

# Chapter 15

## Overview on 3PL Selection Problem

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### ABSTRACT

*Many companies outsource their logistics functions to Third-Party Logistics providers (3PL) instead of achieving them internally. The studies on this field are mostly of empirical type and focused on reasons, benefits, and risks of working with 3PL as well as the role of those on supply chain management. This chapter focuses on 3PL selection problem and presents a literature analysis of 47 articles published within 2001-2011 period. The objective is to identify the mainly approaches applied and their evaluating criteria in measuring the performance of 3PL.*

### INTRODUCTION

In recent year, much has been written about outsourcing logistics activities, which can be defined as an activity entrusted to a third party logistics provider (3PL) instead of being achieved internally. It also involves activities carried out by a 3PL on behalf of a shipper and consisting of at least management and execution of transportation and warehousing. In addition, other activities can be included, for example inventory management, information related activities, such as tracking and tracing, value added activities, such as secondary

assembly and installation of products, or even supply chain management.

The 3PL providers can perform the logistics functions of their customer either completely or only in part. Currently, they have their own warehouses, transport fleets and their credits are often deployed throughout the world. Most 3PL have specialized their services through differentiation, with the scope of services encompassing a variety of options ranging from limited services to broad activities covering the supply chain. Based on a survey of 3PL users in the US, Table 1 provides an overview of the functions normally performed by 3PL (Bottani & Rizzi, 2006).

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Table 1. Activities associated with 3PL

Logistics processes	Activities
Transportation	Road rail air sea, intermodality management, shipping, forwarding, package express carrier, customs brokering, (de) consolidation, perishable/hazardous goods management, freight bill payment/audit.
Distribution	Order fulfilment and processing, picking, sorting, dispatching, post-production configuration, installation of products at customer's site.
Warehousing	Storage, receiving, cross-docking, (de) consolidation, perishable/hazardous goods.
Inventory management	Forecasting, slotting/lay out design, location analysis, storage/retrieval management.
Packaging	Design, labelling, assembly and packaging, palletizing.
Reverse logistics	Pallets flows management, recycling, reuse, remanufacturing disposal management, repair, testing and products serving, return shipment management.

Most recent studies conducted on 3PL are empirical and focus on reasons for, benefits and risks of outsourcing decision (Sohail & Sohail 2003, Sohail 2006, Hsiao *et al.* 2010); modeling, planning and evaluation of the integrated logistics network for 3PL (Tyan *et al.* 2003, Ying & Dayong 2005, Ko & Evans 2007, Min & Ko 2008, Wong *et al.* 2009); analysis of relationships between 3PL and their clients (Hertz & Alfredsson 2003, Carbone & Stone 2005, Panayides & So 2005, Wang, 2010); and finally on 3PL selection. The later is the objective of this paper.

Literature reviews considering logistics outsourcing from a broader standpoint have already been published (Maloni & Carter 2006, Selviaridis & Spring 2007, Marasco 2008). However, the 3PL selection is mentioned in these studies as being only a critical decision in the outsourcing process. For example, Selviaridis and Spring (2007) proposed that criteria have to take into account organizational and operational contingencies and special buyer requirement.

The overview of literature on 3PL selection problem detailed here is related to 47 articles published during the last decade in reputable international journals in logistics/Supply Chain Management, transport/distribution and purchasing domains such as European Journal of Operational Research, Expert Systems with Applications, International Journal of Physical Distribution & Logistics Management, Trans-

portation Research Part E, and Supply Chain Management: An international Journal. These articles are collected from various databases such as BusinessSourcePremier, Emerald, ScienceDirect, and SpringerLink-Kluwer.

For the literature research, “3PL selection”, “Third-Party logistics choice”, “logistics outsourcing”, “3PL evaluation performance”, and other relevant descriptors are used. The full text of each article is reviewed in order to eliminate those that are not related to 3PL selection problem. As a result, 47 articles are identified. Moreover, in order to deduce the elements of differentiation between the 3PL selection and those of supplier selection of goods, 3 recent articles on this last case are analyzed.

Thus, to study the 3PL selection problem in terms of criteria and methods, this paper is organized as follows: approaches for 3PL selection are detailed first. Secondly, used criteria and methods are analyzed and some future researches are presented. The last section concludes the study and summarizes its findings.

### 3PL SELECTION APPROACHES

The 3PL selection is a complex process because it involves various quantitative and qualitative criteria such as price, quality, timely delivery, technology, operational capabilities, skills man-

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