

Third Party Logistics: An Analysis of the Feasibility and Contexts of Strategic Relationships

By

Madhu Ranjan
B.Tech. Mechanical Engineering
Regional Engineering College, Kurukshetra, India, 1994

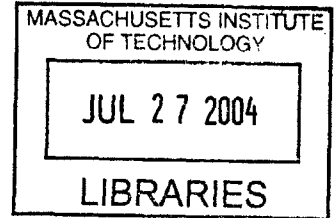
Richard Tonui
B.S. International Business Administration
United States International University – Africa, Nairobi, Kenya, 1997
M.S. Computer Information Systems
Georgia State University, Atlanta, Georgia, U.S.A, 2003

Submitted to the Engineering Systems Division
In Partial Fulfillment of the Requirements for the Degree of

MASTER OF ENGINEERING IN LOGISTICS

At the
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
June 2004

© Madhu Ranjan and Richard Tonui. All rights reserved.



The authors hereby grant to MIT permission to reproduce and to distribute publicly paper and electronic copies of this thesis document in whole or in part.

Signature of Authors.....

[Handwritten signature]
Engineering Systems Division
May 12, 2004

Certified by.....

[Handwritten signature]
Christopher Caplice
Executive Director-Master of Engineering in Logistics Program
Thesis Supervisor

Accepted by.....

[Handwritten signature]
Yossi Sheffi
Professor, Engineering Systems Division
Professor, Civil and Environmental Engineering Department
Director, MIT Center for Transportation and Logistics

Acknowledgements

I would like to acknowledge the generous support and encouragement I have received from the many friends, colleagues and mentors who have made this work possible. I am grateful to our thesis advisor, Dr. Christopher Caplice, for his advice, motivation and support throughout the program. My classmates have also been a steady source of knowledge, wisdom, energy and pleasantry. I would especially like to thank Madhu Ranjan, my thesis partner and a source of valuable debate and feedback, and Robert Sweeney of Yantra who provided important input on the research topic. I am also grateful to my siblings Henry, Patrick and Peter – a constant source of support and encouragement – and to Bernard Ngeny, Paul Kihiu and their parents and siblings for their continued support and friendship over many years. My fiancée Wairimu Wanjau has supported me through the recent twists and turns and I am indebted to her as well.

The road to this degree has been long and I would also like to recognize and acknowledge those who in early and recent days played important roles in preparing me for and helping me to gain this exceptional learning opportunity. Mr. Odhiambo, Mrs. Onyura and other teachers at Kericho Primary School accepted nothing less than my best, gave me a world-class beginning, and set me on the long road to an education. I am also very grateful to Rob Kocerha and Diane Clark whose mentorship, support and encouragement helped make this dream possible.

Lastly and most importantly, I owe an eternal debt of gratitude to my parents who encouraged and enabled me to always reach higher. You are the wind beneath my wings.

Richard

Acknowledgments

I would like to thank our advisor Dr. Christopher Caplice for his guidance and encouragement which kept us on the right path during the long journey of our research. I would also like to extend my sincere thanks to Mr. Robert Sweeney of Yantra, who provided us with insightful ideas during our discussions on the research work. I specially enjoyed and learned a great deal in long discussions with Richard Tonui, who is my co-author in this thesis.

Finally I would like to thank Dr. S.C. Sharma for his support and affection throughout my stay at MIT. I am also indebted to Harpreet Singh for his encouragement and moral support extended to me all along. I dedicate my work to my parents Shakuntla Sharma and Harish Chander Sharma.

Madhu Ranjan

Third Party Logistics: An Analysis of the Feasibility and Contexts of Strategic Relationships

By

Madhu Ranjan
&
Richard Tonui

Submitted to the Engineering Systems Division on May 7, 2004 in partial fulfillment of the requirements for the degree of Master of Engineering in Logistics

ABSTRACT

An important topic in the Third Party Logistics (3PL) industry is the extent to which customers view 3PL services as pure-commodities to be re-bid. The trend towards commoditization has been one of the causes for current pricing pressures on the 3PLs. The 3PLs gearing towards "strategic partnerships" and the addition of Value-Added Services to their portfolio could decelerate the trend towards commoditization and could also otherwise differentiate them from their competitors.

This study investigates the categories of relationships that 3PLs have and specifically the presence of strategic relationships in the 3PL industry. The study also examines the contexts in which they exist and highlights the factors that have contributed to the formation of the strategic relationships. The study concludes by proposing steps that 3PLs can take to better position themselves as candidates for strategic relationships.

Thesis Supervisor: Christopher Caplice

Title: Executive Director, Master of Engineering in Logistics Program, MIT

Table of Contents

Table of Contents.....	5
List of Figures	6
List of Tables	7
1. Introduction.....	8
1.1. The Third Party Logistics (3PL) Industry.....	8
1.2. Motivations for Research.....	11
1.3. Methodology	12
1.3.1. Understanding relationships.....	12
1.3.2. Segmenting the relationships	13
1.3.3. Identifying the contexts of and traits for strategic relationships	13
1.4. Roadmap	14
2. The U.S. Third Party Logistics Market.....	15
2.1. Background	15
2.2. Current State	16
3. Relationships	30
3.1. A Review of Past Research on Relationships	30
3.2. Benefits of Strategic Relationships.....	38
3.3. Framework Used in the Study.....	40
4. Key Findings	43
5. Recommendations	51
5.1. Contexts for effective strategic relationships.....	51
5.1.1. Seek suitable target industries.....	51
5.1.2. Seek suitable target clients.....	52
5.1.3. Establish the right environment through willingness to share risk	52
5.2. Capabilities.....	53
5.2.1. Develop a range of Value-Added Services.....	53
5.2.2. Develop expertise in areas of operation.....	54
5.2.3. Develop alliances to provide a broad and deep set of services	55
6. Conclusions	57
6.1. Summary of Research.....	57
6.2. Future Research.....	58
Appendix.....	60
Survey to 3PLs	60
Survey to Customers	64
Bibliography.....	67

List of Figures

Figure 1 Development of the outsourcing of Logistics Services (Gattorna, 1998) 10

Figure 2 Market Share of Top 5 3PLs By Segment 24

Figure 3: 3PL industry dynamics (Lieb and Bentz, 2003) 25

Figure 4: 3PL Opportunities (Lieb and Bentz, 2003) 26

Figure 5: 3PL services (Allen et al, 2003) 27

Figure 6 –3PL Roles (Allen et al, 2003) 28

Figure 7 Spectrum of Coordination Mechanisms (Adapted from Rice and Ronchi, 2002)
..... 34

Figure 8 Characteristics of Selected Coordination Mechanisms (Adapted from Rice and
Ronchi, 2002)..... 35

Figure 9 Relationship Framework 41

List of Tables

Table 1 Gross Revenues Across 3PL Segments (Armstrong and Associates, Inc.,2003)	17
Table 2 Top 10 Value-Added Warehousing Providers (Traffic World, 2004).....	18
Table 3 Top 10 Non-Asset Based Surface Transportation Providers(Traffic World, 2004)	19
Table 4 Top 10 Asset-Based Transportation (Traffic World, 2004)	20
Table 5 Top 10 Air/Ocean Freight Forwarders (Traffic World, 2004).....	21
Table 6 Consolidated List of Top 10 3PLs Across Segments (adapted from Traffic World, 2004)	22
Table 7 Important Characteristics Of and Factor Contributing to Strategic Relationships	44
Table 8 Distribution of Customers Across Relationship Segments.....	45

1. Introduction

1.1. *The Third Party Logistics (3PL) Industry*

Third Party Logistics (“3PL”) emerged in the early 1990s when logistics service providers started offering consolidated services and an increasing number of customers, for a variety of reasons, entered into longer business contracts with the logistics service providers. The total logistics market in 2003 in the US was \$910 billion (Delaney, 2003) and the 3PL market was around \$65 billion (Gordon, 2004). The 3PL market has been increasing for the last 10 years at a rate of more than 20 percent. A survey of 221 companies in the US reported that 78% of US companies are using 3PLs for logistics services and spending 49% of their logistics expenditure on outsourcing which is likely to grow to 56% by 2006-08(Allen et al, 2003). The growth of the 3PL industry is much faster than the growth in total logistics expenditure indicating that the market is still in its formative stage. This makes 3PLs an interesting area of study.

At the outset, we define the terms which we will be using in our thesis so as to eliminate any ambiguity in understanding our use of the terms. 3PLs are defined in many different ways. For example, the Council of Logistics Management’s formal definition of a 3PL is: “A firm which provides multiple logistics services for use by customers. Preferably these services are integrated, or “bundled” together by the provider. These firms facilitate the movement of parts and materials from suppliers to manufacturers, and finished products from manufacturers to distributors and retailers. Among the services which they provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding.” On the other hand a rail-road company, Burlington Northern Railway, defines 3PL as a “Third-party logistics and/or service provider who acts on behalf of a shipper or carrier. A 3PL may also be referred to as an IMC (Intermodal Marketing Company), freight forwarder, transportation broker or intermediary.” EyeForTransport, an Internet transportation portal, defines a 3PL as “An organization that manages and

executes a particular logistics function, using its own assets and resources, on behalf of another company”.

For this paper we define a 3PL as a provider of outsourced logistics services. This may include only a single service like transportation or warehousing or could include a complete integration of the supply chain. 3PLs have the potential to offer more than a single service. They differ from transportation companies in the fact that customers outsource their in-house logistics functions in part or whole to these companies. 3PLs may have their own assets (Asset based 3PLs) to fulfill the logistics functions or they may further subcontract (Non-asset based 3PLs) these functions to other companies.

A term that is being used increasingly in logistics outsourcing is Fourth Party Logistics or 4PL. This is defined as “An integrator that assembles the resources, capabilities and technologies of its own organization and other organizations to design, build and run comprehensive supply chain solutions - Accenture” (Kittel and Paulsson, 2003). According to the Council of Logistics Management (2003), a 4PL differs from a 3PL in the following ways; “1) a 4PL organization is often a separate entity established as a joint venture or long-term contract between a primary client and multiple logistics service providers; 2) a 4PL organization acts as a single interface between the client and multiple logistics service providers; 3) All aspects (ideally) of the client’s supply chain are managed by the 4PL organization; and 4) It is possible for a major third-party logistics provider to form a 4PL organization within its existing structure”. The term Lead Logistics Provider is also being used by some businesses to describe their 4PLs.

The term 4PL was coined in 1996 by Bob Evans of Arthur Anderson (now Accenture). There is confusion in theory and practice about the use of the term 4PL. In research work on the definition of 3PL and 4PL, and the relevance of 4PLs, Kittel and Paulsson (2003) observe that “Fourth Party Logistics is quite a

confusing expression when it comes to buyer seller relationship. Specially keeping in mind that 4PL is said to be able to be the single point of contact of logistics providers for the clients (First or the Second party). The single point of contact will always be the third party. There is no fourth party and the only valid expression is 3PL. Any logistics service provider that offers multiple services should be categorized under the term third party logistics.”

