Inter Organizational Relationships Performance in Third Party Logistics: conceptual framework and case study
Romana Aziz\(^1\), Jos van Hillegersberg\(^2\), Kuldeep Kumar\(^3\)

Abstract
Supplier relationship management is an important challenge for shippers in logistics outsourcing. This paper attempts to understand the factors which affect inter organizational relationships performance in third party logistics and proposes a conceptual framework specifically for inter organizational relationship performance in third party logistics. We also draw a set of propositions from published research and exploratory interviews with practitioners to explain inter organizational relationships performance in third party logistic networks. Five main dimensions of inter organizational relationships are identified which affect performance in third party logistics: commitment, supplier adaptation, conflict resolution, partner fit and communication. In order to assess the validity of our conceptual model we include a case study in this paper. The case study is based on Shell Chemicals Europe and their portfolio of seventeen third party logistic service suppliers.

Keywords: Third party logistics, logistics performance, inter organizational relationships, logistics portfolio

1 Introduction
The logistics process in supply chains consists of a number of activities, e.g., outbound and inbound transportation, warehousing, packaging and inventory management. Researchers (Marasco, 2008 & Selviaridis and Spring, 2007) agree that third party logistics (TPL) can be defined as the use of external logistic service providers (LSPs) to carry out the entire logistics process or one or more logistics activities. Manufacturing firms are increasingly outsourcing their logistics requirements to external contractors while they concentrate on their core competencies. Outsourcing of logistics services is a complex ‘make-or-buy’ question as it entails a number of risks and hence the shippers need to understand the various aspects that can influence the relationships between buyers and suppliers of logistic services.

Since the nineties there has been a considerable focus on the concept of integrated chain management which is defined as supply chain management (SCM) that considers social and environmental issues (Seuring and Muller 2007) within the context of sustainable development. According to Seuring and Muller (2007) there are three main schools of thought in integrated chain management: the material and information flow school, the strategy and cooperation school and the regional industrial networks school. Relationships between buyers and suppliers of goods or services also known as inter organizational relationships (IORs) are considered to be an important aspect of supply chain management in all these three schools of thought. Relationships with LSPs are the foundation for building an effective and efficient supply chain (Wathne and Heide, 2004) and proper management of these relationships can contribute to performance improvement in

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SCM (Jap et al., 1999). In line with these developments SCM is now interpreted (Halldorsson et al., 2003) as the management of inter organizational relationships.

According to the findings of the study ‘The State of Logistics Outsourcing’ (Langley, 2008) there is a need to improve the inter organizational relationships in TPL and benefits from TPL relationships can ‘result only from deliberate efforts to form strong relationships’ This study highlights the importance of customer supplier relationships in logistics by concluding that ‘client and provider must forge strong bonds up and down the organization, from the executive level through operations’ and ‘everything goes well but also can fail because of relationships’. Current research also points out that usually the relationships among shippers and their external network of LSPs are not well managed (Selviaridis and Spring, 2007) and more research is needed to identify the elements of relationships that are successful predictors of relationship performance. According to Selviaridis and Spring (2007) the phenomenon of TPL can also be used as a vehicle to study and understand the generic dynamic behavior of IOR networks.

In an integrated supply chain a shipper usually has a portfolio, i.e., a number of contracted logistic service suppliers and some of these suppliers may be sub contracting to other suppliers thus forming a network of IORs. IOR networks are defined (Barringer and Harrison, 2000) as a hub and wheel configuration in which the focal organization is the hub and organizes the interdependencies of an array of firms. The organizations in an IOR network develop through their cooperative relationships with other organizations (Anderson et al., 1994) and these organizations can be related or connected either directly or indirectly.

IORs in logistics are dynamic as they are characterized by change, and evolve with time (Dwyer et. al., 1987). Halldorsson and Skjott-Larsen (2006) state that the relationships between LSPs and shippers are influenced by controllable and uncontrollable forces of change, and these forces can affect the performance positively or negatively. The ability of a shipping firm to coordinate its internal activities with its portfolio of external logistics suppliers network is one of the most critical strategic tools for success. Management and understanding of complex and dynamic IOR network of a shipper (buyer) with its portfolio of LSPs (suppliers) is currently an underdeveloped area in literature and it is emerging as a major focus area in SCM research (Golicic et al 2003). Recent reviews of literature on third party logistics e.g. (Marasco, 2008), (Selviaridis and Spring, 2007) and (Maloni and Carter, 2006) show that the extant literature on this topic mainly consists of identification of trends with the help of surveys and more research by case studies and qualitative methods is required to gain a deeper understanding of the different factors that affect relationship performance in logistics.

