

Logistics Outsourcing Practices in the US: An Exploratory Analysis of the Third-Party Logistics Service Users

Abstract

Ongoing global recession forced many firms to change the direction of their business strategic thinking. This change in a strategic thinking includes the reassessment of “self-sufficient” business practices that may not necessarily add the highest value to the supply chain process and may not bring the highest possible return from the allocated resources. As such, outsourcing strategy which allows the firm to focus on its core competency has gained popularity over the years. One of the supply chain activities that are often outsourced is logistics as evidenced by a continued growth of the third-party logistics industry. To help firms formulate wise logistics outsourcing strategy, this paper examines the common logistics outsourcing practices among the U.S. firms and identifies key determinants for their logistics outsourcing decisions. It also explores the current logistics outsourcing trends in terms of customer value propositions.

Key words: *Third-party logistics; logistics outsourcing; exploratory analysis*

1. Introduction

With the world economy deeply mired in the worst recession in decades, many firms search for every possible means to enhance their managerial efficiency. One of such means includes logistics outsourcing. Logistics outsourcing allows the firm to focus on its core competency and exploit external resources and expertise in handling its logistics activities. Its potential benefits include: cost savings, improved cash flows, better asset management, greater distribution networks, quicker customer responses, and supply chain flexibility (Bardi and Tracey, 1991; Bhatnagar and Viswanathan, 2000; Bask, 2001). Realizing these benefits, 70% of the U.S. firms outsourced their logistics operations to some extent for the last two decades (Alibaba.com, 2010). The popularity of logistics outsourcing is further evidenced by a gradual growth of the third-party logistics (3PL) industry for the last two decades. Though suffering from a minor decline in 3PL growth during 2009, the 3PL industry generated more than \$120 billion of revenue in 2010 (Eckler, 2010). Due to a wide range of 3PL service options available from the ever-growing 3PL industry, the 3PL selection decision often poses unique challenges. These challenges may include: (1) the identification of logistics functions that need to be streamlined and outsourced; (2) the constant evaluation and monitoring of 3PL performances; (3) the coordination of outsourced logistics activities through frequent communication with the 3PLs; (4) the preparation of a request-for-proposal (RFP) or request-for-quotes (RFQ); (5) contract renewals; (6) the establishment of a long-term relationship with trust-worthy 3PLs. The failure to deal with these challenges may significantly disrupt the 3PL user's supply chain operations and bring more harm than good, since the 3PL user contractually relies on the 3PL to provide timely and cost-efficient

logistics services to its end-customers. For example, one of the leading 3PLs, YRC, Inc. recently filed a lawsuit against its client, the Marine Corps Exchange for its contract disputes in 2010 (<http://docs.justia.com/cases/federal/district-courts/federal-claims/cofce/1:2010cv00154/24970/24/>). This is not an isolated incidence given the fact that Ryder and its client, Office Max once got engaged in \$21 million contract disputes involving 3PL service failures. A similar contract dispute was reported by the US Department of Justice for the Public Warehousing Co (PWC)'s failure to deliver and supply food in a timely manner to U.S. troops in Kuwait and Iraq (Eyefortransport, 2009).

Considering the various challenges of logistics outsourcing, it is important for the 3PL user to develop a careful strategic plan before making its decision on the scope of logistics outsourcing, the 3PL selection, contract negotiation, relationship building, performance appraisal, conflict resolution, and contract renewal. To help the 3PL user develop such a plan, this paper conducts a questionnaire survey of the U.S. firms and identifies the common logistics outsourcing practices that can be developed into the "best-practices." This paper also develops potential performance metrics that can be used to evaluate the 3PL performances and then determines the benchmark ('best-in class') 3PL among the seven leading 3PLs in the U.S.

