



# Service level agreements in business relationships

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Master thesis in Urban, Port and Transport Economics

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This study analysed the role of SLAs in business relationships in the transport and logistics sector. This paper discussed different forms of relationships and the potential of SLAs in business relationships for the transport and logistics sector. A qualitative analysis is performed on different logistics service providers in the Netherlands. It turns out that SLAs could contribute to the improvement of medium and large sized business relationships in the transport and logistics sector. The scope of business should be of significantly magnitude in order to implement SLAs.

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# Table of contents

- Acknowledgements.....2**
- List of figures.....5**
- 1 Introduction.....6**
  - 1.1 Background information.....6
  - 1.2 Research objectives and questions.....7
  - 1.3 Outline thesis.....7
- 2 Market overview.....9**
  - 2.1 Defining logistics service providers .....9
  - 2.2 Market overview transport and logistics market.....11
    - 2.2.1 Market developments .....11
    - 2.2.2 Market players.....14
    - 2.2.3 Market segments .....14
    - 2.2.4 Future prospective .....15
- 3 Literature review on inter-organizational relationships.....16**
  - 3.1 Types of inter-organizational relationships.....16
    - 3.1.1 Arm’s length relationships .....17
    - 3.1.2 Alliances.....18
    - 3.1.3 Partnerships.....19
    - 3.1.4 Strategic partnerships.....20
    - 3.1.5 Vertical integration.....20
  - 3.3 Relationship or partnership? .....21
  - 3.4 Characteristics relationships.....21
  - 3.5 Relationships in transport and logistics sector .....23
  - 3.6 Conclusion .....23
- 4 How are service level agreements generally formed and analysed? .....24**
  - 4.1 Defining Service Level Agreements (SLAs) .....24
  - 4.2 Historical development of SLAs .....25
  - 4.3 Purpose of SLAs.....25
  - 4.4 Characteristics of SLAs in inter-organizational relationships .....26
  - 4.5 Intra- and inter-organizational implementation of SLAs .....26
  - 4.6 Elements of SLAs .....27
  - 4.7 Cost and benefits analysis .....29
  - 4.8 SLA versus contract.....30
  - 4.9 Conclusion .....30
- 5 How are key performance indicators generally formed and analysed? .....32**
  - 5.1 Defining KPIs.....32

5.2 Characteristics of KPIs.....	33
5.3 KPIs in the transport and logistics sector .....	35
5.4 Conclusion .....	36
<b>6 Methodology.....</b>	<b>37</b>
6.1 Method of data collection.....	37
6.2 Selecting research group.....	39
6.3 Method of data analysis.....	40
<b>7 Results and analysis.....</b>	<b>41</b>
7.1 Descriptive analysis concerning the implementation of SLAs in business relationships .....	41
7.1.1 Explanatory analysis concerning the implementation of SLAs in business relationships.....	42
7.2 Descriptive analysis concerning purpose of SLAs .....	43
7.2.1 Explanatory analysis concerning purpose of SLAs .....	43
7.3 Descriptive analysis concerning elements of SLAs.....	44
7.3.1 Explanatory analysis concerning elements of SLAs.....	45
7.4 Descriptive analysis concerning costs and benefits of SLAs .....	46
7.4.1 Explanatory analysis concerning costs and benefits of SLAs.....	47
7.5 Descriptive analysis concerning problems with composing, implementing and updating process of SLAs.....	48
7.5.1 Explanatory analysis concerning problems with composing, implementing and updating process of SLAs.....	49
7.6 Descriptive analysis concerning KPIs.....	49
7.6.1 Explanatory analysis concerning KPIs.....	51
7.7 Descriptive analysis concerning market developments of SLAs.....	52
7.7.1 Explanatory analysis concerning market developments of SLAs.....	53
<b>8 Conclusion, limitations and further research .....</b>	<b>55</b>
8.1 Limitations.....	59
8.2 Further research.....	59
<b>9 References .....</b>	<b>60</b>
<b>10 Appendix.....</b>	<b>65</b>

## List of figures

Figure 1: Triadic relationships between seller, buyer and third party logistics (Source: Bask, 2001)

Figure 2: Amount of companies in transport and logistics market in the Netherlands in the period 1992-2012 (Source: NIWO)

Figure 3: Mutations in the amount of companies in the transport and logistics sector in the period 1993-2011 (Source: NIWO)

Figure 4: the amount of licenses related to the size of company in 2012 (Source: Presentation Transport en logistiek; we zijn altijd onderweg!)

Figure 5: Purchasing Portfolio Matrix designed by Kraljic (Source: ABN Amro, 2013a)

Figure 6: Development economic growth in the Netherlands (%) and businesses road haulage in the period 1997-2013 (Source: Presentation Transport en logistiek; we zijn altijd onderweg!)

## List of tables

Table 1: The amount of companies per size and the amount of licenses per size in 2012 (Source: Transport in Cijfers, 2013)

Table 2: Top ten logistics service providers in the Netherlands (Source: logistiek.nl)

Table 3: Continuum of coordination mechanisms (Source: Rice and Ronchi, 2002)

Table 4: Characteristics of various coordination mechanisms (Source: Rice and Ronchi, 2002)

Table 5: Characteristics of various coordination mechanisms (Source: van Weele, 2008)

Table 6: List of KPIs in the transport and logistics sector ranked by their importance (Source: Kasilignam, 1998)

Table 7: An overview of the benefits of SLAs mentioned by the amount of respondents

Table 8: An overview of the mentioned KPIs by the amount of respondents

# 1 Introduction

## 1.1 Background information

Logistics service providers are under pressure due to increasing service level requirements and increasing consumer wishes. They are required to provide better and more reliable services to their customers. The increasing importance for details and increasing importance for achieving a high level of services have forced logistics service providers to reform their relationship structures. The business relationships of logistics service providers can be structured in many different ways, but a new way of structuring a business relationship has entered the transport and logistics market. This new way of structuring a business relationship is called service level agreements (hereinafter SLAs). SLAs are documents that are used to specify what the customer could expect from the logistics service provider and it contains the obligations of the customers as well as the logistics service providers. SLAs can be considered as useful documents since service quality can be improved by defining and focusing key services to meet business requirements. These key services are called KPIs which are quantifiable measures that logistics service providers use to gauge or compare performance in terms of meeting their strategic and operational goals.

Although SLAs are implemented in business relationships in various sectors, SLAs are a recent phenomenon for the logistics sector. SLAs are only implemented by a couple of logistics service providers and they are only implemented in a couple of business relationships. Although SLAs entail benefits for logistics service providers, they are still reluctant in implementing them in business relationships. There are probably a couple of explanations that prevent them to implement SLAs in business relationships. How could these explanations be identified? Is the logistics sector such a different sector in implementing SLAs in business relationships compared to other sectors? And is it possible to standardize SLAs in business relationships in the logistics sector? These questions will be addressed in detail in this thesis.

There can be observed many different forms of relationships structures. Logistics service providers can use contracts, service level agreements or operational arrangements to structure their business relationships and due to this amount of structure tools, a proliferation of relationship structures can be observed. SLAs are the most recent documents logistics service providers can use to structure their business relationships and, as a result, they are not used to implement them in business relationships. This confusion, the increasing importance for details and the increasing importance for achieving a high level of services make it relevant to investigate how and to what extent SLAs could be implemented in business relationships in the transport and logistics sector. Furthermore little research has been conducted about SLAs in the transport and logistics sector so far and this makes it even more relevant to investigate.

Literature will be consulted in order to obtain a clear overview of SLAs and KPIs in business relationships. The amount of literature of SLAs and KPIs in the transport and logistics market is limited. Most of the literature comes from other sectors such as the IT sector where SLAs have their origins. Although the literature doesn't come from the logistics sector, most factors and elements are applicable for the logistics sector and this makes the literature relevant. Literature will also be consulted in order to obtain an overview of inter-organizational relationships. SLAs are implemented in business relationships, but it is of the importance to investigate different types of relationships and their characteristics.

## **1.2 Research objectives and questions**

The aim of this research is to find out how, and to what extent, SLAs could be implemented in business relationships in the transport and logistics sector. What factors influence the choice of implementing SLAs in business relationships? What elements should SLAs include and can SLAs contribute to the establishment of long term business relationships? This research will try to answer these questions.

The research question of this research can be defined as follows:

*“How and to what extent can SLAs contribute to the improvement of business relationships of logistics service providers?”*

The research question will be answered by dividing the research into three sub-questions:

- How are inter-organizational relationships generally formed and analysed?
- How can SLAs generally and specifically in the transport and logistics sector be characterized?
- How can KPIs generally and specifically in the transport and logistics sector be characterized?
- In which business relationships and to what extent should logistics service providers implement SLAs?

## **1.3 Outline thesis**

After defining the research questions for this research, a final structure of the thesis can be presented.

Chapter 2 will present definitions of logistics service providers and an overview of the transport and logistics market. Chapter 3 will present the different forms of inter-organizational relationships and their characteristics. Chapter 4 will present the definitions and characteristics of SLAs. Chapter 5 will present the definitions and characteristics of KPIs. Chapter 6 will present the methodology used for

this research. Chapter 7 will present the findings of the research and these findings will be analysed by the author. Chapter 8 will provide a conclusion; discuss the limitations of this research, along with recommendations for further research.

## 2 Market overview

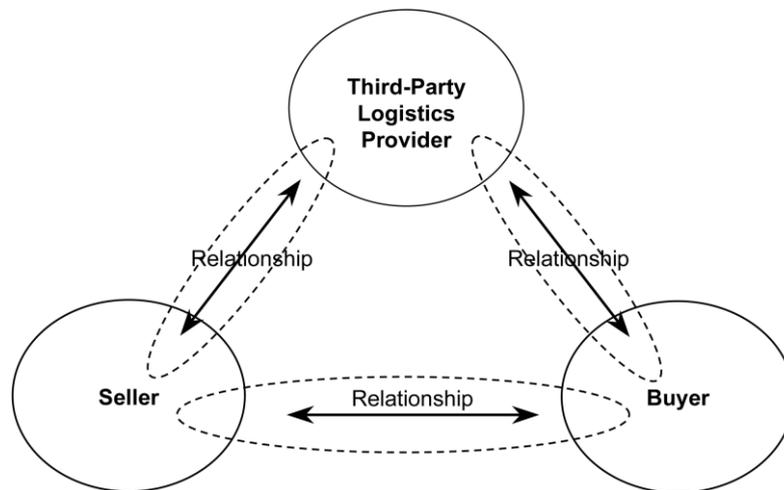
Before starting to analyse relationships and SLAs, it is important to know the definitions of logistics service providers and the structure of the transport and logistics market. There are multiple types of logistics service providers and these different types of logistics service providers are often used interchangeably although there are substantial differences among the types. The most observed logistics service providers are third party logistics providers (hereinafter TPL providers). In the following section, the concept of third party logistics service provider will be examined.

### 2.1 Defining logistics service providers

There are multiple levels of logistics service providers. The most observed logistics service providers are currently third party logistics, but it started with the first party and the second party. The first party is the shipper or supplier while the second party is the buyer (Hertz & Alfredsson, 2003). There is however no consistent definition in literature for TPL providers despite the growing amount of literature on TPL. Some literature defines TPL providers as traditional “arm’s length” sourcing of transportation and/or warehousing. Other literature adds extra services to TPL that encompass the entire logistics services (Marasco, 2008).

Protrans (2003) provide a general definition for TPL providers: *“Activities carried out by an external company on behalf of a shipper and consisting of at least the provision of management of multiple logistics services. These activities are offered in an integrated way, not on a stand-alone basis. The co-operation between the shipper and the external company is an intended continuous relationship.”*

Figure 1 illustrates the relationships of TPL providers with sellers and buyers. Bask (2001) argues that TPL providers have their foundation in a triadic form of relationship consisting of seller, buyer and third-party logistics service provider. In this triad, three dyadic relationships can be distinguished, a relationship between seller and TPL provider, a relationship between buyer and TPL provider and a relationship between seller and buyer in the supply chain (see figure 1). The name third party logistics refers to the services provided by the TPL provider to the buyer and seller. It should however be noticed that most TPL relationships are dyadic relationships, a relationship between TPL and seller or a relationship between TPL and buyer.



**Figure 1: Triadic relationships between seller, buyer and third party logistics (Source: Bask, 2001)**

TPL providers can perform several activities and that's why there are many definitions of TPL providers in literature. For a clear overview, literature classifies logistics service providers to their type of relationship with customers, design and management, degree of customization and dedication, knowledge level of shippers and providers, and material flow characteristics (Hertz & Alfredsson, 2003). TPL providers can also be characterized by to what extent the TPL business is more than just a side business to transport and/or warehousing and to what extent TPL providers themselves are outsourcing part of their logistics services.

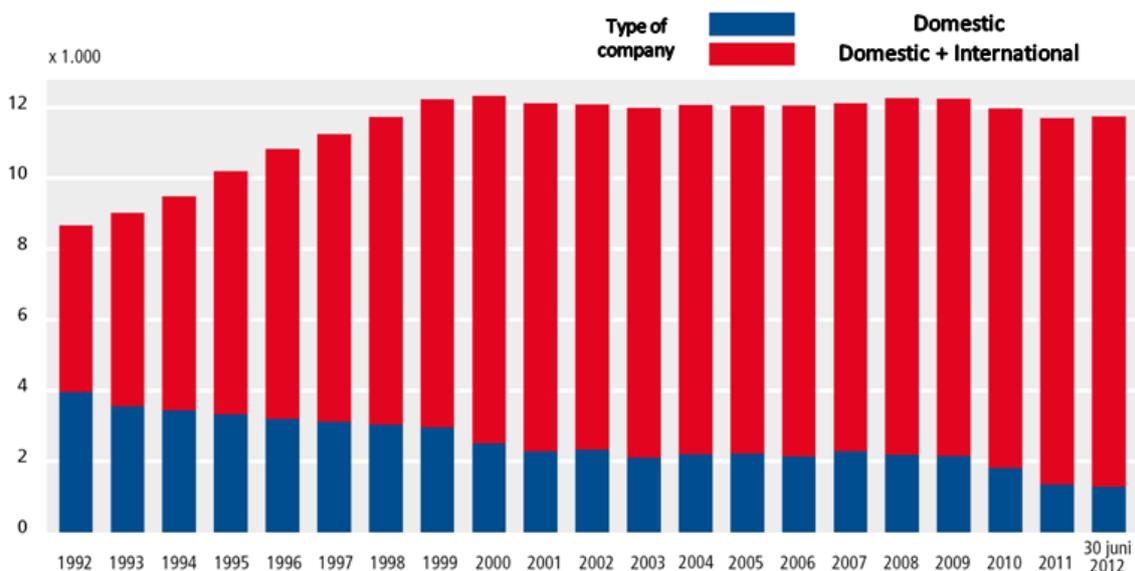
Literature provides several broad and narrow definitions of TPL providers. In between these definitions, Bask (2001) describes TPL as *"relationships between interfaces in the supply chains and third-party logistics providers, where logistics services are offered, from basic to customized ones, in a shorter or longer term relationship, with the aim of effectiveness and efficiency."* This definition clearly sets out the essence of the functions of TPL providers. They provide a wide variety of services, but always with the aim to increase the effectiveness and efficiency of the operations.