Current literature on inter organizational relationships in TPL mostly focuses on an organizational level of analysis where a single organization is studied. There are only a few empirical studies in which the ‘whole network’ or the ‘whole portfolio’ is analyzed. We do not know fully how IOR networks in TPL are structured, operated and developed (Provan et al, 2007 & Seuring 2008). These authors have remarked that there is a need to do more research on examining the whole networks in order to understand network evolution and governance and to gain insights into how collective outcomes can be efficiently generated.

Within the context of the buyer – supplier relationship in logistics we emphasize the buyer’s (service user or customer) view on performance and look at performance from a user centric perspective in this paper. Our objective is to understand and explain the various aspects that affect relationship performance in third party logistics. The purpose of this paper is to develop a conceptual framework and to present an empirical case study that helps us to achieve an understanding of properties of IORs in a logistics network and to explain how these properties affect performance.

Our main research question is how can we analyze and understand the relationship performance of a shipper with its network of LSPs? The main research question leads to three sub questions: (1) What are the main factors that affect inter organizational relationship performance in third party logistics? (2) How do these different factors affect performance in third party logistics? And (3) How do these factors affect relationship performance in a real life context?

The findings presented in this paper are relevant for practitioners and academics. Practitioners can use these findings as a prescriptive resource while targeting their efforts for performance improvement in logistics outsourcing. Our contribution for the academics is in the form of a conceptual framework and propositions for relationship performance in third party logistics and testing of propositions in a qualitative case study.

The rest of the paper is organized as follows. We present our research approach in the next section. This is followed by a conceptual background of IORs in third party logistics. We then integrate and build upon the existing literature and present a conceptual framework centered around a set of propositions to answer the
first two sub questions. After that we describe our case study methodology and then we describe our findings from an empirical research based on a qualitative case study. This case study uses the conceptual framework as a lens. In this case study we investigate the logistics network of Shell Chemicals Europe within its real life context to answer the third sub question. We conclude the paper with a discussion of our findings, implications, limitations and future research.

2 Research approach
A literature review was carried out to identify the factors that affect relationship performance in third party logistics. In addition, we conducted three in depth open ended interviews with buyers of logistic services. These interviews were conducted to gain some additional insights on the following issues:

- Understand the meaning of relationship performance and quality of service among the buyers of logistic services
- Identify the different factors that affect performance in third party logistics in practice

Based upon the literature review and exploratory interviews we developed a set of propositions organized around the main research question and answer the first and second sub questions. The set of propositions was incorporated into a conceptual lens that was used to conduct a case study to test the propositions and answer the third sub question. The empirical research is based on a qualitative case study and our unit of analysis is the IOR network consisting of Shell Chemicals Europe and their portfolio of seventeen diverse LSPs. The details of the case study design are described in the later section on case study methodology.

3 IOR networks in third party logistics: conceptual background
The concept of buyer-supplier IORs within the context of logistics and supply chains has evolved over the last three decades from transactional approaches to relational approaches, and from dyadic business relationships to interconnected business relationships embedded in cooperative inter organizational business networks. These business networks are characterized by evolving social and technical bonds based on factors like mutual adaptation and trust. IORs in logistics networks are halfway between market transactions and vertical integration on the relationship continuum (Duffy 2008). Hakansson (1982) points out that IORs between buyers and suppliers are dynamic in nature and continue to evolve as a consequence of the individual interaction episodes between the buyers and suppliers.

3.1 Formation of IOR networks in third party logistics
In order to explain the rationale of the organizations to form an IOR network and the various objectives and motives that cause the organizations to enter an IOR, scholars have used different theoretical paradigms to study the formation of IORs. Scholars (e.g., see Stock 1997) have emphasized the need to borrow theories from other disciplines and apply them to logistics and SCM. The most practical IOR theories behind supply chain management are transaction cost analysis, resource based view, principal agent theory and network theory (Halldorsson et al 2007 and Skjoett-Larsen 2000) and they have been successfully applied to the phenomena of TPL in SCM. Each of these theories uses a different perspective to explain the driving factors that lead to the formation of an IOR but they all agree that successful IORs in logistics help businesses to improve profits, reduce costs and increase sales.