2. Relevant Literature

Reflecting the growing popularity of logistics outsourcing and a subsequent growth of the 3PL industry, there exist an extensive body of the literature relating to logistics outsourcing including 3PL trends, extent of 3PL usage, 3PL benefits, 3PL benchmarks, and 3PL selection criteria. In general, 3PL refers to a for-hire, independent service provider performing all or part of logistics

activities for the buyer, the seller, and the manufacturer of raw materials, parts/components, goods in process, or finished products without taking the title of those goods (e.g., Menon et al. 1998; Maltz and Ellram 2000; Zhou et al., 2008). Sheffi (1990) is one of the first to conceptualize 3PL services and project the emergence of the 3PL industry. Lieb and Randall (1992) started their landmark study by examining the extent to which U.S. manufacturers used 3PL services; the specific areas of 3PL services that were frequently used; and the managerial benefits accrued from the use of 3PL services. This study was continued and extended by Lieb and Randall (1996), Sink et al. (1996), Lieb and Kopczak (1997), Murphy and Poist (1998), Lieb and Randall (1999), Lieb and Miller (2002), Lieb and Kendrick (2002), Lieb and Kendrick (2003), Lieb and Bentz (2004), and Lieb and Bentz (2005) who examined the extent of 3PL usage, 3PL market trends, and the prospects of the 3PL industry from the perspectives of 3PL Chief Executive Officers (CEOs) and users for the last decade. Following suit, Knemeyer and Murphy (2005) and Sahay and Mohan (2006) investigated the impact of 3PL relationships on 3PL selection, contractual arrangements, and extent of its usage. These studies, however, primarily focused on the 3PL industry in the U.S. and did not recognize the emergence of the 3PL industry in foreign markets. In response to the need for global 3PL studies, Lieb et al. (1993) conducted an empirical analysis to compare the status of the U.S. 3PL industry to that of the European industry. Lieb and Kopczak (1997) also examined how U.S. 3PLs established their foothold in the European market. To better understand the dynamics of emerging 3PL markets in a particular foreign country, Dapiran et al. (1996) investigated the extent of 3PL usage in Australia. Similarly, Bhatnagar et al. (1999) zeroed in on 3PL opportunities in Singapore, while Sohail et al. (2004) looked into the burgeoning Sub-Saharan African market that was often overlooked by many 3PLs. Also, Jaafar and Rafiq (2005) studied the prevalent practices and trends of the 3PL industry in the United Kingdom. Other

similar studies focusing on the particular country's regional 3PL markets include: logistics outsourcing practices in Mexico (Arroyo *et al.*, 2006), New Zealand (Sankaran *et al.*, 2002), Australia and New Zealand (Mollenkopf and Dapiran, 2005), China (Hong *et al.*, 2004 a,b; Zhou *et al.*, 2008), Korea (Kim, 1996), India (Sahay and Mohan, 2004), Saudi Arabia (Sohail and Al-Abdali, 2005), United Arab Emirates (Sohail *et al.*, 2005), Denmark (Larsen *et al.*, 2001) and Turkey (Aktas and Ulengin, 2005).

However, a vast majority of these prior studies did not develop a benchmark of 3PL performance standards which is critical to sustaining the growth of the 3PL industry on a global scale. Recognizing this deficiency, Min and Joo (2006) attempted to measure the performance of selected 3PLs and then develop a benchmark standard using DEA. Similar attempts were made by Zhou *et al.* (2008) and Min and Joo (2009). Despite numerous merits, most of the prior 3PL studies primarily focused on specific demands, needs, and types of logistics outsourcing practices without looking into specific outsourcing decision processes, contractual terms, 3PL selection criteria, value propositions, and performance metrics which will be the important basis for 3PL benchmarking. To fill a significant void in this kind of 3PL knowledge bases, this paper conduct an exploratory study of U.S. firms to understand their outsourcing decision processes, contractual issues, value propositions, and performance metrics, while identifying best-in class practices and then developing the profile of leading 3PLs in the U.S. More specifically, this paper addresses the following research questions:

1. Which companies are likely to outsource their logistics activities?
2. Who makes a logistics outsourcing decision and manages 3PLs?
3. Which logistics functions are likely to be outsourced?
4. Which terms (e.g., payment, duration, and conflict resolution) are included in the 3PL

contracts?