## 2.2 Market overview transport and logistics market

For this research, it is of the interest to investigate the structures, developments and future prospective of the transport and logistics market in order to have good insights in the market. It is important to analyse the market since it is of the interest to know what type of transport and logistics companies there are. Furthermore this information could be useful for selecting suitable companies for this research.

### 2.2.1 Market developments

The Netherlands has a long history regarding transport and logistics. They are the second largest transport and logistics player of Europe (Transport in Cijfers, 2013). The growth of the amount of companies is however stagnating. There can be observed 11.732 companies in 2012 whereas there were observed 11.231 companies in 1997. Figure 2 illustrates the amount of companies in the Netherlands. There can be obtained a development concerning the amount of international road haulage. Whereas many transport and logistics companies used to have a national focus, most of them now have an international focus.

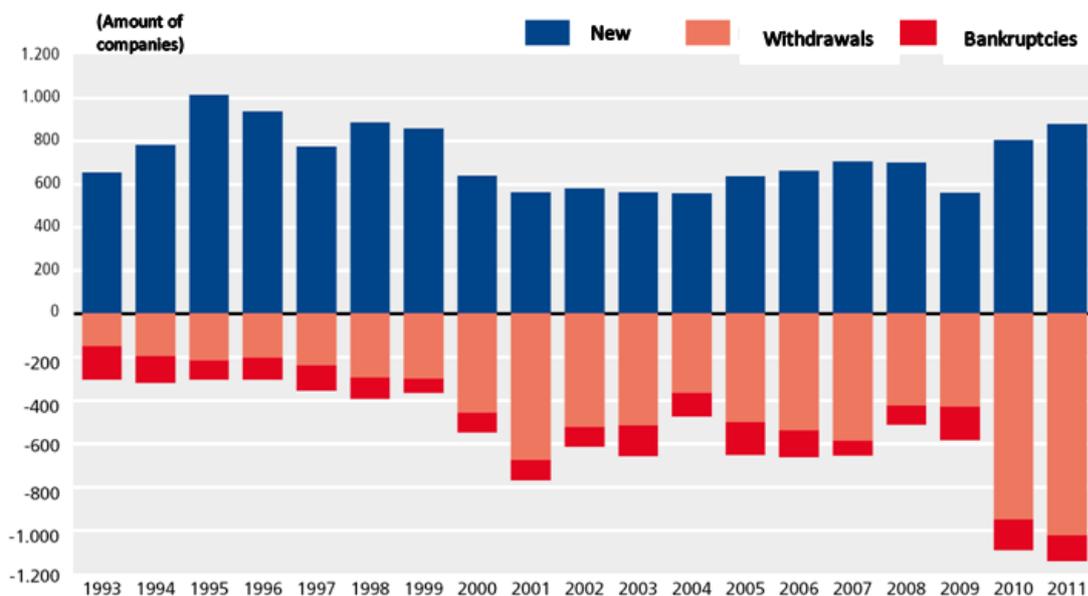


**Figure 2: Amount of companies in transport and logistics market in the Netherlands in the period 1992-2012 (Source: NIWO)**

The last couple of years have been difficult for the transport and logistics sector. Prices were put under pressure and, as a result, many companies got into trouble and some of them went bankrupt. Figure 3 illustrates the amount of bankruptcies and withdrawals of licenses. It can be observed that the amount of bankruptcies and withdrawals has increased significantly in 2010 and 2011. On the other hand, the amount of new companies has also increased in 2010 and 2011. So it can be

observed that the transport and logistics market is a dynamic market with many incoming and out coming companies although the amount of companies remains at the same level.

The dynamics of the transport and logistics market can be explained by Porter’s five forces: threat of new entrants, threat of substitutes, high level of internal competition, bargaining power of buyers and bargaining power of suppliers. If three or more of the forces are substantial present in the market, the market is defined as less attractive. For the transport and logistics sector, the entry barriers are low, there is a high level of internal competition, there is a threat of substitutes and the buyers have substantial power. So the transport and logistics market can be defined as less attractive since four of Porter’s five forces are substantial present. This also explains the dynamics of incoming and out coming companies in the sector.



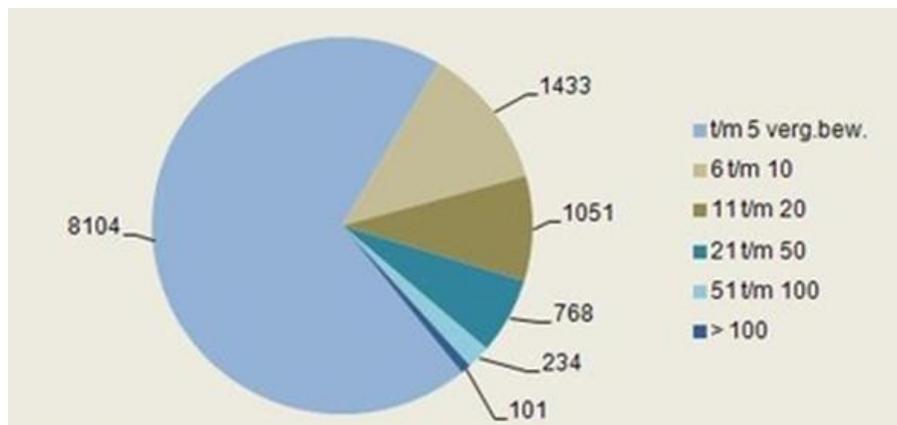
**Figure 3: Mutations in the amount of companies in the transport and logistics sector in the period 1993-2011 (Source: NIWO)**

Figure 3 gives however a distorted situation of the transport and logistics market. Whereas the amount of companies decreased from 12.256 in 2008 to 11.462 in 2012 (-6.9%), the amount of licenses decreased from 112.745 in 2008 to 97.855 in 2012 (-15.2%) (Transport in Cijfers, 2013). This means that the companies that stops their activities or goes bankrupt are larger companies than the new entrants who are often small sized enterprises. As a result, the amount of small sized enterprises increases while the amount of medium and large sized enterprises decreases.

	Companies	Licenses	Share companies	Share licenses
<b>Total amount of licenses</b>	11.732	103.067	100,0%	100,0%
1	398	3.957	3,4%	3,8%
2	3.957	3.390	33,7%	3,3%
3	1.695	2.889	14,4%	2,8%
4	963	2.464	8,2%	2,4%
5 tot 10	616	2.464	5,3%	2,4%
10 tot 15	1.715	11.235	14,6%	10,9%
15 tot 20	770	8.931	6,6%	8,7%
20 tot 50	443	7.377	3,8%	7,1%
50 tot 100	821	24.741	7,0%	24,0%
100 en meer	251	16.764	2,1%	16,3%
	103	21.319	0,9%	20,7%

**Table 1: The amount of companies per size and the amount of licenses per size in 2012 (Source: Transport in Cijfers, 2013)**

Table 1 and figure 4 illustrates the amount of licenses a logistics service provider has in the Netherlands. It can be observed that there are 8.104 small sized enterprises (69.3%) who only have 15.330 (15%) of the total amount of licenses and there can be observed 101 large sized enterprises (0.9%) who have 21.011 (20.5%) of the total amount of licenses. Furthermore 33.7% of the companies are sole proprietorships which mean that they only have one license. So there are many small sized enterprises, but their influence on the market is quite limited. On the other hand, there are just a few large sized enterprises, but their market share is quite large.



**Figure 4: the amount of licenses related to the size of company in 2012 (Source: Presentation Transport en logistiek; we zijn altijd onderweg!)**

## 2.2.2 Market players

Analysing characteristics of the market players gives a good insight in the transport and logistics market. Table 2 illustrates the amount of employees, the amount of offices, the amount of squared meter of warehousing and the yearly turnover of the top ten logistics service providers in the Netherlands. It can be observed that DHL Supply Chain/Forwarding Freight is the market leader followed by DB Schenker, Kuehne + Nagel and CEVA Logistics. The top ten logistics service providers operate their activities worldwide except Bakker Logistiek who still has a focus on the Benelux. The full top 75 logistics service providers of the Netherlands can be found in appendix B.

	Name company	Amount of employees in NL	Amount of offices NL	Amount of m <sup>2</sup> warehousing NL	Turnover NL x mln	Network
1	DHL Supply Chain/Forwarding Freight	5.185	59	724.000	28.200*	Worldwide
2	DB Schenker	2.750	35	190.000	587	Worldwide
3	Kuehne + Nagel	2.600	26	500.000	629	Worldwide
4	CEVA Logistics	2.100	17	245.000	242	Worldwide
5	UPS SCS	1.860	12	180.000	46.000*	Worldwide
6	DSV	1.800	20	430.000	350	Worldwide
7	Bakker Logistiek	1.650	12	285.000	185	Benelux
8	Rhenus Logistics	1.500	32	155.000	358	Worldwide
9	Wim Bosman	1.450	7	340.000	195	Worldwide
10	Flextronics Logistics	1.350	1	130.000	71	Worldwide

**Table 2: Top ten logistics service providers in the Netherlands (Source: logistiek.nl) \*=worldwide turnover**

## 2.2.3 Market segments

Business activities can be classified in four market segments (see figure 5). Many transport companies are operating in a commodity market which is a market that delivers standard commodities with abundant source of supplies. In a commodity market, there can be obtained a high level of competition and the price is set by the market. Many small sized enterprises are transport companies who are operating in a commodity market, but these transport companies try to shift from a commodity market to the logistics market by providing extra services such as value added logistics and services. In this market, companies are less dependent on the market and price setting is part of the strategy of companies. So transport companies are operating in a commodity market which can be characterized by low profit margins and standard products while logistics companies are operating in a specialty market which can be characterized by differentiated products and higher

profit margins. Many small sized enterprises are operating in a commodity market while many large sized enterprises are operating in a specialty market.

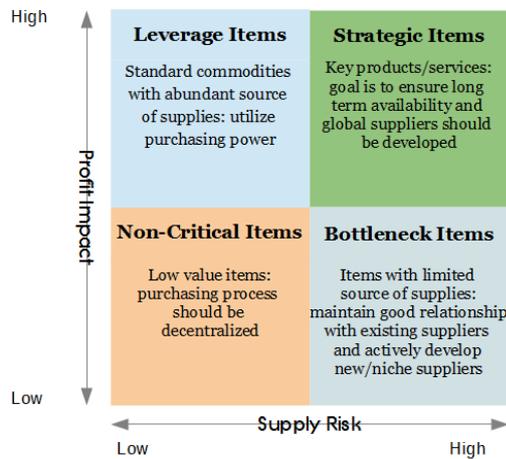


Figure 5: Purchasing Portfolio Matrix designed by Kraljic (Source: ABN Amro, 2013a)

### 2.2.4 Future prospective

The growth development of the transport and logistics sector follows the same path as the economic growth of the Dutch economy. Figure 6 illustrates the growth of GDP during the last 15 years (blue bars) and the growth of the transport and logistics sector (red line). It can be observed that the transport and logistics sector significantly depends on the Dutch economy. This can be explained by the fact that transportation is a derived demand. The future prospective of the transport and logistics sector will depends on the future prospective of the Dutch economy. It is expected that the Dutch economy will grow slightly the coming years and, as a result, it is also expected that the transport and logistics sector will grow slightly (ABN Amro, 2014).

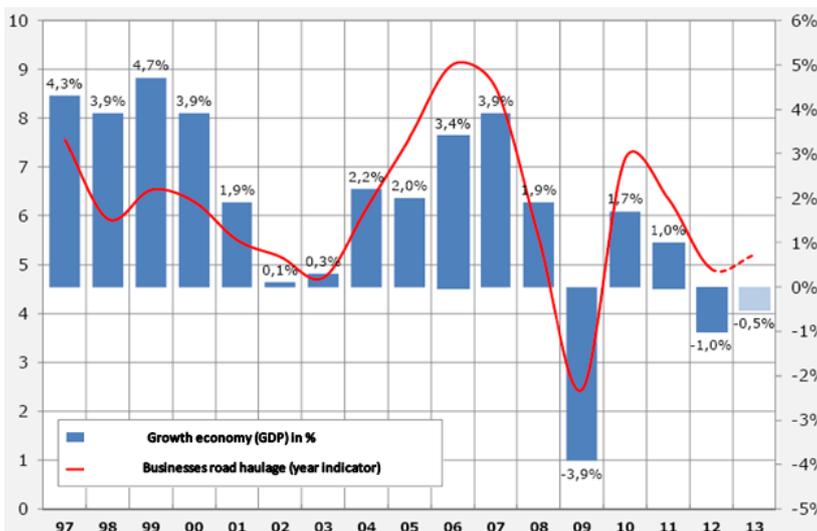


Figure 6: Development economic growth in the Netherlands (%) and businesses road haulage in the period 1997-2013 (Source: Presentation Transport en logistiek; we zijn altijd onderweg!)

### **3 Literature review on inter-organizational relationships**

There are many relationships within supply chains and it is of the interest to manage these multiple relationships among the actors involved in order to optimize the performance of supply chains (Mentzer et al. 2001). The relationships among these actors vary from simple transactional relationships to complex interdependent relationships. Ganesan (1994) and Berry and Parasuraman (1991) argue that value creation in the supply chain can be obtained from long term relationships and that's why many companies are moving closer towards long term relationships.

Literature provides many different inter-organizational relationships such as alliances, partnerships, collaborative relationships and transactional relationships, but there still exists a high level of ambiguity about the different definitions and descriptions of the relationships (Rinehart et al., 2002). The definitions of the various relationships are often used interchangeably and that's why a lot of confusion is created.

Kerlinger and Lee (2000) argue that it is important for theory to have a single, clear definition in order to be validated and advanced. Literature should be consistent in their use of inter-organizational relationships in order to prevent ambiguity. This is important for companies since indistinctness about the relationships terms can lead to disconnects in the expectations between suppliers and customers. A mutual understanding of expectations is therefore necessary for making the relationship as efficient as possible.