IOR networks are formed as a result of an adaptive response to the environmental uncertainty and dependence. A synthesis of the literature on IORs and networks leads to the conclusion that these relationships are “an intentional response to dependencies among organizations that aims at enhancing the power and control of the networking organizations in order to foster their success” (Oliver and Ebers 1998). IORs in logistics are considered to be a means to overcome the environmental uncertainty which is mainly caused by dynamism and diversity in the environment. IORs enable businesses to gain many strategic advantages and enhance their capacity to perform effectively by leveraging other businesses’ tangible and intangible resources and capabilities. Ring and Van de Ven (1994) suggest that IORs can be described as socially contrived mechanisms for collective action and cooperative IORs are usually formed because of the quest of one business partner to find another with the needed resources. Schoorman et al (1981) agree that in a majority of
cases IORs are formed to cope with environmental uncertainty caused by scarcity of resources and lack of knowledge about changes or fluctuations in environment. Businesses consider entering an interorganizational relationship to satisfy their resource needs, and to share or exchange resources. Thus the main driving forces behind the formation of an IOR are the mitigation of uncertainty and creation of value by sharing resources and knowledge (Gulati, 1995, & Granovetter, 1985). Besides mitigation of uncertainty and resource sharing other advantages of participation in IORs include access to a foreign market, product or service development, flexibility, and neutralizing or blocking competitors (Barringer and Harrison 2000).

3.2 Existing generic IOR models

The existing generic models of buyer supplier relationships are mostly based on resource dependence view or transaction cost theory and they use a variety of constructs like performance, trust, social bonds, mutual goals, power, dependence, technology, adaptations, structural bonds, cooperation, commitment etc (Wilson, 1995). One of the earliest generic models of buyer supplier relationships in the network context is the descriptive and explanatory IMP model (Hakansson, 1982) and consists of four types of elements describing (1) the interaction process between buyers and sellers, (2) the buyers and sellers in the interaction process, (3) the environment and (4) the atmosphere. This model is based on inter organizational theory (Van de Ven et al, 1975) and the ideas of institutional economics (Williamson 1975).

Consistent with these findings Duffy (2008) proposes that buying organizations usually tend to build long term cooperative relationships with their suppliers and their levels of trust, commitment, relational norms and conflict resolution methods reflect whether the relationship is cooperative or adversarial. Accordingly Duffy’s conceptualization of buyer-supplier relationships consists of four dimensions, i.e., (1) Degree of coordination and integration reflected by interaction, information exchange and joint activities, (2) Nature of interdependence expressed by its magnitude and asymmetry, (3) Attitudes and sentiments that exist in the relationship consisting of trust, commitment, relational norms and conflict resolution methods and (4) performance perceived in terms of financial costs and benefits.

4 Inter organizational relationships and performance in third party logistics: A conceptual framework

Parasuraman et al. (1985) suggest that that service performance can be measured along five dimensions:

- Tangibles: Physical facilities, equipment and appearance of personnel
- Reliability: Ability to perform the promised service dependably and accurately
- Responsiveness: Willingness to help customers and provide prompt service
- Assurance: Knowledge and courtesy of employees and their ability to convey trust and confidence
- Empathy: Caring individual attention the firm provides its customers

These performance dimensions map consistently with the nine logistic service performance attributes of Mentzer et al (2001) which are personnel contact quality, order release quantities, information quality, ordering procedures, order accuracy, order condition, order quality, order discrepancy handling and timeliness. In the extant literature on logistics the most commonly used performance attributes are reliability, safety, on time delivery, compliance with standards and cost savings.

In our proposed conceptual model to study IOR performance in third party logistics we combine the concepts of Hakansson (1982) and Duffy (2008) discussed in the previous section and extend them on the basis of current literature and exploratory interviews with buyers of third party logistic services. We have proposed a new conceptual framework for an IOR model specifically for third party logistics. In our proposed framework the performance and quality of inter organizational relationships between a shipper and its network of LSPs depends on five factors: commitment, supplier adaptation, conflict resolution, partner fit and communication. The details of the theory building process are not given here for the sake of brevity. The conceptual framework and the related propositions are presented in this paper. The initial conceptual framework is shown in Figure 1.
The following propositions are proposed for each of the factors included in the initial framework:

**Commitment**
P1: Higher levels of commitment result in performance improvement  
P1a: High levels of information sharing in the presence of goal congruence leads to better commitment  
P1b: Power imbalance in favor of shipper can improve supplier commitment in the absence of alternate opportunities available to supplier.  
P1c: Power imbalance in favor of shipper can impact supplier commitment negatively if alternate opportunities are available for the supplier.  
P1d: Trust between the partners leverages commitment levels and leads to improved performance.  
These propositions are reflected in Figure 2.
Supplier adaptation
P2: Supplier adaptation has a positive effect on performance
P2a: Supplier dependence in the presence of learning orientation can lead to adaptation.
The above propositions are shown in Figure 3.

Conflict resolution
P3: Effective conflict resolution mechanisms lead to performance improvement.
P3a: Relational norms in the presence of formal controls (contracts) have a positive effect on conflict resolution.
These propositions are shown in Figure 4.