5. What are the most important determinants for selecting 3PLs?
6. What are the most important benefits of logistics outsourcing?
7. Which performance metrics are most important to 3PL performance evaluation?
8. Which leading 3PL is considered to be the “best-in class” performer (benchmark)?

3. Profiles of 3PL Users and Their Logistics Outsourcing Decision Processes

To be completed

4 Data Analysis and Discussions

To be completed

5 Major Findings and Managerial Implications

To be completed

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Table 1. Respondent Profiles (N = 63 firms)

Company Information	Percentage
<i>Industry classification</i>	
Manufacturing	52.4 %
Retail trade	4.8
Government and defense	1.6
Health-care services	11.1
Service providers	15.9
Others	14.3
<i>Total number of employees</i>	
Less than 99	12.7 %
100-499	19.0
500-4999	23.8
5000 or larger	44.4
<i>Total number of supply chain professionals</i>	
0-5	27.9 %
6-10	9.8
11-25	11.5
26-49	13.1
50-99	13.1
100 or more	24.6
<i>Annual sales</i>	
Less than \$50 million	17.5 %
\$50 million-\$99 million	6.3
\$100 million-\$499 million	19.0
\$500 million-\$999 million	12.7
\$1 billion or more	44.4
<i>Annual logistics expenditure</i>	
Less than \$500,000	23.3 %
\$500,000 - \$999,999	11.7
\$1 million - \$4.99 million	10.0
\$5 million - \$9.99 million	3.3
\$10 million - \$19.99 million	5.0
\$20 million - \$49.99 million	6.7
\$50 million - \$99.99 million	6.7
\$100 million or more	33.3
<i>Annual outsourcing expenditure</i>	
Less than \$500,000	33.3 %
\$500,000 - \$999,999	6.7
\$1 million - \$4.99 million	5.0
\$5 million - \$9.99 million	15.0
\$10 million - \$19.99 million	6.7
\$20 million - \$49.99 million	3.3
\$50 million - \$99.99 million	8.3
\$100 million or more	21.7

Table 2. A List of Most Outsourced Logistics Services

Logistics Services	Currently need outsourced service *	Plan to outsource *	No for that service *	Rank
Customs clearance/brokerage	60.4%	3.8%	20.8%	1
Port services	55.6	5.6	25.9	2
Freight bill audit and payment	47.4	2.6	2.6	3
Freight forwarding	46.3	5.6	14.8	4
Import/export documentation	40.7	1.9	14.8	5
Shipment consolidation/in-transit merge	35.3	5.9	25.5	6
Shipment tracking/event management	34.5	9.1	7.3	7
Freight brokering	34.0	5.7	15.1	8
Security management	24.5	1.9	11.3	9
Inbound traffic control	20.4	0	14.8	10
e-logistics/e-purchasing	19.2	1.9	26.9	11
Product packaging/labeling/marketing	16.7	3.7	9.3	12
Outbound traffic control	16.7	3.7	14.8	13
Loss/damage claims management	15.1	3.8	9.4	14
Warehouse management	14.8	1.9	14.8	15
Returned good management	14.3	5.4	8.9	16
Carrier negotiation and contracting	11.1	0	9.3	17
Inventory management	10.9	1.8	10.9	18
Customer relationship management	5.5	1.8	1.8	19
Demand forecasting/planning	3.7	3.7	3.7	20

*Note: Numbers represents a percentage of respondents.

Table 3. The Common Forms of Logistics Outsourcing Compensation

Compensation Form	Average Frequency of Use¹	Ranks
Transaction based fees	4.13 (1.275)	1
Flat-based fees	3.49 (1.339)	2
Cost-plus transaction fees	2.73 (1.457)	3
Percentage-of-savings	1.83 (1.136)	4
Gain-sharing	1.54 (.930)	5
Flat-fees plus gain-sharing	1.54 (.994)	6

¹**Note:** Numbers in parentheses are standard deviations.

