailing supply chain, the typical flow of goods goes from the suppliers in bulk to the distribution center who break bulk, sort and consolidate the goods before sending it to the retail stores (customers) (Craig, Dehoratius, Jiang and Klabjan, 2015).

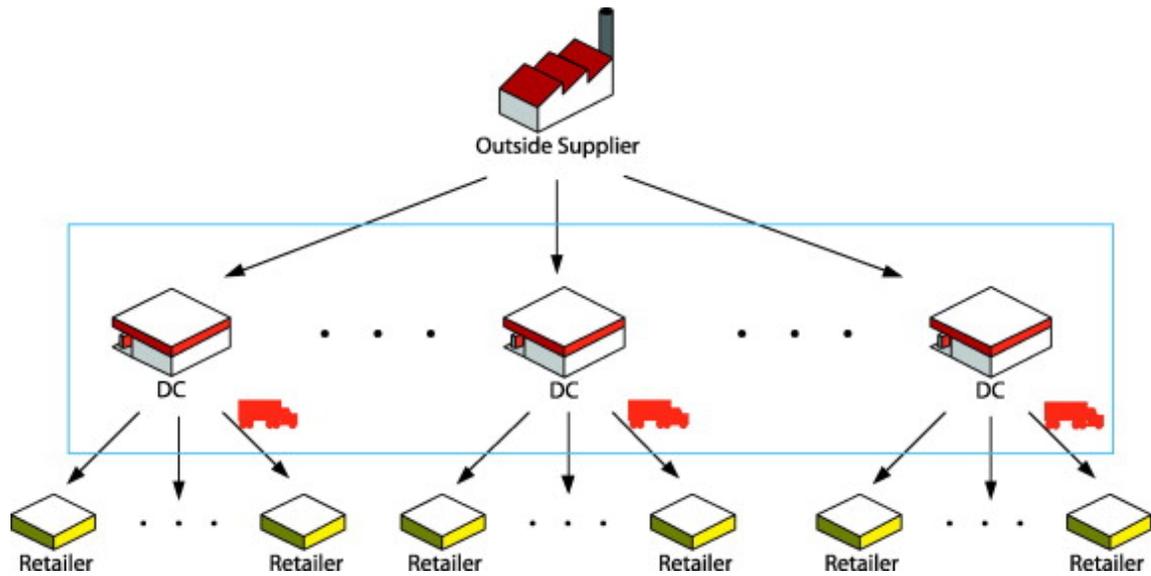


Figure 5: Multi-level Supply Chain Network (Tsao, 2013)

Tsao (2013) illustrates how a typical supply chain involving distribution centers within retailing can look like with an outside supplier delivering goods to the distribution centers who perform different functions (depending on their role in a specific supply chain) and then sends the goods to the retailers (see Figure 5: Multi-level Supply Chain Network (Tsao, 2013)).

There are a vast amount of different types of terminals acting as distribution centers, all with different functions, goals and roles in the supply chain. Examining the literature provides no clear definition of what a distribution center is since each distribution center is different from another in terms of functions and roles performed.

However, Figure 5: Multi-level Supply Chain Network (Tsao, 2013)

by Tsao (2013) resembles a typical supply chain layout involving distribution centers and similar figures can be found by other authors (Coyle et al, 2013; Lumsden, 2012). The common view of a distribution center is a form of centralized terminal providing several value adding services in the form of handling goods but also administrative functions. Listing all the different functions that a distribution center can perform is simply unrewarding, however there seems to be a consensus between authors that a typical distribution center handles sorting, consolidation and storage of goods as their main functions, with a vast amount of additional functions differing from case to case (Jonsson and Mattsson, 2011; Lumsden, 2012; Tsao, 2013; Coyle, 2013; Craig, 2015).

2.5 Collaboration

Strong relationships through collaboration are more prone to achieve common goals for obtaining the competitiveness of the partners (Chen, Daugherty and Landry, 2009; Whipple and Russell, 2007; Baratt, 2004; Xiande, Baofeng, Barbara and Jeff, 2008). In order to develop and maintain a collaborative relationship Mentzer et. al. (2001) argues that it requires: trust, longevity of the relationship, sharing information, openly discussing processes and systems, leadership, technology and benefit sharing. This is supported by earlier research by Ganesan (1994) that suggests trust, commitment and communication as important requirements for an effective collaboration. All these requirements are necessary as mentioned above to achieve common goals and according to Min, Roath, Daugherty, Genchey, Chen, Arndt and Richey (2005) also achieve improved visibility, higher service levels, increased flexibility, greater end-customer satisfaction and reduced cycle times.

To further clarify the concepts regarding the factors of collaboration, research by Mamad and Chahdi (2013) summarize previous literature and provides seven factors to include when looking upon collaboration issues. Therefore, these factors will be used since it provides a solid based regarding the main conflict factors, which are the following: trust, commitment, communication, information technology, dependence, formalization and control, these are presented more in-depth below.

Trust

There is no distinct definition of trust; according to Ganesan (1994) it can be defined as a belief, a feeling or expectation vis-à-vis an exchange partner that results from its expertise, reliability and intentionality. In a supply chains trust is a multidimensional phenomenon consisting of two components, credibility of an exchange partner and an expectancy that the partner's word or written statement can be relied on and benevolence (Ganesan, 1994; Doney and Cannon, 1997). Meaning that to which extent a partner is genuinely interested in the other partner's welfare and motivated to seek joint. Furthermore, trust is a belief of an actor that the other actors in the supply chain will carry out actions that will have positive outcomes (Anderson and Narus, 1990; Moorman, Deshpandé and Zaltman, 1993). Doney and Cannon (1997) emphasize that "collaborative relationships rely on relational forms of exchange characterized by high level of trust" and according to Ganesan (1994) "the high levels of trust characteristic of relational exchange enable parties to focus on the long-term benefits of the relationship". Therefore, trust is widely preserved as a major component of collaboration relationship.

The incentive to gain a high level of trust as Mohr and Spekman (1994) mentions is highly related to firms' desire to collaborate which Anderson and Narus (1990) support and further stated that once trust is established, firms discover that joint efforts can achieve and exceed the outcomes than a firm acted solely in its own best interest would accomplish.

Commitment

Commitment refers to the desire to see the relationships continue in the long-term (Ganesan, 1994), which Morgan and Hunt (1994) also mentions by saying that it is the durable desire to maintain a privileged relationship. This can be related to Dwyer, Schurr and Oh (1987) definition of commitment as a "implicit or explicit guarantee on the continuity between exchange partners". Furthermore, mutual commitment implies willingness of partners to make sacrifices in the short term to achieve long-term benefits (Dwyer et. al., 1987). Commitment leads to mutual gain and performance for both parties in a supply chain relationship (Tellefsen and Thomas, 2005; Mohr and Spekman, 1994). Both parties can also achieve individual and joint goals without raising the specter of opportunistic behavior, when firms commit to long-term partnerships (Lambert, Emmelhainz and Gardner, 1999). Previous research by El Alaoui, Chakor and Mdaghri (2012) discovered that commitment had a direct and positive impact on performance and is an important indicator of the health of the relationship.

Communication

Early research by Frazier and Summers (1984) stated that communication acts as a process by which information is transmitted. In addition to this, Anderson and Narus (1990) define communication as a formal or informal sharing of relevant information between firms. There are several suggestions why communication is of high value when maintaining the relationships. Moor (1998) argues that partners are both able to act independently to maintain the relationship over time and to reduce uncertainties. Furthermore, Mohr and Nevin (1990) also mention that communication can reduce doubt, mistrust, asymmetric information and opportunistic behavior. But sharing ambiguity information can be damageable for the relationship and research of Zhou and Benton (2007) emphasizes that companies must prevent any ambiguity information to be transmitted between actors. In order to sustain a functional

communication, characteristics that clearly need to be included in the communication strategy are: quality, frequency, direction and content (Mohr and Nevin, 1990). These characteristics are significant factors for a successful collaboration and for long-term performance (Anderson and Narus, 1990).

Information Technology

The use of information technology (IT) strengthens the links between actors in the supply chain (Pramatari, 2007), since IT connect users to facilitate the optimization process in the supply chain (Ahmed and Ullah, 2012). Therefore with IT, adequate formal and informal communication among partners is the basis for the collaboration to grow between them (Anderson and Narus, 1990; Heide and Miner, 1992). Paramati (2007) also state that IT can contribute to reduce transaction costs and limits opportunistic behavior and IT is summarized through Bowersox (1990) who argues that IT is a critical factor if partners are to realize benefits of collaboration.

Dependence

Some authors argue that in order for businesses to achieve their goals, each business depend on their environment and on other organizations for obtaining resources necessary (Kumar, 1996; Lusch and Brown, 1996). This is supported by Pfeffer and Salancik (1978) who states that companies desire to secure the resources necessary for their survival and development puts them in a position which each is dependent on the other. Dependence is determined by two dimensions, firstly, the “essentiality” of resources and, secondly, the “difficulty of replacing partner” (Kumar, 1996; Heide and John, 1990). To establish interdependence between actors in the supply chain, these dimensions require a mutual dependence. Interdependence is an outcome from a relationship in which actors perceive mutual benefits from the interaction (Mohr and Spekman, 1994). Furthermore, Pfeffer and Salancik (1978) state that interdependence develops collaboration relationships in order of complementary contributions of each partner and the assets exchanged. In order to achieve mutual beneficial goals of both parties within the supply chain, mutual dependence seem to be the key (Ryu, Arslan and Aydin, 2007).

Formalization

Formalization can be defined as “agreements in writing between two or more parties, which are perceive or intended, as legally binding” (Lyons and Mehta, 1997; Woolthuis, Hillebrand and Nooteboom, 2005), therefore it can also be seen as a formal contract. Other research by Mamad and Chahdi (2013) argues that it is an agreement or a bilateral coordination mechanism by which two parties agree on another’s behavior. In order for stakeholders to overcome the contradictions and control potential hazards that may occur throughout the supply chain, the formalization of collaboration is one of the most effective mechanisms (Mamad and Chahdi, 2013). The formal contract must clearly state the goals pursued and the means to achieve these goals (Ellram, 1995) as well as providing solutions to differences of potential interests (Nickerson and Zenger, 2002; Dekker, 2008). This is critical in order to make an effective collaboration within the supply chain (Malhotra and Lumineau, 2011) and reduce uncertainties regarding the opportunistic behavior of partners and minimize operating costs (Ellram, 1995).

Control

Control can be characterized within a supply chain as an incentive to monitor and evaluate in order to ensure that partners behave as expected (Mamad and Chahdi, 2013). In addition to this, it can also be seen as set of mechanisms and processes, which enables the parties of a chain to ensure that decisions and behaviors developed by them correspond with the objectives (Fenneteau and Naro, 2005). Furthermore, control is considered as a necessity for the efficiency and value creation in a supply chain (Woolthuis et. al., 2005). Therefore, by the use of tracking

devices and monitoring tools, evaluation and monitoring can be accomplished and are needed in order to establish a collaborative framework between actors within the supply chain. As a consequence of this, these devices can set collaborative behaviors (Kanda and Deshmukh, 2008) and to further gain actors motivation in terms of learning and as a safeguard against the risk of opportunism (Williamson, 2008).

Summarization of Conflict Factors

In order to highlight how each factor affects collaboration between actors in the SC, dependant on the level of collaboration, a summary of the theory previously explained within the conflict factors presented by Mamad and Chachdi (2013) can be found below in Table 1: Effects on Collaboration.

Table 1: Effects on Collaboration

Factors	Low level	High level
Trust	Weak relational exchange, focus on short-terms benefits of the relationship. Not interesting in other party's welfare and not motivated to seek joint.	Good relational exchange, focus on long-term benefits of the relationship. Interested in other party's welfare and motivated to seek joint.
Commitment	Unhealthy relationship, negative impact on performance, reduced possibility to achieve joint goals	Healthy relationship, positive impact on performance, achieving individual and joint goals
Communication	Do not share relevant informal- and formal information, creates uncertainties, doubt and mistrust.	Share relevant informal- and formal information, reduce uncertainties, doubt and mistrust.
Information Technology	Weakens the link between actors, complicates the optimization of SC processes and increases transaction costs.	Strengthens the link between actors, facilitates the optimization of SC processes and reduces transaction costs.
Dependence	Interdependent through non-mutual benefits, seek to provide complementary contribution and assets exchange for own interests.	Interdependent through mutual benefits, seek to provide complementary contribution of each partner and assets exchange.
Formalization	Harder to overcome contradictions and control potential hazards in the SC with unclear goals and solutions to differences of potential interest and increase uncertainties	Easier to overcome contradictions and control potential hazards in the SC with clear goals and solutions to differences of potential interest and reduce uncertainties
Control	Uncertain if partners perform as expected, may decrease efficiency and value creation in a SC.	Partners perform as expected, may increase efficiency and value creation in a SC.

As mentioned in the background and according to Coyle et. al. (2013) companies no longer compete on one-on-one basis, instead due to the severe competition companies prefer to cooperate to establish functional chains of interdependent companies (Coyle et. al., 2013; Razmi and Haghghi, 2014). According to Barutçu et. al. (2010), this has become a necessary part of competitive strategies and is no longer an option. Sople (2011) mention the importance of the entire supply chain to be closely integration to have the possibility to achieve the common goals for the supply chain.

2.6 Supply Chain Conflicts

A positive and well working collaboration among actors can generate a better outcome of the supply chain performance, which senior management is well aware of. Even though businesses realize the importance of collaboration, still according to Shaiq et. al. (2015) conflicts is an undesired but unavoidable phenomenon of functional interaction either within a company or with chain partners like suppliers, logistics service providers or any other support service provider. Furthermore, operational conflicts have a higher probability to occur in a collaborative network, the higher number of members operating in the chain (Shaiq et. al., 2015). By minimizing number of actors within a supply chain, Min and Zhou (2002) argue that inclusion of all potential actors from different levels might complicate the concept of strategic collaboration. This support Scott and Westbrook (1991) statement that “the number of members in any supply chain collaboration network should not exceed more than the minimum required number to minimize the conflicting goals of different members organizations and to concentrate more on the performance overall supply chain”. To generate a well performing supply chain, the supply chain management is crucial and Baratcu et. al. (2010) argues that one of the major disciplines of supply chain management is conflict management itself.

To further focus on the conflict in relationships, the collaboration and interaction between two parties within a supply chain are as equally important to highlight. Therefore, the conflicts between actors’ relationships can hamper the overall performance of the entire supply chain. The concept of conflicts have different definition and meanings, which according to Thomas (1992) is based on that conflict is a process which initiates quietly when either of the parties starts thinking that his interests are being frustrated by the other party. Looking at the general literature concerning conflict, it is mostly defined in different ways emphasizing its different characteristics. According to Ramzi and Haghghi (2014) definition, which can be seen as the most comprehensive one, they argue that the conflict is a byproduct of human interaction, “people who are functionally interdependent but perceive conflicting goals, contradictory aims and contrary values and who feel the opposite party is potentially interfering with the realization of the goals, end up having conflicts”. Since a supply chain is purposely crafted with the partnerships involved to achieve similar targets for mutual interests one would believe that common goals would be typical, however according to Shaiq et. al. (2015) the parties involved still often has different if not contradictory targets and missions. If the supply chain is not properly managed it helps breeding conflicts due to it is inherent in the system (Levine, 2012). Reasons that primarily trigger conflicts among supply chain partners and even more specifically between buyers and suppliers are according to Barutcu et. al. (2010) the following:

- ❖ Partners in the chain have different objectives
- ❖ A prevailing sense of mistrust between partners
- ❖ Weakness in operational structure
- ❖ Lack of cooperating spirit
- ❖ Substandard quality of communication and providing insufficient information or stating half-truth

Barutcu et. al. (2010) means that different objectives put the focus of supply chain partners in different directions. For example, during collaboration between a distributor and a transportation firm, the distributor's main objective could be to always deliver on time while the transportation firms main focus could be to always drive with full trucks. These different objectives could create conflicts when decisions whether to drive with a less than full truck load or to not deliver on time has to be made. To point out one reason that is the controlling factor for all other reasons above, Shaiq et. al. (2015) highlights that a prevailing sense of mistrust between partners is the main trigger of conflicts in collaborations between actors. This prevailing sense of mistrust is essentially when supply chain partners have a hard time to trust their collaboration partners' incentives and reasons for different decisions and actions which makes it harder to come to mutual agreements and decisions and essentially drives the partners further away from each other (Barutcu et. al., 2010).