There is no strong consensus in literature about the terminology and typology for describing the inter-organizational relationships forms. There are however some important distinctions among types of relationships. Webster (1992) and Rice and Ronchi (2002) provided a continuum of common relationships. This continuum of relationships will be used since it gives a clear overview of the inter-organizational relationships.

#### **3.1 Types of inter-organizational relationships**

The channel literature was the first to provide a range of relationships from arm's length transactions to vertical integration (Golicic et al., 2003). This range of relationships is acknowledged by several authors and they placed collaborative relationships in between arm's length transactions and vertical integration (Nevin, 1995; Webster, 1992). These collaborative relationships can be identified as alliances, partnerships, joint ventures, network organizations and service agreements. Literature attempted to categorize the relationships under a particular type based on the relationship characteristics (Golicic et al., 2003).

Rice and Ronchi (2002) provided a continuum of relationships (see table 3). From arm's length relationships to vertical integration, the actors involved use more bureaucratic and administrative control and less market control. Rice and Ronchi (2002) argue that there are two coordination mechanisms for coordination among business operations: markets and hierarchies. Markets refer to the price mechanism of the free market while hierarchies refer to coordination through cooperation between actors involved.

Literature also mentions a third type of coordination mechanism, called alliances or intermediate mode of organization (Rice and Ronchi, 2002). This type of coordination mechanism can be situated in the middle of the other two coordination mechanisms. In alliances, companies coordinate with each other through some integration activities such as long term contracts without committing to a particular hierarchic model. Examples of alliances are mergers and acquisitions.

All coordination mechanisms form a continuum of relationships. Although, there is consensus in literature about the continuum of relationships, these continuums are characterized in various ways by literature. Ellram (1991), for example, argues that the continuum consists of four levels of coordination between market and hierarchy, short term contract, long term contract, joint venture and equity interest. In contrast, Macbeth and Ferguson (1994) distinguish product life relationship, shared destiny, minority shareholding, strategic alliance and joint venture as types of relationships.

Rice and Ronchi (2002) synthesized the various definitions of relationships into six groups of relationships: arm's length relationships, information sharing alliances, collaborative logistics alliances, collaborative network alliances, partnerships, and vertical integration. In the next section, these relationships will be examined.

Markets		Hierarchies			
Markets	Alliances (Hybrids)			Hierarchies	
Arm's Length Relationships	Information Sharing Alliances	Collaborative Operations Alliances	Collaborative Network Alliances	Partnerships	Vertical Integration

**Table 3: Continuum of coordination mechanisms (Source: Rice and Ronchi, 2002)**

### 3.1.1 Arm's length relationships

The simplest market coordination mechanisms are transactions between two economic actors on an arm's length level of relationship. In a pure market, each transaction is independent of all other

transactions and the price mechanism of the free market will ensure the lowest available price for a company. The search to the lowest available price entails additional costs, called transaction cost. These costs include the costs of searching the lowest available price, negotiating and contracting, and controlling the quality and quantity of purchased goods (Coase, 1937).

Although, pure transactions are rare in the current economic market, it is a useful starting point for analysing the forms of relationships. The marketing literature used transactions as the basic unit of analysis. Kotler and Levy (1969) defines a pure transaction as *“a one-time exchange of value between two parties with no prior or subsequent interaction. Price, established in the competitive marketplace, contains all of the information necessary for both parties to conclude the exchange. In a pure transaction, there is no brand name, no recognition of the customer by the seller, no credit extension, no preference, no loyalty, and no differentiation of one producer’s output from that of another.”* This quote really describes the characteristics of pure transactions which can be considered as the most loosely coupled form of relationships. Actors involved are acting in their self interest and are not subject to any pressure from the other party. Another characteristic of arm’s length relationships is that the relationship between buyer and seller is not exclusive; the seller can easily find other customers while the buyer can easily find other sellers.

### **3.1.2 Alliances**

One step along the continuum from transactional relationships is alliances. These market mechanisms are not pure market mechanisms such as the arm’s length relationships. Whereas arm’s length relationships entail simple buy-and-sell activities, alliances entail a more intensive relationship between two companies. They share some common interest, perform some coordination activities and exchange value through buy-and-sell activities (Rice and Ronchi, 2002). In alliances, two companies do some sharing in terms of information, risks and rewards. There are however several degrees of shared goals and a broad range for time horizon and level of commitment. Therefore, the different forms of alliances will be examined first.

#### *Information sharing alliance*

Information sharing alliance is the most loosely coupled form of alliances. This form of alliance is a relationship where market buy-and-seller transactions are complemented with passive information sharing. Companies can incorporate information from other companies such as inventory visibility or order tracking. An information sharing alliance can be the starting point for companies to develop a more meaningful relationship. The companies expect that the information shared may improve their connected processes without significant commitment or risk taken by every company (Rice and

Ronchi, 2002). A characteristic of information sharing alliances is that it typically represents a short term commitment between the involved actors.

#### *Collaborative operations alliance*

Collaborative operations alliance is a relationship where information of companies is shared and it entails active process coordination in one or more domains. This relationship is long term agreement regarding product design of engineering. In contrast to information sharing alliances, this relationship entails active information sharing and supply network process coordination and improvement activities. Collaborative operations alliances are medium-to-long term commitments since companies share the information and the same common goals with each other. Strategic benefits can be obtained if both companies actively engage with each other (Rice and Ronchi, 2002).

#### *Collaborative network alliance*

Collaborative network alliances entail information sharing, active process coordination and making network-level financial decisions and tradeoffs. It is the most committed level of alliance where value can be created through long term agreements. The agreements include financial, resource and risk sharing. Two companies share some common goals, but the level of commitment in terms of dedicated resources and risk sharing is significantly higher and more complex compared to collaborative operations alliances. The two companies try to improve their supply chain by mutually investing in dedicated assets and try to balance the risk by developing creative agreements and arrangements. Collaborative network alliances are typically long term commitments and companies apply this form of relationship in order to create shared strategic benefits for both companies. Decisions are made in order to improve the supply network rather than improving the process coordination of their own activities (Rice and Ronchi, 2002).

### **3.1.3 Partnerships**

Partnerships can be placed in the domain of hierarchies. Literature does not consider partnerships as hybrid relationships since partnerships entail some measure of legal commitment or equity ownership. Partnerships include joint ventures and other relationships where the ownership is less than 51 percent. The level of commitment is significantly higher for partnerships compared to collaborative network alliances. The goals and objectives of the two companies are so similar that the financial structure of the relationships also changes. The two companies share equity interests and that's why collaboration and integration become stronger.

### **3.1.4 Strategic partnerships**

Strategic partnerships are long term relationships between independent companies who share the same goals and try to achieve mutual benefits. They join efforts to achieve goals that they would not achieve without the partnership (Mohr and Spekman, 1994). Their goals can be either process optimization or developing new logistics services for customers. The former has a cost centre focus while the latter has a value centre focus. Value creation is considered as the most interesting strategy since the profit margins are higher compared to the cost centre focus.

Strategic partnerships involve trust and the associated sharing of information, risks and rewards. Companies can benefit from a partnership in terms of better accessibility to new technologies or markets, achieving economies of scale in production, sharing risks and improving complementary skills (Powell, 1987). On the other hand, partnerships also lead to more complexity, loss of autonomy and information asymmetry.

A strategic partnership requires several antecedents in order to become a successful strategic partnership. Antecedents consist of organizational, inter-organizational, and external environmental issues. Many authors have investigated the antecedents of interfirm value creation. Achrol et al. (1990) acknowledge trust, commitment, group cohesiveness, and motivation of alliance partners as the most important antecedents. Smith and Barclay (1997) argued that the most important antecedents are dependence, prior history of the business relationship, rate of technological change, managerial imbalance and organizational compatibility as the main antecedents. Mentzer et al. (2000) coalesced these antecedents and they argued that the most important antecedents of strategic partnerships are interdependence, mutual trust, commitment, organizational compatibility, and top management vision of the firms within a particular supply chain.

### **3.1.5 Vertical integration**

The most tightly coupled form of relationships is vertical integration. Vertical integration represents pure hierarchy and this means that companies own all the value adding entities in the supply chain and coordinate the activities among the entities in order to increase the efficiency of the whole supply chain. Vertical integration is a coordination mechanism that companies apply when they want to have power and control over the whole supply chain. The time horizon of vertical integration is very long and the costs and efforts of acquiring or merging other companies could be very high.

### **3.3 Relationship or partnership?**

Literature provides several relationships and partnerships, but sometimes there is a lack of agreement on the meaning of relationships and partnerships. Lynch (1998) and Rice and Ronchi (2002) argue that the difference between these two types is that partnerships are relationships with a shared ownership while there is no shared ownership in relationships. ABN Amro (2013a) defines relationships as “*a contractual agreement between buyer and supplier*” while in partnerships, companies share the same goals and they try to create value in the supply chain by establishing a partnership.

In partnerships, the involved partners cooperate with each other with the aim to obtain mutual benefits. The cooperation can be either vertical or horizontal. Vertical cooperation refers to a cooperation of companies from different supply chain levels or different industries. Companies are willing to vertically cooperate since benefits can be obtained such as securing the quality and quantity of products and services, decreasing the transaction costs and decreasing raw material costs (Thun, 2005). In horizontal cooperation, companies from the same supply chain levels cooperate with each other in order to act with more power compared to customers and suppliers. Benefits of horizontal cooperation are economies of scale, economies of scope, reduction of transaction costs and reinforcement of the competitiveness.

### **3.4 Characteristics relationships**

In the previous sections, several relationships are examined each with their own characteristics. The following characteristics of relationships are classified by Rice and Ronchi (2002):

- Degree of common goals
- Time horizon of the relationship
- Structure of the relationship
- Description of relationship
- Activities by coordination mechanism
- Instruments for coordinating cost, benefits and risk

The relationships can be subdivided into three segments: arm’s length relationships, collaborative relationships and partnerships. Table 4 outlines the characteristics of these segments.

Type of relationship	Arm's length relationships	Collaborative relationships	Partnerships
Goals	Different	Some similar goals to improve logistics flows & new products	Most goals are common
Time horizon	Short term, as long as the transaction	Medium-to-long term, dependent on shared investment in mutual assets	Long term
Structure	Two separate entities	Two separate entities	Multiple entities with equity
Description of relationship	Arm's length	Actively collaborative-mutual efforts to improve common processes	High level of risk sharing and active collaborative effort
Activities by coordination method	Buy and sell products & services	Buy and sell prods/Svcs share info, active coord & Ping systems & processes	Run the business with other part of owners (partners)
Instruments for mediating risk	Price	Price, long term contracts, contingency contracts	Partial control via partial ownership

**Table 4: Characteristics of various coordination mechanisms (Source: Rice and Ronchi, 2002)**

Van Weele (2008) distinguishes more characteristics such as level of relationship, turnover, profit margin and the amount of companies operating this form of relationship (see table 5).

Type of relationship	Transactional relationships	Collaborative operations	Partnerships
Level of relationship	In development	Operational	Tactical, strategic
Turnover	-	Low/average	High
Profit margin	-	Small/reasonably good	Reasonably good/high
Amount of companies	Plenty	Many	Little

**Table 5: Characteristics of various coordination mechanisms (Source: van Weele, 2008)**

The characteristics provided by Rice and Ronchi (2002) and Van Weele (2008) show that partnerships generally result in higher profit margins compared to collaborative and transactional relationships. Companies are however still reluctant to start a partnership with another company. This can be explained by the fact that companies don't share the same strategic business goals. Another explanation could be the lack of information about each other business activities.

### **3.5 Relationships in transport and logistics sector**

In the transport and logistics sector, a wide variety of relationships can be obtained. Many logistics service providers have a minority of large customers (approximately 20%) and the rest are usually small customers (approximately 80%). The large customers are however responsible for most of the turnover (approximately 80%). The small business relationships are often loosely coupled form of relationships while the large business relationships are often intensive couple d form of relationships.

ABN Amro (2013a) investigated the effects of cooperation and they distinguished loosely coupled form of relationships and intensive form of relationships. They found that companies can achieve better tariffs in intensive relationships (65%) than in loosely relationships (50%). Better tariffs can be achieved by cost reductions which is a result of the cooperation.

Intensive coupled forms of relationships have become more common in the transport and logistics sector. Half of the logistics service providers acknowledge the importance of cooperation between them and customers. The main antecedents of successful intensive relationships are making clear agreements, adapting quickly to new developments and transparency among the partners. Benefits of intensive relationships are better service provisions, more complete network, higher capacity utilization degree, higher efficiency and lower costs (ABN Amro, 2013a).

Cooperation and intensive relationships will become more important in the future. One third of the current companies acknowledge that they would not exist anymore without having intensive relationships. Furthermore two third of logistics service providers advise other companies to cooperate either in a loosely coupled form or in an intensive form. ABN Amro (2013a) expects that more companies will start a partnership in the upcoming years since the weak financial position of companies will stimulate them to cooperate.

### **3.6 Conclusion**

There are many inter-organizational relationships within supply chains and these relationships vary from simple transactional relationships to complex interdependent relationships. A continuum of relationships can be obtained from arm's length relationships to vertical integration. From arm's length relationships to vertical integration, the actors involved use more bureaucratic and administrative control and less market control. The relationships can be distinguished by several characteristics such as the degree of common goals, time horizon of the relationship, structure of the relationship and description of the relationship. In the logistics market, most of the customers are small customers (approximately 80%) whereas a minority of the customers are large customers (approximately 20%).

## 4 How are service level agreements generally formed and analysed?

SLAs have received a lot of attention from companies the last years and, as a result, SLAs have become standard business practices in many industries. SLAs are considered as a useful tool for identifying the key services and processes required to meet business needs (Barclay Rae). SLAs can be used in relationships in order to prevent problems and conflicts. In this chapter, the concept of SLAs will be examined by looking at the definition, history, purpose, characteristics and components of SLAs.

### 4.1 Defining Service Level Agreements (SLAs)

Before analysing the concept of SLAs, it is of the interest to examine the definition of SLAs. Literature provides wide and narrow definitions of SLAs. Barclay Rae provides a wide definition of SLAs: *“A SLA is a written agreement between a service provider and a customer, defining services to be provided in qualitative and quantitative terms.”* They acknowledge an SLA as an agreement at a high level that defines services and service levels to be aimed for. Service level agreements are results of collaborative negotiation processes and are used to measure performance and to identify areas for improvement and resources required. The objectives of SLAs are managing services expectations to customers by setting target levels of service deliveries and providing valuable performance information to understand and provide suitable levels of services, resources and skills (Barclay Rae).

Rahman (2000) argues that an SLA is a formal contract between a service provider and customer. The key elements of an SLA are the elements of the services and the minimum level of services a provider should deliver to its customers. Rahman acknowledges an SLA as a proxy contract which means that an SLA is not considered as a legal contract. As a result of that, it is difficult to solve SLA related problems.