Scale: 5 = most frequently used
 4 = somewhat frequently used
 3 = occasionally used
 2 = rarely used
 1 = never used.

Table 4. The Common Forms of Contract Clauses Included in the 3PL Contract

Contract Clauses	Average Frequency of Use*	Ranks
Service standards and performance measures	4.26 (1.173)	1
Key performance metrics	4.09 (1.240)	2
Timeline requirements	3.89 (1.192)	3
Process for termination of contracts	3.62 (1.472)	4
Communication channel between the 3PL user and the provider	3.32 (1.377)	5
Procedures for conflict resolution	3.26 (1.306)	6
Penalties for non-performance	3.13 (1.320)	7
Potential collaboration with other 3PLs	2.71 (1.212)	8
Gain sharing	1.96 (1.154)	9

***Note:** Numbers in parentheses are standard deviations.

Scale: 5 = most frequently used
4 = somewhat frequently used
3 = occasionally used
2 = rarely used
1 = never used.

Table 5. Key Determinants for Selecting 3PLs

Determinants	Degree of Importance*	Rank
Consistent/reliable services	4.58 (.738)	1
The provider's expertise	4.37 (.816)	2
The provider's reputation	4.33 (.664)	3
Competitive prices or fees	4.21 (.780)	4
The provider's financial stability	4.21 (.818)	5
The provider's information technology support	3.96 (.830)	6
Past relationship with the provider	3.78 (1.031)	7
Flexibility for providing customized services	3.47 (.836)	8
Capability to act as a lead logistics provider	3.26(1.163)	9
Global supply chain solutions and visibility	3.18 (1.156)	10
The provider's contract renewal rate	3.06 (.998)	11
Focused/Niche service capability	3.06 (1.054)	12
A broad range of value-added services for one-stop shopping	3.04 (1.008)	13

***Note:** Numbers in parentheses are standard deviations.

Scale: 5 = extremely important
4 = very important
3 = moderately important
2 = slightly unimportant
1 = not at all important

Table 6. Key Benefits of Logistics Outsourcing Services

Benefits	Extent of Agreement*	Rank
Improved overall customer services	4.00 (.694)	1
Great leverage for rate negotiation	3.93 (.821)	2
Timely invoicing	3.74 (.732)	3
Timely communication with customers	3.72 (.763)	4
Improved accuracy of invoicing	3.67 (.700)	5
Reduction in order cycle time	3.65 (.790)	6
Timely payment	3.63 (.853)	7
Reduction in employee bases	3.55 (.872)	8
Reduction in billing error	3.53 (.836)	9
Improved accuracy of quotations	3.48 (.795)	10
Faster resolution of billing issues	3.30 (.792)	11
Improved credit rating	3.24 (.725)	12

***Note:** Numbers in parentheses are standard deviations.

Scale: 5 = strongly agree
 4 = agree
 3 = neutral
 2 = disagree
 1 = strongly disagree

Table 7. Key Performance Metrics for 3PL Services

Performance Metrics	Degree of Importance*	Rank
Shipping accuracy	4.72 (.492)	1
On-time delivery	4.69 (.507)	2
Order accuracy	4.52 (.606)	3
Order fill rate	4.32 (.701)	4
Frequency of customer complaints	4.26 (.763)	5
Order cycle time (lead time)	4.17 (.694)	6
Invoicing/Billing accuracy	4.08 (.730)	7
Responsiveness to inquiry	4.06 (.752)	8
Cost to serve/Cost of goods sold	4.04 (.839)	9
Economic value added (EVA)	3.87 (.864)	10
Cash-to-cash cycle time	3.83 (.944)	11
Inventory turns	3.72 (.988)	12
Asset turns	3.63 (.991)	13

***Note:** Numbers in parentheses are standard deviations.

Scale: 5 = extremely important
4 = very important
3 = moderately important
2 = slightly unimportant
1 = not at all important

Figure 1. The Duration of the 3PL Contract