Weakness in operational structure revolves around facilitators, which enables effective collaboration such as IT systems and operational processes. Having an IT system which forces certain tasks to be done a specific way by supply chain partners or operational processes that become ineffective due to regulations by other supply chain partners or due to how other supply chain partners operate can create frustration and tensions which in turn can trigger conflicts. Lack of cooperating spirit logically creates conflicts if one party within a supply chain collaboration setup tries to cooperate and work for the better of the whole chain while other partners might lack cooperating spirit and are less interested in the collaboration. Basically a lack of cooperating spirit from at least one partner in a supply chain collaboration can create frustration and trigger conflicts when another party compromises and puts energy into a collaboration and get nothing in return (Barutcu et al., 2010).

The last point regarding substandard communication can take form in many ways. A typical scenario would be when one supply chain partner suffers from delays, having to reschedule production, transportation or similar issues due to lack of information or communication from a supply chain partner. However substandard communication can also trigger conflicts in scenarios where one supply chain partner does something that affects other partners without informing them in time, such as switching transportation routes, changing volumes of a delivery or increasing/reducing production volumes during a holiday season. As mentioned above, these five points can be seen as the main triggers to supply chain conflicts where a prevailing sense of mistrust often is a central driver to the other triggers (Barutcu et al., 2010; Shaiq et al., 2015).

2.7 Theory Summary

Through this summary the purpose of each theory previously presented will be clarified and how these are connected to this thesis (see Figure 6: Theory Summary). Since the focal firm and each logistic company operate within a SC, providing theory regarding SCM enriches the understanding of managing entire supply chains. In addition, it enlightens the important factors in order to gain a competitive advantage through solid management, which can be related to how the actors collaborate within the SC. Furthermore, by using the network approach the SC can be visualized and simplified, due to nodes and links that connect the actors with each other creating a supply chain network. This enables the possibility to link the actors looked upon in this thesis, which is the focal firm and the logistics companies, and inform that the link between actors represent relational exchange. This relational connection between actors is according to Edward, Hearnshaw, Mark and Wilson (2013) through contracts and various flow types, such as material flow, information flow and financial flow. Therefore, SCM and network approach provides an overview to this thesis and supports why collaboration and conflicts not only affect two or more actors but rather the entire supply chain.

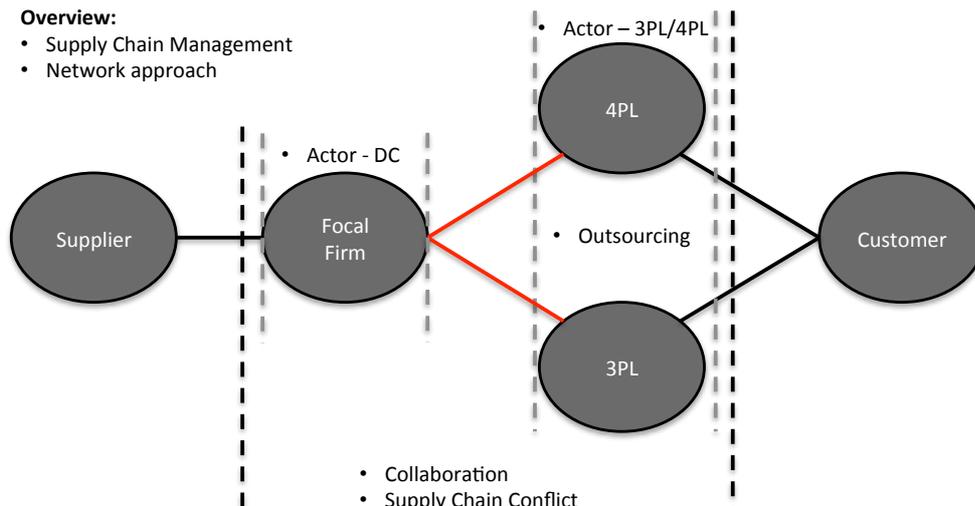


Figure 6: Theory Summary

The focal firm operates as a DC and was previously connected with a 3PL and is currently connected to a 4PL. Therefore, definitions of actors are stated in order to define the three main actors, the DC, the 3PL company and the 4PL company. This also supports what types of flows that creates the link between the logistics companies to the focal firm. In addition to this, by stating the definitions of each actor used in this thesis, enhancement of the analysis and conclusions is made. Furthermore, the focal firm, which is a DC that has earlier outsourced their activities regarding the outbound distribution to a 3PL and now currently to a 4PL. By theory regarding outsourcing it clarifies why actors such as a DC outsource distribution to logistics companies and more specifically how these are linked together.

By narrowing the theories down at the end of the funnel, collaboration and SCC are chosen in order to have the possibility to fulfill the thesis purpose with support from the other theories. Collaboration focus on the actual relationship between actors and what factors to consider in order to establish a solid collaboration setup. If these factors are not thoroughly considered, conflicts may occur and through SCC theory we highlight the typical conflicts within SCs, which is similar to the ones stated in the collaboration theory.

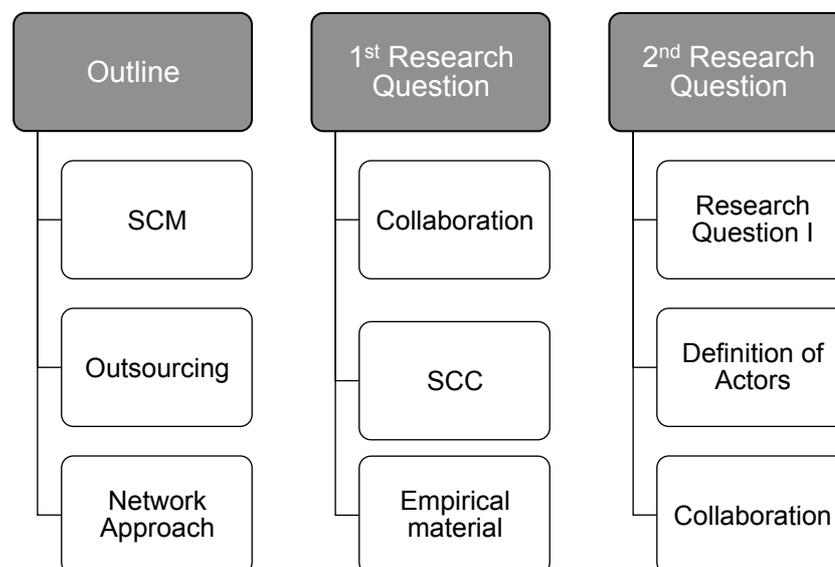


Figure 7: Link between Research Questions and Theoretical Framework

As mentioned above, SCM, network approach and outsourcing are theories providing an overview and are used throughout the whole thesis. Remaining theories will be clarified in Figure 7: Link between Research Questions and Theoretical Framework, by connecting which theory is used for each research question. Additionally, the answer from research question one is also applied in order to enable answering of the second research question.

3 Methodology

This chapter will guide the reader through the methodological choices made by the authors in order to fulfill the purpose of the study

3.1 Research Methodology

This chapter will go through and explain the methodological choices behind this master thesis. The importance of explaining the method properly lies in the ability for others to take your research seriously and accept it (Crotty, 1998). Our choices of different approaches, strategies and methods will be explained through each layer of the “research onion” by Saunders, Lewis and Thornhill (2015) who explain the need to defend and motivate choices in each layer in order for the reader to fully understand choices made within the inner layers of the research onion (see Figure 8: The Research Onion (Saunders et al., 2012)).

The first layer that will be explained is the layer of philosophies which is a term that explains different ways of viewing the nature of reality, what is considered acceptable knowledge and what role values play in the research. The second layer is the research approach which focuses on how you approach your research in terms of theories, generalize of and the use of data and the general logic of how you go forth with your research. The third layer is the layer of strategy which consists of different strategies that you can use in order to achieve the goal of fulfilling the purpose.

The fourth layer is your choice of how you will approach the use of methods by using one or several methods and/or mixing them in order to fulfill your purpose. The fifth layer considers your time horizon for your study where you decide on how you will distribute and use the time available. The sixth and final layer is the data collection and analysis layer which is essentially the hands-on methods you will use to collect and analyze data (Saunders et al., 2015).

All of the layers of the research onion and our choices within each layer will be more in-depth discussed and explained below to motivate the methodological foundation of our study.

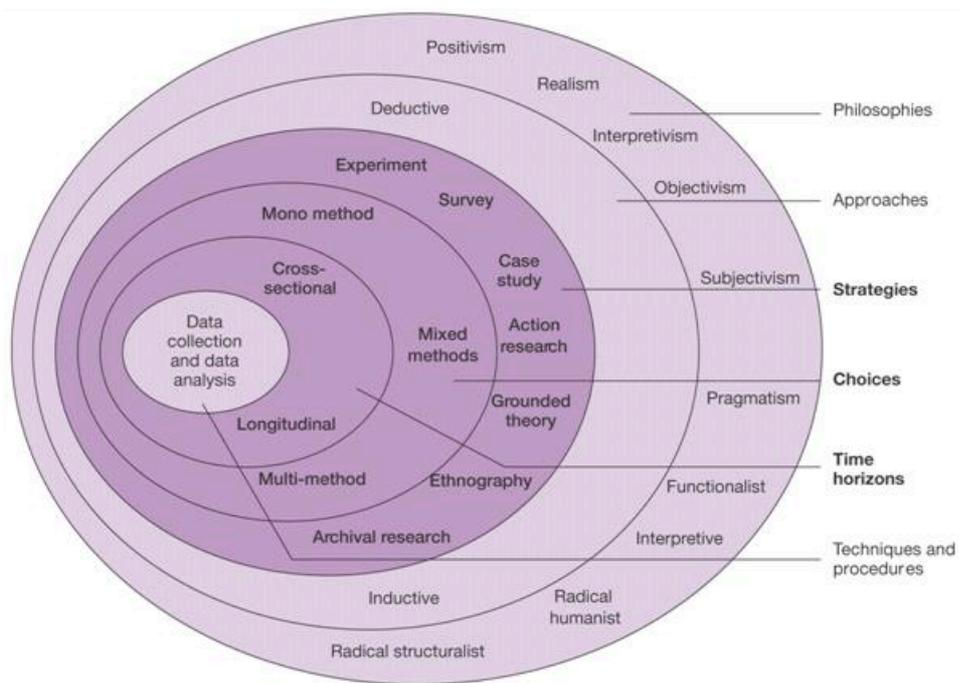


Figure 8: The Research Onion (Saunders et al., 2012)

3.2 Research Philosophy

A research philosophy can be seen as your own assumptions about how to view the world which in turn will build the foundation for what strategy and methods that will be used within the research (Saunders et al., 2015). The main area of interest according to Saunders et al. (2015) is the view of what is counted as acceptable knowledge. There are several research philosophies which all differ somewhat on what they count as acceptable knowledge and how they view the reality. This thesis has adopted the pragmatism philosophy throughout the research. The pragmatism philosophy is based around the concept that how you view the world and what is counted as acceptable knowledge is highly centered on your research questions (Saunders et al., 2015). The basis is that the nature of reality, what is considered acceptable knowledge and what role values play in your research depends on what is most suitable for your research question.

Pragmatists highlight the practical consequences of a research finding as the most important part of a research, what a research finding practically means or how it can be used (Natasi, Hitchcock and Brown, 2010). The pragmatism research philosophy is based around the idea that there is not a single point of view of how the world operates or how to undertake research, but rather multiple views and ways to develop research (Tashakkori and Teddlie, 2010; Saunders et al., 2015). Kelemen and Rumens (2008) however emphasizes that undertaking a research with the pragmatism philosophy does not mean that you have to use multiple methods but rather using methods and strategies well suited and fitted to fulfill your research questions.

Other philosophies such as the positivistic philosophy or the interpretivism philosophy are more rigid regarding what can be seen as acceptable knowledge. Positivists only accept knowledge when it can be measured and quantified, much like a natural scientist, while the interpretivistic perspective focuses on interpretations and that interpretations of phenomena are valid knowledge (Saunders et al., 2015). We did not want to limit what is seen as acceptable knowledge to either spectrum (observable phenomena versus interpreted phenomena) because we believe that certain aspects of our research requires an objective, positivistic approach where phenomena or information can be ruled out when needed (through for example, statistical data). At the same time, certain aspects of the research needed interpretations to fully understand and drive the research forward in order to answer the research questions thoroughly.

This thesis has two main research questions that have to be answered in order to fulfill the purpose, namely:

1. What type of conflicts occur when a focal firm collaborates with a 3PL company as well as when the same focal firm collaborates with a 4PL company?
2. How can conflicts occurring between a focal firm and a 3PL company as well as between the same focal firm and a 4PL company be attributed to the different roles of 3PL and 4PL companies?

We adopted the pragmatist view because we believe that different views can contribute to answer these questions as well as for the discussion and future research.

Just to provide an example of our thought behind choosing the pragmatic view, answering the first research question could be done by strictly looking at facts gathered through interviews and a positivistic philosophy could be suitable. While positivism is often connected to quantitative studies, adopting certain aspects when doing qualitative interviews is fully possible (Saunders et al., 2015) and as such, adopting the positivistic view could be of interest for research question one. This because research question one is based around looking at conflicts that has occurred

and leaves less room for interpreting the data gathered in the sense that conflicts that have occurred in the past have occurred, there is essentially of no interest to interpret it in any other way for the research question.

However, as we move towards research question two, adopting a positivistic approach could hinder the development of the research by eliminating the possibility to subjectively interpretations of the data gathered. Using the positivistic approach for research question two would leave us with less room to interpret the data in order to compare and find similarities and differences to answer the second research question. An example of how this could affect our research is that we might find that certain conflicts that occur between a focal firm and a 3PL company could be similar to another conflict between a focal firm and a 4PL, while not being identical. This could be hard to measure and really observe and as such provide unacceptable knowledge according to a positivistic philosophy. There would be of interest for the research question and to provide a result of value to allow interpretations of the different conflicts when we are at the stage of comparison. This provided connections between the different conflicts regarding 3PL and 4PL actors that would have been harder to justify from a positivistic perspective, while still being of interest for the research question. With this in mind, interpretations of our result and data was suitable to answer the second research question while at the same time, only observed phenomena was used in order to answer research question one. Accepting both of these ways of viewing what is acceptable knowledge is the essence of a pragmatist approach, which is why we have chosen to adopt this philosophy.

As mentioned above, using the pragmatist approach, both observable phenomena and subjective meanings can provide acceptable knowledge depending on the research question. The practical use of the findings is the important factor and as such we adopted the pragmatist philosophy in order to interpret the world, values and what we consider acceptable knowledge in the best suitable way for our research questions. At the same time, we believe that both strictly positivistic quantitative studies within the same area of research as well as interpretive studies can contribute to further improve this research area in different ways which also is aligned with the philosophical view of the pragmatist.