A specific example which illustrates the functioning of 4PLs is a contract between Nortel, a telecommunications equipment vendor, and Keuhne & Nagel, a logistics service provider. In the past, Nortel’s internal logistics personnel managed third party logistics companies providing services to Nortel. The management function of the supply chain (including management of the 3PLs) has been outsourced to Keuhne & Nagel (4PL) (Armbruster, 2002). The 3PL and 4PL relation can best be described by the following figure:

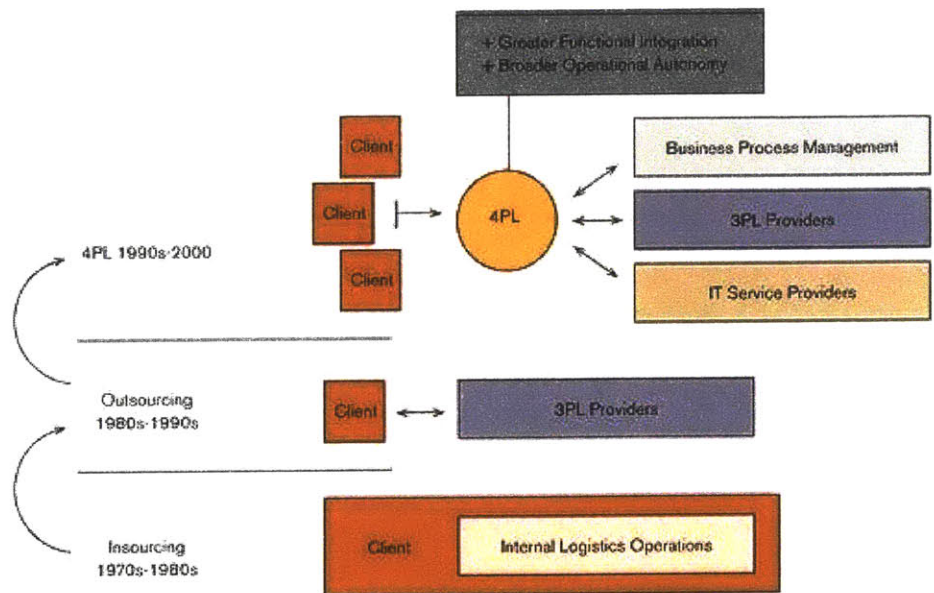


Figure 1 Development of the outsourcing of Logistics Services (Gattorna, 1998)

1.2. Motivations for Research

Individual companies no longer compete with other stand-alone companies but supply chains compete against other supply chains (Christopher, 1997). The performance of the supply chain depends on the operations of all participants. The participants could include suppliers, manufacturers, carriers and retailers. If the participants work independently, supply chain costs and inefficiencies are likely to increase. The globalization of corporations has increased complexities and challenges in the supply chain. Strong competition, coupled with the factors stated, is motivating companies to build relationships with stake holders in the supply chain. As described by Christopher (1997), in such a network of participants and relationships, each partner adds value through specialization in an activity where it can provide differential advantage.

With this background, many companies are working to integrate their supply chain both up-stream and down-stream in order to improve visibility, reduce inventory and improve fulfillment. The companies are now targeting overall cost reductions in the complete value chain rather than in parts of the value chain. That is, they are shifting from local or silo optimization to global optimization of supply chains. This requires closer coordination and operational synergies amongst all the players in the value chain. 3PLs are increasingly playing a vital part in customers' supply chains which makes the study of relationships between 3PLs and customers important.

A current topic among industry analysts is the extent to which customers of 3PLs view the services as pure commodities to be re-bid. Some 3PLs provide strategically important services to customers as reflected in a survey by Allen et al (2003). The survey of 224 companies reports that 73% of 3PL customers in North America feel that 3PLs are key to satisfying customer requirements and 78% feel that they have established collaborative relationships with 3PLs. Customers face some challenges like system integration and alignment of

operations when outsourcing work to 3PLs. Integration requires effort and imposes costs on both the partners. There have been a number of studies on the importance of relationships between 3PLs and customers. However, there appear to be no studies that have sought to identify the traits and capabilities of 3PLs that predispose them to engage or be engaged in strategic alliances with customers. This reveals an opportunity for a contribution to the available body of knowledge through research into the capabilities and organizational attributes that Third Party Logistics companies should develop to become strategic partners.

The study aimed to answer the following two questions :

1. In which logistics outsourcing contexts are strategic 3PL relationships more effective?
2. What capabilities and organizational attributes should 3PLs should in order to become strategic partners?

1.3. Methodology

The study was segmented into three parts, each required to gain a clear and complete understanding of both the research context and key elements that relate to answering the primary research questions. The approach is detailed in this section.

1.3.1. Understanding relationships

To understand the present relationships, a literature review of existing studies on 3PL relationships was undertaken. This covered different definitions of relationships, as proposed by various researchers. Recent surveys conducted by various agencies were also studied and used to further understand the 3PL

market. We also developed a questionnaire and conducted discussions with industry professionals to understand relationships existing in logistics and to gather their viewpoints on strategic relationships.

1.3.2. Segmenting the relationships

There appears to be no clear definition for logistics relationships. We therefore first categorized relationships between 3PLs and their customers into segments that could be differentiated from a practical perspective. A framework was drafted to aid in probing into the 3PL and customer relationships in order to facilitate an appropriate understanding of the primary dimensions of the relationships. This framework was established with reference to previous research and refined based on feedback from industry professionals.

The framework was incorporated into a questionnaire sent to 3PLs. The questionnaire also included an introduction and described the aim of study being conducted.

1.3.3. Identifying the contexts of and traits for strategic relationships

Based on the background established through the literature review and surveys of the 3PL industry conducted by various agencies, we analyzed the data gathered from industry professionals. We then attempted to determine a correlation between different business contexts and relationships between companies. Our analysis was aimed at finding the context of strategic relationships in the industry, which was one of our primary research goals. The analysis also focused on the second research question; to infer the capabilities that 3PLs should develop or enhance in order to become strategic partners.

1.4. Roadmap

The study consists of three parts. In chapter two, we summarize the history and current state of the Third Party Logistics industry. This includes an outline of the segments within the industry as well as an assessment of the market share of top providers. In chapter three, we explore the subject of business relationships. We summarize previous research and industry surveys with a special focus and emphasis on findings related to strategic relationships. We conclude the chapter by segmenting 3PL relationships and establishing a framework for our research.

Chapter four details our research findings on the characteristics that distinguish strategic relationships and the contexts in which they develop. Recommendations drawn from the findings are presented in the fifth chapter. We conclude the thesis by suggesting areas for further research in chapter six.

2. The U.S. Third Party Logistics Market

2.1. *Background*

The outsourcing of logistics is not a new trend. In the 1950s and 1960s, the outsourcing of transportation and warehousing was common. This outsourcing was a pure commodity purchase and logistics as an activity was rarely a part of a company's business strategy. In the 1970s, as companies began to emphasize cost reduction and improved productivity, companies started to look for multi-competency providers for outsourcing. The long term relationship became more common and service providers began to set up dedicated facilities for some of their clients.

In the early 1980s, companies began to lay emphasis on supply chain optimization but it was mostly restricted to isolated operations within their organizations. Businesses focused on coordinating the movement of products within their facilities - integrating their financial system, ordering systems and in-house inventory management. The range of services offered by Logistics Service Providers (LSPs) also increased. In addition to traditional logistics services like transportation and warehousing, LSPs began to offer services like inventory management, packaging and other value-added services. Other domains of logistics services like freight forwarding, custom clearance and reverse logistics were outsourced but again this was typically a commodity transaction.

In the 1990s the following factors impacted the logistics industry:

1. The advent of the Internet allowed companies to better share data and information which facilitated coordination between participants in the supply chain. Faster communication enabled manufacturers to more quickly access consumption data at the user end and stock levels at the supplier end faster. This

facilitated outsourcing as the logistics service providers could be better integrated into customer's supply chains.

2. Outsourcing of manufacturing and international sourcing of materials and products resulted in global networks with added complexities in supply chains. Businesses had to coordinate offshore logistics, more customs clearance and more freight forwarding.

3. With the Internet also came the era of e-business which meant a new challenge of broader geographical markets. Internet commerce expanded the scope of direct-to-customer deliveries, requiring faster and lower-volume deliveries. Examples of logistics service providers that work in this area are UPS, FedEx and elogistics.com.

Logistics Service Providers aligned their services to meet changing customer's requirements. The term "3PL" was coined to represent service providers who entered into contracts with customers to manage or service their in-house logistics functions.

2.2. Current State

Third Party Logistics has gained a higher profile in recent years as a result of the factors described earlier in this paper. As single-competency providers have expanded their offerings, the number of 3PLs has proliferated. The market remains open to small logistics players (Chee and Graeve, 2003). The low-growth market for parcel carriage, growing at a rate of 4% per annum is dominated by a few players but there are no significant share holders in high-growth (15 to 25% per annum) warehousing, transportation management, air/ocean freight forwarding, and dedicated contract carriage (Gordon, 2003). 3PLs have been expanding their global operations and services and this has resulted in a number of mergers and alliances such as that of Keuhne & Nagel-USCO, UPS – Fritz and Exel – Mark VII.

The total number of 3PLs is currently estimated to be around 1000 (Chee & Graeve, 2003). The 2003 market for 3PLs, categorized into four groups based on the nature of their operations, is summarized in Table 1 below. Each segment is then described and detailed in the following pages.

3PL Segment	2003 Gross Revenue (\$ Billions)
Domestic Transportation Management – Asset Based	9.2
Domestic Transportation Management – Non-Asset Based	21.4
International Transportation Management (Air/Ocean Freight Forwarding)	23.5
Value-Added Warehouse/Distribution	19.8
Software	3.0
Total	76.9

Table 1 Gross Revenues Across 3PL Segments (Armstrong and Associates, Inc.,2003)

In the most recent year, 2003, the segment with the largest revenue is International Transportation Management, also referred to as Air/Ocean Freight Forwarding in a different study. A large number of 3PLs are in each segment as can be discerned from the market share information which is detailed later in this chapter. A description of each segment and the top 10 3PLs in each segment are provided below.

1. Value-Added Warehousing Providers

These are 3PLs that manage all or part of a customers' logistics operations and provide physical assets and labor resources for warehousing and related pre & post-manufacturing services.

The total U.S. revenue in this category in 2003 was \$ 19.8 billion (Traffic World, 2004). The top 10 3PLs in this category in 2003 and their market share are shown in Table 2 below:

Value Added Warehousing	Revenue	% of Market
Exel PLC Americas	\$ 2.2 B	11.1
UPS	\$ 1.6 B	8.0
Tibbet & Britten Group NA	\$ 914 M	4.6
APL Logistics	\$ 869 M	4.3
TNT Logistics NA	\$ 750 M	3.7
Caterpillar Logistics Services	\$ 700 M	3.5
Americold Logistics	\$ 700 M	3.5
Logistics Insights	\$ 415 M	2.0
Menlo Worldwide Logistics	\$ 400 M	2.0
Genco Distribution System	\$ 377 M	1.9

Table 2 Top 10 Value-Added Warehousing Providers (Traffic World, 2004)

2. Non-Asset Based Surface Transportation Providers

These are 3PLs that act as service integrators and are not restricted to using any particular warehouse or transportation company in providing services to customers. They are expected by their customers to be unbiased in their decision-making on their customers' behalf due to their unlimited freedom to work with the varied service providers that best meet their customers' needs.