Verma (2004) and Jin et al. (2002) provide a narrow definition of SLAs: *“A service level agreement is a formal definition of a relationship that exists between a service provider and its customer. A SLA can be defined and applied to any industry and it is used to specify what the customer could expect from the provider, the obligations of the customer as well as the provider, performance, availability and the security objectives of the service.”* Although, this is a clear definition, Pantry and Griffiths (1997) argues that it is not complete. They mention that an SLA should also cover costs and penalties when formulated expectations are not met by a party.

According to Pantry and Griffiths (1997), the success of implementing SLAs depends on the levels of expected performance. These levels should be realistic since too low agreed service levels will lead to

inefficient levels of support while too high agreed service levels will lead to contract frustration and adversarial relationships.

#### **4.2 Historical development of SLAs**

SLAs have their origins in the IT sector in the 1960s when they were used as a tool for buying minutes of computer machine time (Leon, 2001). Since then, there was a significant growth in the use of SLAs and SLAs began to be implemented in other sectors. There can be observed a couple of developments concerning SLAs. Whereas SLAs used to be implemented to measure technical services, nowadays SLAs have become comprehensive bilateral agreements between partners. Furthermore SLAs used to be implemented for managing relationships between partners, but SLAs are also composed for internal suppliers (Snell, 1997).

The most striking evolution is however that SLAs are not only used in the IT sector, but also in several other sectors such as the logistics sector. Nowadays, more and more companies use SLAs since their aim is to improve the service quality in order to stay competitive and SLAs are considered as a useful tool for identifying the key services and processes required to meet business needs (Barclay Rae).

#### **4.3 Purpose of SLAs**

What are the main reasons behind the use of the concept SLAs? Companies can also use contracts in order to formalize agreements between parties. But it seems to be that companies appreciate SLAs because it is considered as a practical and appropriate tool for achieving quality-related outcomes (Bianco et al., 2008). Examples of these quality-related outcomes are ensuring appropriate quality and efficiency in the provision of services, better utilization of resources, improving the understanding between providers and users of services and in particular and improving the relationships between internal providers and users (Bianco et al., 2008).

Barclay Rae agree that the basic reason behind implementing SLAs is to improve service quality by defining and focusing on key services required to meet business requirements. Other purposes of SLAs are to discipline service providers to review their ability to meet these requirements and to discipline customers to examine their requirements for key services. SLAs are also implemented in order to agree levels of expectation between parties and to improve understanding and working relationships (Barclay Rae). Other purposes of using SLAs are simplifying complex issues, reducing areas of conflict and encouraging conversations between parties in case of disputes (Kandukuri et al., 2009).

#### **4.4 Characteristics of SLAs in inter-organizational relationships**

The definitions of SLAs illustrate that SLAs are complex agreements between two parties. The content of SLAs significantly differs per sector and inter-organizational relationship, but a couple of general characteristics of SLAs in relationships can be obtained.

The first characteristic of an SLA is the bilateral relationship between the service provider and customer. Both parties should approve the formulated agreement and therefore they are forced to keep the promises they made. This is in contrast to service guarantees which are promises of service providers to its customers, but the customer does not have any participation in this relationship. In SLAs, both parties are responsible for the relationship and they announce to fulfil their obligations (Vandaele, 2002).

The second characteristic of an SLA is the minimum acceptable service level which is determined by the consideration of the interests of the service provider and the customer. Cost and benefits of operational activities are taken into consideration and hereafter the minimum acceptable service level can be determined by the service provider and customer. So SLAs can be considered as an expectations-managing mechanism in order to achieve shared expectations about services and deliveries (Karten, 1996).

An SLA can also function as a communication tool between service providers and customers (Karten, 1996). An SLA can be used as a tool for establishing a successful partnership between the parties. In such relationships, an SLA is essential in setting standards for both parties. An SLA covers the rights and duties of the parties and it covers the responsibilities of both parties. As a result, the amount of conflicts will reduce due to the communication aspects of an SLA.

Another characteristic of SLAs is the continuously adaptation to changes that occur in relationships between service providers and customers. In this situation, SLAs can be considered as living documents. Both partners should regularly meet with each other in order to discuss the SLA and the required adaptations. During time, partners could experience that the formulated expectations are not realistic anymore. Partners could also face problems and as a result, the SLA should be formulated differently during time.

#### **4.5 Intra- and inter-organizational implementation of SLAs**

SLAs can represent several inter- and intra-organizational relationships. In the composing process of SLAs, involvement of the customer in the process is needed. Logistics service providers will compose different SLAs due to the different needs of the customers and due to the different forms of relationships. As a result, many different SLAs will be formulated and these SLAs can be divided into

several categories. Blackwell and Dixon (2003) and Vandaele (2002) structures SLAs in internal and external SLAs.

Vandaele (2002) argues that internal SLAs are agreements between customers and service providers when both of them belong to the same organization. External SLAs are agreements between customers and service providers not belonging to the same organization. Blackwell and Dixon (2003) argue that the main difference between these two applications is that an SLA forms an agreement between parties when applied to internal service provision while SLAs are often considered as contracts between parties when applied to external service provisions. For internal service provisions, SLAs are used to define the provided services and performance criteria, but they don't have a legal status in this context (Beaumont, 2007).

Vandaele (2002) and, Blackwell and Dixon (2003) show that SLAs can be structured either internal or external. This research will however focus on the external structure of SLAs. The literature is consulted to show that this not the only way to structure SLAs for companies. From now on, SLAs will be considered as external agreements since this research will focus on inter-organizational relationships.

#### **4.6 Elements of SLAs**

Although, there are many different forms of SLAs, some common characteristics of SLAs in inter-organizational relationships can be obtained from literature. Verma (2004) argues that SLAs should contain the following elements:

- *A description of the nature of services*
- *The expected performance level of service, specifically its reliability and responsiveness and how these performance levels will be measured*
- *The procedure for tracking and reporting problems with the service*
- *The time frame for response and problem resolution*
- *The process for monitoring and reporting the service level*
- *The consequences for the service provider not meeting its obligations*
- *Escape clauses and constraints*

It should be noticed that this is not an exhaustive list, but it entails the most common elements of an SLA. Kandukuri et al. (2009) argue that an SLA should include a wide range of elements and they distinguish a number of elements of SLAs: introduction and purpose, services to be delivered, performance-, tracking- and reporting management, problem management, customer duties and responsibilities, warranties and remedies, security, legal compliance and resolution of disputes, and termination. These elements will be commented in detail.

In the introduction of an SLA, the purpose and objectives of the relationship will be examined. The commencement and duration of the agreement are mentioned in the introduction and some relevant information on the involved parties is given. Reasons for having an SLA are given and the key aspects of the agreement are outlined.

After the introduction, the services and the manner in which the services should be delivered are described. This is considered as the most critical chapter of the SLA. Services are often separated into standard services and customized services. It is of the importance that the information on the services is accurate and that the delivered services contain detailed specifications (Kandukuri et al., 2009).

An important part of an SLA deals with performance, tracking and reporting management. Furthermore it is also of the importance to monitor and measure the service level performance. Service performance levels should also be reviewed regularly since this prevents problems. Other specifications in SLAs are benchmarks, targets and metrics.

When two independent companies cooperate with each other, there could occur some problems and that's why an SLA contains a chapter concerning problem management. The aim of problem management is to minimize the impacts of incidents and problems and problem management should try to resolve these incidents.

Customers as well as service providers should understand that the relationship contain some duties and responsibilities. Customers should regulate access, facilities and resources for the employees of the service provider who need to work on-site. Other responsibilities for customers are arranging adequate training for its employees in order to meet health and safety requirements. These duties and responsibilities are required to support the service delivery process (Kandukuri et al., 2009).

Warranties and remedies are required in SLAs since it sometimes occurs that the promised standards are not achieved by one of the parties. These warranties and remedies are often characterized in terms of service quality, violations of the agreement, and third party claims. It is also possible to exclude a party if it does not meet the SLA.

An SLA often covers security related topics. Customers are forced to provide controlled physical and logical access to its premises and information. Service providers, however, should respect and comply with the customer's security policies and procedures. An SLA should cover adequate provision for disaster recovery and business continuity planning to protect the continuity of the services being delivered.

Another crucial part of an SLA is the legal compliance and dispute resolution since legal jurisdiction is needed in case of dissonances between the customer and service provider. An SLA should cover the use of informal methods for dispute resolution and the use of arbitration. The liability clause is usually limited in order to restrict the total liability of the service provider and the customer.

An SLA should include a means by which the agreement may be ended. It should cover arrangements about the termination at end of initial term, termination for convenience, termination for cause and payments on termination (Easytech Solutions, 2002).

#### **4.7 Cost and benefits analysis**

In relationships, companies sometimes include an SLA in their contract, but this is not always the case. Which judgments are made by the parties for using SLAs in their relationship? In other terms, what are the costs and benefits of SLAs? Karten (1996) investigated the costs and benefits of SLAs and she distinguished five categories of benefits of SLAs.

First, SLAs improve the communication between service providers and customers. It improves the understanding between the service provider and customer and it facilitates increased sharing of important information. There will also be less conflicts and problems due to communication benefits of SLAs (Karten, 1996).

Second, SLAs can help to manage expectations of the service providers and customers by clarifying the scope of services and the distribution of responsibilities. SLAs provide a context for realistic expectations and it creates a shared view of expectations.

Third, SLAs can help to improve service deliveries by facilitating the setting of performance standards and providing a standard for assessing service effectiveness. Service deliveries can also be improved by using SLAs as a tool for providing a context for service changes and as a tool for providing a basis for continuous improvement.

Fourth, SLAs can help to strengthen relationships by stimulating service providers and customers to make contact and by promoting a customer orientation. Relationships can also be reinforced if service providers are customer orientated and if they pay attention to their customers.

Fifth, SLAs can help to create a business orientation by providing a link between services and business objectives and by facilitating the integration of new service offerings. SLAs can also be used as a tool for creating awareness of cost and benefits.

SLAs can deliver benefits for service providers and customers, but SLAs also entail specific costs such as time costs related to negotiations and revisions of SLAs. These costs are however lower than the

benefits of SLAs and therefore companies can gain net benefits from having an SLA (Vandaele, 2002). The implementation of SLAs in relationships improves the quality of the services delivered by service providers and these benefits are higher than the associated costs<sup>1</sup>.

#### **4.8 SLA versus contract**

SLAs and contracts are sometimes used interchangeably, but this is not correct. There are some substantial differences between these two concepts. Hiles (1994) investigated the relationship between SLAs and contracts and he argued that contracts are legal commitments between parties written by experts. These experts however usually don't have sufficient detailed knowledge of the provided services. Contracts don't provide sufficient information about the specification of the services and the quality of the services. An SLA can solve these problems since it specifies the characteristics of the services more precisely.

Barclay Rae and, Johnston and Clark (2001) argue that the main difference between a contract and an SLA is that an SLA should be considered as a list of targets while a contract should be considered as a legal, formal agreement between parties. A contract is an absolute statement of quality levels with legal or financial penalties if levels are not met while an SLA is a working process to define and balance business requirements with available service resources. Thus, contracts can be considered as documents while SLAs are processes intended to improve the performance of the involved parties.

Johnston and Clark (2001) argue that SLAs can be used as measurement tools as a part of contracts. The reason behind this concept of a separate SLA is that the SLA can be revised without having to revise the contract. This is preferred by companies since it reduces the administrative burden of reviewing the contract too frequently.

In conclusion, SLAs are considered as negotiated agreements between service providers and customers, and the agreements should be formal and flexible. SLAs are not considered as strictly legally binding documents. In contrast, contracts are considered as strictly legally binding documents and contracts are not flexible in its enforcement.

#### **4.9 Conclusion**

An SLA is a formal document that identifies a relationship that exists between a service provider and its customer. The basic reason behind implementing SLAs is to improve service quality by defining and focusing on key services required to meet business requirements. SLAs can be either implemented on an intra-organizational or on an inter-organizational level. SLAs include several

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<sup>1</sup> It should be noticed that the mentioned costs and benefits are not expressed in monetary terms. Vandaele (2002) argues, however, that the ascendancy of benefits outweigh the low costs of SLAs.

general elements such as a description of the nature of services, but the elements of SLAs should be adjusted to the preferences of the service provider and the customer. Benefits of implementing SLAs are that it improves the communication; it helps to manage expectations and it helps to improve service deliveries by setting performance standards. The most important benefit of SLAs is however that relationships are strengthened by stimulating service providers and customers to make contact. Establishing an efficient long term relationship requires investments from both parties and SLAs are useful documents for bringing the involved parties together.

## 5 How are key performance indicators generally formed and analysed?

In relationships, performance indicators are appreciated by the involved parties since it quantifies the performance of the partner's activities. Harrington (1991) already emphasizes the importance of measurement indicators: *"If you cannot measure it, you cannot control it. If you cannot control it, you cannot manage it. If you cannot manage it, you cannot improve it."* The performance of companies can be improved by prematurely signaling problems and KPIs can be a useful tool for signaling upcoming problems. In the ever changing world, information has become crucial for companies to improve their performances and that's why KPIs are important elements in SLAs. In this chapter, literature will be consulted in order to clarify the concepts of KPIs.

### 5.1 Defining KPIs

Before analysing the concept of KPIs, a definition of KPIs will be given. Van der Vorst (2000) defines KPIs as follows: *"KPIs are a set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals. KPIs vary between companies and industries, depending on their priorities or performance criteria."* This definition is almost the same as the stated definition of ASB (2006): *"KPIs are factors by reference to which the development, performance or position of the business of the entity can be effectively measured. They are quantified measurements that reflect the critical success factors of the entity."* KPIs are used by companies to verify whether they are performing well in relation to their strategic goals and objectives. A small number of KPIs serve to reduce the complex nature of organizational performance (Marr, 2010).

KPIs are effective in coordinating and directing activities within organizations. They reflect a balance between cost, time, quantity and quality. Bauer (2004) argues that KPIs are quantitative measurements that measure the outcome of a critical success factor, goal and objectives. It is also better not to change KPIs too often since it can otherwise disturb the long term considerations of partners. So KPIs are factors used by companies in order to evaluate whether the services and processes are performing well.

Reh (2005) argues that KPIs are crucial for companies to measure progress towards organizational goals. KPIs can be considered as a performance management tool and companies should understand the importance of setting right KPIs in order to obtain long term value to their companies. Eckerson (2004) argues that KPIs can be considered as strategic value drivers in order to achieve organizational goals. This means that KPIs can steer companies in the right direction in order to achieve its organizational goals and objectives.