Partner fit
P4: Higher levels of partner fit leads to better performance. Partner fit depends on similarity in planning capabilities, IT use and management structure (see Figure 5)
Communication

P5: Higher quality and formality of communication leads to better performance (see Figure 6)

Figure 6: Communication and performance

The integrated framework is shown in Figure 7. This integrated framework was used as a conceptual lens for the Shell Chemicals Europe case study.

5 Case study methodology

The case study concerns a large central European chemical manufacturer Shell Chemicals Europe, SCE and its network of seventeen LSPs. We have not used any real names in our description of LSPs in order to maintain confidentiality. We adopted a qualitative approach but some quantitative data was also collected. Data was collected through:

- Observation – For first hand in depth understanding. One junior researcher was embedded within SCE for six months, while another senior researcher visited SCE on weekly basis.
- Interviews - We interviewed eighteen informants for this case study. The interviews were in depth and open ended with members of SCE (10), senior executives of LSPs (6) and industry experts (2). Some of the informants were interviewed more than once. The average duration of an interview was ninety minutes. During the interviews we maintained a retrospective longitudinal stance and asked the interviewees to give a historical answer culminating in the present to our questions. All interviews were face to face.
- Documents – Past performance reports, contracts, websites etc. We made extensive use of available electronic and paper documents.
- Questionnaires – A questionnaire was sent to the all the seventeen LSPs, out of which thirteen LSPs responded.

The four well established quality characteristics of case study research namely construct validity, internal validity, external validity and reliability (Yin 1994) were upheld as follows:

- Construct Validity: This characteristic refers to the quality of observations. Multiple sources of evidence were used as described above and the informants reviewed the draft.
- Internal Validity: This term is used to establish the quality of causal relationships. We achieved this by pattern matching. We began by building theoretical propositions supported by the existing literature. The actual patterns are discussed in the light of expected patterns in the following sections of this paper. Another source of internal validity is the fact that we collected our data over a period of six months from January 2009 to June 2009. Some of the informants were interviewed more than once during this period. All the informants answered our questions by adopting a retrospective stance where they reflected upon their experiences of the past years and provided longitudinal answers.
- External Validity: This characteristic is used to establish the domain to which the findings can be generalized. Our unit of analysis was the relationships of a focal organization (Shell Chemicals Europe) with its portfolio of external LSPs. It is explained in next section that there were three categories of LSPs viz. big, medium and small. Although we have investigated one portfolio in this case study but within each category of LSPs we collected information from a number of LSPs to establish the generalizability of our findings.
- Reliability: This term relates to the operations of a study. This factor mainly refers to the minimization of errors and biases. We followed a pre developed case study protocol and all data items were main-
tained in a project repository. Most of the informants were interviewed in the presence of two investigators.

Figure 7: Integrated conceptual framework for relationship performance in third party logistics
6 Shell Chemicals Europe

Shell Chemicals Europe (SCE) is a large, financially successful and highly reputable chemical manufacturer and its approximately 1000 customers are located all over the Europe. SCE operates its business with remarkably high and very stringent standards of health, safety, security and environment. Although high safety standards are a norm in the chemical transportation industry yet SCE’s distinguishing feature is that their acceptable threshold standards are much above the industrial averages. Due to this reason the LSPs who got a contract with SCE got a huge boost in their reputation for excellence and competitive advantage. It is a common adage among the LSPs that “if you can qualify to work for SCE then you are proved eligible to work for any manufacturer in any market segment.”

There were a number of reasons due to which SCE was selected for this research. At the time of this case study SCE was experiencing day-to-day firefighting, which occurred when unresolved issues bounced back from the LSPs to SCE’s staff. Moreover SCE was also facing difficulties in managing their relationships with the LSPs. SCE did not feel that it had enough leverage over its LSPs and they did not understand why some LSPs were causing more work relative to other LSPs. The senior SCE managers were wondering if they were effectively making use of the right mix of LSPs.

The main drivers behind SCE’s decision to outsource outbound transportation were increased flexibility and cost savings. In terms of expected service quality their highest priorities were reliability, minimization of late deliveries and minimization of extra costs. LSPs were contracted for a period of one to three years and SCE reviewed the performance of every LSP three times a year. LSPs were assessed on the basis of health, safety and environmental standards and operational performance. The outcome of the periodic assessment led to ‘reward’ or ‘penalty’ actions by SCE. SCE had an ongoing incentives scheme for high performing LSPs.