The total U.S. revenue in this category in 2003 was \$ 21.4 billion (Traffic World, 2004). The top 10 3PLs in this category in 2003 and their market share are shown in Table 3 below:

Non-Asset Based Surface Transportation	Revenue	% of Category
C.H. Robinson	\$3.294B	15.3
Hub Group	\$ 1.335 B	6.2
Schneider Logistics	\$ 1.194B	5.5
UPS	\$ 1.0 B	4.6
Transplace	\$ 1.0 B	4.6
Caterpillar Logistics Services	\$ 1.0 B	4.6
Pacer Global Logistics	\$ 937 M	4.3
Ryder Systems	\$ 906 M	4.2
R.R.Donnelley	\$ 784 M	3.7
Penske	\$ 729 M	3.4

Table 3 Top 10 Non-Asset Based Surface Transportation Providers(Traffic World 2004)

3. Asset-Based Transportation Providers

These are 3PLs that act as service integrators and have their own fleet and assets to provide services to clients.

The total U.S. revenue in this category in 2003 was \$ 9.2 billion (Traffic World, 2004). The top 10 3PLs in this category in 2003 and their market share are shown in Table 4 below:

Asset-Based Transportation	Revenue	% of Category
Penske Logistics	\$ 1.6B	17.3
Schneider Dedicated	\$ 1.6B	17.3
Ryder Dedicated	\$ 1.0B	10.8
JB Hunt Dedicated Contract Services	\$ 580M	6.3
NAL	\$ 579M	6.3
Ruan Transportation Management System	\$ 500M	5.4
Werner Dedicated	\$ 334M	3.6
Swift Transportation	\$ 270M	2.9
Cardinal Logistics Management	\$ 181M	1.9
NFI Industries	\$ 150M	1.6

Table 4 Top 10 Asset-Based Transportation (Traffic World 2004)

4. Air/Ocean Freight Forwarders

These are 3PLs that book or arrange space for shipments on behalf of customers and process the related documentation. They handle both ocean and air transportation and are familiar with import/export rules and regulations for foreign countries, methods of shipping and other documents related to foreign trade. They also provide services like arranging insurance, advising on import regulations, providing guidance for packing/marketing/labeling and export clearance.

The total U.S. revenue in this category in 2003 was \$ 23.5 billion (Traffic World, 2004). The top 10 3PLs in this category in 2003 and their market share are shown in Table 5:

Air/Ocean Freight Forwarders	Revenue	% of Category
Eagle Global Logistics	\$1.869 B	7.9
DHL Danzas Air & Ocean	\$1.445 B	6.1
UPS	\$ 673 M	2.9
BAX Global	\$ 597 M	2.5
Expeditors International of Washington	\$ 566 M	2.4
Wilson Logistics Inc.	\$ 536 M	2.3
UTI Worldwide	\$ 317 M	1.3
Kuehne & Nagel	\$ 300 M	1.3
Panalpina	\$ 300 M	1.3
Maersk Logistics USA Inc.	\$ 280 M	1.2

Table 5 Top 10 Air/Ocean Freight Forwarders (Traffic World 2004)

The categories represent different services that 3PLs offer. The significant variation in top 3PLs across the categories is consistent with the statement indicating that the market has many players and remains open. As shown in Table 6, only a few players have leading positions in multiple segments and none has leadership across all the segments.

CONSOLIDATED LIST OF THE TOP 10 3PLs ACROSS SEGMENTS						
<i>Sorted By Presence in Segments</i>						
3PL	# of Top 10 positions	VAW	NABST	ABT	AOFF	Total *
UPS	***	\$1.600	\$1.000		\$0.673	\$3.273
Caterpillar Logistics Services	**	\$0.700	\$1.000			\$1.700
Ryder	**		\$0.906	\$1.000		\$1.906
Schneider	**		\$1.190	\$1.600		\$2.790
Americold Logistics	*	\$0.700				\$0.700
APL Logistics	*	\$0.869				\$0.869
BAX Global	*				\$0.597	\$0.597
C.H. Robinson	*		\$3.294			\$3.294
Cardinal Logistics Management	*			\$0.181		\$0.181
DHL Danzas Air & Ocean	*				\$1.445	\$1.445
Eagle Global Logistics	*				\$1.869	\$1.869
Exel PLC Americas	*	\$2.200				\$2.200
Expeditors Intl of Washington	*				\$0.566	\$0.566
Genco Distribution System	*	\$0.377				\$0.377
Hub Group	*		\$1.335			\$1.335
JB Hunt Dedicated Contract Services	*			\$0.580		\$0.580
Kuehne & Nagel	*				\$0.300	\$0.300
Logistics Insights	*	\$0.415				\$0.415
Maersk Logistics USA Inc.	*				\$0.280	\$0.280
Menlo Worldwide Logistics	*	\$0.400				\$0.400
NAL	*			\$0.579		\$0.579
NFI Industries	*			\$0.150		\$0.150
Pacer Global Logistics	*		\$0.937			\$0.937
Panalpina	*				\$0.300	\$0.300
Penske	*		\$0.729			\$0.729
Penske Logistics	*			\$1.600		\$1.600
R.R.Donnelley	*		\$0.784			\$0.784
Ruan Transportation Management	*			\$0.500		\$0.500
Ryder	*		\$0.906			\$0.906
Swift Transportation	*			\$0.270		\$0.270
Tibbet & Britten Group NA	*	\$0.914				\$0.914
TNT Logistics NA	*	\$0.750				\$0.750
Transplace	*		\$1.000			\$1.000
UTI Worldwide	*				\$0.317	\$0.317
Werner Dedicated	*			\$0.334		\$0.334
Wilson Logistics Inc.	*				\$0.536	\$0.536

Table 6 Consolidated List of Top 10 3PLs Across Segments (adapted from Traffic World, 2004)

* Amounts displayed in the table are in billions and totals exclude revenue from the segment if the revenue does not place the 3PL in the top 10.

VAW = Value-Added Warehousing

NABST = Non-Asset Based Surface Transportation

ABT = Asset Based Transportation

AOFF = Air/Ocean Freight Forwarding

As can be discerned in Table 6 above, only one 3PL, UPS, has a leading position across three segments and only three others have leading positions across two out of the total of four segments. All other 3PLs have a dominant position in only one segment.

The Top 10 3PLs generally account for less than 25% of the total market in each segment except in Asset-Based Transportation where there is market domination by the top 5 3PLs with a market share of around 60%. This is shown in the figure below.

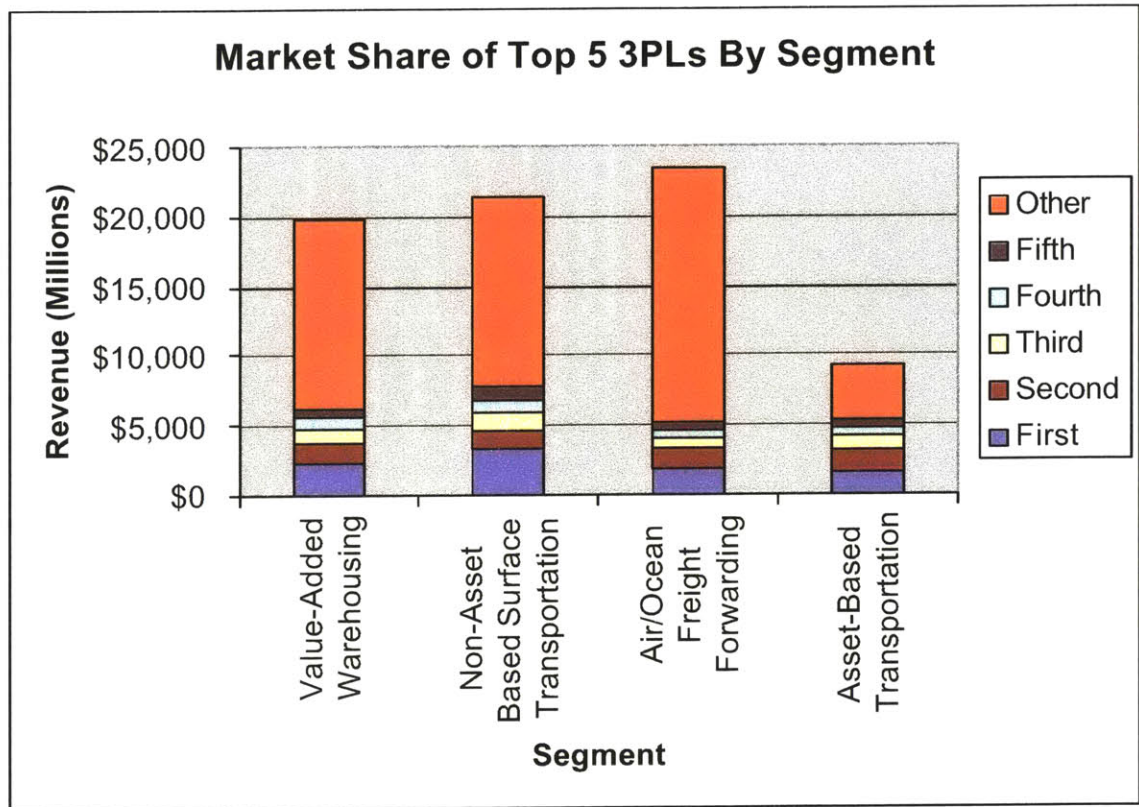


Figure 2 Market Share of Top 5 3PLs By Segment

As participants in the supply chain have pursued goals of tighter integration, 3PLs who have been the logistics intermediaries have faced pressure to upgrade their systems to facilitate the sealing of visibility gaps in the supply chain. The development of the Internet and Internet technology standards, and the more recent initiatives related to Radio-Frequency Identification tagging, have also contributed to internal and inter-participant technology changes. The above factors have contributed to a high-growth logistics market for 3PLs and increased efficiency in the supply chain.

A survey of CEOs of 20 3PL companies suggests that price pressure continues to be a factor in the 3PL market partly resulting from a continued perception by 3PL customers that significant profit margins are enjoyed by Logistics Service Providers (Lieb and Bentz, 2003). The competitive pressure encountered by

customers has also served to stimulate this phenomenon. The survey also indicates that this has caused difficulties for 3PLs; the 3PLs have not been able to consistently meet their revenue targets. The pressure has also led 3PLs to manage their client portfolios more closely, with a new trend towards selectivity; customers that are not deemed to be profitable may be offloaded. The survey indicates that an increased percentage of customers are demanding broader services. The CEOs' responses in the survey also suggest that large scale 3PL mergers are expected in the industry. In the survey, CEOs were asked to identify and rank the three most important industry dynamics. The dynamics ranked 1st, 2nd and 3rd were given 3, 2 and 1 point respectively. Some of the notable forces present in the industry as per the above survey over the last 3 years, reflected by the total points assigned, are summarized below.