3.3 Research Approach

Referring back to the research onion, the research approach is the second layer and revolves around your research's use of data and theory. First of all, and of importance to the choice of research approach, our research, based on the purpose and research questions are a combination of exploratory and explanatory research. Exploratory research focuses on asking open questions to gain insight about a topic, while explanatory research emphasizes on explaining relationships between variables (Saunders et al., 2015). With this in mind, our first research question is of exploratory nature where we gained insight as to what conflicts that can occur in this setting, while the second research question is more in line with an explanatory nature where we identified relationships between occurring conflicts and the type of firm they are connected to.

There was also the possibility to do a descriptive study; however these types of studies are often connected to statistics with the goal of identifying characteristics of a phenomenon which is less suitable for this thesis (Saunders et al., 2015). With the statement that this research will be a combination of exploratory and explanatory in nature the research approach could be chosen and Easterby-Smith, Thorpe and Jackson (2008) states three main reasons why the choice of research approach is important; They emphasize how it enables you to further take a more structured and well informed decision on your research design, which research strategies that will and will not work for your specific research and that you, by knowing the traditional

research approaches easier will identify and cater for typical constraints throughout your research, which is also emphasized by Yin (2010).

There are essentially three common research approaches used, which are the deductive approach, the inductive approach and the abductive approach (Saunders et al., 2015). A deductive approach essentially means that you are reviewing existing literature and design your research strategy around testing and validating existing theory. You use data collection to develop hypotheses and propositions revolving around existing theory in order to validate or falsify the theory of interest. The inductive approach is sort of the opposite in the sense that using this approach you begin with collecting data to identify patterns, themes and explore phenomenon in order to build conceptual frameworks and generate new theory. The abductive approach can be seen as a combination of the previous two approaches (Suddaby, 2006) where you collect data to explore a phenomenon, patterns and themes which you then test in order to generate new, modify existing or add to existing theory (Saunders et al., 2015).

The abductive approach uses an iterative process of moving back and forth from theory to data as opposed to the deductive approach of moving from theory to data as well as the inductive approach of moving from data to theory. This thesis began with analyzing theory in order to establish a basic understanding of existing literature regarding conflicts within supply chains, then move towards empirical data collection to create a foundation to answer our first research question. Existing theory were used to identify typical conflicts within supply chains in order to be able to find conflicts that have actually occurred in this specific case. In the next step of the research we analyzed gathered data, made comparisons within the gathered data as well as comparison with theory in order to answer our second research question as well as to fulfill our purpose. Since these steps were taken throughout the thesis, an abductive approach has been used.

3.4 Strategy

The choice of strategy revolves around the plan of how you are supposed to provide answers to your research questions. Denzin and Lincoln (2005) describe the research strategy as the link between the research philosophy and data collection methods. This thesis used the strategy of a single case study to answer the research questions. The goal of case studies is to explore a research topic within its context or several real-life contexts (Yin, 2009). There are several reasons for using case studies as research strategy, however Eisenhardt and Graebner (2007) emphasizes that case studies are especially relevant if you wish to gain rich amounts of data and knowledge of the processes and objects being observed within its context. Saunders et al. (2015) explains that case studies have a high ability to answer the questions “why?”, “what?” and “how?” regarding your research questions which is in line with our research questions.

Yin (2009) distinguishes four characteristics in two different dimensions of case studies and when and what they are suitable for. The dimensions are single case versus multiple cases as well as holistic case versus embedded case. Regarding the first dimension, Yin (2009) emphasizes that single case studies are often used when it represents a unique, critical or extreme case scenario. Single cases are often selected because of its characteristics of being typical, or because it provides opportunity to observe and analyze a phenomenon that few have considered before (Saunders et al., 2015).

The purpose of this thesis is to further increase the knowledge regarding similarities and differences in conflicts between a focal firm and a 3PL as opposed to a focal firm and a 4PL. Our selected case is unique in the sense that the focal firm recently have collaborated with a 3PL firm and now collaborates with a 4PL firm, meaning access to information and people which have been present at both “states” of the company (the different collaboration setups) was available.

This provided us with the ability to gather data regarding occurring conflicts of both the collaboration setups that the company has had. Since companies change over time, people switch work positions, the economy might change and the effect time has on memories etc, analyzing a company that have collaborated with different logistics firm, but who have not recently switched collaboration partners, might provide less available and relevant data. This specific case provided us with the ability to analyze occurring conflicts of two states of a focal firm with as few other factors that could affect the result as possible. An example of this could be that if we would analyze a company that collaborated with a 3PL firm 10 years ago and now collaborates with a 4PL firm; the economic factor of both the company as well as the rest of the market/world could be factors influencing how the collaboration functioned and what conflicts that occurred. The goal with this case is to minimize such external effects as much as possible by investigating a focal firm and two different collaboration partners closely connected in the time aspect.

Because of this uniqueness a single case study were selected in order to provide enough relevant data to answer our research questions. This is in line with Yin (2009) reasoning behind deciding on a single or multiple case studies. It is not related to providing the most possible evidence possible but rather you decide on a single case study when you have a case which is critical, unique or typical in order to answer your research question properly (Yin, 2009). The above statements provide several benefits to why a single case study is suitable. We have a unique case in the sense that the focal firm have recently worked with both a 3PL and a 4PL company. Compared to investigating two different “focal firms” where one worked with a 3PL and one with a 4PL company, this provides us with fewer factors that might impact the result (such as the differences or similarities in conflicts being an effect of a different focal firm, rather than a different type of logistics company). Using this specific case with a static focal firm gave us the possibility to eliminate possible differences between one focal firm to the next from the equation. In addition to this, finding similar cases where a static focal firm has worked with both a 3PL and a 4PL company in a similar fashion to our specific case is unrewarding. Due to our purpose and the nature of the case required us to gather information about conflicts and problems that have occurred in the past we needed several interviews with several different people at different positions. Performing these interviews and gathering enough data from more than one case, let alone finding a similar case was simply not possible within our time-frame for this thesis.

The second dimension mentioned by Yin (2009) is the holistic versus embedded dimension. Basically this depends on how you look at the case or case studies that you are observing. The holistic view is when you look at a company or studied organization as a whole, without taking different departments or similar ways of dividing a company into account. On the opposite, the embedded view is used when you divide a company in different ways, such as departments, for example to identify differences between departments within a company where, in that case, each department becomes an “embedded case”. This thesis focus on the conflicts between a focal firm and their collaborating partners and the important part is the relationship and connection between the focal firm as a whole and the partners, rather than different departments within the company. We therefore adopted the holistic view and conflicts were viewed as being conflicts between focal firm and the 3PL company or the 4PL company, and we did not take into account which department or who in the company that the conflict might involve. Our goal was to identify similarities and differences regarding occurring conflicts when a focal firm uses a 3PL as opposed to a 4PL collaboration partner and as such, distinguishing between different departments through embedded cases provides no benefit for our research question.

Besides the performed interviews connected to our case study we also collected and analyzed documents regarding the company structure and the collaboration setups in order to get a clear

picture of the case. Examples of documents studied are company descriptions, process maps and similar documents regarding the company structure, however due to ethical considerations, these documents will not be presented in this thesis. In addition to this the authors used previous literature and theory in order to confirm data, such as comparing theory regarding typical conflicts with respondents answers during interviews to get a better view of the nature of a certain conflict. This strengthened the possibility for us to make sure that the information we gathered through interviews and how we interpreted different responses to questions are not misunderstood.

Using several methods of data collection this way refers to “triangulation” and is often used within case studies in order to strengthen the trustworthiness by gathering data from more than a single source within a case study (Bryman, 2006; Yin, 2009; Saunders, 2015). Typically triangulation refers to using at least three different sources of data and while ideally you would also want different types of sources (such as interviews, document studies and literature), different sources of the same type can also be seen as triangulation (Yin, 2009). However, in the case with sources of the same type, the researcher has to make sure that the sources aren’t connected to each other in a way that makes them essentially only a replica of each other. An example of this could be three different documents stating something where two of the documents are just retelling what the third document says (Yin, 2009). This case contained several interviews, which could be seen as triangulation by itself, however the authors decided that to further strengthen the thesis, additional sources such as document studies and comparison with previous literature were appropriate.

3.5 Methodological Choice

The methodological choice is closely connected to the research strategy in the sense that depending on your choice of strategy, you are essentially making a methodological choice. Basically you choose between making a quantitative, qualitative or multiple methods research design and it all depends on how you go forth in answering your research questions (Saunders, et al. 2015). If you choose a certain strategy of answering your research questions you are essentially also choosing the methodology. The methodological choice therefore goes hand in hand with the choice of strategy. In this thesis, we performed a single case study in order to answer our research questions and collecting data through several methods, which means that we conducted a qualitative multi-method way of designing our research (Yin, 2009). According to Denzin and Lincoln (2005), qualitative research is often associated with an interpretive philosophy; however as Saunders et al. (2015) emphasizes, the pragmatist philosophy can also adopt qualitative research (see chapter 3.2). Our choice of methodology is in this case essentially dependent upon our choice of strategy. The uniqueness of our specific case and its benefits as explained in the chapter above becomes the foundation and base of this research, which is why we chose to rely on this single case. In addition to this, the authors decided upon several methods of data collection in order to strengthen the research. Using multiple methods this way is often used within business and management research to overcome weaknesses associated with using a single method (Bryman, 2006). By choosing and deciding upon our strategic choices the way we did essentially also made us decide upon our methodological choice and summarized it as a multiple methods qualitative study.

3.6 Time Horizon

The choice of time horizon often depends on the research question and purpose, however time in general is often a constraint within the academic world which somewhat limits the possibilities for certain type of studies (Saunders et al., 2015). There are generally two types of studies discussed regarding the time horizon, cross-sectional studies and longitudinal studies. Cross-sectional studies are performed when you study a certain phenomenon at a specific time,

while longitudinal studies focuses on observing a phenomenon over a longer time period to study change and development (Saunders et al., 2015).

This thesis, due to time constraints, is a cross-sectional study where we gathered data over a short period over time. However this study included a longitudinal element through the way the purpose and method is formulated. While the data gathering were performed in the typical way of cross-sectional studies (over a short time period), we gathered data regarding a previous state of the case study's focal firm (when they collaborated with a previous 3PL partner). This means that the thesis will somewhat draw from the strength of being able to study change and development that longitudinal studies has, while still being able to stay within the time constrains necessary. Basically we gathered data regarding the previous collaboration between the focal firm and their 3PL partner and identified conflicts that occurred in that time period through interviews with people that were involved with this previous collaboration. This provided us with the longitudinal element needed to compare the collaborations and ultimately fulfill our purpose while still performing a cross-sectional study to remain within our time-frame.

3.7 Data Collection

The most central point of the research onion is the data collection and data analysis, which determines your choice of actual methods for gathering and analyzing your data. The purpose of this thesis is to study conflicts between a focal firm and their collaboration partners and while some data regarding this was found within company documents, provided wider perspective and the whole picture we needed to gather data from the individuals that have actually been involved and experienced both of these collaborations. Because of this, and due to this thesis, as previously stated, being of qualitative nature the main data collection technique used were interviews.

3.7.1 Semi-Structured Interviews

Interviews are according to Saunders et al. (2015) a way of purposefully asking questions and recording answers in order to explore a topic or subject. However interviews can be performed or set-up in different ways and different authors has different ways to classify interview types (Powney and Watts, 1987; Yin, 2010; Robson, 2011; Saunders et al., 2015). Yin (2010) uses a broad classification by dividing interviews into structured interviews and qualitative interviews. Structured interviews are according to Yin highly scripted interviews where you basically read predetermined questions from a script and also possibly fill in predetermined answers (Saunders et al., 2015). Structured interviews are seen more as a type of survey or poll and are of quantitative nature (Yin, 2010). The other classification is the qualitative interviews, which are interviews without the scripted nature of structured interviews and no predetermines questions are used exclusively. Saunders et al. (2015) further classifies qualitative as unstructured/in-depth interviews or as semi-structured interviews. Unstructured interviews refer to highly informal interviews where your goal is to gain in-depth knowledge of an area of interest. These types of interviews follow no theme or specific area but rather focus on a certain aspect, which the respondent is free to discuss and talk freely about (Saunders et al., 2015). Semi-structured interviews are interviews where you follow a certain theme or area of interest throughout the interview and possibly have some general key questions for the respondents. However as opposed to structured interviews, you do not follow questions strictly and the way of asking questions and even which questions you ask may differ from respondent to respondent dependent on the context of the interview (Yin, 2010; Saunders et al., 2015).

Qualitative, semi-structured interviews are according to Yin (2010) the most used method of doing interviews when doing qualitative research. Saunders et al. (2015) emphasizes that semi-

structured interviews are often conducted when doing exploratory and explanatory research where you need to understand participants reasoning and attitude towards the topic which is strengthened by the findings of Cooper and Schindler (2008). Another important aspect of semi-structured interviews are their possibility to handle a larger amount of questions, complex and/or open ended questions as well as where you might have to adapt and change the order and direction of questions depending on the context (Jankowicz, 2005; Easterby-Smith et al., 2008).

Silverman (2007) puts heavy focus on that the choice of what type of interviews you perform, and your method in general should be aligned with your research question and the choice should be suited to best answer your research question as a first priority. With that said, Saunders et al. (2015) suggest six questions as a checklist in order to determine whether semi-structured interviews are suitable or not:

- ❖ Does the purpose of your research suggest using semi-structured and/or in-depth interviews?
- ❖ Will it help to seek personal contact in terms of gaining access to participants and their data?
- ❖ Are your data collection questions large in number, complex or open-ended?
- ❖ Will there be a need to vary the order and logic of questioning?
- ❖ Will it help to be able to probe interviewees' responses to build on or seek explanation of their answers?
- ❖ Will the data collection process with each individual involve a relatively lengthy period?

Due to the nature of this study, it provides several reasons why semi-structured interviews are suitable and below we will go through these six checklist points and how our study fits within the checklist.

The purpose itself is based around conflicts between the focal firm and two of its collaborating partners and with the limited background knowledge that we as researchers has regarding these collaborations and how they have worked, structuring interviews with semi-structured themes connected to conflicts is suitable. The nature of discussing company information and especially the conflict area could make participants less willing to participate which the nature of semi-structured interviews can help to hinder through the second point in the checklist above, by creating a personal contact and assuring participants secrecy and explaining how the data will be used and how secrecy will be handled.

The third point on the checklist revolves around the amount and complexity of data collection questions as well as whether they are open-ended or not. Our research questions revolve around conflicts, and emphasizes on the type of conflicts that have occurred. In order to be able to categorize conflicts and to compare different conflicts with each other, we needed to know as much as possible about the conflicts that occurred and the nature and complexity of different conflicts can be hard to answer through set questions on a questionnaire. This is also connected to the last two checkpoints regarding probing of interviewees' responses as well as the length of interviews. Since we wanted to gather as much information as possible about the different conflicts that have occurred, without knowing much about what conflicts that have occurred beforehand, we have started with the theme of conflicts, and then build on our questions and seek information continuously throughout the interviews. This also affected the length of the interviews since we started with more basic themes regarding conflicts to first identify what type of conflicts that have occurred and as the interviews continue, developed our questions and seek more detailed information about the different conflicts that have occurred as the interviews continued.

The fourth point in the checklist is regarding if questions might need a change in ordering or logic depending on context and/or the specific participants. This has been done in our case, since certain conflicts are not known or affecting every participant that we have interviewed. Therefore, certain questions have been included as well as excluded depending on context. In addition, information gathered through the initially interviews were used in the subsequent interviews. This also affected the order of questions in the applied theme, since new knowledge was gained after each completed interview.