A twelve member group under the leadership of a senior manager governed the outsourced logistics at SCE. The activities of the logistics group included:

- Contract Management: Deciding on new contracts and renewal of old contracts.
- Planning: Analyzing to create most optimal supply chains
- Transport Coordination: Managing day-to-day activities and monitoring LSP performance
- Technical Advisory: Managing health, safety, and environmental risks and giving technical support

During 2008 SCE spent 70 million Euros on outbound transportation via external LSPs. SCE had contracted a portfolio of seventeen LSPs in 2008 as shown in Table 1. These LSPs fell into three distinct categories on the basis of their turnover figures of 2008, i.e., big, medium and small. A main reason for distinguishing the LSPs into three categories according to their size was that during analysis we found that each category was distinct in its characteristics as explained later. Two big LSPs had turnover of more than 700 million Euros, five ‘medium’ LSPs had a turnover between 230 million and 500 million Euros and ten ‘small’ LSPs had turnover less than 155 million Euros. Thirty percent of the SCE business went to small LSPs, fifty five percent to the medium LSPS and fifteen percent to the big LSPs. It can be seen in Table 1 that 11 LSPs shared among themselves 98 percent of SCE spend. The other 2 percent was shared by 6 LSPs and three of these were ‘niche’ players providing specialized services that were not delivered by other LSPs. Although the ‘niche’ players handled less than 1 percent of SCE business, it was not easy for SCE to replace the ‘niche’ players due to their special skills and characteristics.

In our case study we collected data from thirteen LSPs. Four LSPs were not approachable due to their internal reasons. The thirteen LSPS included in this study handled 90 percent of the SCE business. This is also indicated in table 1.

The comparison between percentages of SCE’s spending on an LSP and SCE’s spend as a percentage of an LSP’s annual turnover is illustrated in Figure 8. It may be noted from Figure 8 that a particular LSP may be a big part of SCE’s portfolio, i.e., SCE may be giving a big piece of its business to an LSP but SCE may not be a big customer for that LSP and may constitute a very small part in that LSPs portfolio of customers. As an example we can consider L1 a medium LSP, SCE allocated 22 percent of its business to L1 and this constitutes only three percent of L1’s yearly turnover. On the other hand there is the contrasting case of L8 and L6, two small LSPs, who get 4.50 and 7.70 percent respectively of SCE’s spend but this small amount of business from SCE constitutes sixty percent or more of their turnovers.
Table 1: SCE’s contracted portfolio of seventeen LSPs in 2008

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Niche</th>
<th>Part of Study</th>
<th>Percentage of SCE Spend (2008)</th>
<th>SCE spend vs. total LSP turnover in 2008 (%)</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>Medium</td>
<td>No</td>
<td>Yes</td>
<td>22.9</td>
<td>3.00</td>
<td>Average</td>
</tr>
<tr>
<td>L2</td>
<td>Medium</td>
<td>No</td>
<td>Yes</td>
<td>15.9</td>
<td>4.00</td>
<td>High</td>
</tr>
<tr>
<td>L3</td>
<td>Big</td>
<td>No</td>
<td>Yes</td>
<td>14.4</td>
<td>1.00</td>
<td>Average</td>
</tr>
<tr>
<td>L4</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>11.0</td>
<td>12.71</td>
<td>Average</td>
</tr>
<tr>
<td>L5</td>
<td>Medium</td>
<td>No</td>
<td>Yes</td>
<td>8.6</td>
<td>1.00</td>
<td>Low</td>
</tr>
<tr>
<td>L6</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>7.7</td>
<td>60.00</td>
<td>High</td>
</tr>
<tr>
<td>L7</td>
<td>Medium</td>
<td>No</td>
<td>No</td>
<td>5.2</td>
<td>Not part of study</td>
<td>Low</td>
</tr>
<tr>
<td>L8</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>4.5</td>
<td>62.00</td>
<td>High</td>
</tr>
<tr>
<td>L9</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>3.1</td>
<td>Not part of study</td>
<td>Average</td>
</tr>
<tr>
<td>L10</td>
<td>Medium</td>
<td>No</td>
<td>Yes</td>
<td>2.3</td>
<td>0.44</td>
<td>High</td>
</tr>
<tr>
<td>L11</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>2.2</td>
<td>6.00</td>
<td>Average</td>
</tr>
<tr>
<td>L12</td>
<td>Big</td>
<td>No</td>
<td>Yes</td>
<td>0.7</td>
<td>0.03</td>
<td>Low</td>
</tr>
<tr>
<td>L13</td>
<td>Small</td>
<td>Yes</td>
<td>Yes</td>
<td>0.5</td>
<td>13.00</td>
<td>Low</td>
</tr>
<tr>
<td>L14</td>
<td>Small</td>
<td>No</td>
<td>No</td>
<td>0.4</td>
<td>Not part of study</td>
<td>Low</td>
</tr>
<tr>
<td>L15</td>
<td>Small</td>
<td>No</td>
<td>No</td>
<td>0.2</td>
<td>Not part of study</td>
<td>Low</td>
</tr>
<tr>
<td>L16</td>
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<td>Yes</td>
<td>Yes</td>
<td>0.2</td>
<td>0.20</td>
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</tr>
<tr>
<td>L17</td>
<td>Small</td>
<td>Yes</td>
<td>Yes</td>
<td>0.2</td>
<td>11.00</td>
<td>Low</td>
</tr>
</tbody>
</table>