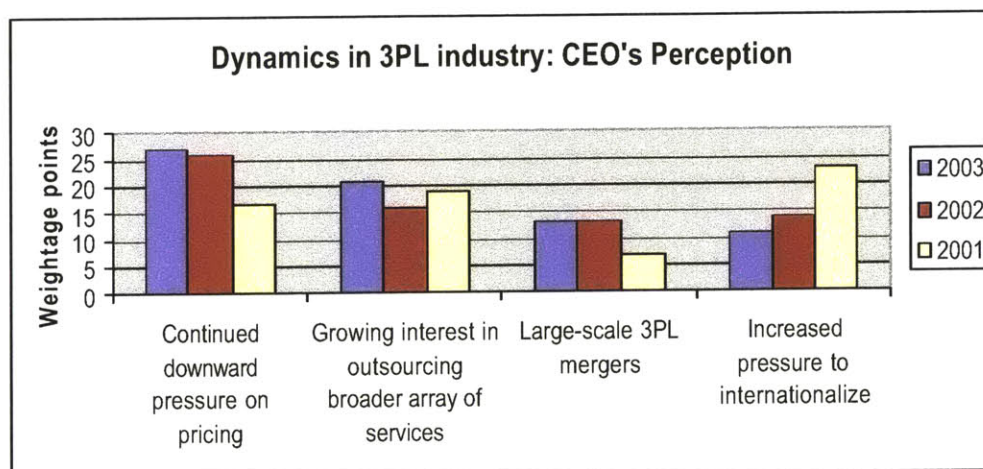


Figure 3: 3PL industry dynamics (Lieb and Bentz, 2003)

As might be expected, 3PLs have had to adjust their operations and revisit their strategies in response to the forces summarized above. The range of adjustments has included a new focus on target markets, a withdrawal from unprofitable operations and customers, and efforts to improve the quality of service provided to customers. The 3PL CEO's response in Lieb and Bentz' (2003) survey suggests that they re-aligned their strategy to:

1. Focus on industries where they had previous experience in delivering solutions and to focus on core areas of their strengths.
2. Drop their unprofitable contracts and customers.
3. Focus their marketing & sales on target markets.
4. Cut expenses in media and trade shows and upgrade customer service.

A related trend is the globalization of logistics firms, a result of merger and acquisition activity between 3PLs based in diverse geographic locations. In the United States, the last 15 years have seen the entry of Europe-based 3PLs such as Exel. This has happened alongside efforts by U.S.-based 3PLs to expand into new markets. This expansion is likely to result in enhanced global services for 3PL users and is especially useful for Multi-National Corporations and other users with cross-border operations.

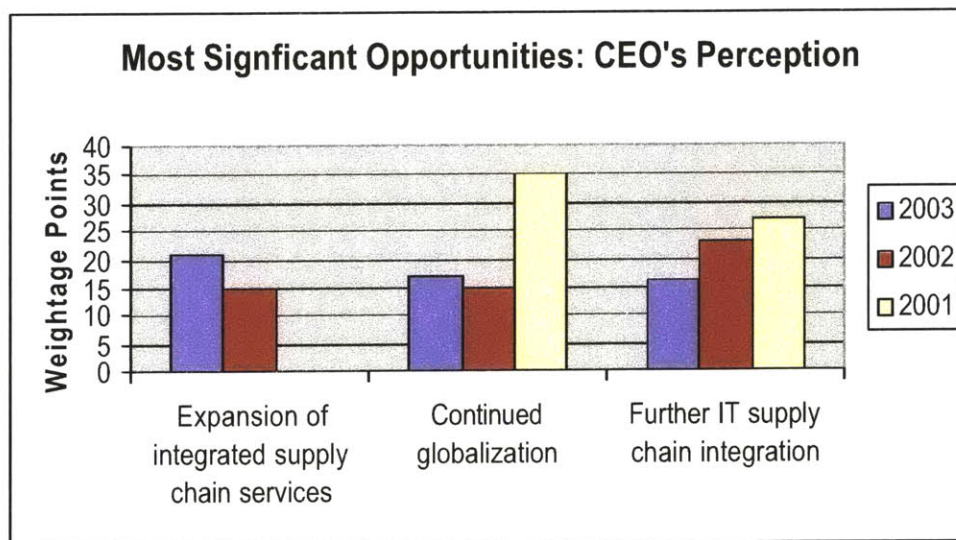


Figure 4: 3PL Opportunities (Lieb and Bentz, 2003)

As evidenced by the results summarized above, CEOs perceive opportunities for continued growth in the 3PL market. The survey by Lieb and Bentz (2003) shows that CEOs of 3PLs expect to continue winning new business, with an average of 52% of revenue expected to come from new customers. Per the survey, the CEOs expect the industry three-year growth rate to be 10%.

CEO respondents also reported a phenomenon that is of potential importance to our research. Thirteen out of nineteen respondents indicated that their firms (3PLs) have made decisions to specialize on specific industry verticals in which they believe that they hold unique competitive advantages.

The status of the various services that 3PLs offer to customers was addressed by the Allen et al (2003) survey. The findings may be indicative of the value-added services that represent the greatest opportunities for 3PLs specifically in regard to the willingness of customers to outsource the service. The survey of 221 industries in the US and 53 industries in Western Europe indicated logistics activities which were most outsourced were warehousing (73%), outbound transportation (71%), custom brokerage (66%), inbound transportation (62%) and custom clearance (62%) followed by freight forwarding, freight bill auditing, cross docking, consulting, reverse logistics, carrier selection and order fulfillment (Allen et al, 2003).

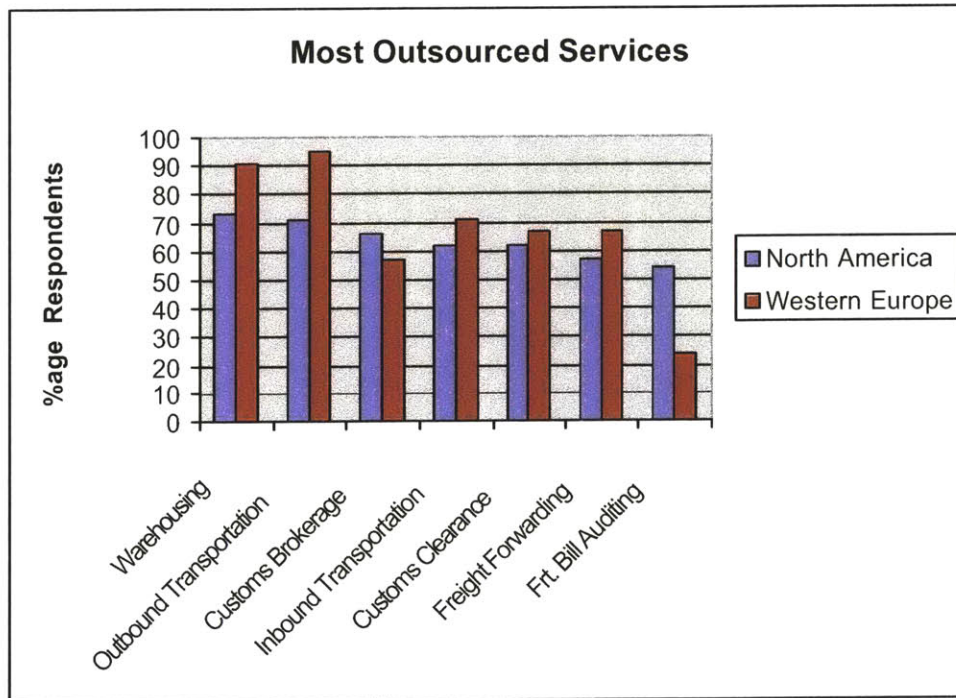


Figure 5: 3PL services (Allen et al, 2003)

The survey also suggests that more of the customers expect 3PLs to be service provider, service manager and problem solver. As shown in the figure, the Resource Provider and Resource Manager traits are the most important traits sought by 3PL customers. This may be an important consideration when devising strategies for a 3PL. These findings are also relevant to our research into the traits that 3PL customers seek in strategic relationships.

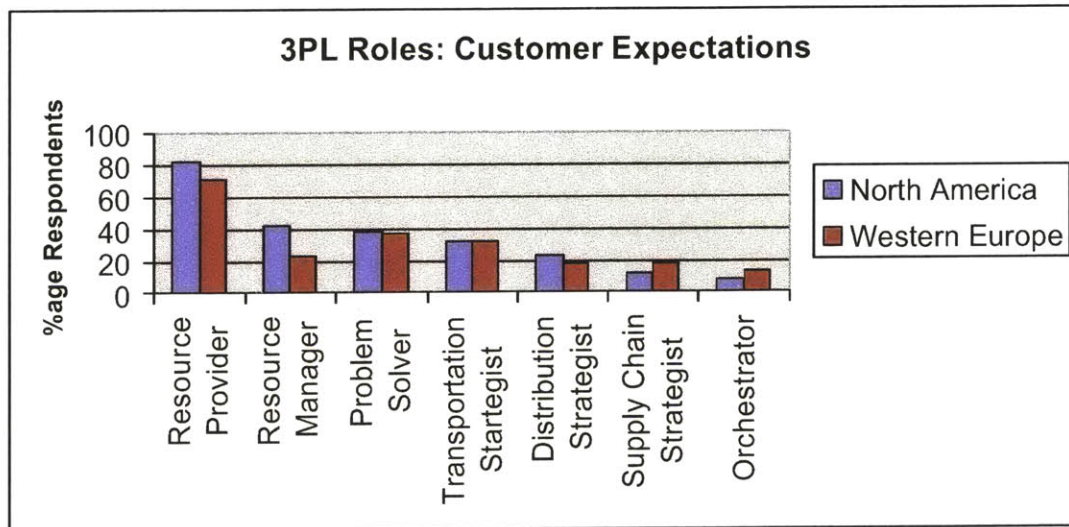


Figure 6 –3PL Roles (Allen et al, 2003)

Customers also want more accountability in the outsourced operations. This has given birth to 4PLs or Lead Logistics Providers (LLP) who seek to offer expertise in supply chain design and operations and to provide end to end solutions for the customers. This is likely to have two implications for 3PLs. First, the large Logistics Service Providers, who have the capability to become a LLP, will enter into this field and secondly, small companies are likely to form alliances with companies having complimentary capabilities.

The 3PL market is growing fast and is highly competitive. The important points that we would like to highlight are:

1. There is an ongoing integration of supply chain services as a result of globalization of business, outsourcing and the need to better manage the extended supply chain.
2. 3PLs are specializing in specific industry verticals in which they believe that they hold unique competitive advantages.
3. Customers expect 3PLs not only to provide resources but also to act as managers and problem solvers on their behalf.

3. Relationships

Relationships between participants in a supply chain, like most business relationships, are complex. This reflects the nature of the interactions which often have conflicting goals and motivations, as well as differences in the organizational setup and processes of the parties. A broad range of research has been undertaken to both define the relationships as well as to determine or propose effective management approaches to administer the relationships. A study of “strategic partnerships” in the supply chain would be incomplete without an understanding of the meaning of the term as used in both scholarly and business literature.

The alternate meanings of the noun partner, as defined in the Oxford English Dictionary include: “one who is associated with another or others in the enjoyment or possession of something”, “one who is associated in any function, act or course of action”, “one who takes part with another or others in doing something” and “one who is associated with another or others in the carrying on of some business”. Synonyms for the term “partner”, per the WordSmyth Dictionary-Thesaurus include such words as “associate” and “collaborator”. In light of these meanings, this thesis views the terms partner and collaborator as being largely interchangeable when encountered in literature. To provide additional context for this study, some relationship frameworks that have been used in previous research are discussed and summarized below.