The purpose of KPIs is to measure the operational processes in order to increase the performance of companies (Parmenter, 2009). Teague and Eilon (1973) argue that the purposes of KPIs are to ensure the achievement of goals and objectives, to evaluate, control and improve procedures and processes and, to compare and assess the performance of different organizations, departments and individuals. Almost the same, Bourne and Bourne (2002) determine concentrating on the core business, explaining directional organization goals and re-evaluating the performance targets as the main purposes of KPIs. Another purpose of using KPIs is to detect potential problems that can occur between partners.

KPIs are important indicators to track progress and help to manage and improve the performance of companies. Therefore, KPIs should clearly be linked to the strategy and objectives of companies. Only a small amount of KPIs should be used in order to answer the most important questions for companies. API investigated whether KPIs are derived from strategic goals and they found that this is barely the case. Only 15% of the respondents of a survey of 1100 organizations believed that their KPIs were linked to the strategy and objectives of their company. So although literature emphasizes the importance of a link between strategic goals and KPIs, this is often not the case in practice.

## **5.2 Characteristics of KPIs**

KPIs should meet certain requirements in order to be considered as relevant. KPIs can be either process-based, activity-based or outcome-based. Parmenter (2009) investigated the characteristics of KPIs by analysing 3000 participants in KPIs workshops and he determined seven common characteristics of KPIs. The characteristics of KPIs are:

- A KPI should be measured frequently (daily or weekly)
- A KPI should be acted on by the CEO and senior management team
- A KPI should be understandable for both partners
- A KPI ties the responsibility to the individual or the team
- A KPI should have a significant and positive impact
- A KPI should encourage appropriate action
- KPIs should be few in number

Masayna et al. (2004) and Barbuio (2007) distinguish more key characteristics of KPIs which are:

- A KPI must be affordable
- Factors affecting the KPI should be controllable by the service provider
- A KPI should be meaningful to all the parties
- A KPI should be cost effective to collect

The main characteristics of KPIs can be summarized into the SMART paradigm: a KPI should be specific, measurable, achievable, result-oriented/relevant and time-bound. KPIs should have a specific goal which means that it is clear and unambiguous. The second criterion is the need for measuring the progress towards attaining the goal. If it is not possible to measure a KPI, then it is also not possible to verify whether a company is making the right progress towards their goal. The third criterion is that a KPI should be realistic and attainable. Unrealistic goals can lead to friction among partners which is not desirable. The fourth criterion is stressing the importance of relevance of choosing the right KPIs. Only relevant goals will receive support from both partners. KPIs are considered as relevant when they support or are in alignment with other goals. The fifth criterion is that a KPI should be time-bound which means that a goal should be achieved within a given date. A time bound goal will usually establish a sense of urgency which is needed since the focus of partners will otherwise be on daily activities (van Uchelen, 2003).

### *Categories of KPIs*

There is no uniform framework of KPIs and as a result, the amount of KPIs has become incredibly high the last years. Literature divides the KPIs into sub categories in order to structure this proliferation of KPIs. There are however still various ways to categorize KPIs. The most important categories for KPIs are quantitative/qualitative indicators (Parmenter, 2009; Barbuio, 2007; Gunasekaran et al., 2001), leading/lagging indicators (Barbuio, 2007, Gunasekaran et al., 2001, Eckorson, 2004), process indicators (Gunasekaran et al., 2001), input/output indicators (Gunasekaran et al., 2001, Barbuio, 2007, Chan and Qi, 2003), and level of focus indicators (Gunasekaran et al., 2001, Barbuio, 2007). It should be noticed that this list is not exhaustive and that the selection process for KPIs can differ per sector and per company.

Shepherd and Gunther (2005) investigated 42 journal articles and books and they found that KPIs can be categorized in several ways. They distinguish four main categories:

- Whether KPIs are qualitative or quantitative variables (Beamon, 1999).
- What they measure: costs and non-costs (Gunasekaran, 2001); quality, costs, delivery and flexibility (Schonsleben, 2004); cost, quality, resource utilization, flexibility, visibility, trust and innovativeness (Chan, 2003); resources, outputs and flexibility (Beamon, 1999); supply chain collaboration efficiency, coordination efficiency and configuration (Hieber, 2002); and input, output and composite measures (Chan and Qi, 2003).
- Whether their focus is strategic, tactical or operational (Gunasekaran et al., 2001)
- What the processes are in the supply chain they relate to (Huang et al., 2004; Lockamy and McCormack, 2004).

### 5.3 KPIs in the transport and logistics sector

In the previous section, general characteristics of KPIs were examined. For this research it is more interesting to investigate the KPIs used in the transport and logistics sector. Before analysing the KPIs this sector, it is relevant to mention the most common logistics activities. Banomyong (2013) listed these activities:

- Order processing
- Customer service
- Inventory management
- Logistics communications
- Purchasing
- Transportation
- Reverse logistics
- Packaging
- Warehousing and storage
- Value added services
- Distribution and delivery
- Order entry and order picking

These activities can be categorized into four main categories: cycle time KPIs, cost KPIs, service/quality KPIs and asset KPIs. Cycle time KPIs refer to the cycle time of production processes. Cost KPIs can refer to cost per shipment, cost per warehouse etc. Service/quality KPIs control, for example, the quality of delivery of products. Asset KPIs are related to the assets of a company such as inventories (Banomyong, 2013).

#### *Classification of KPIs in the transport and logistics sector*

KPIs in the transport and logistics sector focus on time, quality, availability, cost, profit and reliability of performed activities. These KPIs can be measured either internal or external to an organization. Internal metrics measure the performance of the internal components of the system such as warehouses or transportation equipment. Examples of internal metrics are truck utilization, warehouse throughput and machine utilization. External metrics measure the expectations of companies that are not part of the organization such as customers or governments. Examples of external metrics are frequency of delivery and pick-up or the percentage delivered on time. External metrics are often financially and service oriented. The services or deliveries will be measured on how well it is provided, looking at time, cost and quality (Kasilingam, 1998).

KPIs in the logistics sector can have either a strategic or operational focus depending on the type of activity. Operational KPIs are focused on unit level performance while strategic metrics are focused on overall performance of the system. For both strategic and operational focus, the KPIs can be either financial or non-financial. Financial KPIs are related to costs and benefits while non-financial KPIs are related to service, productivity or utilization. Table 6 illustrates the most important KPIs in the logistics sector. The most important KPIs are on-time delivery and complete and damage-free delivery.

<i>Logistics metric</i>	<i>Ranking*</i>	
	<i>Transportation</i>	<i>Distribution</i>
On-time delivery	6.83	6.67
Complete and damage-free delivery	6.83	6.33
Accurate freight bills	6.17	5.8
Timely response to inquiry and claims	6	5.8
Order cycle time	5.5	6.6
Average transit time	6.4	5
Percentage backorders	4	6.14
Order accuracy and completeness	6	6.57
Customer communication	6	6.33
Service level	6.5	6.14
Inventory accuracy	5	6.5
Forecasting accuracy	5	5.75
Order selection	5	6
Order administration	4	5.67
Order shipping	4	6.2
Percentage loss or damage in storage	4	6.17
Throughput dollars per total inventory	0	6.4
Order throughput cycle time	6	6.8
Value of inventory adjustments	0	6.33
Replenishment cycle time	5	6
Percentage transaction processing errors	0	5.5
Number of orders shipped per year	1	5.5
Total logistics costs as a percentage of sales	6	6.25
Net profit as a percentage of sales	6	6.8

**Table 6: List of KPIs in the transport and logistics sector ranked by their importance (Source: Kasilignam, 1998)**

## 5.4 Conclusion

KPIs are a set of quantifiable measures that a company uses to gauge or compare performance in terms of meeting their strategic and operational goals. KPIs vary between business relationships since the preferences differ per business relationship. They are useful figures to increase the performance and to measure progress towards organizational goals. KPIs should meet the requirements of the SMART paradigm in order to prevent problems concerning the interpretation of the KPIs. The most important KPIs are on-time delivery, complete and damage-free delivery, accurate freight bills and timely response to inquiry and claims.

## 6 Methodology

The choice of an appropriate methodology is crucial for conducting a proper analysis. There are several methodologies and these methodologies can be categorized into quantitative or qualitative methods. This chapter aims to establish the methodology for this thesis. First, a description of several methodologies will be given. Afterwards, an explanation for the research set up will be given.

### 6.1 Method of data collection

Quantitative and qualitative methods differ in terms of their analytical objectives, type of questions, type of data collection instruments, forms of data and the degree of flexibility (Mack et al., 2005). The difference in the degree of flexibility is considered as the key difference between quantitative and qualitative methods. In quantitative research, the results are often fixed and these results can be compared and tested easily. In qualitative research, however, the results are often flexible and then a comparison is difficult to make. On the other hand, qualitative methods deliver specific and valuable information.

In this research, qualitative methods will be used since quantitative methods are not considered as appropriate research methods by the author. There is no strong consensus about the definition, purpose and elements of SLAs in the transport and logistics market and only a small group of large sized transport and logistics companies use SLAs. Therefore, quantitative methods are not considered as appropriate research methods since these methods require a large sample. In situations where little information is available, it is recommended by literature to start with qualitative methods such as interviews or focus groups. These methods can help to create hypotheses which can be tested later on by quantitative methods. In qualitative methods, researchers can acquire more detailed information and can react to the response of the respondent while the results of quantitative methods will have a more general character.

Qualitative research can have either an exploratory, descriptive or explanatory research focus. Exploratory research means a preliminary investigation of an unknown research topic and the aim is to gain new information and insights. Interviews are proper research methods to acquire quickly a lot of information about the research topic. An advantage of the use of interviews is the large diversity of information the interviewer can obtain from an interview. An additional advantage of interviews is that questions of the interviewer will always be answered by the respondents and in case of unclearness; the interviewer can explain the questions more specifically (Verschuren and Doorewaard, 2000).

The purpose of the interview with Jeroen van Velzen was to learn more about the content of SLAs and the implementation of SLAs by companies in the transport and logistics sector. After reading

(scientific) articles, reports and books about SLAs, this interview was to enlarge the knowledge of the author about SLAs. This interview helped the author to have a clear view of SLAs and the use of SLAs in the transport and logistics sector.

The interview with Jeroen van Velzen can be described as a 'free interview' which means that the interview had a low level of pre-structuring. The author had no proposed questions, but he had an idea about the topics he wanted to ask the respondent. Free interviews normally provide space for conversation and explanation of the respondent. This form of research can be very useful in the beginning of a research process since the respondent can give all the information he wanted to share without concerning on the proposed questions by the interviewer.

Furthermore research can also have a descriptive or explanatory focus. Descriptive research means an in-depth study on an individual, a situation, group or organization which aims to describe the object of study accurately (Verschuren and Doorewaard, 2000). Explanatory research means a study which is designed to indicate causality. After the stage of exploratory focus, the author gathered more information and knowledge about the insights of SLAs. With these insights, the author could shift its focus to a descriptive and explanatory focus. The aim of interviews became to learn more about the actual thoughts and perceptions on SLAs in the transport and logistics market and what value SLAs can create in relationships. So this can be considered as descriptive and explanatory research.

For the descriptive and explanatory research, in-depth interviews are effective techniques since in-depth interviews are useful for learning about the perspectives of individuals and companies. During in-depth interviews, the interviewer wants to learn more about the research topic by asking specific questions to the person being interviewed. The interviewer asks the questions in a neutral manner, listening attentively to the responses of the person being interviewed and tries to ask follow-up questions based on those responses. In-depth interviews are effective techniques for getting more information about the feelings, opinions and experiences of the person being interviewed. Especially, sensitive topics can be better discussed in in-depth interviews than in a group setting. In a group setting, people will be more reluctant to provide useful information and therefore an in-depth interview will be preferred by the interviewer.

Before having an in-depth interview, the interviewer should prepare a clear list of questions. For this research, a set list of questions was created which can be seen in appendix A. This indicates that the level of pre-structuring is much higher for in-depth interviews than for free interviews. This is important for the research since the results of the interviews can be compared more easily due to the same set list of questions. The list of questions is divided into sub groups. First, the interviews started with introductory questions about the company. Afterwards, the questions were structured

into questions related to SLAs, questions related to KPIs, questions related to SLAs in business relationships and into market questions related to SLAs. The questions are divided into sub groups in order to structure the interview.

## **6.2 Selecting research group**

There have been conducted eight in-depth interviews by the author. The selected companies are medium sized enterprises and large sized enterprises. Small sized enterprises are not taken in to the analysis since they often don't use SLAs and are not familiar with SLAs at all. As a result, only medium sized enterprises and large sized enterprises were selected by the author. The selected companies are connected to Kring Logistiek en Supply Chain (KLS group) and FENEX Commission Seaport Logistics. These companies are familiar with SLAs and they were willing to share information about SLAs with the author. The selected companies are DB Schenker, VAT Logistics, Ploeger Logistics, Broekman Logistics, Rhenus Logistics, Abr. de Haan Logistics, Ewals Logistics and RMI Global Logistics Services.

A presentation about SLAs was given during a conference of the KLS group in order to draw attention to this subject and to approach companies for conducting an interview. The author also used the network of TLN and FENEX in order to arrange interviews. In the end, eight companies were willing to participate in this research. This amount of participants is considered as sufficient by the author. The participating companies cover a substantial part of the logistics sector and they have most knowledge about SLAs.

Six of the eight companies can be found in the top 75 logistics service providers (see appendix B). DB Schenker is a multinational and it is the second largest logistics service provider in the Netherlands. They have been known for years with the implementation of SLAs in business relationships and their turnover is 587 million euro a year. Rhenus Logistics ranks number 8 in the list with a turnover of 358 million euro a year. Broekman Logistics ranks number 21 with a turnover of 193 million euro a year; VAT Logistics ranks number 46 with a turnover of 120 million euro a year; Ewals Cargo Care ranks on number 51 with a turnover of 500 million euro a year in Europe; and Ploeger Logistics ranks number 68 with a turnover of 34 million euro a year. RMI Global Logistics and Abr. de Haan Logistics can't be observed in the top 75 logistics service providers, but RMI Global Logistics is a subsidiary of de Rijke Logistics which is ranked number 16 with a turnover of 300 million euro a year. Furthermore they are familiar with the implementation of SLAs in business relationships. The figures illustrate that two respondents are large sized enterprises and five respondents are medium sized enterprises. Abr. de Haan Logistics is the only logistics service provider that can be identified as a small/medium sized enterprise.