Figure 8: Relative significance of SCE spend

SCE had evolved a detailed procedure to measure the performance of its contracted LSPs. Performance rankings were produced once a year. The aggregated performance measure was based on:
6.1 SCE portfolio of LSPs

As pointed out earlier that the SCE portfolio consisted of three types of LSPs, small, medium and big. The medium and big LSPs are sometimes combined and also referred to as larger LSPs in the rest of this paper. Due to SCE’s distinctly high standards of quality all LSPs reported that working for SCE was continuously resulting in an improvement in their capabilities and skills. We observed that:

- Each small LSP was highly distinct in its strengths and weaknesses though a couple of common traits were observed across all the small LSPs
- Medium LSPs showed remarkably similar characteristics
- Big LSPs also showed common characteristics.
- There were certain differences that rendered some LSPs more efficient than others. Despite the distinctive traits of small, medium and big LSPs the highest performers had uniquely similar aspects irrespective of their size.

In this section we discuss the characteristics of small, medium and large LSPs. This is followed by a discussion of the characteristics of high performing LSPs and performance related issues and insights in the next section.

The small LSPs lacked discipline in organizing their day to day operations and functions. Their processes were marked by a lack of standardization and overall a general sense of ‘ad-hoc’ ness prevailed. The responsibility to do a job correctly was left to the individuals and in every small LSP we observed a person (or two) who was ‘fire fighting’ like a hero and trying to prevent the ‘doomsday’ and the whole organization was found to be reliant on the knowledge and skills of these local ‘heroes’. This preoccupation with depending on ad-hoc approaches had prevented the small LSPs from any meaningful long term innovation. We did not find any future vision to evolve and climb up the ladder in the industry. Although some of them were willing to accept more business from SCE we found that they were not so sure if they could cope with expanded volumes.

The medium LSPs were very crucial for SCE because they were handling fifty five percent of its business. While analyzing the medium LSPs we observed that their processes and procedures had been documented and standardised to a much greater degree as compared with the smaller LSPs. The medium LSPs had formalized their practices and were constantly under the push to refine their workflow. They wanted to achieve a more effective way of doing transportation with a view to expand their business. Although they were working as simple ‘truckers’ with SCE but they had a desire to provide a more integrated transportation solution which could include order processing as well on the lines of a 4PL.

The medium LSPs felt more secure about the stability of their relationship with SCE and they thought that it was long term. The medium LSPs generally possessed more ‘relational capital’ characterized by friendship between the two partners (LSP and SCE) at multiple levels. We observed high mutual or cooperative interchange of favors or privileges between SCE and the medium LSPs. The medium LSPs were ready to discuss suggestions of increased business from SCE despite the fact that they complained about the higher levels of control practiced by SCE via rigid and constraining operational procedures. They wanted more responsibility and more joint decision making with regard to procedures.

The big LSPs exhibited significantly lower levels of relationship specific investments. They had not invested considerable resources in building up business with SCE in terms of developing new information systems, learning SCE products and procedures and training their employees. They were of the view that if the relationship with SCE would end, they would not have a lot of trouble redeploying their people and facilities presently serving SCE.
7 Analysis of relationship performance in SCE portfolio

Table 2 shows the four top performing LSPs which include two small and two medium LSPs. The following sections discuss the top performing LSPs with respect to the conceptual framework and the propositions presented in section 4 earlier.

Table 2: High performers in the SCE portfolio

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Percentage of SCE Spend (2008)</th>
<th>SCE spend vs. total LSP turnover in 2008 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L6</td>
<td>Small</td>
<td>7.7</td>
<td>60.00</td>
</tr>
<tr>
<td>L8</td>
<td>Small</td>
<td>4.5</td>
<td>62.00</td>
</tr>
<tr>
<td>L2</td>
<td>Medium</td>
<td>15.9</td>
<td>4.00</td>
</tr>
<tr>
<td>L10</td>
<td>Medium</td>
<td>2.3</td>
<td>0.44</td>
</tr>
</tbody>
</table>

7.1 Commitment

The top four highest performers’ business relations were marked by their commitment to SCE. The highest performers believed that they were dependent on SCE irrespective of the amount of business that SCE outsourced to them and felt that the balance of power was tilted (though slightly) in favor of SCE. The top performing LSPs used commitment as a means to offset the threats due to power imbalance and dependence and demonstrated their commitment by striving to achieve higher performance levels. The low performing LSPs did not feel dependent on SCE because of two reasons: a) they felt that there were alternate customers on the scene who could easily replace SCE, b) they felt that SCE was not able to leave them due to their niche positions and hence suitably dependent on them (Propositions P1, P1c).