3.1. *A Review of Past Research on Relationships*

A study examining the essence of collaboration in the supply chain proposes that “true collaboration is more than just outsourcing a function or service to an outside provider” (Bowersox et al, 2003). The components of a collaborative relationship, based on their framework, are:

1. Sharing information

This is the revealing or communication of information by one party to the other. The two parties in the relationship may be the primary recipients of information from third parties, or generators of information. The other party will depend on them to provide access to the information. The manner and degree to which they communicate this information is a significant component in the relationship.

2. Jointly developing strategic plans.

Plans developed by one party depend on the cooperation of the other party in order to be effective. The parties therefore engage in joint planning in order to integrate their internal processes and objectives.

3. Synchronizing operations.

During execution, both parties align their operations in order to implement their responsibilities and maximize effectiveness.

The Bowersox et al (2003) study however notes that although the rewards of collaboration are appealing, “true success stories are scarce”. Moreover they posit that some business relationships that are referred to as collaboration are actually examples of “conventional contracting and outsourcing”. One of the differentiators is deemed to be the governance structure that is used to manage the relationship.

Per the study, reasons for failures in cross-enterprise collaboration are:

1. The failure to establish the business case and a sustainable value proposition supporting cross-enterprise collaboration.
2. The failure to establish policies and guidelines to guide development, implementation and sustained operations of cross-enterprise collaborative arrangements.
3. The failure to develop and implement long-term reward and risk-sharing agreements. These agreements must be capable of withstanding pressure to achieve short-term operating results that might negatively impact the collaborating partners.
4. The failure to modify internal command and control organizational structures and performance measures to facilitate cross-enterprise collaboration.

It is especially noteworthy that “performance”, “reward” and “risk-sharing” are viewed as elements affecting the success or failure of relationships. One of the areas of contention between 3PLs and their customers has been determination of performance as well as the structure of contracts. When “Pay for Performance” plans are effected, it is often difficult to measure and allocate performance improvements between the parties and to determine the appropriate pay. “Pay for Performance” payment or compensation plans tie compensation to the achievement of specific targets set out in advance by the parties, such as a specified minimum cost reduction or maintenance of a specified service level.

Among the relationships that Bowersox et al (2003) identify, but view as falling short of collaboration, are “Buy Sell” relationships (including those that continue over long periods) and “contracting and outsourcing” in which dependency is present and “command-and-control principles” govern. The central differentiator advanced is that “contracting or outsourcing relationships can shift to cross-enterprise collaboration whenever the participants transition the governance structure from command and control to rules-based collaboration.” On the subject of “strategic collaboration”, Bowersox et al

(2003) indicate that this type of relationship is exceedingly rare and constitute the creation of “extended enterprises” that requires integrated planning and a sharing of risk and rewards associated with value-adding activities that are outside the core competency of either participant in the relationship.

One example cited in the study is that of the relationship between the automotive firm General Motors (GM) and railway company CNF through the “Vector SCM” joint venture. Vector SCM manages GM’s supply chain as a 4PL. At this point, it becomes clear that the definition advanced by Bowersox et al is distinctly different from the common meaning intended when the words “strategic partnership” are used by 3PLs (Bowersox et al, 2003).

Another study investigating the nature of relationships created a “spectrum of coordination mechanisms” (Rice and Ronchi, 2002). This ranged from information sharing/integration to process integration to “tight” organizational integration. The lattermost is determined to include linkages in communication channels, performance and incentives, and shared risks and gains. The study noted that the relating organizations, perhaps more so on the lower end of the relationship spectrum, have “separate objectives, goals, measures, and financial fate”.

Recognizing the lack of clarity in industry when defining the nature of supply chain relationships, Rice and Ronchi (2002) use economic and coordination theory to propose a framework for segmenting and classifying the relationships. These relationships are variously described as collaborations, partnerships or alliances. They observe that there are two fundamental types of relationships in economics and a third based on industrial economics (Rice and Ronchi, 2002). These are:

1. Markets, where “economic actors coordinate with each other in order to sustain the exchange of goods or services”.

2. Hierarchies, where an actor establishes and maintains authority through ownership.
3. Hybrids-This type of relationship is described as having some integration activities “often including long-term contracts”.

A representation of this framework is shown in Figure 7 below.

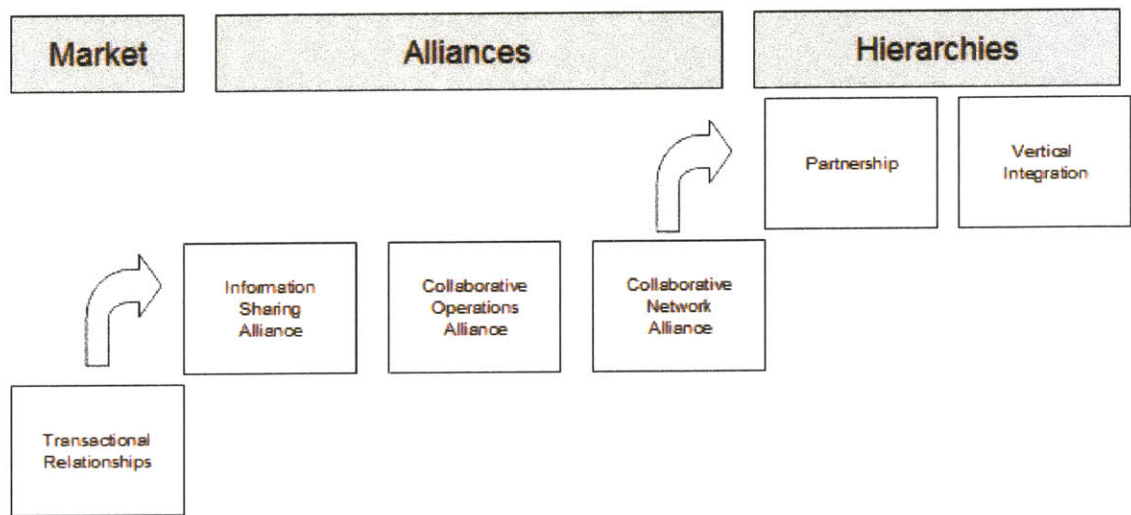


Figure 7 Spectrum of Coordination Mechanisms (Adapted from Rice and Ronchi, 2002)

Rice and Ronchi propose a framework which synthesizes the definitions identified in prior research in this area (Rice and Ronchi, 2002). An adaptation of the framework is displayed in Figure 8 below:

Characteristics of Selected Coordination Mechanisms			
	Transactional Relationships	Collaborative Operations	Partnerships
Goals	Different	Some similar goals to improve logistics flows & new products.	Some or most goals are common.
Timeframe	Transaction	Medium-To-Long term, dependent on shared investment in mutual assets and processes.	Long-Term, limited by structure of ownership. Shareholders can sell stake.
Structure	Two entities.	Two entities.	Multiple owners with equity.
Description of Relation	Competitive Arms-length Relationship	Actively collaborative. There are mutual efforts to improve processes.	High level of risk-sharing and collaborative effort.
Activities by coordination method	Buy and Sell Products & Services	Buy and sell products/services. Active coordination and planning systems and processes.	Run the business with other Part owners.
Instruments for Mediating Risk	Price	Price, Long-Term contracts, Contingency contracts, "hostages".	Partial control via partial ownership.

Adapted from Rice and Ronchi (2002)

Figure 8 Characteristics of Selected Coordination Mechanisms (Adapted from Rice and Ronchi, 2002)

It is important to note that this segmentation, as recognized by Rice and Ronchi (2002), defines terms that typically have a variety of meanings in industry literature and practice. For example, they view “partnerships” as relationships in which there exists an element of shared ownership; in practice the term is often used to describe a broader range of relationships.

Our study recognizes the need to accurately define the nature of relationships and our study concurs with the Rice and Ronchi (2002) definition of a partnership. However, in our study the broader definition of partnership is used.

Bagchi and Virm (1996) study relationships in logistics outsourcing and define a logistics alliance as a long term partnership arrangement between a shipper and a logistics vendor for providing a wide array of logistics services including transportation, warehousing, inventory control, distribution and Value-Added Services. They further state that in a logistics alliance the user perspective (shipper) and the provider perspective (3PL) should match and in such alliances the business is defined by both formal and informal agreements. The reasons cited for forming alliances are:

1. Complementary capabilities

Each party to the alliance has a capability that the other needs but does not possess. By combining their capabilities each is able to advance its objectives.

2. Risk sharing in business

Both parties invest resources and efforts in business ventures and both stand to loose if the venture fails. For example, a provider establishing a new warehouse to service a customer need in return for the customer providing a commitment to use the facility.

3. Both the organizations being able to focus on their core areas to gain a competitive advantage

The parties enlist the support of a provider with more expertise in a needed function. Each party out-sources non-core areas and can therefore focus their resources on consolidating their advantage in core areas of their expertise.

Bagchi and Virm (1996) conclude that frequently, companies form logistics alliances when they are compelled to find new ways to do business when by crises in the form of dropping profits, loss of market share and/or other similar challenges.

Lambert (1996) notes that partnerships are an essential part of business thinking. He points out that a partnership is not the same as a joint venture or vertical integration, but a well managed partnership behaves as one. The partners in most cases provide a strategically important service/opportunity to the other partner. One of the examples of this kind of partnership, cited by Lambert (1996), is of the relationship between Xerox and Ryder for delivery, installation and removal of copiers. In this relationship, Ryder truck drivers deliver, set up, test and demonstrate copiers for Xerox. The drivers also perform customer training and remove old equipment.

The review of existing literature leads us to expect a diverse range of relationships between 3PLs and their customers. The range of relationships described in the literature reflects varying strategies adopted by parties to achieve their objectives and to manage their risks. The common characteristics that we can derive about collaborative relationships as described in various studies are:

1. Long-term contracts.
2. High level of information sharing.
3. Risk sharing.

We have outlined various studies on relationships. In the next section, we explore some of the benefits that 3PLs and their customers expect to derive from strategic relationships.

3.2. *Benefits of Strategic Relationships*

A range of reasons are advanced for the outsourcing of business functions. When outsourcing logistics and establishing strategic relationships, 3PL customers expect the following benefits:

1. **Cost:** There are direct costs associated with ordering each year. This includes time and money spent in tendering for offers from 3PLs, receiving offers, negotiating and then releasing orders. With a long-term relationship, these costs are minimized or eliminated.
2. **Operations:** Integrating a new 3PL into business operations incurs high cost in training. For the 3PL, the learning curve in a specific customer's operations may start from zero. The customer has to explain all activities to the 3PL and it takes time to grasp all aspects of the business process. One of the benefits that customers seek from 3PLs is the adoption of best practices. These benefits are often less likely to be realized if the length of engagements or contracts are not sufficient to allow the effective transfer and use of knowledge. For example, in the absence of a long term relationship, commitment in implementation may be lacking from one or both sides; short term contractual goals carry more weight. Moreover, as mentioned earlier, in effecting any changes in the system to improve productivity, there is always a time and cost factor. 3PLs may not be inclined to invest efforts to improve as by the time results begin to show, it may be time for contract renewal.
3. **Access to expertise:** Customers can gain a competitive advantage crucial to business by forming a relationship with 3PLs. Customer can take advantage of a 3PLs' expertise in logistics-related functions or knowledge in a specific market.