3.7.2 Documentary Analysis

As mentioned before, when performing a single case study it can be designed by using a mix of methods to collect and analyze data (Yin, 2009). We have therefore included documentary analysis in our mix of methods that supported the interviews performed, which have contributed to the data collected in different ways. First and foremost, it generated an overall perspective, since documents that have been analyzed consisted of the company structure as well as the collaboration setups. These documents contain information about the company description as well as process maps connected to each collaboration setup with both logistics companies. Secondly, by performing document analysis before conducting the interviews we gained a solid foundation to start from and then we could through interviews gain further knowledge. In addition, this also facilitated us to better understand information stated by the respondents and made the interviews smoother. Thirdly, it also enabled us to confirm if information gathered through interviews were in line with the documents.

3.7.3 Selected Sample

Depending on what type of study that is being conducted, an appropriate sample technique has to be selected. These sample techniques can be divided into two types, probability sampling and non-probability sampling (Saunders et. al., 2015). Probability sampling seeks to answer the research questions and achieve objectives through statistically estimate the characteristics of the population from the sample which is a sampling technique is usually associated with surveys (Saunders et. al., 2012). Therefore, we selected non-probability sampling which as opposed to probability sampling is useful when research questions and objectives cannot be achieved through statistical inferences about the characteristics of the population (Saunders et. al., 2015). Additionally, Saunders et. al. (2015) also state that non-probability sampling is used when a sample cannot be selected randomly from a sampling frame, which further augmented our choice of using non-probability sampling. Since we conduct a single case study with a particular purpose, a non-probability sampling is suitable in order to gain richer information. Furthermore, the respondents selected for the interviews have been specifically handpicked together with our contact person at the focal firm in order to interview the individuals that could provide the information required to answer the research questions. This was of high importance since we needed individuals from different departments at the focal firm that have collaborated with both the 3PL- and the 4PL company. This also prevented interviewing inadequate individuals for the thesis purpose that most certainly would not be prevented if respondents were selected randomly.

Due to the specific criteria required of the respondents a sample size of nine individuals were handpicked (Table 2: Interviews Performed), which is in line with performing semi-structured interviews according to Saunders et. al. (2015). Patton (2002) also argue that the sample size is dependent on the research questions and objectives, what you need to find out, what will be useful and what will have credibility, which further strengthen the sample technique and size selected for this thesis.

3.7.4 Interview Process

Initially, the key to perform successful interviews is to thoroughly plan and be prepared before they are carried out, as prior planning prevents poor performance (Saunders et. al. 2015). In order to avoid data quality issues we have therefore followed Saunders et. al. (2015) three key measures that are to be included when preparing interviews. These key measures are level of knowledge, developing interview themes and supplying this information to the interviewee before the interview and lastly, appropriateness of location.

Level of knowledge concerns the actual knowledge we as researcher need to have regarding the research topic and organizational or situational context in which the interviews are to take place (Saunders et. al., 2015). This knowledge has mostly been obtained by documentary analysis as mentioned before, in order to gain knowledge regarding the organizational and situational context of the collaboration setups. In addition, further knowledge about the research topic has been gained from the literature review performed beforehand. Since our research topic involved looking at conflicts occurring in the two different collaboration setups, the information revealed from the interviews are required to be more detailed in order to gain sufficient information to generate a reasonable result. Therefore, we were required to have a higher level of knowledge in order to show credibility, which according to Saunders et. al. (2015) encourages the interviewees to offer more detailed information regarding the topic.

Continuously, we developed an interview theme based on the conflicts factors from Mamad and Chachdi (2013) and used it as main areas to generate an open discussion with the interviewees in line with the theme developed. Through open discussion we allowed respondents to define and describe a situation to provide extensive answers and Patel and Davidson (2011) argues that this gives the respondents a greater freedom to design the answers themselves. To further strengthen the interviewees' responses in terms of validity and reliability according to Saunders et. al. (2015), we informed them beforehand about the thesis purpose and provided a list of the interview theme, which gives the interviewees an opportunity to be prepared for the interview.

An appropriate location to conduct the interviews is of importance and should be chosen based on what is convenient for the respondents, where they will feel comfortable and where the interview is unlikely to be disturbed (Saunders et. al., 2015). Therefore, each interview was performed at the focal firm site in a conference room behind closed doors, which avoided interruption and made it both convenient and comfortable for the respondents.

At the start of each interview the first few minutes of conversation will have a significant impact on the outcome, based on our credibility as well as the respondents' confidence (Saunders et. al., 2015). This required us to initially explain the thesis purpose and in what manner the data collected may be used. In addition to this, we also discussed the respondents' role within the organization, to make sure that the respondent felt appreciated and important (Ghauri and Grønhaug, 2010). After the initial discussion when we have shown credibility and friendliness, each respondent was asked to be audio-recorded, which all respondents approved, which in addition to taking notes as the interview progressed provided us with a reliable way to transcribe the gathered data.

Respondents interviewed as mentioned before were handpicked based on certain criteria regarding their involvement with both collaboration setups; this allowed us to only interview respondents that had collaborated with both the 3PL- and 4PL company. There are also several departments at the focal firm that have connection to the collaboration with the logistics companies but in different ways, which is obvious since each department operates differently but important in order to gather the whole holistic picture. Interviews were made in-person with

respondents that operate on the floor as well as manager from each of these departments, in order to cover a greater area of where conflicts may occur. Table 2: Interviews Performed provides a summary regarding the amount of interviews performed, at which department the respondents work, duration and how the interviews were performed.

Table 2: Interviews Performed

Respondents	Respondents Work Department	Duration of Interviews	Performed through
A	Logistic Project	60 minutes	In-person interviews
B	Planning	90 minutes	In-person interviews
C	Planning	60 minutes	In-person interviews
D	Loading	60 minutes	In-person interviews
E	Loading	60 minutes	In-person interviews
F	Outbound	45 minutes	In-person interviews
G	Outbound	40 minutes	In-person interviews
H	Outbound	30 minutes	In-person interviews
I	Outbound	30 minutes	In-person interviews

3.8 Data Analysing Techniques

After the empirical findings were gathered, further analysis of the data collected has to be performed. According to Saunders et. al. (2015) there are two ways facilitate this process, either quantitative data analysis or qualitative data analysis. This thesis has gathered qualitative data through in-depth interviews, which support the choice of performing a qualitative data analysis. This choice can further be enhanced since in-depth interviews are based on meanings expressed through words and not derived from numbers as quantitative data is based on. In addition to this, this thesis is dependent on our interpretation of the respondents' answers, which according to Saunders et. al. (2015) is in line of performing a qualitative research and therefore conducting a qualitative data analysis is preferred.

Qualitative data derived from words, can according to Saunders et. al. (2015) make it more ambiguous and complex to analyze than quantitative data and words may have multiple meanings as well as unclear meanings. In order to clarify meanings and to sustain quality of the qualitative research, it is important to thoroughly interact between data collection and data analysis (Saunders et. al., 2015). To ensure that quality is attained, data collected has been analyzed with aid of two techniques; first through summarizing data and secondly through categorizing data, these data analysis techniques is acquired from Saunders et. al. (2015) when performing a qualitative data analysis. Figure 9: Data Analysis Process shows the process of how we analyzed data as well as techniques used in order to establish accurate and qualitative data to generate a result and analysis for this thesis.



Figure 9: Data Analysis Process

Initially, the audio-recorded interviews were transcribed, to ensure that no data got lost. Additionally, with the transcriptions together with the data collected from documents, these have been summarized, in order to identify key points. By identifying key points that was connected to the conflict factors stated by Mamad and Chahdi (2013), it was easier to detect relevant data required for the thesis purpose as well as research questions.

After the data has been summarized, we categorized it in order to group them according to themes. The semi-structured interview questions were based on a theme related to the main collaboration issues based on Mamad and Chahdi (2013); trust, commitment, communication, dependence, information technology, formalization and control. We then categorized data derived from terms used in existing theory as Strauss and Corbin (1998) suggest in order to match our findings with existing literature.

3.9 Research Quality

It is essential to have a good research design in order to ensure a certain quality in a qualitative research and to reduce the possibility of getting the wrong answers (Saunders et. al., 2015). Since a qualitative research is based on meanings through words and how researchers interpreters these words, it can be criticized for not being as credible as a quantitative research, which is more scientific thoroughly (Cope, 2014), due to being based on numbers and statistics. In addition to this, generalizability of findings and conclusion origins in quantitative research and it is difficult to achieve in a qualitative research due to the fact that each study is unique (Daymon and Holloway, 2011).

However, with a clear research design including well-structured and -elaborated methodology, enabled us to focus on what is important in order to avoid these major pitfalls, which according to Daymon and Holloway (2011) could lead to false findings and conclusions. Furthermore, a clear research design enabled us to make distinct and consistent decisions, thereby clearly articulate the procedures performed, which Bryman (2008) argue that qualitative research lack. Nonetheless, to ensure trustworthiness in a qualitative research, Lincoln and Guba (1985) suggest four criteria to focus on; credibility, dependability, transferability and confirmability. A brief explanation of each criteria will be presented as well as the actions taken to certify that this thesis achieve a high level of quality.

Credibility relates to the validation of findings and results (Seale, Gobo, Gubrium and Silverman, 2004). More specifically, it refers to the extent to which a researcher's account is believable and appropriate, with particular references to level of agreement between respondents and researcher (McGinn 2010). Additionally, a high level of certainty is required to attain credibility when a researcher is interpreting the data assembled through respondents' answers in interviews (Miles and Huberman, 1994). To achieve a high level of credibility, we informed respondents regarding the thesis purpose and what theme the interview would cover, before performing them. Moreover, at the start of the interviews with each respondent we continued to clarify and discuss the chosen method for this thesis as well as letting the respondents speak freely regarding our questions, in order to not affect the answers.

Furthermore, dependability means that the research is carried out in a stable and consistent manner (Daymon and Holloway, 2011), which Munn, Porritt, Lockwood, Aromataris and Pearson (2014) support by arguing that dependability can be established if the research process is logical, traceable and clearly documented. Thereby, to perceive high dependability, same findings would be discovered by a researcher conducting it the same way with equivalent respondents (Saunders et. al., 2015). Respondents interviewed were handpicked due to competence and knowledge regarding the collaboration setups with both logistics companies. When respondents' statements were verified by each other; we believe that a sufficient level of saturation was acquired. Additionally, to increase the thesis dependability, data triangulation was applied through analyzing documents of the organizational and situational context of the collaboration setups. Due to this unique case and sensitive information that is not stated in this thesis, such as exact answers from the respondents, findings are most likely to differ if same research is conducted with another case. However, we believe that this thesis contains a high

level of dependability, since the logic behind how we analyzed data is clearly documented and therefore also makes it traceable.

Transferability is closely linked to the research generalizability but more exactly it refers to what extent the research can be transferred to other settings (Daymon and Holloway, 2011). The specific conflicts we discovered within this thesis cannot be generalized. Meaning that these conflicts always will occur in a collaboration of this type would be inaccurate to state. On the contrary, our analysis and conflicts linked to a company type is based on previously literature, which would allow generalizability in the sense that other conflicts of similar characteristics can be linked to a company types as well, strengthening the level of transferability.

The last criteria confirmability requires the researcher to account for any biases and use appropriate qualitative methods to respond to those biases (Jensen, 2008). Furthermore, it can be expressed as the degree to which the results of the research are based on the research purpose and not altered due to researcher bias (Jensen, 2008). To attain a high level of confirmability, we have clearly presented how data were collected through interviews and documentation as well as how it was analyzed and categorized, in order to make the research process as transparent as possible. Additionally, a representative from the focal firm reviewed this process as well as result to determine whether our interpretations are consistent with their perceptions.

3.9.1 Research Ethics

To further support as well as supplement the research trustworthiness and credibility previously discussed, ethics regarding how this thesis was conducted will be presented. There are certain ethical principles to take into consideration when collecting data as well as how to use and analyze it during the conduction of a research. Therefore, Saunders et. al. (2015) point out that respect, privacy, voluntary participation and confidentiality towards the participants is a necessity, to prevent negative effects of how data is collected, used and analyzed.

In this thesis, information that was deemed sensitive was treated with respect in order to develop a trust and respectful relationship with those involved. Respect is closely connected with the privacy of those taking part of the thesis. Therefore, we ensured confidentiality of the data gathered from participants even before the interviews began as well as during the data collection through interviews. Additionally, we asked to record the interviews and made sure the information gathered was only stored on our personal devices, where only we could retrieve the data to avoid leakage of such sensitive information. Each participant also accepted to be interviewed and therefore participated voluntarily as well as we did not force the participants to answer questions they felt uncomfortable with.

Afterwards, when data was collected, we maintained anonymity of those participated in the interviews by not writing their names to avoid causing any harm. Since, this thesis emphasizes on conflicts through collaboration with companies, data collected regarding this topic may cause harm towards both the participants and the companies involved. Because of this we have also kept companies' participating anonymous. In order to further make sure that we do not cause any harm towards participants and companies involved, the semi-structured questions and exact answers are not presented. The thesis has also been reviewed and verified by a person from the focal firm, in order to confirm that the thesis does not state any false information and information that may intrude on participants or companies privacy.

Since, we have taken these ethical principles into consideration when conducting the thesis; we can therefore state that findings and analysis of the data has been responsibly managed.

4 Result

In this chapter, the empirical findings collected will be presented. Initially, an introduction of the companies involved is described as well as the 3PL's and 4PL's collaboration process with the focal firm. Followed by what type of conflicts occurs in these two collaboration setups in order to answer the first research question.

4.1 Collaboration Structure

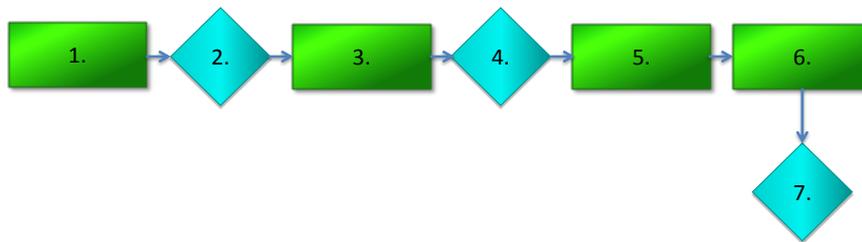
In order to clarify the companies involved in this thesis, each actor will be described in terms of which type of industry it operates in and its connection to each other. As mentioned earlier, the focal firm operates as a DC and is a part of a larger supply chain. This thesis is built around the focal firm and its collaboration between the two separate logistics companies, which is a former logistics partner, a 3PL company and the current logistics partner, which is a 4PL company. During the collaboration with the focal firm and between the two logistics companies, both logistics companies link their services to the focal firm's outbound operations. This includes initially from planning goods for distribution till the goods have reached its destination.

The focal firm is the distribution center of a larger supply chain located in central Sweden. The DC covers the entire Nordic market with deliveries to the supply chains different stores as well as directly to end customers. The DC performs several different types of activities such as handling administrative work and returns, however the main activities of interest in this case are those affecting the outbound flow of goods since this is where the collaboration with the 3PL and 4PL takes place. Basically, goods arrive from various countries throughout the world to the DC, who then acts as a warehouse for storage, a terminal for cross-docking as well as performing sorting allocation, assortment and accumulation activities. The distribution center (the focal firm) consists of 100 000 square meters of storage space which supplies all of the 390 warehouses within the focal firms' company group in the Nordic region.