It can be seen in Table 2 that the two highest performers are small LSPs (LSP6 and LSP8) having extremely high dependence on SCE as sixty percent or more of their revenue was generated from their business from SCE. They knew that their survival depended on business from SCE and at the same time they did not feel secure in the stability of their relationship. Due to this reason they went out of their way to maintain high performance and avoid penalties. This sense of dependence and power imbalance can be easily rationalized in the case of the two small high performing LSPs as around sixty percent of their revenue came from SCE. These small LSPs did not have any potential alternate customers and they believed that SCE can easily replace them unless they performed very well and remained in the top 25 percent zone. SCE is a relatively small customer for the other two top performing LSPs namely L2 and L10 which were of medium size and business from SCE constituted 4.00 and 0.44 percent respectively of their annual turnover. SCE was receiving very high performance from these two medium LSPS despite small amounts of spend. Although SCE was a small customer for these two LSPs they felt highly dependent on it. Their dependency sprang from two sources: a) their future plans and hopes to be able to expand their relationship with SCE by the dint of their quality performance, b) their perception of SCE as being a key customer and a source of numerous intangible benefits which could not be matched by other customers (Proposition P1b).

It is worthwhile to contrast the case of the two high performing small LSPs who are marked by high dependence on SCE with two low performing small LSPs namely L13 and L17. The fact that SCE was a significant customer for L13 and L17 is evident from the fact that thirteen and eleven percent respectively of their turnover is due to SCE yet they remain the worst performers in the SCE portfolio. The chemical transporting operations of L13 and L17 covered some particular geographic regions and had a number of alternate customers. Due to a horde of legislative restrictions SCE was unable to deploy other carriers in those regions and hence SCE had become dependent on L13 and L17 due to their regional positioning (Proposition P1c).

The high performing LSPs had a higher degree of harmony in their dealings with SCE in terms of information sharing. They were able to engage SCE in joint problem solving and decision making and they were found to be highly reliant on advice from SCE on their business operations and they trusted SCE’s judgment. They were more willing than others to make long term investments and short term sacrifices in transporting SCE’s products because there was a high level of perceived goal congruence. The information
sharing behavior of the top performing LSPs had raised the level of mutual trust and led to higher commitment in their relationship with SCE. These LSPs treated the problems as joint responsibilities irrespective of who was at fault. The behavior of high performers showed greater cooperation and coordination for achievement of mutual goals (Propositions P1d, P1a).

7.2 Supplier adaptation
The higher dependency level of top performing LSPs rendered them more attuned towards adaptive changes. The top performers tended to be more adaptive as compared with other LSPs. Due to their dependency on SCE high performing LSPs were better predisposed and willing to make efforts to change their processes in order to better suit the requirements and expectations of SCE. Their adaptive capabilities had a direct positive impact on their ability to nurture and strengthen the relationship with SCE. The top LSPs reported that they had made changes in their personnel, procedures, strategy, policies and equipment in order to accommodate SCE. The high performing LSPs adapted their behaviors in order to increase the likelihood for continuation of relationship and to expand the relationship via adaptive changes. It was observed that small LSPs were generally more inclined to make adaptive changes but the adaptation of high performers was marked by learning orientation. The high performing LSPs were conducting rigorous internal reviews with an inclination to learn and understand what they were doing right and where they were going wrong. Moreover adaptation made them fit better with the others in the network and as a consequence adaptation improved the performance of the overall network (Propositions P2, P2a).

7.3 Conflict resolution
The high performers were more aware of explicit mechanisms to address or resolve conflicts with SCE. In their relationship with SCE their top management was involved in resolving conflicts. In the case of high performing LSPs there was a well defined level of responsibility regarding actions that would lead to conflict resolution and achievement of mutual goals. They cooperated with SCE in the pursuit of mutual goals and problem solving was a joint responsibility. Cooperation was enhanced by coordinated activities where LSPs knew what they had to do and when and there was a greater awareness of the predefined regulations, standards and contractual terms and conditions. Although formal controls played an important role in the strength of relationship between top LSPs and SCE, it was also observed that top performing LSPs were willing to resolve the conflicts by resorting to relational norms. During conflict resolution they were willing to make adjustments to solve or smooth over the problems due to ingrained behaviors like flexibility, restraint and solidarity (Propositions P3, P3a).