Benefits for 3PLs in Strategic Relationships:

1. Cost: In a long-term business relationship, the 3PL will have a more stable customer base. “The cost of acquiring a new customer is 5 times the cost of retaining an old customer” (Christopher, 1997). It is more profitable to retain and continue with old customers than to develop a new one. As the customer develops confidence a higher share of business can also be expected with minimal extra costs involved.

2. Planning: If the customer base is stable and defined, 3PLs can plan and make better investments in acquiring assets. The location of cross docks, size of fleet, and TL/LTL decisions can be decided much more efficiently if the long-term business outlook is predictable. 3PLs can streamline and consolidate their business in a better way by taking advantage of economies of scale and scope.

A case described by Christopher (1997) illustrates the significance of the roles 3PLs are now playing. In the case, he reports that Fujitsu Personal Systems produces hand held computers in Japan and utilizes an alliance with DHL to perform the distribution. DHL’s Express Logistics Center handles all European distribution including such functions as quality inspection, kitting, configuration and packaging. He also reports that Fujitsu has won new customers based on the after sales service provided by its 3PL partner, DHL.

This kind of arrangement works out to be mutually beneficial for both the parties.

Despite these benefits, there are shippers who do not outsource at all. Per the survey by Allen et al (2003), 22% of businesses do not use 3PLs. There are also customers who outsource but maintain an arms length relationship with 3PLs.

This finding suggests an opportunity for further study to understand the contexts in which 3PLs and customers would opt to pursue collaborative logistics outsourcing relationships.

We have explored the relationship and benefits in strategic relationships. In the next section, we synthesize a framework within which we proceed with the study.

3.3. *Framework Used in the Study*

Recognizing the varying views and attributes of specific relationships in past studies and in industry literature, we synthesized the findings and established a framework to be used in the course of the research. This was deemed to be especially necessary to ensure that all participants in the interviews shared a common baseline at the start of the discussions. However, it should be noted that comment and feedback were requested to ensure that participants' varying views and reasons for the views were sought and understood. This was also viewed to be important in ensuring clarity in the discussions.

Two primary dimensions for segmenting logistics relationships are identified as being loyalty and depth

Loyalty can be characterized as either long or short. Although there was no absolute value that denoted the two parts of this aspect of relationships, 1 year was used as the boundary between a short-term relationship and a long-term relationship. It should also be noted that although some short term relationships are renewed and have the appearance of long-term relationships, the intent of the parties was viewed to determine the proper classification. For example, outsourced services that were to be re-bid annually were viewed to be short term. The 1-year boundary was not found to be incorrect by any of the

participants, though it was noted that typical 3PL contracts can range from 1 to 3 years, or even more.

The second dimension, depth, captured the intensity of relationships, as distinguished by such activities as collaboration, sharing of rewards and shared goals. The two parts of this dimension are Buy/Sell Relationships and Partnerships.

A visual representation of the two-dimensional framework used is shown below.

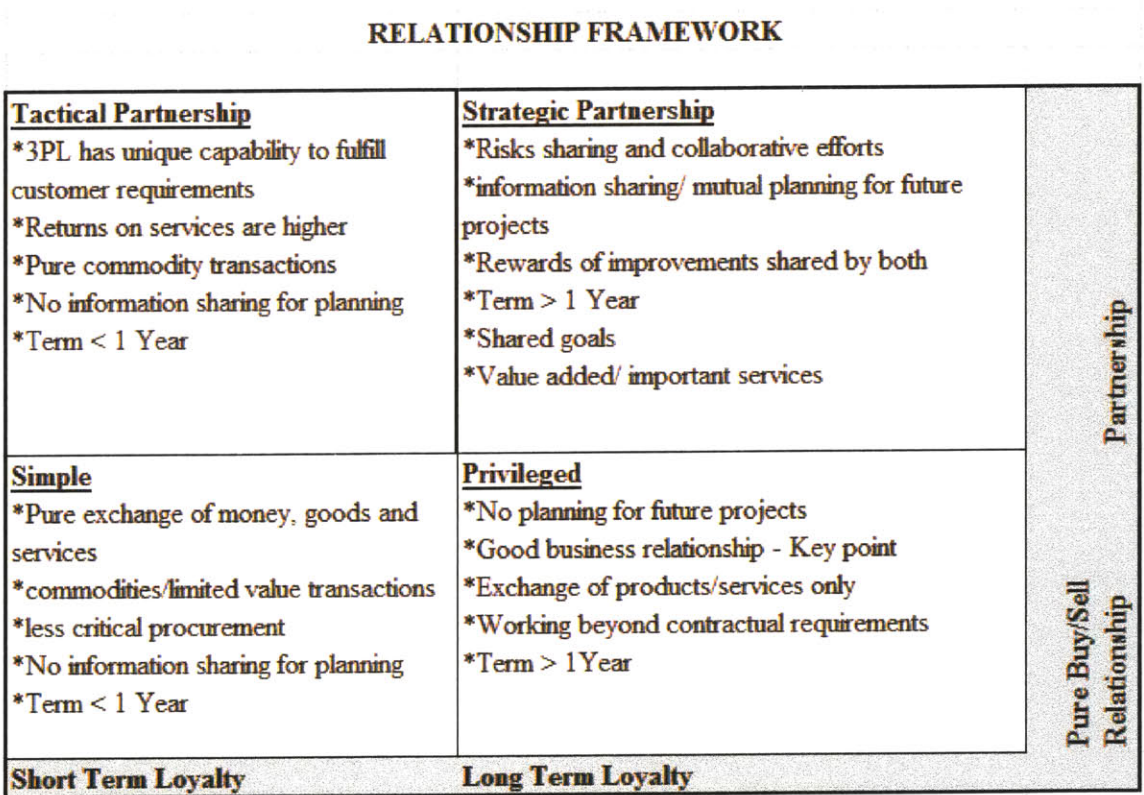


Figure 9 Relationship Framework

Based on this framework, the four types of relationships can be described as follows:

Simple: The companies have short term contracts purely on a transaction level with no information sharing and no intent to pursue the relationship beyond day

to day activities. Typical activities that fall within this category are single loads that are published for bidding on an auction or outsourcing of customs clearance for individual consignments.

Privileged: The client and the service provider enjoy a good working relationship and contracts are of a longer duration. The service provider works beyond the contractual terms to maintain the relationship. However there is no vision sharing and no information sharing regarding future plans.

Strategic Partnership: The companies share a long term vision, share planning for future projects and share the risks and rewards of improvements. This is mostly accompanied by Value-Added Services or services of strategic importance to the customer.

Tactical: This was considered to be impractical prior to the interviewing but was included for completeness and to elicit feedback from the respondents.

In this section we reviewed a selection of viewpoints that have been used by researchers to assess business relationships. We also reviewed the objectives and benefits that motivate both shippers and 3PLs to participate in relationships. Having established a context for our research, we established a framework to gather data that will allowed us to determine the nature of relationships that 3PLs have with their customers. The framework also allowed us to determine the factors that are most prominent in determining the nature of relationships. Our aim was to formulate a framework which is simple, clear and practical to enable 3PLs to segment their customers without any ambiguity. These relationships primarily fell into 3 categories: simple relationships, privileged relationships and strategic relationships.

In the next chapter, we detail the findings that we made in our research, with a focus on strategic relationships.

4. Key Findings

Executives from nine major Third Party Logistics providers and a major pharmaceutical customer were interviewed under the study. As outlined under the research methodology, each of the executives was provided with a questionnaire prior to the interviews. Each interview lasted approximately half an hour. The sample size was relatively small, influenced by the degree to which confidentiality concerns and other constraints limited the level of participation in the study by logistics professionals. Despite the small sample size, several recurring findings and themes were gathered from the discussions.

The nature and range of responses received from participants in the study confirmed the complexity of and, to an extent, the confusion surrounding the relationships between 3PLs and Customers.

The study reveals that most respondents have a general understanding of the presence of a range of relationships in their customer portfolios. However, none of the respondents communicated pre-existing or alternative segmentation models of relationships. Most of the companies indicated that they do not decide their strategy for a client company based on a relationship model. However, once asked to indicate the proportion of customers falling in different relationship segments, they indicated that they could differentiate the relationships with their customers clearly in each segment. The primary factors and characteristics found in the study that distinguish strategic relationships are summarized in Table 7.

Characteristic/Factor	Importance
Long Term Contract	+++
Compensation Plan / Gain sharing	+++
Value-Added Services	+++
Complexity in Supply Chain	+++
Profit	++
Joint Planning	++
Information Sharing	+
Consultancy	+
Continuous Improvement	+
Joint Venture	+

Table 7 Important Characteristics Of and Factor Contributing to Strategic Relationships

Some significant observations were made in the study. In Table 7, it should be noted that there is no obvious indication of the ‘cause or effect’ nature of the characteristic or factor. For example, it would be reasonable to expect that some confidence building may be necessary before a customer would engage a 3PL in the long-term contract. On the other hand, it could be argued that participants in long term contracts may have stronger incentives to ensure amicable relationships. Although we find the former explanation to be more persuasive, we believe that there is room for further exploration.

A second observation that we believe to be significant is the observation that the participants placed emphasis on compensation and gain sharing while seemingly placing less emphasis on information sharing. By their very nature, the complexity of supply chains, a factor that received prominence in the discussions, necessitate more joint planning and joint planning can be reasonably expected to involve the sharing of pertinent information. We therefore conclude that an alternate approach that bundled individual traits into

predefined buckets would be likely to result in changes in the prominence of different traits. This is also an aspect that would be the basis for further study.

The spread of relationships across the segments are summarized in Table 8.

Segment	Range
Simple	0-90%
Privileged	0-60%
Tactical	0%
Strategic	2-80%

Table 8 Distribution of Customers Across Relationship Segments

While we anticipated a range of results from different participants in the study, the interviews yielded some surprising results. The most striking was the range in the simple and strategic segments. It was our expectation that strategic relationships would be relatively few in all the 3PL portfolios due to the level of attention that more important customers typically receive. One of the participants, a non-asset based 3PL reported having 80% of its customers in the strategic category. While the distribution was not a specific focus of the study, we however observed that asset-based 3PLs projected a higher degree of comfort with arms-length simple arrangements. As expected, tactical relationships within the definition presented in the framework were not reported.

The key findings on strategic relationships were:

1. Importance of Value-Added Services

One of the motivations for this research was the reported trend towards commoditization of 3PL services and efforts by 3PLs to expand the range of Value-Added Services offered (Lieb et al, 2003). Our research found evidence

to support the view that Value-Added Services provided by 3PLs to customers aid in moving customers and 3PLs along the path to strategic relationships. One of the participants in our study, a large pharmaceutical firm, identified several Value-Added Services sourced from a 3PL as the reason for their viewing of their 3PL as a strategic partner. The pharmaceutical firm received expertise and consultancy services from their 3PL, which managed aspects of their logistics such as reverse-logistics. The customer had a positive view of the relationship and gave no indication of a desire or motivation to discontinue the relationship.

Another participant, a 3PL, responding to questions regarding the characteristics that distinguished their strategic relationships from other relationships, reported Value-Added Services as a factor. The 3PL provided warehousing services to clients, but noted that strategic customers received customized facilities for handling and processing of materials. The implications of the provision of this service were made explicit by another participant in the study. The participant observed that some of the services provided incurred high set-up costs. Switching to other providers would require the strategic customers to decommission the existing custom facilities and recreation of the same at the new service providers' site. In one case, the customized component of the Value-Added Services was software. This meant that custom features available in the current 3PLs software platform would have to be built into new providers' systems or the features would have to be foregone.