The 3PL firm founded in 1890 is a globally represented provider of supply chain and logistics solutions to wide variety of businesses and industry sectors. They are globally at the forefront of several types of transportation modes including sea freight, airfreight and inland transportation but also provide integrated and contract logistics. In Sweden they have 230 employees spread out over five main locations while globally they are spread out over more than 100 countries having over 1000 offices with more than 66,000 employees.

The 4PL firm was founded in 2010 with the focus on IT logistics and outsourcing of operations and is located in Sweden with 6 employees. They are a development partner providing solutions for transportation in existing networks, sourcing of transportation and logistics, consulting regarding complete supply chains or specific logistics areas as well as providing IT and technical support. The 4PL firm has a customer base operating within a wide variety of industries throughout Sweden and has been growing rapidly since they started in 2010.

With this short introduction to the companies involved in this case study, the flow of goods will be presented below.



1. Inbound goods from suppliers
2. Storage / Cross-docking at DC
3. Picking operations
4. Loading area
5. Loading operations
6. Transportation
7. Delivery to store / End customer

Figure 10: Simplified Flowchart

The above flowchart (see Figure 10: Simplified Flowchart) represents a simple yet for this case, comprehensive enough flowchart of the focal firm's goods flow. Since the focus of this thesis is the collaboration between the focal firm and its partners rather than the flow itself, a basic flowchart is enough. A short description of each activity is given below:

1. Goods arrive from the focal firms different suppliers to the DC.
2. The goods are either stored for later use or cross-docked and put into the loading area for loading onto the next truck it's supposed to be transported with.
3. Goods that have been stored for later use is picked according to previously planned picking lists.
4. When the goods are picked it is put into the right loading areas in order to prepare for loading onto trucks.
5. Trucks dock onto the terminal where the goods have been set up in the right loading order and the staff then proceeds to load the goods into the trucks.
6. Transportation of the goods is performed by the transporters
7. The goods are delivered to the stores and end customers.

The collaboration between the focal firm and its logistics partners (the 3PL firm as well as the 4PL firm) took place and affected activity number three through seven in the above flowchart which consists of the following activities: picking operations, loading area, loading operations, transportation and delivery to store/end customer. The main responsibilities for the 3PL and 4PL companies when they collaborated with the focal firm was to organize and plan what goods that was going to be delivered, which port at the DC that it should be loaded at, which truck that should pick it up and in what order it should be loaded and delivered in order to optimize transportation routes.

4.1.1 Planning Process

A step-by-step illustration of the planning process for both the 3PL and the 4PL will be presented in order to give the reader a view of the collaboration setups.

3PL

The planning process begins when orders that have arrived to the focal firm are set to be planned and scheduled for delivery. Below is a flowchart (Figure 11: Collaboration Process with the 3PL) of the planning process where each step will be explained in detail:

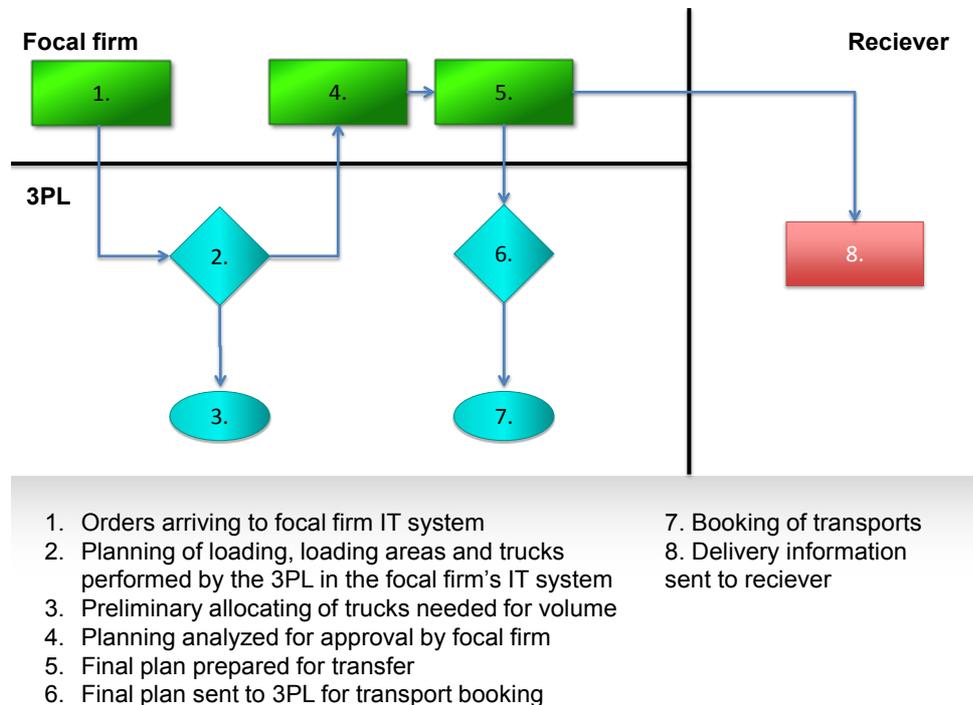


Figure 11: Collaboration Process with the 3PL

1. The first step is essentially when orders arrive to the focal firm and are placed in hold within the IT system until the planning cycle begins.
2. In the second step, the 3PL company, being located on the focal firm's site, used the focal firms IT system in order to plan what goods that should be delivered, where it should be delivered, what time it should depart from the site, which trucks that should be used, which docking ports that should be used and in what order the goods should be loaded. Essentially the 3PL planned what goods that should go to which locations, which in turn made it possible to plan which trucks that should be used and how much space was needed. When all trucks were planned they could then plan which loading areas that should be used (and taking into account how the loading areas are used before and after this planning cycle). Then the planned goods are placed in front of the right gate in correct order, depending on the order they are supposed to be loaded.
3. Since the 3PL used their own trucks, they could with the information they had when the first planning process was done, preliminary allocate resources and trucks needed to handle the volume of goods.
4. In the fourth step the plan that the 3PL company has made is sent to the planning department of the focal firm in order to be analyzed. Normally, changes by the planning department of the focal firm is not needed and the plan made by the 3PL company is approved, however the focal firms planning department has the last word and if they,

for whatever reason, needed to change something it was done in this step.

5. In the fifth step the final plan is prepared to be transferred. If no adjustments are made, this step goes hand in hand with step four, as an approved plan is instantly continued to the next step through the push of a button. If adjustments are made, a series of manual operations is made.
6. The final plan is sent back to the 3PL in order for them to take care of the logistics operations.
7. In this step, the 3PL books transports to cover the volume and delivery schedule that has been planned. In most cases, the preliminary planning is mostly identical to the final plan and as such; the preliminary allocation of trucks and volume is often adequate.
8. The final step occurs simultaneously to step six which is when the final plan is sent to the 3PL and consists of delivery information being sent to the receivers of the goods that has been scheduled for delivery. The information is sent both to end customers as well as to warehouse stores connected to the focal firm.

As mentioned above, this is the planning process which is the main operative function that collaboration between the focal firm and the 3PL takes place. The process is a cycle that repeats itself daily and the plan is made one day in advance in order to get the delivery schedule, picking orders and loading positions to respective operations in time. The operation then proceeds as described above in the simplified flowchart.

4PL

While being similar to the planning process that was used by the 3PL, there are a few differences which can be seen when going through the steps in the same way as done above with the 3PL. Below, a flowchart (see Figure 12: Collaboration Process with the 4PL) of the planning process of the 4PL can be seen and following that, explanations to the different steps throughout the process.

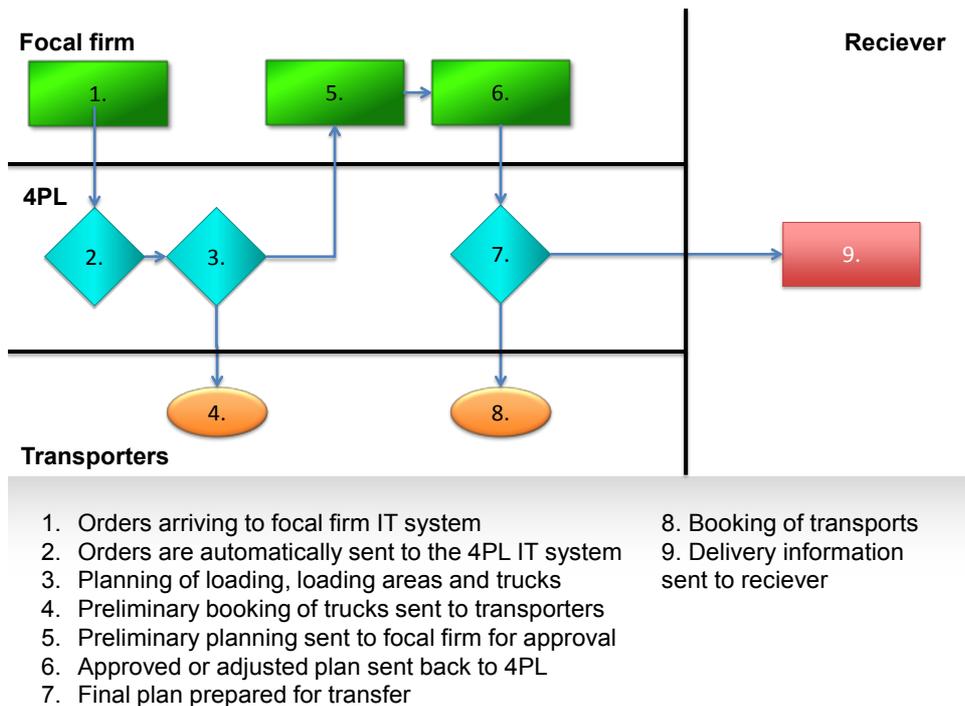


Figure 12: Collaboration Process with the 4PL

1. The planning process starts, in the same way as with the 3PL, with orders arriving and being put on hold in the focal firms IT system waiting to be processed in the next planning cycle.
2. The second step is performed automatically by the system and here, all the information about orders and deliveries that is currently in the focal firms IT system is automatically sent to the IT system of the 4PL firm in order for them to start planning.
3. The third step is similar to the second step of the 3PL firm. Here planning of where different goods are supposed to be delivered, delivery times, which docking ports that will be used, in what order goods will be loaded as well as a preliminary plan of which transporters/trucks that will transport the goods.
4. Since the 4PL does not have their own trucks or drivers, they rely on outsourcing the transportation of goods to external carriers. In order to prepare their carrier partners, a preliminary booking of trucks/transportations is made here to make sure that adequate space and volume for the goods is available.
5. The preliminary plan is then sent back to the focal firm for approval, much like in the case with the 3PL. The preliminary plan is then analyzed and either approved or adjusted if needed and then prepared to be sent back to the 4PL company.
6. The approved or adjusted plan is then sent back to the 4PL company again in order to apply the finalized plan since they are the ones managing the logistics operations.
7. With the finalized plan ready, the 4PL prepares it for transfer and application throughout the operative departments.
8. In this step, the final plan is ready and the 4PL now books the transports needed through their different carrier partners.
9. With the booking of transports approved from the 4PL's carrier partners, reliable delivery schedules and times is set and as such, it is possible to send delivery information to the receivers, being either end customers or the warehouse stores connected to the focal firm.

The planning process that is used with the 4PL company is similar to the one used with the 3PL in several steps. However differences exist in the same fashion that differences exist throughout the operational goods flow. In the next section, a comparison of the main differences between the two collaboration setups will be presented.

4.1.2 Differences Between the Collaboration Setups

In many ways, the collaboration setups with the 3PL and 4PL are similar; after all they do cover the same responsibility area of planning the outbound goods flow and managing the transportation of goods. However three key differences can be identified between the operational structure of the two collaboration setups which in turn are the cause for differences within the planning process and the collaboration structure overall:

The 3PL used their own trucks while the 4PL outsourced transportation

This is the most crucial difference between 3PL companies and 4PL companies in general, how they approach assets and whether or not they use their own trucks and physical assets in order to perform their services. In the case of the 3PL company (and 3PL companies in general) they

are asset based with their own fleet of trucks and drivers where as the 4PL, much like the definition of 4PL companies, does not have their own physical assets but rather relies on outsourcing the physical handling of goods.

The 3PL used stand-alone trailers while the 4PL used driver-bound transportation

In the two collaboration setups presented in this case, one key difference is that within the 3PL setup, stand-alone trailers were used where as within the 4PL setup, driver-bound transportation were mainly used. This is of importance to both planning as well as operational departments at the focal firm, which are the main areas where the collaboration setups took place.

The 3PL were located on-site while the 4PL were located off-site

The final key difference is that the 3PL had their office at the focal firm's site where as the 4PL were located off-site much further away. Since this thesis examines the subject of conflicts and problems which can be affected by the physical distance to each other, this issue is of high importance and a major difference between the two collaboration setups.

4.2 Conflicts and Problems Revealed

This chapter will present the nature of the problems and conflicts that has been identified through the performed interviews. With conflicts and the area in general being a rather sensitive field of study and due to ethical concerns, actual problems and conflicts will not be presented but rather an overview of how each conflict area as presented by Mamad and Chahdi (2013) is reflected in the cooperation between the focal firm and its two different collaboration partners.

Trust

Regarding the trust issue the main opinion reflected by the interviews was that the focal firm has more trust in the 4PL company than they had in the 3PL company. There are a few factors that highly affected this issue, one which was that the 4PL company used drivers that either knew English or a Scandinavian language. This made it a lot easier for the focal firm to communicate with the drivers which made it easier to trust that they do what they are supposed to do. The 3PL mostly used drivers that did not speak any Scandinavian language as well as having lacking English skills, which made it impossible to communicate. Another factor that affected the trust issue was that the drivers used by the 4PL returned to drive the same routes several times, which made the personnel at the focal firm got to know the drivers as well as the drivers getting to know the routes. This created a common ground and the personnel of the focal firm built up a trust for the drivers since they knew they had driven the same route before. With the 3PL they had a lot of different drivers and there were very rarely any driver returning to drive the same route twice.

A few factors regarding trust were different depending on which department of the focal firm that was interviewed. At operational level respondents claimed that while the 3PL had a lot of different persons that you got in contact with if there were any issues, they all had experience and knew what they were doing. While if they, at operational level contacted the 4PL they could end up speaking to someone which were more inexperienced and had less knowledge about what to do in different situations. However at a higher level within the focal firm the trust regarding this factor was greater for the 4PL due to the fact that they often talked and cooperated with the same person as opposed to when contacting the 3PL at a higher level where more times there were different people involved than with the 4PL.

Another issue that was often mentioned throughout the interviews was the trust regarding time and that trucks and drivers arrive on specified times. There were a common issue with the 3PL that they tended to promise too much regarding arrival time for trucks and drivers and it was

more often than not that trucks arrived several hours later than what the focal firm was told by the 3PL. This was much less of an issue with the 4PL who were very precise with timing and if they said that a truck was going to arrive a certain time it usually did. This obviously lowered the trust for the 3PL since they were so often wrong regarding the time of arrival for trucks compared to the 4PL.

One factor which was highly emphasized throughout the interviews was the fact that the 3PL were located on site which created a sense of closeness and improved the trust for the 3PL a lot due to the ability to talk face-to-face. With the 4PL the focal firm constantly has to use mail and/or phone contact which is both slow and does not provide the same trust-building feeling that a face-to-face contact builds in terms of promising to solve a problem or similar issues.

A summary of the main issues regarding the trust area can be found below:

- ❖ Generally more trust in the 4PL than the 3PL.
- ❖ 4PL uses drivers with adequate language skills as opposed to the 3PL who did not.
- ❖ The drivers used by the 4PL returned to drive the same routes as opposed to the 3PL drivers who did not.
- ❖ At operational level the trust of the many contact persons at the 3PL were greater while at a higher level it was greater for the fewer contact persons of the 4PL.
- ❖ Trusting what the logistics companies said regarding time of arrival and similar matters much greater for the 4PL due to the 3PL often stating half-truths or exaggerating how near an arriving truck is.
- ❖ A high amount of trust for the 3PL comes from being located on site and allowing face-to-face communication as opposed to using mail and phone with the 4PL.