7.4 Partner fit
High performing LSPs acted as true bridges between the SCE and its customers and the most important attributes of these LSPs that affected the value delivered by them included robust planning capabilities, IT use, ability to comply with the industrial standards, operational flexibility and commitment to continuous improvement. These attributes contributed to the ‘partner fit’ quality of high performing LSPs and made them more compatible with the requirements of SCE. We had observed a high similarity between the IT and planning capabilities of SCE and the high performing LSPS complemented by similar management structures (Proposition P4).

The high performing LSPs exhibited a greater ‘partner fit’ with SCE in terms of the following factors:
- High similarity between the IT capabilities of SCE and medium LSPs
- The organizational cultures of SCE and medium LSPs were compatible with each other.
- The management and operating styles of SCE and medium LSPs were compatible with each other.

7.5 Communication
We observed that there were strong links between high performance and quality and formality of communication. The highest performers were found to be more open in their interaction via information sharing with SCE. They shared information with SCE which they did not generally shared with other customers and as a
result of information sharing there was reduced fire fighting within SCE. Relationship based on open interaction via information sharing fostered improved commitment and close interaction and information sharing positively improved communication. We found that the high performing LSPs reported a higher level of satisfaction with their communication with SCE. The communication between top performing LSPs and SCE was not only more accurate and complete but also more timely and adequate. We observed that the top LSPs were able to interact more closely with SCE and this characteristic of close interaction led to better cooperation between the supplier and the buyer (Proposition P5).

The highest performers adhered to higher levels of formality in communication. In coordinating their activities with SCE the highest performers followed formal communication channels. It was important for them that the terms of their relationship had been written down in detail. Despite the formality in communication the high performers described their relationship with SCE as a "cooperative effort" rather than "arm's length". Overall the higher performers were found to be more aware of SCE’s expectations.

8 Summary and conclusions

Some of the important challenges associated with logistics outsourcing are related with relationship management and performance improvement. We looked at some of these challenges in this paper in the context of third party logistics. This paper has tried to explain the links between the various dimensions of IORs and performance in third party logistics. The objective of this research was to understand how we can analyze the performance of IORs of a shipper with its network of LSPs? We looked at the various dimensions of relationship and their impact on performance by combining theory development with empirical research.

The theory development was mainly based on the review and integration of current literature and exploratory interviews with practitioners and resulted in an integrative conceptual framework for relationship performance in third party logistics. This framework served as a conceptual lens for the empirical research and the empirical research complemented the theory development work. The conceptual lens was used to conduct a qualitative case study in a real life environment. The data collected during the case study generated insights that confirmed our proposed propositions. The main findings are about the elements of relationships that impact performance in TPL. We observed that the high performance of top ranking LSPs in SCE portfolio was dependent upon following five aspects:

- Commitment: Based on information sharing, goal congruence, power imbalance in favor of SCE and trust.
- Adaptation: Based on supplier dependencies and learning orientation
- Conflict resolution: Based on control and relational norms
- Compatibility: Based on planning capabilities, IT use and management structure
- Communication: Based on quality and formality

SCE had total control on the logistics operations and there was no sharing of responsibilities between the LSPs and SCE. Under the conditions of high levels of buyer control it appears that the small LSPs (other than the niche players) performed better. They treated SCE as an important customer and were very flexible in fulfilling SCE's orders and requests. The larger (medium and big) LSPs other than the top performers did not exhibit this high level of commitment due to the following two main reasons:

1. The total spend figures from SCE did not provide any reason for the larger LSPs to foster commitment as the larger LSPs were not dependent on the business that SCE provided them. Image enhancements and learning opportunities were the main drivers for larger LSPs to partner with SCE.
2. The larger LSPs felt that SCE used them solely as trucking companies and did not recognize them as full-blown logistics service providers. The larger-sized LSPs were logistics solution providers and they sought more responsibility and less SCE control in their business with SCE. The larger LSPs hoped to go beyond being just truckers and hence they were frustrated because they did not feel they were taken seriously in decision making.

Our conceptual framework provides an explanation of the pertinent elements of interorganizational relationships that can affect performance. Managers can use these insights to develop effective relationship management strategies. The framework and the propositions can serve as a useful basis for the development of a more general theory for relationships development in third part logistics.
Our qualitative investigation was thorough but the main limitation is that we carried out only one case study. It will be worthwhile to conduct more studies in this area to test the theory further and with more cases the validity of our framework will increase. It may be interesting to conduct further studies to understand which aspects of third party logistics performance in the chemicals transportation industry are similar or dissimilar when compared with transportation in other industries. This will also help in forming the best practices. This research was conducted from the point of view of the logistics outsourcer though the insourcers, i.e., the LSPs were also involved. A similar study conducted from the insourcers point of view will further improve the conceptual framework.

References