Although the full implications of this dependence are worthwhile areas for further research, it is evident that Value-Added Services are a significant factor in determining the presence of a strategic relationship.

2. Compensation Plan Influences the Nature of Relationships

One of the characteristics of relationships described in the Rice and Ronchi (2002) framework is risk, and the allocation of risk. Relationships on the more

closely integrated end of the “coordination spectrum” display a higher level of risk sharing. This observation was supported by findings made in the course of the interviews. One of the participants reporting an unusually high number of strategic relationships, 80%, indicated that gain-sharing and continuous improvement were characteristics of their relationships. Another participant reporting only 2% of its customer portfolio as strategic relationships also reported that the structure of compensation plans was a distinguishing feature of its strategic customers. Strategic customers had a gain-sharing mechanism in their compensation plan.

An important finding in this area was the potential for difficulties in relationships when clear performance measures and targets are absent; disagreements on the achievements of targets were reported. An added complexity is the manner in which improvements are to be credited to either the customer or the 3PL. In some situations, outsourcing of logistics required changes in customer’s internal processes and part of the resulting improvements were viewed by customers as arising from their own internal efforts rather than from the efforts of their 3PL.

Despite concerns about performance measurement, the research showed that risk and reward sharing is often an identifier or characteristic of strategic relationships. The parties are more willing to seek mutually acceptable ways of managing risks in strategic relationships.

An example of risk and reward sharing derived from our study is that of one of the participating 3PLs’ arrangement with some of its strategic customers. In most cases, the 3PL charges its customers a fixed fee for each transaction or service provided. In other cases, it charges a relatively smaller fixed fee and shares the savings gained by the customer when joint supply chain initiatives yield results. Through this arrangement, risk is shared by ensuring that the customer does not shoulder entirely the risk represented by outsourcing its

logistics operations. The 3PL assumes a share of the risk by offering to link its compensation to realization of actual savings in the customers operations.

3. Complexity of Customer Supply Chains

A recurring concept revealed in the course of the research was that complexity in the supply chain is a factor influencing the nature of 3PL/customer relationships. Some of the participants explicitly stated complexity as the reason for the development of strategic relationships. This complexity was both at specific points in the supply chain, such as in warehouse processing, as well as in overall coordination of the supply chain.

A complex supply chain has characteristics such as critical delivery requirements, a large product/component range, geographically dispersed suppliers/participants, specialized sorting and specialized reverse-logistics requirements. Logistics outsourcing requires the integration of operations of 3PLs and their customers. When the operations are complicated, both parties may have to customize or align their processes and systems in order to be effective in performing a single transaction or a sequence of coordinated transactions. An example of a complex requirement leading to a strategic relationship between a 3PL and a customer in our study is illustrated below.

A participating pharmaceutical firm's complex requirement was due to the span of its supply chain and the nature of the product being handled. Disposal of returned products had to be carefully controlled due to the hazardous nature of the product and legal requirements. The 3PL was responsible for collecting returned product, ensuring it was handled and disposed of correctly, and managing paperwork required to ensure compliance to legal requirements. Because of this complexity, the 3PL had become an integrated part of the pharmaceutical company's operations. Mutual planning, a recurring

characteristic of strategic relationships, was part of the ways in which complexity was managed between the 3PL and the customer.

4. The need for 3PL Expertise and Continuous Improvement in Operations

One of the reasons firms give for outsourcing is to gain expertise in non-core areas of their operations. Our research revealed that 3PL expertise was also a factor that contributed to the establishment of strategic relationships. While consulting received less emphasis than traits such as gain-sharing, we observed that some of the distinct characteristics generated by our study are not mutually independent in practice. An example is complexity and the need for deeper expertise, two aspects which were presented as distinct factors in the study but which in practice are likely to be directly related. An additional finding was that this expertise needed to be demonstrated through continuous improvements in the operation of the customers' supply chain.

A customer in the study reported that the expertise and consultancy service provided by their 3PL was one of the main reasons for their designation of the relationship as strategic. The customer perceived the 3PL as contributing to the continuous improvement of their logistics processes. Since the customer was satisfied with the service being provided and the 3PLs' commitment to continuous improvements, the customer indicated that they had no plans to seek a different 3PL.

3PLs also had a similar perception of the value of specialized knowledge in a specific industry vertical. One of the 3PL participants was shifting to a more narrow focus of service to specific industries in order to gain deeper knowledge of the needs of customers. The 3PL reporting the highest proportion of strategic customers reported that joint planning and continuous improvement of customer logistics processes were primary characteristics of its strategic relationships.

To summarize the findings, it should be noted that the individual findings were not inconsistent. For example, the risk and reward sharing described earlier provide a motivation for both parties to engage in joint planning and seek continuous improvements in supply chain management. Supply Chain complexity provides the motivation for customers to seek expertise and provides an opportunity for 3PLs to establish a value-proposition for customers.

In this section we discussed the key findings from our research and described the ways in which 3PLs and customers view characteristics of strategic relationships. Based on these findings, in the next section we discuss ways in which 3PLs can improve their ability to develop strategic relationships.

5. Recommendations

In this section, we draw lessons from our research and analysis and suggest areas of focus and courses of action that third party logistics providers may take in order to better position themselves for strategic relationships. We discuss the contexts that 3PLs should seek or, if possible, cultivate in order to facilitate the development of strategic relationships. We also discuss some of the capabilities and attributes 3PLs should develop in order to become more attractive as strategic partners.

5.1. *Contexts for effective strategic relationships*

A primary goal of this research was to assess the contexts that are conducive for the development of strategic relationships. As illustrated in the findings, supply chain participants were able to describe situations in which strategic relationships aided in advancing the mutual objectives of 3PLs and customers. Recommendations regarding the contexts in which 3PLs should seek to establish strategic relationships are detailed below.

5.1.1. Seek suitable target industries

A factor contributing to the duration and intensity of the interaction between 3PLs and customers was the complexity of the supply chain in the industry. This insight reveals an effective way in which 3PLs, by first segmenting industries, can better tailor the level of effort invested in establishing strategic relationships. As described in the key findings, industries with complex logistics requirements are more likely to desire relationships that can assist in ensuring minimal risk of disruption in the supply chain. Examples of complex industries are the computer and electronic industries which have short life cycles, large volumes, global markets and a multitude of stock keeping units. Inversely, industries that have simple logistics requirements are less suitable as targets and are more likely to view the needed services as commodities.

5.1.2. Seek suitable target clients

Within specific industries, customers can also be segmented based on the complexity of their supply chains. Customers within the same industry may have a diversity of assets and approaches which affect their logistics needs. For example, within the computer industry, the logistics requirement for Dell, which pursues a build-to-order strategy, is much more complicated than that of Hewlett Packard which produces and delivers computers to retail stores. Dell is more likely to require a close relationship with its 3PL.

An added dimension to this focus is the presence of competitors within any one industry. As was the experience of one 3PL, some customers may be reluctant to establish relationships with suppliers who also provide the same services to competitors. It is therefore necessary for 3PLs to remain aware of the implications; pursuit of one shipper may require the 3PL to forego the business of the shipper's competitors. Factors such as the customers' (and inversely, the 3PLs') relative size, dominance and future competitive situation become important measures of the long-term desirability of the prospect.

5.1.3. Establish the right environment through willingness to share risk

As can be discerned from the experience of some 3PLs, compensation plans have a bearing on the nature of relationships that develop between 3PLs and Customers. Depending on the nature of contracts, it is possible for adversarial or otherwise difficult relationships to arise. Some 3PLs have instituted gain-sharing as part of their compensation plans, facilitating an alignment of interests of both the provider and the user.

Since both parties then have a stake in ensuring a productive relationship, an environment in which a long term relationship can grow is created.

Clearly, gain-sharing is more likely to be suggested and driven by customers; it is not of obvious benefit to 3PLs. However, literature and discussions show that the closest relationships exist when both parties have made investments and hence have a stake in the relationship. As defined in the model advanced by Rice and Ronchi (2002), at its most developed level, a strategic relationship takes the form of a partnership or vertical integration with a carefully constructed risk-sharing compensation plan. 3PLs should not be averse to sharing of risk as it can be a factor that aids in establishing positive working relationships with customers and may be necessary in the pursuit of desirable strategic relationships.

5.2. Capabilities

In addition to selecting environments which facilitate strategic relationships, 3PLs can also enhance their suitability for strategic relationships. We analyzed our research findings to identify some attributes and capabilities that 3PLs should cultivate in order to become more attractive partners for strategic relationships. These capabilities and attributes are enumerated below.

5.2.1. Develop a range of Value-Added Services

Value-Added Services are the functions performed by the 3PLs beyond traditional basic services such as transportation, warehousing and freight forwarding. Some examples of Value-Added Services currently offered by 3PLs are packaging/de-packaging, repair work, customer services management and data analysis for reverse logistics.

Value-Added Services serve as a differentiating factor for 3PLs. Expanding the range of services offered also increases customers' dependence on 3PLs by allowing 3PLs to penetrate deeper into customer's supply chains. A related consequence is the raising of entry barriers for the competitors. An example of the effect of the provision of value-added services was described by APL Logistics in our study and is detailed below.

APL Logistics provides warehousing as one of its offerings. Some of its customers have more specialized needs and this has necessitated the offering of customized package processing lines within their warehouse. The provision of this additional service has contributed to the development and maintenance of a close relationship between APL and its customers. The process of establishing the customized service as well as the need to invest resources in establishing the service have contributed to stimulating an interest by both parties to foster the relationship.

5.2.2. Develop expertise in areas of operation

As described in our research findings, customers look upon the 3PLs as experts in the field and this constitutes one of the important reasons for logistics outsourcing. During our interviews, Brian Ashinger, GM of inbound logistics 3PL Transfreight, described this as a basic requirement for a strategic relationship. "We sit with our customers to plan and suggest improvements in the systems. The knowledge base and expertise in the area of operation is what differentiates us from our competitors" he commented.

In our discussion with a logistics outsourcer, we also found that they look upon the 3PLs as consultants in the supply chain with knowledge of best

practices. Greg Morello of Concentrek, a Non-Asset Based 3PL, indicated that Concentrek was able to forge long-term successful alliances with customers because of its ability to implement Just-in-Time and 6-Sigma.

5.2.3. Develop alliances to provide a broad and deep set of services

Customer requirements in complex supply chains often require expertise that extends beyond the capabilities of any one supply chain vendor or service provider. Forming alliances with businesses that have complimentary capabilities can help provide the appropriate combination of expertise and value added service that is needed by the customers. The FedEx partnership with Yantra, GLog and Bridgepoint in providing a complete solution to Nortel Networks illustrates the concept.