The mix of different sizes of the companies is considered as sufficient. The medium sized enterprises face the most problems with SLAs and therefore it is important to conduct most of the interviews with them. The large sized enterprises can deliver useful information about their SLAs and how they have solved problems in the past. Small sized enterprises are usually not familiar with SLAs, but it is interesting to check their thoughts and expectations concerning SLAs.

### **6.3 Method of data analysis**

After conducting the interviews, the results haven been written out by the author. The results of the interviews are compared to each other and the most important conclusions have been written out in the next chapter. First, a descriptive analysis about SLAs is done by the author. Thereafter an explanatory analysis is done by the author. The most striking findings of t he research will be discussed and analysed.

## 7 Results and analysis

The results obtained from the interviews will be presented in this chapter. A descriptive and explanatory analysis of the results will be presented.

### 7.1 Descriptive analysis concerning the implementation of SLAs in business relationships

All the respondents are familiar with SLAs in business relationships although they don't implement them in every business relationship. The implementation of SLAs in a business relationship depends on the presence of a couple of characteristics:

- The type of inter-organizational relationship
- Degree of complexity of processes
- The scope of business
- The size of logistics service provider and/or customer
- The degree of professionalism of logistics service provider and/or customer

All the respondents are familiar with different types of inter-organizational relationships and these types are structured in a different way. Most of the logistics service providers have a couple of intensive coupled form of relationships with customers, but most of the relationships are loosely coupled form of relationships. In intensive coupled form of relationships, SLAs are often implemented since the scope of business is often significantly large and therefore it requires a proper structure. All the respondents agree that SLAs are required in business relationships if the scope of business is significantly large. Small mistakes can have fatal consequences for intensive coupled form of relationships and therefore SLAs are required since the consequences of mistakes are bigger compared to loosely coupled form of relationships.

In loosely coupled form of business relationships, SLAs are not preferred by the logistics service provider neither by the customer since the business is too small. It would be too expensive to record an SLA in these types of business relationships and therefore only a simple operational agreement is recorded by the parties.

The implementation of SLAs also depends on the degree of complexity of processes. SLAs are required in relationships if the degree of complexity of processes is high in order to structure the processes. For instance, the need for multimodal transport has resulted in more complex business solutions. It is possible for customers to choose whether they want the cheapest solution, the environmental friendly business solution or the fastest business solution. Logistics service providers have a major network in order to provide these solutions and, as a result, the processes have

become much more complex. This complexity of processes requires a proper structure and SLAs are useful documents to structure these processes.

The implementation of SLAs also depends on the degree of professionalism of logistics service provider and/or customer. Logistics service providers have always been flexible actors and, as a result, their processes are not structured in a professional way many times. Logistics service providers are required to anticipate quickly to customers demand and then it is sometimes more efficient not to record an SLA. The appreciation of logistics service providers for flexibility makes them reluctant in implementing SLAs in business relationships. In professional organizations, SLAs have become standardized documents more often than it used to be, but less professional organizations still don't implement SLAs in business relationships.

### **7.1.1 Explanatory analysis concerning the implementation of SLAs in business relationships**

Although the respondents are familiar with SLAs, they barely implement them in business relationships. This could be explained by the fact that most of business relationships are loosely coupled form of business relationships, but this is not the only reason. The business relationships of logistics service providers have always been structured in a loosely way. Logistics service providers have always been flexible actors and that's why they didn't want to record too much information in contracts. The purpose of business relationships was barely to establish a long term relationship with mutual benefits. Logistics service providers just wanted to achieve a high level of turnover, but their purpose wasn't to establish a long term relationship with their customers.

The declining profit margins have however put pressure on this thought. Just operating the required activities isn't enough anymore. They should think along with the preferences of the customers and should provide the best solution for every single customer. In other words, logistics service providers should try to create more value in business relationships in order to stay profitable. They should take an active role in the relationship and try to improve the processes continually. SLAs are useful documents to structure a long term relationship and to improve processes by recording KPIs.

Professional logistics service providers already implement SLAs in business relationships. They agree that business relationships should be structured better than it used to be and SLAs are useful documents in doing this. But most of the logistics service providers still operate in an old-fashioned way and it seems to be that they have to make a mental shift. They are afraid of losing flexibility in relationships and they stick to their current structures of business relationships. The world is however changing and customers frequently want to make sound agreements with logistics service

providers. Logistics service providers should adapt to these new developments in order to stay competitive.

Another explanation why SLAs aren't implemented frequently in business relationships is the presence of power in relationships. Large customers try to impose one sided SLAs on smaller logistics service providers while large logistics service providers try to impose one sided SLAs on smaller customers. Long term relationships with mutual benefits can only be achieved if SLAs are documents with mutual interests. Literature stated that more value can be achieved in business relationships if mutual responsibilities are recorded in SLAs. In practice however customers and logistics service providers try to implement one sided SLAs in relationships since this entail higher benefits for themselves. It is not expected that the presence of power in negotiations will disappear, so it is perhaps the best option to select customers of the same size as the logistics service provider in order to avoid abuse of power.

## **7.2 Descriptive analysis concerning purpose of SLAs**

There can be observed several purposes of SLAs in business relationships. The purpose of SLAs is to record operational agreements formally in terms of quality of services. An SLA should at least include the mutual processes and it is important that mutual responsibilities are recorded in the document. It is important to record processes and other important issues formally since the potential conflicts and problems can be prevented by having formal documents.

Another purpose of SLAs is to manage expectations of both parties; it is a proper tool in setting feasible expectations for the relationship. It is important to know each other's needs and expectations. SLAs can be used to create distinctness in the relationship since SLAs are considered as useful documents for analysing the processes before starting the business relationship. SLAs can also be considered as a 'check-list' which means that each element of processes is analysed. SLAs are robust documentations which can be very useful in starting up a proper business relationship.

### **7.2.1 Explanatory analysis concerning purpose of SLAs**

The purposes of SLAs differ per logistics service provides and per type of business relationship. SLAs can be considered as a manual for structuring a relationship. SLAs are implemented in order to structure the processes without having a strategic goal. SLAs can however also be considered as documents for observing developments in business relationships. These observations can be useful for both partners if they want to achieve continuous improvement of processes in the relationship. Figures and statistics are useful information for optimizing the business relationship and SLAs properly record performance indicators and other important information.

It seems to be that the purposes of SLAs can be analysed from an operational perspective and from a strategic perspective. From an operational perspective, SLAs have a purpose of a manual of the mutual processes. From a strategic perspective, SLAs can be considered as useful documents for structuring the relationship. SLAs can contribute to long term relationships with mutual benefits by continually measuring, analysing and improving processes. The involved parties make sound agreements with the aim to establish a long term relationship and to prevent problems and conflicts.

Although SLAs can be analysed from a strategic perspective, they are still often not implemented from a strategic perspective. This can be explained by the fact that the purpose of SLAs is interpreted differently by the involved parties. They are often not thinking along the same lines and, as a result, SLAs are interpreted differently by the parties. Therefore it is of the interest that the involved parties discuss the strategic purposes of the relationship during the composing process of the document. SLAs are proper documents for achieving strategic goals and objectives since it builds bridges between the operational processes and strategic goals.

### **7.3 Descriptive analysis concerning elements of SLAs**

The content of SLAs differs per logistics service provider and per business relationship, but there can be obtained general elements an SLA should contain. These elements are:

- Introduction
- Purpose and objectives of relationship
- A description of the nature and quality of services
- Definitions of good conditions of products
- Definitions of good conditions of information
- Expected performance level of services (KPIs) and how these levels will be measured
- The process of monitoring and reporting the KPIs
- Duties and responsibilities of involved parties
- Complaint handling
- Payment criteria
- Termination
- Contact information

The elements are consistent with the obtained elements from the literature, but some elements are of greater importance than others. In the introduction of an SLA, the involved parties will briefly be described. The commencement and duration of the agreement are mentioned in the introduction. Furthermore the purpose and objectives of the relationship will be examined in the introduction.

After the introduction, the nature and the manner in which the services should be delivered are described. The description of the services is the basis of the relationship and the services should be described carefully in order to prevent potential problems concerning the interpretation of the description of services. It is very important to include proper definitions of products and proper definitions of information. SLAs should cover mutual responsibilities and therefore it is very important for logistics service providers to include proper definitions of products and information. They are only able to provide their services well to customers if the products are delivered to the logistics service providers in good condition and if they are informed on time. So the description of the nature and quality of services and definitions of good condition of products and information is a crucial part of SLAs.

SLAs should also include expected performance level of services (KPIs) and how these levels will be measured. KPIs are obligatory elements in SLAs since the involved parties want to know whether the services are performed well. If this is not the case, the involved parties could take a number of measures in order to improve the performance levels. It is important to describe the measurement systems that are used in relationships in order to prevent misinterpretation and it is also important to agree the process of monitoring and reporting the KPIs.

SLAs should also cover duties and responsibilities of the involved parties. All the respondents argue that it is of the importance to record a mutual agreement which means that SLAs should cover mutual duties and responsibilities. This is an important part of the SLA in order to prevent one-sided composed SLAs.

Furthermore SLAs should include complaint handling, payment criteria, termination and contact information. Complaint handling is crucial in business relationships since problems and conflicts could damage the relationship. Therefore it is of the interest to make sound agreements about the complaint handling. The payment criterion is another important element of SLAs. Payments should be made on time since it could otherwise affect the businesses. Finally SLAs should also include contact information of the involved parties. In cases of problems, conflicts or questions, it is easy to know which person to contact.

### **7.3.1 Explanatory analysis concerning elements of SLAs**

The elements of SLAs don't significantly differ per logistics service provider and per business relationship. General elements such as description of services, KPIs and contact information are always included in SLAs. It should however be mentioned that it is of the interest that an SLA includes mutual responsibilities. Customers require a high level of performance, but logistics service providers are only able to provide this level of performance if the products are in good condition and the

information is communicated well. Large companies with a lot of power try to compose a one sided SLA, but logistics service providers should only start a relationship if mutual responsibilities are recorded well in the document.

Although SLAs include general elements, there is no consensus by the respondents about including bonuses and penalties in SLAs. Most of the respondents don't want to include bonuses and penalties in their SLAs since it is not preferred by both parties. If there are some problems with meeting the performance levels, both parties will try to solve these problems since it is for both parties of the interest to achieve the highest level of performances as possible. Large customers sometimes want to include bonuses and penalties in SLAs, because they argue that incentives are necessary for obtaining the highest level of performance in business relationships. It seems to be that multinationals want to include bonuses and penalties in SLAs since they gained considerable experience and they accurately know what performance levels they can guarantee to their customers.

It seems to be that the structure of business relationships in the transport and logistics market is a little bit out of date. Many business relationships are still based on trust without recording too many processes. This is the way the old generation structured their relationships and they argue that it is not necessary to record SLAs. The new generation however argue that business relationships nowadays require operational agreements such as SLAs in order to prevent conflicts and problems. The new generation attaches more importance to formal agreements and KPIs since it can improve the relationship. So it seems to be that there is difference in thoughts about SLAs among the old generation and the new generation. The old way of structuring business relationships is a bit out of date and therefore it seems to be that the sector has to face a mind shift regarding contracts and SLAs.

#### **7.4 Descriptive analysis concerning costs and benefits of SLAs**

There can be observed a couple of benefits of SLAs from the interviews. Table 7 illustrates the most frequently mentioned benefits of SLAs.

<b>Benefits of SLAs</b>	<b>Number of respondents</b>
Creating clearness	6
Managing expectations	4
Easy to update	2
Improving processes	2

**Table 7: An overview of the benefits of SLAs mentioned by the amount of respondents**

The most frequently mentioned benefit of SLAs is creating clearness in the relationship. Operational processes and performance levels of the services are formalized in a document and, as a result, clearness is created in the relationship. Especially in the beginning of the relationship, an SLA is an important tool since the document forces both partners to describe the processes and mutual responsibilities.

The second frequently mentioned benefit of SLAs is managing expectations of the involved parties. When starting a relationship, both parties should have realistic expectations concerning the relationship. Expectations of the relationship are managed by clarifying the scope of services and the distribution of responsibilities. It is very important in the beginning of the relationship that the involved parties share the same view of expectations and SLAs are useful documents in doing this.

Another benefit of an SLA is that the document can be updated easily by both parties since it is a living document. The relationship is continually changing and, as a result, the document should also continually change in order to prevent problems and conflicts. In contrast, contracts are difficult to update while the relationship is continually changing. Therefore, SLAs are usable documents since they can easily be updated by the involved parties.

SLAs are proper preparation documents for starting a business relationship and for improving the processes. In the beginning of the relationship, the processes will not be operated efficiently since the new relationship will entail unexpected problems and conflicts. Therefore relationships require a structure in the beginning of a relationship and SLAs can structure the relationship well.

There can also be observed a couple of costs concerning SLAs. Logistics service providers and customers should spend time and effort in SLAs in the composing process of the document. Companies should also be careful in selecting the right information to include in SLAs. They should not include too much information in the document since it then can become an expensive and juridical document. Another disadvantage of SLAs is its inflexibility compared to relationships without having an SLA. More details are recorded in SLAs while in some situations, companies want to operate the services in another way, but this is not possible due to the composed requirements in SLAs. The lack of flexibility is an important reason for logistics service providers not to record SLAs with customers.

#### **7.4.1 Explanatory analysis concerning costs and benefits of SLAs**

A cost and benefit analysis can be analysed from an operational and a strategic perspective. From an operational perspective, SLAs are useful documents since it forces both partners to describe the processes and mutual responsibilities. Operational managers consider SLAs as practical documents, check-lists or manuals. They exactly know which processes should be operated in the relationship

since this is recorded in an SLA. So from an operational perspective, SLAs are useful documents for structuring the operational processes of a business relationship.

It is however also possible to implement SLAs on a strategic level. From a strategic perspective, SLAs can be considered as useful documents for starting a long term relationships with a customer. Especially in the beginning of relationships, processes require a proper structure since both partners need to know each other's processes. It is also important to structure the processes well in order to prevent problems and to build up trust among the partners. The involved partners should start to converge in order to establish a long term relationship, but this requires a proper structure of the relationship and SLAs can contribute to such a proper structure.

SLAs should be considered as an investment in a relationship and it is a good preparation for starting a business relationship. It is more efficient to analyse potential problems before starting a relationship than solving these problems during a relationship. SLAs provide clearness to the partners and it is considered as an important document for realizing expectations. The services are recorded formally in a document and, as a result, problems and conflicts are prevented. SLAs are also living documents and, as a result, they can be adapted quickly to new developments. Literature acknowledges that long term relationships entail significant benefits and SLAs are useful documents for partners to establish a long term relationship.