Commitment

The respondents of the interviews were all indicating that the 3PL were less committed to the relationship than the 4PL. The 4PL were more often than not willing to solve problems that occurred as well as them being drivers of improvements for both the relationship as well as for both the focal firm as well as themselves. The 3PL were also helpful and tried to solve problems, however with a different mentality more in line with that they could solve problems, if the focal firm paid for it. Generally speaking the respondents had a feeling that the 3PL were more a provider of transportation, more of a buyer-seller relationship, than the 4PL who felt more like a partner that they could work together with. While the 3PL, according to the respondents were much harder to work with regarding development and improvements due to the focal firm having to be really driven and pushing the 3PL in order for anything to happen, the 3PL always performed and delivered in the crucial moments (such as peak times) which the respondents emphasized. An example regarding commitment was brought up by one of the respondents who emphasized that even though the 3PL were located on site; they were rarely within the focal firms operational areas observing how they work. The 4PL, being located much further away, was on the other hand a lot on site in order to observe and gain knowledge regarding how the focal firm operates.

A summary of the main issues regarding the commitment area can be found below:

- ❖ Generally the 3PL were less committed to the relationship than the 4PL.
- ❖ Both firms willing to solve problems, however the 3PL with an underlying tone that it would imply additional costs for the focal firm.
- ❖ According to respondents the 3PL felt more like a provider of transports while the 4PL a partner.

- ❖ Harder to implement changes and improvements with the 3PL than the 4PL however the 3PL always delivered when needed (during peak times).
- ❖ The 3PL being located on site and still rarely within the operational areas of the focal firm while the 4PL located much further away often was at the focal firm to observe and learn.
- ❖ The 3PL sold more or less a fixed package of services, while the 4PL were adapting to the focal firm's needs in order to create a good relationship.

Communication

The absolute major issue regarding communication between the focal firm and its' partners were the language barrier that existed with the 3PL. This was also the most major issue or conflict overall for practically every respondent. The 3PL used cheaper drivers from other countries that did not speak English or any other language used by the focal firm. This meant that communicating with the drivers were practically impossible when collaborating with the 3PL. The focal firm and its employees had to contact the 3PL office in order for the office to connect them to the drivers' headquarters in order to translate back and forth between the focal firm and the driver. In addition to this, the drivers' headquarters were also often lacking English skills. The 4PL had rules and regulations that forced the transporters they used to only use drivers that knew either a Scandinavian language or English which made it possible for the focal firm to communicate directly with the drivers which in turn, made overall communication much easier. When collaborating with the 3PL, in order to change loading orders or transport routes, the focal firm had to contact the 3PL who in turn had to make the changes and contact the drivers which often took a severe amount of time. When working with the 4PL, the focal firm had the possibility to communicate directly with the drivers which simplified rescheduling and change of loading orders or other plans a lot easier and quicker.

The fact that the 3PL were located on site was a huge benefit regarding the communication issue since it made it possible to speak to them face-to-face which, much like mentioned in the trust part above, is a whole different way of communicating, increasing both speed that you can solve problems but also makes it easier to fully understand each other. The 4PL did have people available at all times, however the main office of the 4PL works different hours than the focal firm which can make it hard to reach the people you need to during the 4PL's off-hours. The 3PL on the other hand always had experienced people on site during the working hours of the focal firm.

As mentioned in the trust part above, several of the respondents mentioned that the 3PL often were very imprecise regarding timing information when asked. However the 4PL were often late with important information regarding delays and such issues but it should be mentioned that the respondents also emphasized that the setup used by the 3PL made it easier to see these types of problems at an earlier stage due to the use of stand-alone trailers.

With the 3PL being a larger firm the respondents as explained in the trust part, said that you often got to speak with different people when talking to the 3PL as opposed to the 4PL where you more often talked to the same people all the time. Besides building trust, talking to the same people often made communication easier since the people you spoke to were familiar with the issues and events going on. However, in case you ended up talking to someone at the 4PL that were not updated on a certain issue it could become problematic as opposed to when talking with the 3PL were basically everyone were experienced enough to quickly handle most problems.

A summary of the main issues regarding the commitment area can be found below:

- ❖ Most major issue overall is the language barrier that existed with the 3PL.
- ❖ Communication with drivers had to go through the 3PL office to the driver's office to the focal firm which created frustration and was time consuming.
- ❖ Easier to change and adapt regarding loading orders and routes with the 4PL because they could communicate directly with drivers.
- ❖ A huge benefit regarding communication that the 3PL were located on site since it made it possible to speak face-to-face.
- ❖ Always experienced people on site from the 3PL where as the 4PL worked different hours which could create problems in reaching the necessary people.
- ❖ The 3PL often communicated wrong information regarding times while the 4PL were more often late with important information (such as delays).
- ❖ When communicating with the 3PL there were more different people that you spoke to (however, all experienced) while the 4PL had fewer people that were more up to date on information and events.

Information Technology

Generally speaking the respondents did not really consider much of the IT systems and how their work “problems” or “conflict” areas but rather had accepted that the system are what they are and there isn't much to do about it. One of the main issues discovered was the manual work that has to be done by the loading department in order to report deviations and problems to the 4PL. This was much less of an issue with the 3PL due to them requiring less information and this has caused irritation and frustration due to the loading department having to spend so much time on administrative work. The loading department emphasized the need for an automated system for reporting deviations which they really felt is needed when collaborating with the 4PL. Since the 3PL were not requesting as much reports it were not a problem in the same way when collaborating with the 3PL.

The respondents emphasized that the 4PL has a much better system for planning which makes it easier for them to make adequate planning and as such is a better solution than when the 3PL worked in the focal firms' system due to it being “worse” for planning. However the respondents of the focal firm also emphasized that with the 4PL having their own system it is more systems that has to work together which sometimes causes issues. For example, if a file is deleted in the focal firm's system but isn't deleted in the 4PL's system it causes errors and problems when syncing which requires the firms' IT departments to assist and solve the problems. This is a frustrating problem when using several systems however according to the respondents they have become better on avoiding such problems and generally the benefits of the 4PL having a better planning system outweighs these types of issues.

A summary of the main issues regarding the information technology area can be found below:

- ❖ Respondents more or less accepted lacking systems integration and did not really see them as conflict areas.
- ❖ No automated system for handling the extensive reports required by the 4PL. Non-issue with the 3PL due to not requiring as much information.
- ❖ The 4PL has better technical/system tools for planning than the tools the focal firm has themselves that were used by the 3PL.
- ❖ With the 4PL having their own system, which has to work together with the focal firms system, syncing errors did occur from time to time which required IT support.

Dependence

Overall the respondents felt that there was not a lot of dependence from any direction when collaborating with the 3PL. The respondents said that it felt like the 3PL were a large supplier of transportation which made them not really dependent on the focal firm, however they did build a rather large system with a location on site for the focal firm. In the same sense, the focal firm was not really dependent on the 3PL since they could switch to a different supplier of transportation much like they eventually did. However switching transportation supplier for a firm the size of the focal firm is not easily done which sort of created a type of dependency on the 3PL were they could not just suddenly end the relationship and buy transports from someone else over a day due to the size of the firm.

The respondents explained that they feel that the 4PL is overall more dependent on the focal firm than the other way around due to the focal firm being a rather large customer to the 4PL. While this was the general feeling of the collaboration the respondents also emphasized another interesting thing which was that the focal firm is far more dependent on the 4PL and their planning as opposed to how it was with the 3PL. With the 4PL, the focal firm are much less able to affect the planning of trucks and loading than they were able to with the 3PL. According to the respondents this causes a lot of problems since the 4PL often plan with a lot more “spikes” in volume. This is caused by the 4PL using driver-bound transportation which forces the drivers to be on site when the trucks are being loaded. With resting times and schedules to follow this creates a scenario where the drivers used by the 4PL have to be in-and-out of the focal firms terminal as quickly as possible.

With the addition of keeping delivery times and promises this makes certain hours of the day have a lot of volume and require a lot of staff at the focal firm terminal while other hours during the day, there is much less to do. This is a problem or conflict highly emphasized by the personnel at the terminal when using the 4PL since they had a much easier time planning personnel and volume when collaborating with the 3PL. With the 3PL the terminal staff could always dock a stand-alone trailer, load it and undock it until it was picked up by a driver which evened out the production volume. In addition to this, the 3PL had the possibility to plan using their stand-alone trailers which made the volume a lot more even for the terminal and loading personnel to begin with. While this creates a dependency for the focal firm on the 4PL, when speaking with respondents stationed within the office it is clear that they are aware of this issue and that it is a constant balance between letting the 4PL plan their way which creates a better situation for the receivers and increases delivery service as well as lowering transportation costs, as opposed to let the planning department of the focal firm have their say which often points in the direction of evening out production volumes for the loading department.

A summary of the main issues regarding the dependency area can be found below:

- ❖ Overall low dependence from any direction with the 3PL, most of the dependency occurred due to the fact that it is a complex process in switching a partner with the large operational size of the focal firm.
- ❖ Respondents felt that the 4PL is more dependent on the focal firm due to the 4PL being a smaller actor and the focal firm being a large customer to them.
- ❖ The focal firm at operational level is far more dependent on the planning done by the 4PL than the 3PL due to not being able to use stand-alone trailers to even work-load.

Formalization

Regarding contracts, regulations and rules formalized between the focal firm and its' collaboration partners, the respondents emphasized that they are mostly followed, however some issues surfaced when probing answers further.

The absolute main conflict or problem that occurred with the 3PL was the language barriers and impossibility to speak to the drivers. This was solved with the 4PL by contracting that the drivers hired by the 4PL had to speak either a Scandinavian language or English. This is by far the most emphasized change and improvement of the 4PL over the 3PL in this case.

One issue that was related to the use of stand-alone trailers (as with the 3PL) as opposed to using driver-bound transportation was when a need to reschedule or change the loading order or similar change of plans. When using stand-alone trailers the contract basically stated that the 3PL had to make any changes to routes or loading orders and the driver could not decide upon this (due to the driver not being in charge of their own truck, but rather just drive an available trailer). Because of this, changing plans when collaborating with the 3PL were heavily time consuming and with the addition of the impossibility to communicate with the drivers (due to language barriers) the process of loading could quickly become really problematic. The contract with the 4PL basically says that the driver always has the last word regarding routes and loading orders, however should the driver change anything about the plans provided by the 4PL; the driver becomes responsible for delivering on time. With the addition of not having language barriers, the setup with the 4PL provided a much easier way to change loading orders and adapt to different situations which could be done directly together with the driver. This saved a lot of time and frustration as opposed to the setup with the 3PL.

Another thing mentioned by the respondents was that with the 4PL, the contract issued stated that drivers should be “of helpful nature” which basically means that they should be available to assist the loading if needed. While far from all drivers do this, it was more drivers that helped and assisted the loading department when needed when using the 4PL than the 3PL.

According to the contract, the focal firm has to report a lot of information regarding delays and problems occurring to the 4PL. This has created a lot of manual labor for the loading department since they have to manually write reports and there is no automated system in place. The 3PL required much less information and with much less detail which made it a lot easier for the loading department and saved them a lot of time.

According to the respondents, the 3PL drove goods for other companies in addition to the focal firms' goods. This could cause issues when a half-full truck arrived to be loaded at the focal firm and the focal firms' goods took a little too much space it essentially could not be fitted onto the truck. In addition to this, the 3PL had a policy of always trying to max the volume on every truck which could be problematic at times. Should the goods take a little bit too much space or if something extra had to go with a truck it was simply not possible due to the sheer volume planned for each truck by the 3PL. With this min-maxing policy in place, the loading department was also slowed down because they had to load goods on top of each other which became severely time consuming. The contract with the 4PL has made the loading of the trucks easier due to the fact that trucks are not planned so closely to their maximum capacity. This creates a lot more flexibility because it allows for the possibility for the focal firm to buy extra volume of the trucks if needed. For example, should the focal firm have ordered half a truck and they suddenly need a few loading meters more they often had the ability to buy the space since the trucks were not so min-maxed. This policy with the 4PL also speeded up the loading department because the need to load goods on top of each other in impractical ways were reduced and the goods did not have to be “perfectly” fitted into the truck in the same way because there were mostly left-over space.

Due to the nature of the 3PL being a 3PL and having their own trucks as opposed to the 4PL hiring transportation and trucks from different carriers, the 3PL had a huge benefit of always

having the same type of trucks all the time which made it a lot easier for the loading and planning departments of the focal firm. The trucks used by the 3PL were almost always of the same dimensions as opposed to the 4PL which used several different carriers which created a scenario where trucks with different dimensions are used. This can cause issues with the planning and loading since they have to adapt depending on what dimension the truck that will be loaded is going to have. One issue with the trucks used by the 3PL was that they were often dirty and having a bad smell. This was caused by the 3PL often transporting garbage within them and it often caused a lot of delays when trucks docked and the loading realized that the truck has to be cleaned so the 3PL had to take the truck to cleaning and then come back to the focal firm which. This was a really frustrating problem for the focal firm, especially since it happened over and over again.

A summary of the main issues regarding the formalization area can be found below:

- ❖ The absolute main issue or difference between the actors was the language barriers that existed with the 3PL but not the 4PL. This was solved through contractual means when hiring the 4PL.
- ❖ If changes to loading orders or routes had to be made with the 3PL, they had to manage and implement the changes according to the contracts which were time consuming. With the 4PL, they could communicate and resolve issues directly with the driver.
- ❖ The contract with the 4PL stated that drivers should be “of helpful nature” which made more drivers helpful as opposed to the 3PL drivers who basically never assisted.
- ❖ The contract with the 4PL forces the loading department to report a lot of deviations to the 4PL which creates a lot of manual labor.
- ❖ The 3PL drove goods for other companies as well and they often min-maxed their trucks which created a lot of issues if the goods planned to be loaded took a bit more space than estimated. The 4PL were less min-maxing which created flexibility as well as speeding up the loading department.
- ❖ The 3PL had their own trucks and they used the same trucks all the time which meant that truck dimensions were always the same. With the 4PL using different carriers, trucks often had different dimensions, which made it more problematic to plan and load them.
- ❖ The 3PL often drove garbage, which often made trucks having to go to cleaning before being used.

Control

Most of the respondents said that there were not much control between the focal firm and its' collaboration partners due to the fact that many problems or issues or if any party doesn't fulfill their promises is directly seen within the day-to-day business. However when speaking to respondents working on a higher level they emphasized that even though it is easy to see when their collaboration partners are lacking in performing their role, they do use measurements and KPI's to make sure that their partners keep their promises regarding both economics as well as regarding quality of services.

According to the respondents, controlling each other due to lack of trust did happen from time to time. As mentioned in the trust section, the 3PL were lacking when it comes to precision regarding arrival times for drivers. This forced the focal firm to control and check themselves when drivers were arriving. In addition to this, with both the 3PL and the 4PL, the focal firm from time to time had to check and control that the fact that certain problems or issues could not be solved (as proposed by the 3PL or 4PL) actually could not be solved, or if certain numbers proposed by the partners were actually the “best” possible solution which it weren't all the time. This type of control mostly happened when the focal firm felt that a proposal of economical

numbers or a “no this problem can’t be solved” answer from the partners were not the reality and was not a control that was made on a regular basis.