Nortel manufactures electronic and computer parts such as switches, link optimizers and web switching modules. Nortel has outsourced distribution of the parts to FedEx. The FedEx contract with Nortel includes picking up of materials from their manufacturing bases, warehousing and distribution to manufacturers, retailers and Nortel's distributors. These transactions are all B2B transactions and the customers are located within the US as well as in Europe and Asia. Prior to 2002, FedEx used its home grown software and used some 4PL companies to manage the supply chain. The system was inefficient, cost was high and there was no visibility. In addition to these problems, there was no flexibility in the system. The platform was not able to accommodate any new customers on the same platform. FedEx decided to subcontract the IT solutions to achieve efficiency and improve visibility. They found that there was no end to end solution available for the complete supply chain. The selected software companies that provide warehousing, inventory management solutions do not provide routing optimization and loading pattern solutions. Moreover these companies

tend to work only on their system or at the most integrate their system with the ERP system used in the client company. They adopted a strategy of finding the best supplier in each field and then integrating those suppliers. FedEx selected Yantra, G-Log, Bridgepoint and Cap Gemini Ernst & Young to work with them as a consortium to provide a complete solution for their supply chain.

The FedEx consortium is an example of vertical disintegration in the supply chain where services are provided by companies which have core competence in their space starting with design by Nortel, manufacturing by Flextronics, distribution by FedEx, order and warehouse management systems by Yantra, load and routing optimization by G-log, system interfacing by Cap Gemini Ernst & Young and hardware hosting by Totality.

As can be determined from our recommendations, the 3PL operating environment consists of forces that are outside the control of 3PLs as well as factors that 3PLs can influence when seeking to establish strategic relationships. Our research highlights these factors and suggests ways in which 3PLs can address them in their relationships. However, as stated earlier, logistics relationships are complex business mechanisms and factors shaping relationships vary across industries and company sizes. In the next section, we provide a summary of our research and suggest areas for exploration in future research.

6. Conclusions

6.1. *Summary of Research*

This study sought to answer two primary research questions.

1. In which logistics outsourcing contexts are strategic relationships more effective?
2. What capabilities and organizational attributes should 3PLs develop in order to become strategic partners?

In regards to the first research question, key findings from the research were that 3PLs' and customers' propensity for strategic relationships vary with the environmental conditions in which they operate. Strategic relationships are more likely to develop in situations in which:

1. Supply chains exhibit a degree of complexity.
2. Both parties have a stake in the relationship and share in the relationships' risks and rewards.

The research also identified important capabilities and attributes that 3PLs should develop in order to become strategic partners. The important capabilities and attributes determined in the study are:

1. The ability to provide value-added services.
2. Expertise in their area of operations.
3. Alliances to supplement their capabilities and to aid in delivering complete solutions to customers.

In addition to these findings and conclusions, the research identified opportunities for further research. These opportunities are described in the next section.

6.2. *Future Research*

The primary focus of our research was strategic relationships between 3PLs and customers. During the course of our research, we identified areas of interest for further research. These opportunities for additional research and factors to be considered in the research are described below.

The research revealed that contract structures and compensation agreements are significant influences on strategic relationships. While we discussed gain-sharing as an example of risk management in our findings and our recommendations, we are of the opinion that this represents a rich area for additional exploration. Research into the different structures that exist in the industry and their impact on the nature of relationships would aid in further clarifying the risk management techniques that are used by parties to logistics outsourcing transactions.

One of our research findings is that Value-Added Services contribute to the establishment of strategic relationships between 3PLs and customers. We believe that further research into the range of Value-Added Services and their relative value in contributing to the establishment of strategic relationships would also be valuable. This would aid logistics providers in determining the most important value-added services that should be added to their offerings.

One of the factors that we found to be a hindrance to the establishment of strategic relationship was lack of proper performance metrics for 3PLs. 3PLs reported that difficulty in measuring their performance and their contributions towards process savings in the supply chain resulted in reversions to arms-

length relationships. We are of the opinion that performance metrics therefore constitute an important area for further research.

Appendix

Survey to 3PLs

Research Question:

In which logistics outsourcing contexts are strategic 3PL relationships most effective?

Secondary Questions:

In which logistics outsourcing contexts are alternate relationships more appropriate?

What capabilities should 3PLs have in order to become more suitable partners?

Motivation and Methodology:

A hot topic in the industry is the degree to which customers of 3PLs view the services as pure-commodities to be re-bid – implying low switching costs and low value-add. The study seeks to categorize the range of relationships in selected 3PLs client portfolios, determine the similarities within categories and the differences across categories. The findings of the study will be used to derive from real cases the contexts in which a range of relationships are most suitable. It will also seek to determine the ways in which 3PLs might migrate customers across the categories and the benefits and challenges that may be encountered.

Framework:

Although “strategic partnership” is a popular term in business literature, there is no single definition that exists defining the term “strategic partnerships” as used in the context of 3PL service providers. For purposes of the study, a framework that captures recurring themes is provided. Questions are also provided to facilitate a clear description of the characteristics of each group.

RELATIONSHIP FRAMEWORK

<p><u>Tactical Partnership</u> *3PL has unique capability to fulfill customer requirements *Returns on services are higher *Pure commodity transactions *No information sharing for planning *Term < 1 Year</p>	<p><u>Strategic Partnership</u> *Risks sharing and collaborative efforts *information sharing/ mutual planning for future projects *Rewards of improvements shared by both *Term > 1 Year *Shared goals *Value added/ important services</p>	<p align="center">Partnership</p>
<p><u>Simple</u> *Pure exchange of money, goods and services *commodities/limited value transactions *less critical procurement *No information sharing for planning *Term < 1 Year</p>	<p><u>Privileged</u> *No planning for future projects *Good business relationship - Key point *Exchange of products/services only *Working beyond contractual requirements *Term > 1 Year</p>	
<p>Short Term Loyalty</p>	<p>Long Term Loyalty</p>	

Note: We anticipate there will be fewer customers in “tactical relationship segment but we are including it to have your views.

Questions:

- Please pick a random sample of your customers. Based on the above classification, what percentage would you place in each segment?

<p><u>Tactical Partnership</u></p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	<p><u>Strategic Partnership</u></p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	<p>Partnership</p> <p>Pure Buy/Sell Relationship</p>
<p><u>Simple</u></p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	<p><u>Privileged</u></p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	
<p>Short Term Loyalty Long Term Loyalty</p>		

- Taking a typical example from each segment, please describe the clients in each quadrant based on the following characteristics.
 - Volume of business
 - scope of services provided
 - compensation plan
 - industry
 - company size (assets and employees)
 - availability of alternative logistics vendors
 - logistics expertise in the company
 - IT capability
- What other characteristics might have contributed to the client falling within this relationship quadrant?

Strategic Partnerships

- How do you treat your strategic partners differently?
- Have you tried to develop a strategic partnership with existing customers?
How?
- How do you present yourself to the companies for marketing purposes?
- What key strengths are emphasized? What communication mode is used?
(Printed literature, video, etc.)
- How do you differentiate yourself from competitors?

Survey to Customers

Background:

1. What are the logistics services operated or needed by your company?
2. What are key points (strengths) you look for in identifying 3PL providers?
3. What portion, if any, of your logistics function is outsourced? Reason?

Contract:

1. How do you formulate the contract with 3PLs? Is it one way communication or is it a mutual decision between you and your 3PLs - defining performance, evaluation etc.
2. What is the normal duration of the contract? How frequently is the contract renewed?

Pricing:

1. How do you compensate the 3PL?
2. Is payment usually performance based or flat on freight basis.

Execution:

1. How many contact points do you have in the 3PL?
2. What metrics do you use to measure their performance?

3. How frequently do you have meetings with your 3PL regarding the issues and problems.
4. Do you have methods to calculate the benefits and improvements brought about by your partnership?
5. How is the data integrated with the 3PLs? Do you grant them access to your data?

Relationship:

1. Do you share your future plans related to supply chain with the 3PL companies?
2. Do you think that during the discussions with the 3PL companies, they tend to put everything in writing?
3. How is risk shared and rewarded by you to the 3PL?
4. How much information do you provide the 3PL? (Demand, forecast)?
5. What factors does your 3PL consider while taking a business decision with you? Are you concerned about your work done or do you consider their profitability also?
6. Do you recognize the 3PLs achievements and tend to reward them in future agreements?

7. Do you see your relationship as a contract, short term, long term or a strategic alliance?

8. What would you consider as the key capabilities that a 3PL must possess in order to qualify as potential strategic partners? (Use a scale of 0 – 5, with 5 = critical and 0 = not a factor)

#	Attribute	Weight
1	Change Leadership	
2	Decision Maker/Controller	
3	Supply Chain Infomediary	
4	Resource (Asset) Provider	
5	Reliability	
6	Inventory and Cycle Time Reduction	
7	Flexibility and Problem-Solving Ability	
8	Supply Chain Visibility	
9	Continuous Improvement	
10	Value-Added Knowledge and Expertise	
11	Interface/Software Ease-Of-Use	
12	Supply Chain Integration Ability	
13	Global Coverage	
14	One-Stop Shop	

Bibliography

- Allen, Gary R., Langley Jr, John C. , Dale, Thomas A., Dort, Erik van and Caporale Donato “Third Party Logistics – Results and Findings of the 2003 Eighth Annual Study”, 2003.
- Armbruster, William. “4PL”, *Journal of Commerce*, June 24-30, 2002.
- Armstrong & Associates, Inc. “3PL Contract Logistics Market”, 2003
<http://www.3plogistics.com/3plmarket.htm>, May 8, 2004.
- Baghchi, Probir K, and Virm, Helge. “European Logistics Alliances: A management model” *International Journal of Logistics Management*, Vol 7, No.1 , 1996.
- Bowersox, Donald J., Closs, David J. And Stank, Theodore P. “How to Master Cross-Enterprise Collaboration” *Supply Chain Management Review*, July 1 2003: Pg. 18.
- Burlington Northern Railway, “Glossary of Railroad Terminology & Jargon”, 2003. <http://www.bnsf.com/html/glossary.html>
- Chee Mun Chew and Denis de Graeve, “Building Service Opportunities for a 3PL in the Value Network”, 2003 Massachusetts Institute of Technology, Cambridge, MA.
- Council of Logistics Management, “Logistics Terms & Glossary”, 2003.
<http://www.clm1.org/Downloads/Resources/glossary03.pdf>
- Delaney, Robert V(2003),“14th Annual “State of Logistics Report”,
www.clmnert.org/Presentation%20Library/Excerpts%20from%2014th%20State%20of%20Logistics%202003.ppt, (15 April, 2004).
- Gordon, Benjamin. “Riding the Third Wave” *Traffic World*: Jan 19, 2004.
- Gottorna, J(1998) “Strategic Supply Chain Alignment”, Gower Publishing Limited, Hampshire,UK.
- Kittal, Johan and Paulsson, Ulf “4PL, Just a new name for 3PL” 2003. Lund Institute of Technology, UK.
- Lambert, Douglas M. “Developing and Implementing Supply Chain Partnership” *International Journal of Logistics Management*, Vol 7, No.2 , 1996.

Lieb, Robert and Bentz, Brook A, "The Year 2003 Survey: CEO Perspectives On The Current Status And Future Prospects of The Third Party Logistics Industry In The United States", 2003.

Christopher, Martin. (1997) "Marketing Logistics" Butterworth-Heinemann, Oxford, UK.

Rice, J, and Ronchi, S. (2002), "Strategic Partnership: collaboration, alliances & the coordination spectrum". Logistics Solutions, Issue 1 2002, pp 22-27

Traffic World, "Directory of Top Logistics Providers", January 19 2004.