### **7.5 Descriptive analysis concerning problems with composing, implementing and updating process of SLAs**

There can be observed a couple of problems concerning the composing process, implementation process and updating process of SLAs. There are sometimes struggles among the parties about setting the performance levels of the services, but in the end the parties will arrange an acceptable level of performance for both parties. In the maintaining process, respondents have problems with the interpretation of conditions and KPIs. Some conditions or KPIs are interpreted differently by the parties and this causes friction among the parties.

The respondents also have problems with the updating process of SLAs and with the communication among operational managers and the people who are involved with the SLA. Sometimes, SLAs are adapted too late to developments and this causes problems since the document doesn't formalize the operations well anymore. On the other hand, some companies have problems with the easiness of updating the document. They argue that a lot of time is spent on the composing process of SLAs while this can easily be broken in the updating process. Another problem is that the document is not implemented sufficiently on a strategic level by logistics service providers. The communication

among operational managers and strategic managers is often insufficient and this makes it difficult to operate the processes in the most efficient way.

Another problem is the lack of mutual responsibilities in SLAs. Large customers with a lot of power try to delegate responsibilities and risks to logistics service providers. As a result, logistics service providers want to include an escape clause in SLAs.

### **7.5.1 Explanatory analysis concerning problems with composing, implementing and updating process of SLAs**

The observed problems concerning the composing, implementing and updating process of SLAs are all related to misinterpretation and miscommunication among partners. Misinterpretation of SLAs could be caused by the fact that the involved parties paid too little time and effort on the document. It can also be explained by the fact that customers are not common with the logistics concepts.

Another problem is the miscommunication among logistics service providers and customers, and among operational and strategic managers of companies. Miscommunication and misinterpretation are results of too little communication among partners, and among operational and strategic managers. The involved parties pay too little time and attention to the SLA and, as a result, problems will occur due to miscommunication and misinterpretation. It is however more efficient to make sound agreements before starting a relationship than doing this during the relationship. Therefore it is of the interest to define clear conditions and KPIs in order to prevent misinterpretation and miscommunication.

The problem of miscommunication could be solved by communicating more frequently with each other. Business meetings, phone calls and visiting companies can reduce the risk of miscommunication among partners. The problem of misinterpretation could be solved by establishing a standard structure for SLAs and by defining standard logistic concepts and KPIs. More distinctness can be created by standardizing documents, concepts and definitions. Distinctness is very important in business relationships in order to prevent problems and conflicts such as misinterpretation of documents and miscommunication among partners.

### **7.6 Descriptive analysis concerning KPIs**

The selection of KPIs differs per business relationship, but the KPIs should meet the criteria of the SMART paradigm. Especially, measurability and achievability are important criteria in selecting KPIs for business relationships. The KPIs differ per business relationship, but it is important that mutual responsibilities are taken into consideration when selecting KPIs. Companies should not select too

much KPIs since it then becomes an expensive and juridical agreement. The respondents select approximately 3 to 8 KPIs, but it depends on the scope of services and the sub market.

KPI	Number of respondents
Delivery on time	8
Order reliability	7
Good conditions of products	7
Stock reliability	3
Deadlines for payment	2
Completeness of orders	1

**Table 8: An overview of the mentioned KPIs by the amount of respondents**

Table 8 illustrates the most frequently mentioned KPIs by the respondents. The most important KPIs are delivery on time, order reliability and good conditions of products. These KPIs are always included in SLAs by the respondents. Other mentioned KPIs are stock reliability, deadlines for payment and completeness of orders. Some extra KPIs are added to the document if it is preferred by the involved parties. It is possible to include financial KPIs in SLAs, but financial KPIs are often not preferred by the parties. Most of the respondents are reluctant in including financial KPIs or bonuses and penalties in SLAs. In fact, only (very) large logistics service providers want to include financial KPIs or bonuses and penalties in SLAs since they argue that incentives are necessary in business relationships. They are however an exception to the general rule.

The reporting process of KPIs differs per business relationships and per logistics service provider. Some respondents report the KPIs to every business relationships, but most of the respondents only report KPIs to customers only when they request their KPIs. The reason that the KPIs are not standard reported is that the measurement systems are not operating efficient so far. This means that it is too expensive for them to report the KPIs to all their customers. Most of the respondents however aim to standardize the reporting process of KPIs, but this requires investments and time.

The KPIs are measured daily or weekly by logistics service providers, but they are reported monthly by all the respondents. This frequency of reporting is considered as sufficient by all the respondents and it is not expected that the KPIs will be reported more frequent in the future. This can be explained by the fact that the customer is satisfied when the performance levels are achieved by the logistics service provider. If there are problems with achieving the performance levels, both parties tend to solve these problems as quickly as possible.

None of the respondents has problems with measuring and reporting the KPIs to customers. A respondent however experiences problems with the interpretation of KPIs. Clear definitions of KPIs

should be made by both parties in order to prevent ambiguity about the interpretation of the KPIs. It is also very important to report the KPIs continually to customers. Measuring, analysing and reporting processes continually to customers contribute to the continuity of relationships. Potential problems and conflicts can be prevented by reporting the KPIs continually.

Costs are made by the respondents concerning the measurement and reporting of KPIs, but these costs are not passed onto customers. Logistics service providers are required to measure and report KPIs and this is considered as a service to customers. Furthermore logistics service providers also want to know their own performance levels since the gathered information can help them to operate processes more efficient. Potential problems can be observed quicker so it is for their self-interest to gather information about the performance levels.

The KPIs are often measured by software programs since this is the most efficient way to measure and report the KPIs. KPIs are however sometimes still measured by employees while this is not the most efficient way. So costs are made by the logistics service providers for measuring and reporting the KPIs, but these costs are not passed onto customers.

### **7.6.1 Explanatory analysis concerning KPIs**

All the respondents argue that an SLA should not contain too many KPIs, because it will then become too expensive to measure and the focus on the most important processes will be lost by having too many KPIs. The selection of the amount of KPIs differs per business relationship, but it seems to be that the amount of KPIs depends on:

- The scope of services
- Complexity of processes
- The sub market that a logistics service provider serves

The amount of KPIs depends on the scope of services; the larger the scope of services, the more KPIs are included in an SLA. The amount of KPIs also depends on the complexity of processes. For example, simple transportation of goods from location A to location B by truck only needs KPIs such as delivery on time and good conditions of products. In contrast, more complex processes such as warehousing activities require more KPIs. The sub market that a logistics service provider serves also affects the amount of KPIs. Transportation of dangerous goods, for example, requires more KPIs than the transportation of sand.

From a strategic perspective, KPIs are important figures for observing developments and potential improvement possibilities. The aim of the involved parties is to achieve continuous improvement of processes and continually measuring, analysing and reporting processes to customers contribute to

the continuity of relationships. Potential problems and conflicts can be prevented by reporting the KPIs continually. So in business relationships, KPIs are very important figures for achieving continuous improvement of processes. The process of measuring, analysing and reporting processes is also important in order to establish a long term business relationship since the involved parties come closer to each other.

There is a lot to be gained from the reporting process of the KPIs. Most of the reporting processes of KPIs are not standardized, because this is too expensive for logistics service providers and they don't think that it is necessary to standardize KPIs. A standardization of KPIs could however deliver competitive advantage for companies. In the transport and logistics market, many companies are competing on prices, but as a result the profit margins are very low. Competition on quality of services is a better strategy since the profit margins are higher compared to price competition. Providing customer specific solutions and customer services can deliver companies a competitive advantage. Companies should have a proactive attitude and try to think along with the customer. Standardization of reporting KPIs is an example of having a proactive attitude of logistics service providers. Knowledge and trust can be built up with the partner by reporting the KPIs continually. Furthermore reporting KPIs continually to customers can be considered as a service to customers.

The reason why logistics service providers don't standardize the reporting of KPIs is that it is too expensive for them. Costs are made by the logistics service providers concerning the measurement and reporting of KPIs, but these costs are not passed onto customers. These costs should however be considered as an investment in the business relationship.

## **7.7 Descriptive analysis concerning market developments of SLAs**

There can be observed some developments concerning the implementation of SLAs in business relationships. SLAs are not implemented in many business relationships and small sized logistics service providers generally don't use SLAs in their relationships. Medium sized logistics service providers however are now in a process of standardizing the implementation of SLAs in business relationships. Large sized logistics service providers already standardized the implementation of SLAs in business relationships. They don't face many problems concerning SLAs since they are already familiar with it. Medium sized logistics service providers however do face problems with standardizing SLAs since they are not familiar with it yet.

The respondents expect that the implementation of SLAs in business relationships will increase in the future. They are now in a process of standardizing SLAs, but SLAs are still not always used in business relationship. For the future, the respondents expect that SLAs will be standardized for business relationships where the business is significant and where the processes become complex. In small

business relationships, logistics service providers still won't prefer to implement SLAs since it is not preferred by both parties. The business is too small and, as a result, composing an SLA will become too expensive for this type of business relationships.

The respondents argue that fewer requirements were needed in business relationships approximately a decade ago. Processes have become more complex and customers require more information and more accurate information. The transport and logistics market has become more professional the last ten years and, as a result, SLAs have been used more often in business relationships. This process of professionalization is expected to continue at least for medium sized logistics service providers and therefore the use of SLAs is also expected to increase in the future.

All the respondents agree that SLAs and KPIs can be used as a marketing tool. Performance levels of current business relationships can be used in order to attract new customers. KPIs can be considered as unique selling points in attracting new customers. The quality of services can be used for marketing and SLAs secure the quality of services. So SLAs can indirectly be considered as marketing tools. Using SLAs is a professional way to approach potential customers and in that way SLAs can also be considered as marketing tools.

All the respondents agree that SLAs can contribute to successful long term business relationships. SLAs help to structure the relationship and this requires a proper structure, especially in the beginning of a relationship. Both parties need to know each others processes and SLAs help to bring them closer together. SLAs are useful documents in order to reinforce trust among partners which is crucial in establishing a successful long term business relationship. Furthermore the process of measuring, reporting and analysing lead to efficient business relationships.

### **7.7.1 Explanatory analysis concerning market developments of SLAs**

Logistics service providers have always been very flexible actors and, as a result, many operations were only based on trust and were not formalized in contracts and SLAs. There were not many problems in business relationships, because problems and conflicts were solved immediately. Processes however became more complex and customers became more critical and, as a result, customers required more contracts and SLAs for the operations. The process of formalizing processes more often started approximately ten years ago. Since then, the implementation of SLAs in business relationships has increased significantly. So it hasn't been a long time ago that the sector operated without formalizing processes in SLAs and, as a result, there are differences of opinions in the sector about the implementation of SLAs in business relationships.

The old generation used to work without SLAs, and they argue that SLAs are not necessary for operating processes efficiently. The new generation however attach more importance to SLAs since

they consider it as a professional way to structure a business relationship. It might be that the sector has to face a mind shift regarding SLAs. Logistics service providers don't want to lose their flexibility in processes, but customers appreciate to record the processes in SLAs. So perhaps the best option is a compromise between the involved parties. Processes could be recorded formally, but without damaging the flexibility of logistics service providers too much.

The descriptive analysis shows that SLAs are not implemented by logistics service providers for a long time and it is still not standardized by many logistics service providers. Although they agree that the implementation of SLAs can deliver benefits for the relationship, they are still reluctant in standardizing SLAs in business relationships. It might be that they don't exactly know how to implement SLAs in what type of business relationships. Starting with a standard framework could be a good starting point. They can adjust the SLA to their preferences after a couple of experiences, but logistics service providers should have the courage to implement SLAs in business relationships.

KPIs are important figures for logistics service providers and for business relationships. Processes can be improved by continually measuring, reporting and analysing processes. KPIs are also crucial for companies to measure progress towards organizational goals. Furthermore, KPIs can be useful figures from a strategic perspective. Potential customers can be attracted by high levels of performance of logistics service providers. KPIs can be considered as unique selling points. However many logistics service providers still don't use KPIs for attracting potential customers. So from a strategic perspective, logistics service providers insufficiently implement SLAs and KPIs in business relationships. There is a lot to be gained from making sound agreements between logistics service providers and customers. SLAs and KPIs keep the relationship neat and steer the involved parties into the right direction in order to achieve its strategic goals and objectives. As a result, SLAs and KPIs contribute to an establishment of a long term relationship which is considered as positive by literature.

## 8 Conclusion, limitations and further research

This study analysed the impact of SLAs on business relationships in the transport and logistics market. The aim of this study was to answer the following research question: *“How and to what extent can SLAs contribute to the improvement of business relationships of logistics service providers?”* The research question will be answered in this chapter, but before that the sub questions will be answered first.

### 1. *How are inter-organizational relationships generally formed and analysed?*

There are many inter-organizational relationships within supply chains and these relationships vary from simple transactional relationships to complex interdependent relationships. A continuum of relationships can be observed from arm's length relationships to vertical integration. From arm's length relationships to vertical integration, the actors involved use more bureaucratic and administrative control and less market control. The relationships can be distinguished by several characteristics such as the degree of common goals, time horizon of the relationship, structure of the relationship and description of the relationship. In the transport and logistics market, most of the customers are small customers (approximately 80%) whereas a minority of the customers are large customers (approximately 20%). The small business relationships are often loosely coupled form of relationships while the large business relationships are often intensive coupled form of relationships.

### 2. *How can SLAs generally and specifically in the transport and logistics sector be characterized?*

SLAs are written agreements that identify relationships that exist between service providers and its customers. The basic reason behind implementing SLAs in business relationships is to improve service quality by defining and focusing on key services required to meet business requirements. SLAs can be either implemented on an intra-organizational or on an inter-organizational level. Some general elements of SLAs can be observed from literature: a description of the nature of services, the expected performance level of services, how these performance levels will be measured and reported, the time frame for response and problem resolution, the consequences for not meeting the obligations, and termination. Although there can be observed general elements from literature, SLAs are structured in different manners since the elements are adjusted to the preferences of the service provider and the customer.

A couple of characteristics of SLAs in relationships can be observed from literature. SLAs are bilateral relationships between service providers and customers. SLAs can function as a communication tool between service providers and customers. Another characteristic of SLAs is the continuously adaption to changes that occur in relationships between service providers and customers. Benefits of

implementing SLAs are that communication is improved by implementing SLAs in relationships; it helps to manage expectations, and it helps to improve service deliveries by setting performance standards. The most important benefit of SLAs is however that relationships are strengthened by stimulating service providers and customers to make contact. Establishing an efficient long term relationship requires investments from both parties and SLAs are useful documents for bringing the involved parties together.