As can be seen above, controlling between the focal firm and its’ partners were not that common on operational level except when any deviation or problem occurred. On a higher level on the other hand, controlling through the use of measurements and KPI’s were performed on a regular basis.

A summary of the main issues regarding the control area is presented below:

- Many issues with partners not fulfilling their responsibilities is easily seen within the day-to-day business.
- Measurements and KPI’s are used to keep track of economical and qualitative values of the partners.
- Controlling due to lack of trust happened from time to time with both the 3PL and the 4PL

Summary

A complete summary of the conflicts and problems that occurred related to the different conflicts factors is presented (see Table 3: Summary of Conflicts). The result shows us what type of conflicts that can occur when a focal firm collaborates with a 3PL as well as a 4PL and answers our first research question.

Table 3: Summary of Conflicts

Conflict/ Problem Area	3PL	4PL
Trust	<ul style="list-style-type: none"> ❖ Generally less trust ❖ Lacking language skills of drivers lowers trust ❖ Drivers rarely returning to drive the routes again ❖ At higher level low trust due to many contact persons ❖ Often exaggerating how near arriving trucks are 	<ul style="list-style-type: none"> ❖ Generally more trust ❖ At lower level, low trust due to inexperienced contact persons ❖ Located far away, off-site makes face-to-face contact impossible and phone/mail has to be used
Commitment	<ul style="list-style-type: none"> ❖ Generally less committed ❖ Underlying tone of that solving problems/helping would cost ❖ Respondents felt that the 3PL were only a provider of transports ❖ Less willing to implement changes and improvements ❖ Rarely observing on site ❖ Sold a fixed package of services 	<ul style="list-style-type: none"> ❖ Generally more committed
Communication	<ul style="list-style-type: none"> ❖ Most major issue overall is the language barrier ❖ Communication with drivers had to go through a lot of contact persons/offices ❖ Often communicated wrong information (especially regarding the time-aspect) 	<ul style="list-style-type: none"> ❖ Located far away, off-site forced phone and mail to be used in order to communicate and made face-to-face contact impossible ❖ Worked different hours than the focal firm, problems to reach the necessary experienced people ❖ More often late with important

	<ul style="list-style-type: none"> ❖ More contact persons could cause confusion 	<p>information such as information regarding delays</p> <ul style="list-style-type: none"> ❖ Sometimes less experienced contact persons
Information Technology	<ul style="list-style-type: none"> ❖ Planned in the focal firm system which isn't an optimal planning tool 	<ul style="list-style-type: none"> • No automated system for handling extensive reporting ❖ Used their own system which caused issues when syncing their system with the focal firms
Dependence	<ul style="list-style-type: none"> ❖ Overall low dependence from both directions ❖ Dependency caused mainly by the fact that it is a complex process in switching partners with the size of the focal firm 	<ul style="list-style-type: none"> ❖ 4PL generally more dependent on the focal firm than the other way around due to the focal firm being a large customer ❖ At operational level highly dependent on the planning done by the 4PL due to not being able to even out production with stand-alone trailers
Formalization	<ul style="list-style-type: none"> ❖ The absolute issue was the language barrier which weren't mentioned in the contract with the 3PL ❖ Contract forced time consuming handling of changes to loading orders and routes ❖ Contract didn't force drivers to assist loading department when needed ❖ Drove goods for other companies as well which could cause issues at loading ❖ Min-maxing philosophy created problems and slowed down the loading department ❖ Often drove garbage which forced trucks to be cleaned before use 	<ul style="list-style-type: none"> ❖ The contract stated that a lot of information regarding delays and similar had to be reported to the 4PL which is very time consuming ❖ Used different carriers which caused dimensions of trucks to differ which caused issues at planning and loading
Control	<ul style="list-style-type: none"> ❖ Issues easily seen within the day-to-day business ❖ Measurements and KPI's used to keep track of economical and qualitative values ❖ Controlling due to lack of trust occurred 	<ul style="list-style-type: none"> ❖ Issues easily seen within the day-to-day business ❖ Measurements and KPI's used to keep track of economical and qualitative values ❖ Controlling due to lack of trust occurred

5 Analysis

This chapter will present the authors analysis of the findings within the result chapter in order to attribute conflicts to either company type where possible.

With the table summarizing the conflict and problems within different areas, research question one regarding what type of conflicts that can occur between a focal firm and a 3PL as well as between a focal firm and a 4PL has been answered. This gives us the ability to proceed with the research and analyze these conflicts in order to, together with literature investigate if any of the occurring conflicts or problems can be attributed to the company type being a 3PL or a 4PL.

The analysis will be structured similar to the result where we will go through one conflict area at a time, analyzing and comparing with theory in order to point out which conflicts or problems that can be derived from the company type and which conflicts or problems that cannot be attributed to this fact.

In order to make it easier for the reader to follow the different conflict and problem points, each section will begin with the part of the table presented above that covers each area and end with a bullet list of conflict and problems that can be attributed to each company type.

Trust

Regarding the trust area, we do not believe that any of the points is possible to derive solely from the company type. According to the respondents of the study, they had more trust for the 4PL, especially at a higher level where as there were more trust for the 3PL on a lower level. However this fact was originating from the fact that there was a difference in the amount of contact persons on different levels rather than being different company types. This issue cannot really be attributed to either 3PL or 4PL companies in general because the theory on what a 3PL company essentially is (Hertz and Alfredsson, 2004; Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Stefanson, 2006; Mortensen and Lemoine, 2008, Marasco, 2008; Lumsden, 2012) and what a 4PL company is (Bumstead, 2002; Hertz and Alfredsson, 2004; Stefanson, 2006; Burnson, 2011; Lumsden, 2012), does not limit how many employees (contact persons) that are used on different levels. As such we can't draw a conclusion that all 4PL companies provide less trust issues on a higher level or that all 3PL companies provide less trust issues on a lower company level.

Another major point regarding trust was the lacking language skills of drivers used by the 3PL which lowered trust since the focal firm were unable to communicate with them properly as well as the 3PL having new drivers as opposed to having drivers returning. These two problems cannot really be connected to the 3PL being a 3PL company since it is naturally possible for 3PLs to use drivers that drive the same routes several times (e.g. Lumsden, 2012) as well as to only use drivers with adequate language skills which is more or less a decision made by the company. At the same time, it would be possible for a 4PL to have a large network where drivers rarely return to drive the same routes as well as to use drivers that weren't proficient in Scandinavian languages or English (e.g. Stefansson, 2006). Because there is not any real limitation regarding these issues within existing literature in place that occurs due to your company being a 3PL or a 4PL, but rather being a choice of how you wish to operate, we cannot draw the conclusion that lacking language skills only occurs with 3PL companies.

Similar to the above points, the fact that the 3PL often exaggerated how close trucks were and generally were imprecise regarding timings, as well as the fact that the 4PL were located far away off-site which forced communication to be done through phone and mail cannot be directly connected to the company type. There could have been the 4PL that were imprecise

regarding timing as well being the one located on site and still be within the definition of a 4PL company (e.g. Hertz and Alfredsson, 2004; Stefansson, 2006). Therefore these points cannot really be attributed to the company types either.

With the above points in mind, the fact that the focal firm had more trust for the 4PL is an effect of other trust issues connected to the specific companies rather than due to the fact that the 4PL is a 4PL company. Since all the other trust aspects are due to other reasons than the company type, we cannot draw the conclusion that 4PLs are generally more trustworthy than 3PL companies.

To summarize the trust section, we did not find any conflict or problem that can be attributed to either of the company types, however in order to keep a consistent outline of the chapter a bullet-list will still be presented:

Conflict/Problems attributed to the role of 3PL companies:

❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

❖ *None*

Commitment

The first point made by the respondents was that the 3PL were generally committed to help and solve problems, if the focal firm paid money for it. This caused a feeling at the focal firm that the 3PL were more or less a provider/supplier of transports rather than a partner. The 3PL were less committed to a relationship and more interested in just selling transports. This is in line with the remaining points were the respondents emphasized that the 3PL were less willing to implement changes and improvements and more or less sold a fixed package of services which were standardized. This is in line with the typical role 3PLs has as presented in previous literature (Hertz and Alfredsson, 2004; Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Stefansson, 2006; Mortensen and Lemoine, 2008, Marasco, 2008; Lumsden, 2012).

The 4PL were, as can be seen in the result chapter, far more committed to the relationship generally and in specific aspects. We believe that the points made regarding commitment can be summarized by the first point in Table 3: Summary of Conflicts, which states that the 3PL were generally less committed and the 4PL generally more committed. This is clearly in line with how the respondents emphasized that the 3PL were more a supplier of transportation versus the 4PL who were more a partner and is also in line with how several authors present the company types in previous literature (Bumstead, 2002; Hertz and Alfredsson, 2004; Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Stefansson, 2006; Mortensen and Lemoine, 2008, Marasco, 2008; Win, 2008; Burnson, 2011; Lumsden, 2012).

The different commitment points are therefore further in the analysis summarized as the 3PL being less committed and the 4PL being more committed. This is done because we believe that this can be attributed to the different company types and the points in the commitment sector are essentially examples of how the case 3PL is less committed and the case 4PL is more committed to the relationship.

Due to the nature of the company types we believe that generally, you will have less issues and problems regarding commitment if you choose to partner with a 4PL than you would have with a 3PL. This does not mean that all 3PLs are uncommitted and all 4PLs are fully committed to their relationships. However, generally 3PLs are providers of services more than partners (Skjoett-Larsen et al., 2006). On the other hand, 4PL companies and their relationship are

often, as mentioned in the theoretical chapter, structured in a way where, if the 4PL reduces costs/improve profits for their customer, they gain benefits as well (Richardson, 2005; Win, 2008) This creates an incentive for 4PLs to provide solutions and adapt according to their customer in order to strengthen the relationship, be valuable to their customer as well as building strengthening their brand and reputation. In addition to this, the role a 4PL has is more in line with a consultant role which generally means a closer connection than the typical buyer-seller relationship that is more similar to how 3PLs operate in general (Win, 2008). Another important factor here is that with the role a 4PL has as a consultant, having to familiarize themselves a lot with each customer; 4PLs usually have a smaller customer base where every customer requires more attention than if you were “simply” selling transportation services as a 3PL which creates an incentive to keep a good relationship with your customer due to the extensive investment in time from the 4PLs side (Win, 2008).

The above argumentation points in the direction that generally, due to the way 3PLs and 4PLs operate and essentially due to their role, 4PLs have more incentive, and thus are more committed to the relationships than 3PLs. Of course there will always be exceptions to the rule and a specific 3PL might be more committed in certain aspects than a specific 4PL. However we believe that our case together with previous literature regarding the role 3PL and 4PL companies provides evidence that you will generally face more issues regarding relationship commitment with a 3PL company than with a 4PL company. As explained above, the other points, such as the 3PL feeling more like a provider of transports according to the respondents could also be attributed to the company types, however in order to simplify all the points are summarized as “Generally less committed” to avoid repeating the same motivations and arguments.

Conflict/Problems attributed to the role of 3PL companies:

❖ *Generally less committed*

Conflict/Problems attributed to the role of 4PL companies:

❖ *None*

Communication

Within the result, certain aspects can and have been put into several problems and conflict areas such as the language barrier that existed with the 3PL due to the fact that it affected more than a single area. In order to avoid unnecessary repetition of preciously stated information, the points regarding the language barriers, wrong communication regarding time-aspects and amount of contact persons at the 3PL as well as the point regarding the 4PL not being located on-site will be considered analyzed in previous sections.

Between the remaining points, one is within the 3PL section and is the issue that communication with drivers had to go through a lot of persons/offices which were heavily time-consuming and frustrating for the loading department. This point is sort of contradictory to how one would believe this issue differs between 3PL and 4PL companies when simply looking at previous literature. The theory clearly points in the direction that 4PL companies are integrators that brings together resources of several carriers, 3PLs and other types of logistics providers (e.g. Win, 2008). Comparing this with 3PLs who often have and control their own physical assets (e.g. Stefansson, 2006), you would assume that there would be more connections and a longer communication chain between drivers and the focal firm when collaborating with a 4PL than with a 3PL. Since in this case, the opposite is true we are not able to assume that there are more problematic to communicate with drivers when partnering with either type of firm. It is therefore assumed that communication with drivers is more an issue related to specific companies/setup. However, a point related to this one is the fact that the 4PL were generally

later in providing important information regarding delays. Now this could very well be due to the same theoretical fact explained above that 4PLs often acts as integrators (e.g. Win, 2008) and that 3PLs often have and control their own physical assets (e.g. Stefansson, 2006). One could assume that it generally is easier and quicker to check your own system and see where your own trucks are currently located in order to spot possible delays as a 3PL than to, as a 4PL be constant up to date on the status of trucks that all of your carriers and 3PLs you outsource to use. It is natural that information regarding a delay which has to pass more actors (from partner to 4PL to focal firm) will take longer time to reach the necessary actor/person than if the information is directly available at the focal firms partner (i.e. the 3PL). Because of this, one could assume that communicating important information such as delays which originates at the physical transportation level (i.e. information originating from drivers or similar) often takes longer time to reach the focal firm when collaborating with a 4PL and as such conflicts regarding this issue could be more common when collaborating with a 4PL company.

The last point regarding communication was the fact that the 4PL worked different hours than the focal firm which made it hard to reach the necessary people at times. However this issue can easily be excluded from having company type as origin as working hours is not determining factor regarding if a company is classified as a 3PL or a 4PL according to how existing literature defines the company types (Bumstead, 2002; Hertz and Alfredsson, 2004; Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Stefansson, 2006; Mortensen and Lemoine, 2008, Marasco, 2008; Win, 2008; Burnson, 2011; Lumsden, 2012).

With the above analysis we conclude that the conflict or problems attributed to the company types regarding communication is as follows:

Conflict/Problems attributed to the role of 3PL companies:

- ❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

- ❖ *Important information originating from physical transportation level are more often late due to passing through more actors*

Information Technology

Information Technology strengthens the link between actors (Pramatari, 2007) and according to Stefansson (2006) 4PL companies frequently make a substantial investment in information systems to support their operations as opposed to 3PL companies that emphasis investment in physical assets (Win, 2008). In regard to this, 4PL companies can generally be seen as having well performing IT-systems compared to 3PL companies due to differentiating focuses.. A conclusion of this would be that it enhances 4PLs' IT-systems to integrate more easily with the customers' IT-systems and as such, there would be more conflicts and problems when collaborating with a 3PL regarding information technology. However, the findings in this thesis points in the opposite direction since there were more problems with the 4PL collaboration setup than the 3PL. The cause of this was most likely that the 3PL used the focal firms system in order to plan the operations which we can't validate through literature being the case for 3PLs in general. Focal firm's IT-system was not as developed as the 4PL's IT-systems, but still less issues occurred when collaborating with the 3PL, since it used the focal firm's IT-system, which did not require integration of two IT-systems with each other.

The main issue when collaborating with the 4PL was that the system the 4PL used had to be integrated with the focal firms IT-systems which caused a lot of issues. This is typical when

looking at integration of IT-systems (Motiwalla and Thompson, 2009), meaning when information is sent back- and forward between the systems, synchronization issues happen frequently. Additionally, 4PLs' substantial investment in information system (Stefansson, 2006) does not always prevent or reduce the issues when IT-systems are synchronized with each other. This specific case showed us that there were less issues when collaborating with the 3PL, however we believe that this was due to the fact that the 3PL worked in the focal firm's system and as such, integration between several systems weren't needed. Examining literature, the main issue with information technology seems to be when different systems are supposed to talk to each other, which can happen when collaborating with both 3PL and 4PL companies and is an effect of the IT-system used rather than the company type.

Conflict/Problems attributed to the role of 3PL companies:

❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

❖ *None*

Dependence

The dependency issue can be somewhat connected to the commitment area in the sense that if you are dependent on someone (your customer or your provider) you are naturally more likely to try to collaborate and satisfy your collaboration partner. Our findings suggests that there are generally a low dependence in both directions when collaborating with a 3PL company which can be supported by the fact that 3PLs often make use of more standardized packages and act more as a provider than a partner stated by several authors (e.g. Skjoett-Larsen et al., 2006; Stefansson, 2006). This creates a relationship more similar to a buyer – seller scenario than a partnership and while you obviously want to keep your customer as a 3PL as well, you most likely haven't invested extensive resources into fulfilling a specific customer's needs and wants. On the other end of the spectrum, the 4PL type of company usually has fewer customers while investing more time and resources into each one of them (Win, 2008). Naturally this creates a dependency on your customer since losing a single customer could mean you lose a larger piece of invested time and resources than if you lost a customer as a 3PL.

While the above argumentation would motivate why you generally would find 3PL companies less dependent on you which in turn could lower your "power" in the relationship which in turn could cause problems and conflicts in different scenarios, it isn't that simple. When interviewing the respondents we also found two other important issues, which were that the focal firm found themselves highly dependent on the 3PL due to the size of the collaboration setup. They emphasized that it isn't easy to just change to another collaboration partner and keeping everything up and running at the same time when they operate a firm of the focal firm's size. In addition to this, the respondents emphasized that they were themselves highly dependent on the 4PL at operational level due to the operational setup not allowing stand-alone trailers. This caused the focal firm to lose control over their loading operations and the focal firm's own ability to even out volume levels were severely reduced. The above issues reported by the respondents complicates the issue of dependency since it with these statements seems that when collaborating with 3PLs you are often less dependent on each other overall, while collaboration with a 4PL puts more dependency in both directions. However, while the case scenario with the 4PL provides evidence that the focal firm were more dependent on the 4PL than the 3PL at operational level, the respondents overall emphasized that generally the 4PL were more dependent on them rather than the other way around.

While the above arguments complicates the issue it would still seem that on a general level (disregarding specific areas such as the focal firm being more dependent on the 4PL when it

comes to the loading operations) 4PLs are more dependent on their focal firm than the other way around as well as 3PLs and their customers (the focal firm) are more independent on each other overall. However examining previous literature puts another light on this issue where it is often reported that collaborating with 4PLs over time makes you lose control of your own operations as well as expertise and knowledge regarding your own business starts to decline (Richardson, 2005).

To summarize the dependency area we want to emphasize that while the 4PL might be more dependent on their customer (the focal firm) in earlier stages of collaboration, over time this might be subject to change. There are cases which suggest that there is a dependency switch where the customer starts to lose control and knowledge regarding their operations and becomes highly dependent on the 4PL in order to run their business (Richardson, 2005). Because of this, our conclusions regarding dependency is that dependency when collaborating with a 3PL is generally lower in both directions and when collaborating with a 4PL it generally is the 4PL that is more dependent on their customer at the initial stages but this is subject to change over time.

Because our focus is on conflict and problems and that the dependency when partnering with 4PLs is subjected to change we cannot draw the conclusion that there would be more problems or conflicts when collaborating with either type of firm. Our view is instead that this is a much more company / collaboration setup based issue.

Conflict/Problems attributed to the role of 3PL companies:

❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

❖ *None*

Formalization

Formalization insinuates to the agreement between two or more parties (Lysons and Mehta, 1997; Woolthuis et. al., 2015) to state how the collaboration setup process will be managed and what each partner contribute with, which according to Mamad and Chahdi (2013) enhances to overcome potential conflicts or problems.

As mentioned before, language barriers can occur within any collaboration setup, so even though the contracts written with the logistics companies various in this matter, it cannot be attributed to a 3PL or a 4PL, since not all 4PLs' requires a certain language skills in their operations performed. Additionally, decisions regarding changes in loading order and routes, assistance while loading trucks, other goods already loaded on the trucks as well as transporting garbage with the same trucks cannot be linked to occur with just a 3PL or a 4PL. It is more specifically linked to how each logistics company decides to execute their operations. Therefore, these decisions can vary from a logistics type to another but also from company to company. Furthermore, the volume decided to be loaded into the trucks could point in the direction of 4PLs being more helpful and creating less conflicts due to being more of a partner rather than a provider (Skjoett-Larsen et al., 2006). According to respondents the 3PL wanted to maximize each truck's fill ratio which often created a problem with goods being retained at the focal firm, since there were not enough space left on the truck. These different manners of volume planning, was agreed on when the contract was determined with both collaboration setups. The agreeable contract with a 3PL compare to a 4PL regarding loading volumes, could refer to 3PL being assets based (e.g. Stefansson, 2006) (own truck fleet) and costs is therefore based on per truck used and 4PL being non-assets based (e.g. Lumsden, 2012) (hired carriers) and cost is therefore based on per loading meter used. Meaning that a 3PL provide their own trucks and

strives to have as high fill ratio as possible, which additionally would lead to lowering their costs, since fewer trucks were required. As opposed to a 4PL that do not possess any own trucks and seek the opposite and only pay for the amount of loading meters used. This gives the focal firm more flexibility to add additional goods as well as only paying for what is being used. Anyway, despite the analysis above regarding volume planning, previous literature (Bumstead, 2002; Hertz and Alfredsson, 2004; Skjoett-Larsen et al., 2006; Maloni and Carter, 2006; Stefansson, 2006; Mortensen and Lemoine, 2008, Marasco, 2008; Win, 2008; Burnson, 2011; Lumsden, 2012) does not prove that it can be attributed to a company type and instead it can be seen as an affect of the operational structure rather than solely based on the company type.

Furthermore, the 4PL had a well-defined contract regarding delays that occurred. Since more actors are involved, much richer information was required in order to see what and who had caused the delays. As opposed to the 3PL who did not have any other actors involved in their collaboration with the focal firm, less information were required. However, conflicts that occurred due to more manually work cannot be attributed to a company type since it refers to the operational structure rather than being based on the different company types.

In addition to the previous points, as mentioned above a 4PL hires carriers to execute the transportation (e.g. Stefansson, 2006; Win, 2008), which enables the 4PL to select the most suitable deal depending on the amount of volume that is going to be transported as well as the transport route. This can affect the dimensions of the trucks, since different carriers may use different truck dimensions. On the other hand, a 3PL can also hire carriers but since they are more commonly asset based (e.g. Stefansson) most 3PL companies' use their own trucks (e.g. Win, 2008). This means that the dimensions of a 3PL's truck fleet is more consistent, since a single actor provides all the transportation and does not include several other actors, such as carriers. Therefore, knowing what truck dimensions that always will dock at the gate will enhance the focal firm's loading operation. Otherwise they have to adapt the operations each time when a truck with different dimensions dock at the gate which requires a different setup for loading. Additionally, since 4PL companies contract one or several carriers, each carrier can be operated differently than another in terms of various rules and regulations that the focal firm need to adjust to. Problems that occur with carriers due to different rules and regulations as well as different trucks and dimensions could be generally seen as more common when collaborating with 4PL companies due to their role of integrating several carriers which means more actors in the supply chain and in turn means more possible variations.

Conflict/Problems attributed to the role of 3PL companies:

❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

❖ *Several carriers causes various in regulations and truck dimensions to take into consideration*

Control

Control is a necessity for the efficiency and value creation in a supply chain (Woolthuis et. al., 2005), which include all actors involved and is characterized as incentives to monitor and evaluate to ensure that partners behave as expected (Mamad and Chahdi, 2013). After examining previous literature, there are no evidences stating that a 3PL or a 4PL control or is being controlled by the buyer (in this case the focal firm) differently. This is in line with respondents' answers that there weren't more or less controls performed with either firm. Due to the day-to-day operations performed from planning to delivery of goods; each activity performed is an in-direct control of how the previous activity was executed. Since, the

collaboration with both the 3PL and 4PL addressed a similar process from planning to delivery of goods, neither of the logistics companies were controlled more than the other. Additional controls were only performed when issues were realized or further problems occurred, but this applied for both logistics companies and not due to the company type.

KPI's, which focus on aspects of organizational performance and depending on what performance is the most critical for the current and future success, companies may use different KPI's and every organization has KPI's whether they know it or not (Parmenter, 2015). With both collaboration setups with the logistics companies similar KPI's were monitored and controlled by the higher level of management within the focal firm. This concludes that conflicts occurred due to control could not be attributed to the company types 3PL or 4PL.

Conflict/Problems attributed to the role of 3PL companies:

- ❖ *None*

Conflict/Problems attributed to the role of 4PL companies:

- ❖ *None*

Summary of the Analysis

With the result of our findings as well as this analysis we have been able to answer both of our research questions. Our first research question was mainly answered through our empirical findings which were presented in the result part of this thesis, while the second research question has been answered throughout this analysis. While many of the conflicts and problems found as the answer to our first research question naturally occurs due to the fact that there are two different companies as a whole, we have been able to, with previous literature connect certain conflicts and problems to the different roles that 3PL and 4PL companies fulfill. A summarized answer to our research and purpose will be presented in the following chapter regarding our conclusions. In order to give an overview of the conflicts and problems that we have been able to attribute to the different roles of 3PL and 4PL companies, a short list will be presented below.

Conflict/Problems attributed to the role of 3PL companies:

- ❖ *Generally less committed*

Conflict/Problems attributed to the role of 4PL companies:

- ❖ *Important information originating from physical transportation level are more often late due to passing through more actors*
- ❖ *Several carriers causes various in regulations and truck dimensions to take into consideration*

6 Conclusion and Discussion

In this chapter the authors' conclusions and answers to the research questions will be presented.

6.1 Conclusion

The purpose of this study has been to “Investigate what types of conflicts occurring during collaboration that can be attributed to the different roles of 3PL and 4PL companies” which has been possible by answering our two research questions. The first research question was formulated as follows:

1. What type of conflicts occur when a focal firm collaborates with a 3PL company as well as when the same focal firm collaborates with a 4PL company?

In order to eliminate other influencing factors that could complicate the possibility to attribute conflicts to the different company types we based our analysis on conflicts that occurred when a static focal firm collaborated with two different partners. As such, this research question was answered in order to enable us to analyze the result and fulfill our purpose. This research question was answered in the result part of this thesis and a summarized of the findings is presented in Table 3: Summary of Conflicts.

In order to fulfill our purpose we had to answer our second research question, which was done by analyzing the result from our first research question and comparing with previous literature. The second research question is formulated as follows:

2. How can conflicts occurring between a focal firm and a 3PL company as well as between the same focal firm and a 4PL company be attributed to the different roles of 3PL and 4PL companies?

What we found when analyzing our empirical findings and comparing it with previous literature was that many conflicts and problems that occurs are based on factors such as operational structure, specific choices as to handle certain issues, company specific policy's and similar factors which are not affected by the company type. Naturally there are many reasons of conflicts; however we found that three conflicts and problem areas could be connected through comparison and analysis of previous literature, to generally be more common with either 3PL companies or 4PL companies.

The main points found is based on our analysis and how we connected certain conflicts with previous literature in order to draw conclusions and generalizations. We found that 3PL companies in general are less committed to the relationship due to their role, as well as the typical relationship that you have with a 3PL, is more in line with a buyer-seller relationship rather than a partnership. We also found that information from the physical transportation level took longer time to reach the focal firm due to having to pass through more actors when collaborating with a 4PL company. In addition to this, our findings suggests that there occur more issues regarding formalization with 4PL companies due to them more often using several carriers who in turn can have different rules and regulations as well as having different available physical assets.

We believe that with the answer to our research questions and especially our second research question we have answered and fulfilled our purpose by determining which found conflicts and problems that can be attributed to either the role of 3PL or the role of 4PL company types.

6.1.1 Contribution

With the presented result analysis this paper provides new insights in the investigated topic regarding if there are conflicts or problems that can be attributed to specific company types. This provides a foundation for future research to build on in order to continue researching how different company types affect collaboration setups. While there might be more conflicts and problems that can be tied to company types and roles which are in need of investigation, this thesis provides a starting point for the topic. Future researchers now have the possibility to compare their findings with ours as well as to further analyze our three main issues that are connected to company types in other ways such as how to adapt and handle conflict management accordingly.

Our findings also provide another perspective for managers regarding the decision of who to collaborate with. Certain companies might have a heavy focus on, and require, an extremely committed partner while for other companies it might be extremely important to receive information regarding delays in time. With this thesis they now have another perspective to take into consideration which could be of value when taking decisions on whom to collaborate with as well as to prepare for the known possible conflicts that could arise.

6.2 Limitations

When conducting any study you will always have certain strengths and weaknesses due to different type of constraints which limits methodological choices. In our case, the most major constraint which limited this study is the limited available timing window to undertake the study. This issue together with the scarce budget available impacted several methodological choices and forced us to make the best use of the available time and money rather than the most optimal solution that could be done with unlimited time and resources.

The constraints above limited this study by having to perform and base our findings on a single case study rather than investigating many more similar collaboration setups which could have further strengthened the possibility to generalize the result to a greater extent. In addition to this, due to the sensitive topic of conflicts we had no possibility to interview and gather the current 4PL company's and the previous 3PL company's perspective on the conflicts and problem areas. However, the focus of the thesis has always been from the focal firm, or the "buyer" of services perspective. Another aspect of performing a single case study like this is that the geographical and cultural perspective could be different and affect how this issue is looked upon in other parts of the world. With that said, the specific case study is performed at a focal firm who handles the whole Nordic region which at least makes the result applicable in nearby located countries.

All research has to take into consideration its weaknesses in order to proactively handle issues and strengthen the validity of the result. We have made several choices in order to strengthen the result of this thesis and to reduce possible weaknesses. First and foremost we made a conscious choice when we picked the focal firm that the case study is based on. We based our decision on several aspects but the main aspect was that we wanted a firm that within a reasonable time-window has collaborated with both a 3PL company as well as a 4PL company. This is highly important due to the fact that we want to attribute certain problem and conflict areas to different company types. In order to do so we want to eliminate as many possible influencing factors as we can in order to avoid a faulty result.

As explained above we wanted as few possible influential factors as possible and with our available time frame and resources we found the choice of a single case study with our chosen conditions to be the best solution. In addition to this we undertook interviews with respondents

at the focal firm who were heavily involved in both of the collaboration setups which further strengthen the value of the findings. Naturally if you want to examine any type of change and attribute effects to said change you would want as many other factors to remain static in order to eliminate that changed effects can be attributed to other factors. In addition to this, it felt like a natural process when we discussed how to find out if certain conflicts or problem areas can be attributed to a specific company type that we talk to someone that has collaborated with both types, find out what problems they had with both types and then analyze if any difference is found and if it can be attributed to the company type.

While we do believe the chosen conditions for the selected case study is valid and necessary and eliminates other possible influencing factors, it would always be beneficial with more studies of the same type, with the same conditions in order to further strengthen and generalize the result.

6.3 Future Research

Since there has not been a lot of previous research regarding what conflicts and problems that can be attributed to different company types there are still important research that has to be made within this area. In order to further strengthen the conclusions and contributions made within this thesis, more studies similar to this one are suggested in order to validate this study as well as providing additional insights. There is also a need for studies that investigate how the geographical and cultural aspects affects this issue, such as examining whether conflicts or problems attributed to the different company types is the same in other parts of the world.

With the limited time and resources available to us as well as the lack of previous literature examining this subject, choosing the case study with the specific conditions was a natural choice to start researching these specific issues. However, we propose that quantitative studies examining this issue are performed in order to strengthen and provide additional statistical evidence, further contributing within this area.

7 References

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