In the transport and logistics sector, the most frequently mentioned benefit of SLAs is creating clearness in relationships by formalizing operational processes and performance levels. Another benefit of SLAs is managing expectation of the involved parties by clarifying the scope of services and the distribution of responsibilities. SLAs have a purpose of a manual of the mutual processes, but they can also be considered as useful documents for structuring the relationship. SLAs can contribute to long term relationships with mutual benefits by continually measuring, analysing and improving processes. Developments in business relationships can be observed well by SLAs and these observations can be useful for the involved parties in order to achieve continuous improvement of processes in the relationships. SLAs are however also important in the beginning of relationships since it forces the involved parties to describe the processes and mutual responsibilities. Processes require a proper structure since the involved parties need to know each other's processes. It is also important to structure the processes well in order to prevent problems and to build up trust among the involved parties. Long term relationships can be established if the involved parties start to converge, but this requires a proper structure of the relationship and SLAs can contribute to such a proper structure.

### *3. How can KPIs generally and specifically in the transport and logistics sector be characterized?*

KPIs are a set of quantifiable measures that a company uses to gauge or compare performance in terms of meeting their strategic and operational goals. KPIs vary between business relationships since the preferences differ per business relationship. They are useful figures to increase the performance and to measure progress towards organizational goals. KPIs should meet the requirements of the SMART paradigm in order to prevent problems concerning the interpretation of the KPIs.

In the transport and logistics sector, KPIs are important figures for observing developments and potential improvement possibilities. The aim of the involved parties is to achieve continuous improvement of processes and continually measuring, analysing and reporting processes to customers contribute to the continuity of relationships. The process of measuring, analysing and reporting processes is also important in order to establish a long term business relationship since the involved parties come closer to each other. KPIs can steer companies in the right direction in order to

achieve its organizational goals and objectives. Therefore, KPIs should be clearly linked to the strategy and objectives of companies. It can be concluded that KPIs are important figures that are useful for optimizing the business relationship and SLAs properly record performance indicators and other important information.

4. *In which business relationships and to what extent should logistics service providers implement SLAs?*

SLAs are not implemented in every business relationship of logistics service providers. From the analysis it can be observed that the implementation of SLAs in business relationships depends on the scope of business, size of logistics service provider and/or customer, the degree of professionalism of logistics service provider and/or customer, the type of inter-organizational relationships and degree of complexity of processes. SLAs are required if the business of the relationship is significantly large. These relationships are often intensive coupled form of relationships. Loosely coupled form of relationships doesn't require SLAs since the business is too small and it would be too expensive to record an SLA. Furthermore it is not preferred by the involved parties. So in intensive coupled form of business relationships where the scope of business is significantly large, SLAs are required since it is important to operate the processes in the most efficient way and SLAs are useful documents in order to safeguard the interests of the involved parties. In contrast, loosely coupled form of business relationships doesn't require SLAs since the business is too small.

There can be observed a clear difference between SLAs in loosely coupled form of relationships and SLAs in intensive coupled form of relationships, but in between these forms of relationships SLAs can be either implemented or not. It seems to be that the need for SLAs in business relationships depends on the preferences of the involved parties, degree of professionalism of the involved parties, the degree of complexity of processes, and the sub market in which the customer operates. Professional organizations tend to implement SLAs more often in business relationships than less professional organizations. The implementation of SLAs in business relationships also depends on the degree of complexity of processes and the sub market in which the customer operates. High risk sub markets such as transportation of petrol require more detailed information which can be recorded in an SLA. More complex processes also require SLAs more often than less complex processes. So in between loosely and intensive coupled form of relationships, the implementation of SLAs depends on a couple of characteristics.

It is now possible to answer the research question:

*“How and to what extent can SLAs contribute to the improvement of business relationships of logistics service providers?”*

SLAs can be considered as useful documents for starting long term relationships with customers. Especially in the beginning of relationships, processes require a proper structure since the involved parties need to know each other's processes. Processes won't be operated in the most efficient way since the relationship will entail unexpected problems and conflicts. Therefore business relationships require a proper structure in the beginning of relationships and SLAs provide such a structure. An SLA forces the involved parties to describe the processes and mutual responsibilities well and, as a result, problems and conflicts can be solved more efficient.

It is also important to structure the processes well in order to build up trust among the involved parties. The involved parties should start to converge in order to establish a long term relationship, but this requires a proper structure of the relationship and SLAs can contribute to such a proper structure. Trust is essential for establishing a long term relationship, but it is difficult to build up trust among the involved parties. It seems to be that it requires time and a proper structure. Furthermore the process of measuring, reporting and analysing performance indicators also reinforce the level of trust among the involved parties.

SLAs should be considered as an investment in a relationship and it is a good preparation for starting a business relationship. It is more efficient to analyse potential problems before starting a relationship than solving these problems during a relationship. SLAs provide clearness to the partners and it is considered as an important document for realizing expectations. Furthermore logistics service providers should think along with the preferences of the customers and should provide the best solution for every single customer.

In other words, logistics service providers should try to create more value in business relationships in order to stay competitive. They should take an active role in the relationship and try to improve the processes continually. SLAs are useful documents to structure a long term relationship and to improve processes continually by measuring, reporting and analysing KPIs. Literature acknowledges that long term relationships entail significant benefits and SLAs are proper documents for involved parties to establish a long term relationship and to achieve strategic goals and objectives since it builds bridges between the operational processes and strategic goals.

## **8.1 Limitations**

A limitation to this research is the restricted availability and knowledge of SLAs in the transport and logistics sector. There was almost no information about SLAs in the transport and logistics sector and, as a result, the author was forced to use literature about SLAs from other sectors. Another limitation of this research is the lack of small and large sized enterprises in the interview group. Most of the respondents were medium sized enterprises and although they deliver useful information for the author, new insights could be obtained from small sized and large sized enterprises if they were present in larger numbers. Another limitation of this research is that the author only approached logistics service providers and not customers. New insights could be obtained from customers about SLAs in relationships.

## **8.2 Further research**

Further research should focus on deepening the analysis of the current thesis by expanding the sample of respondents. Small sized enterprises, large sized enterprises and customers could entail relevant information about SLAs. It could also be interesting for further research to investigate the importance of power for implementing SLAs in business relationships. Some respondents argued that power is important in the decision making process of implementing SLAs in business relationships, but this research didn't analyse the role of power in business relationships in the transport and logistics sector.

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## Presentation

Abercrombie, C. 2013. Presentation: Transport en logistiek; we zijn altijd onderweg!

## 10 Appendix

### Appendix A: Original list of questions for interviews

- 1 What kind of company is company X?
  - Small, medium or large sized?
  - In which sub market does it operates?
  - National or international orientated?
  - What is ratio transport/distribution/logistics?
- 2 What are the main customer relationships of company X?

#### Questions related to service level agreements (SLAs)

- 1 In what kind of customer relationships does company X use SLAs?
- 2 Do the composed SLAs differ per type of business relationship? (arm's length transactions, alliances, joint venture etc.)
- 3 How satisfied are you about composing, implementing and updating SLAs?
- 4 What is the purpose of an SLA?
- 5 What elements should an SLA contain?
- 6 What are the costs and benefits of SLAs?
- 7 Are SLAs composed in cooperation with customers or does company X offer a standard SLA to customers?
- 8 What problems do occur during the composing process, implementing process and updating process of SLAs?
- 9 How are these problems solved?
- 10 Is it possible to compose a standard SLA which can be provided to every type of business relationship?
- 11 What elements should an SLA contain for every type of business relationships?
- 12 What is the added value of an SLA?

#### Questions related to key performance indicators (KPI's)

- 1 What KPIs should an SLA contain?
- 2 What are the most frequent used KPIs?
- 3 What are the criteria for KPIs?
- 4 Do KPIs differ per business relationship or are there any 'common used' KPIs?

- 5 What problems do companies face when measuring KPIs and how are these problems solved?
- 6 How often are KPIs reported to customers and is this a sufficient amount of reporting frequency?
- 7 How many KPIs should an SLA contain?
- 8 Is there a difference in degree of importance of KPIs?
- 9 What costs are associated with measuring KPIs?

### **Questions related to SLAs in business relationships**

- 1 What is the value of an SLA in business relationships?
- 2 Which party takes the initiative for composing an SLA?
- 3 Should companies in business relationships spend more time and effort in composing an SLA?
- 4 How often are SLAs evaluated and adjusted during relationships?
- 5 Is this sufficient amount of evaluations for having an optimal business relationship or should SLAs be evaluated more often by the partners?
- 6 When is it necessary for companies to record an SLA in business relationships?
- 7 Could SLAs be used as a tool in starting a long term relationship with customers?
- 8 Are companies being forced to become more transparent in the future, and if so, could SLAs be used in this process?
- 9 Is it possible to create more value in the supply chain by implementing SLAs more efficient/often?

### **Market questions related to SLAs**

- 1 What are the developments concerning SLAs in company X and in the transport and logistics market?
- 2 Do you expect that the implementation of SLAs will increase in the future, and if so, why do you expect that this development will happen?
- 3 Is there a need for more information from customers and, as a result, is there a greater need for accurate KPIs?
- 4 What is the importance of information sharing among partners? Are companies reluctant to share important information with their partners?

In the transport and logistics sector, agreements are still often made without recording a contract or SLA. These agreements are based on trust among the parties.

- 5 Do you think that the financial crisis has led to an increase in the need for KPIs and SLAs?
- 6 Is it possible to use SLAs and KPIs as marketing tools?
- 7 Can a proper composed SLA contribute to succeeding long term relationships among logistics service providers and customers?

**Thank you for your participation!**

## Appendix B: Top 75 logistics service providers in 2013

	Naam bedrijf	Aantal medewerkers NL	Aantal vestigingen NL	Aantal m <sup>2</sup> warehousing NL	Jaaromzet NL x mln. (*= wereldwijd, **= Europa)	Netwerk
1	DHL Supply Chain/Forwarding Freight	5.185	59	724.000	28.200 *	Wereldwijd
2	DB Schenker	2.750	35	190.000	587	Wereldwijd
3	Kuehne + Nagel	2.600	26	500.000	629	Wereldwijd
4	CEVA Logistics	2.100	17	245.000	242	Wereldwijd
5	UPS SCS	1.860	12	180.000	46.000 *	Wereldwijd
6	DSV	1.800	20	430.000	350	Wereldwijd
7	Bakker Logistiek	1.650	12	285.000	185	Benelux
8	Rhenus Logistics	1.500	32	155.000	358	Wereldwijd
9	Wim Bosman	1.450	7	340.000	195	Wereldwijd
10	Flextronics Logistics	1.350	1	130.000	71	Wereldwijd
11	Norbert Dentressangle	1.350	14	477.000	141	Wereldwijd
12	Geodis	1.249	13			Wereldwijd
13	Nabuurs	1.100	25	200.000	110	Benelux
14	Simon Loos	1.100	23	85.000	101	Benelux
15	Syncreon	1.063	3	117.500	55	Wereldwijd
16	De Rijke	900	6	120.000	300	Wereldwijd
17	Nippon Express	850	5	120.000	176	Wereldwijd
18	Peter Appel Transport	850	2		80	Benelux
19	Fritom Group	839	8	128.000	90	Wereldwijd
20	Koopman Logistics	800	5	23.000	123	Benelux
21	Broekman	750	14	195.000	193	Wereldwijd
22	ModusLink	750	1	27.500	876 *	Wereldwijd
23	CB Logistics	690	5	130.000	85,5	Benelux
24	Post-Kogeko	689	6	16.000	80	Europa
25	HSF Logistics	675	3	15.000	170	Europa
26	Rotra Forwarding	675	3		114 **	Wereldwijd
27	The Meeus Group	650	5	400.000	75 **	Europa
28	Van Uden	650	14	230.000	144	Wereldwijd
29	Dachser	600	5	17.000	61,2	Wereldwijd
30	Jan de Rijk	600	7		194	Europa
31	TNT Fashion	576	16	285.000	117	Wereldwijd
32	Emons	563	7	110.000	77	Europa
33	Heisterkamp	550	1		125 **	Europa
34	CEPL	515	1	80.000	45	Europa
35	Kloosterboer	500	8	400.000	125	Wereldwijd
36	Müller Fresh Food Logistics	500	3	30.000	60	Europa
37	Menlo Worldwide	495	5	70.000	1200 *	Wereldwijd
38	JCL Logistics	475	4	30.000		Wereldwijd
39	St. van den Brink	471	14	13.000	44	Europa
40	Vos Logistics	469				Wereldwijd
41	Mooy Logistics	450	2	32.500		Europa
42	Verhoek Int. Transport	450	1	40.000	55	Europa
43	Seacon Logistics	440	9	108.000	150	Wereldwijd
44	Den Hartogh Logistics	423	7			Wereldwijd
45	C. van Heezik	410	5	70.000	50	Wereldwijd
46	VAT Logistics	405	9	125.000	120	Wereldwijd
47	H&S Group	400	8	55.000	20	Europa
48	Van den Bosch Transporten	400	3			Wereldwijd
49	Bos Logistics	390	4	12.500	30,2	Benelux
50	GVT Group of Logistics	385	4	70.000	49 **	Benelux
51	Ewals Cargo Care	380	4	72.000	500 **	Wereldwijd
52	Varekamp	375	7	30.000	50 **	Europa
53	Farm Trans	350	3	8.000		Wereldwijd
54	Fashionwheels	350	3	80.000		Wereldwijd
55	Koninklijke Saan	350	7	10.000		Europa
56	Oegema Transport	350	1	15.000	20	Europa
57	Van der Helm – Hudig Moerdijk	350	3	150.000	90	Wereldwijd
58	VCK	350	5	180.000	100	Wereldwijd
59	Versteijnen Logistics	350	2	90.000		Europa
60	Vos Transport	350	3	20.000	50	Europa
61	Tielbeke Logistics	335	2	34.000	35	Benelux
62	Goes Transport	325	2	18.000		Europa
63	Cornelissen	320	5	30.000	35	Europa
64	Janssen Distribution Services	320	3	65.000	35	Europa
65	Van der Vlist	320	5			Benelux
66	J. van de Put Fresh Cargo Handling	319	2	11.000	50	Wereldwijd
67	KLG Europe	319	3	45.500	76	Wereldwijd
68	Ploeger Logistics	305	5	22.000	34	Europa
69	Helm Hudig Rotterdam	300	3	60.000	90	Wereldwijd
70	Sluyter Logistics	300	4		42	Benelux
71	Media Logistics	290	1		33	Wereldwijd
72	Hoyer Nederland	280	3	24.000	70	Wereldwijd
73	Yusen Logistics	280	3	45.700	55	Wereldwijd
74	Ben Becker Transportbedrijf	275	3			Europa
75	TNT Innight	275	17	8.000	47	Europa