WHAT DO THIRD PARTY LOGISTICS BUYERS REALLY WANT? AN EMPIRICAL ANALYSIS UTILIZING BENEFIT BASED MARKET SEGMENTATION

Harry L. Sink
North Carolina A & T State University

During the last decade the third party logistics market has grown significantly in the United States. While a degree of uncertainty continues regarding the definition of third-party logistics, a reasonable consensus of the concept has been described as

a relationship between a shipper and third party which, compared with basic services, has more customized offerings, encompasses a broader number of functions and is characterized by a longer-term, more mutually beneficial relationship (Afrik and Calkins, 1994).

Competitive conditions have forced many firms to revise their priorities and focus resources on a limited number of key activities. Business process redesign has revealed the in-house provision of logistical services to be less than critical in the creation of customer value for a growing number of organizations. Thus, the U.S. third party logistics market now accounts for $85 billion of the $1.015 trillion total market for transportation, warehousing, and related support services (Langley, van Dort, Ang, and Sykes, 2005). The level of interest in logistics outsourcing can be further gauged by recent survey responses from chief logistics executives of the 500 largest American manufacturers. The participants currently reported spending 40 percent, on average, of their entire annual logistics budget with third party logistics providers. A consensus of the respondents indicated an expectation to increase this amount to 46 percent within three years (Lieb and Bentz, 2005).

Past research has found the benefits derived from products and services to be prominent discriminatory variables in market segmentation (Haley, 1968; Wind, 1978). The principle underlying benefit-based segmentation is that buyers are not seeking a product or service per se, but the value
PLANT SUPPLY LOGISTICS: BALANCING DELIVERY AND STOCKOUT COSTS

Jennifer A. Pope
Grand Valley State University

James A. Pope
University of Toledo

ABSTRACT

A manufacturer leases rail cars to transport raw material from the supplier to the factory. The manufacturer must balance the costs of leasing rail cars versus stockouts (leading to plant closings) and inventory carrying costs. Using a model of circular queues and a simulation, the cost implications of leasing different numbers of rail cars are analyzed. It is concluded that stockout costs exceed the cost of excess inventory and capacity in the logistics system.

INTRODUCTION

Transporting raw materials to a production facility would seem to be almost trivial when the final product requires only one primary raw material. While the process is not as involved as a multi-level bill of materials system, there are still a number of variables with which one must deal, particularly in the logistics system. In this case, the raw material, peanuts, are transported from a sheller near Columbus, Georgia, to Portsmouth, Virginia, to be converted into peanut butter. The transportation is via railroad—a distance of about 700 miles. The manufacturer is currently required to lease rail cars, which are then moved from Georgia to Virginia full of raw, shelled peanuts, and returned to Georgia empty. The question the plant manager faces on a regular basis is how many rail cars to lease?

Analytically, the system faced by the plant manager is a circular queueing system. As explained in Appendix A, this is a special case of a Jackson network (see Figure 1). In the usual queueing process, customers enter the system, are served and leave the system. In our case, the rail cars leased by the company moved in a continuous loop. The rail cars are “served” in Georgia when they were loaded with peanuts, in Virginia when they are unloaded at the plant and en route in both directions. Appendix A describes briefly the analytical construction of the problem.
WORKING TOWARD A SEAMLESS SUPPLY CHAIN: AN EXPLORATORY ANALYSIS OF THE IMPACT OF SUPPLY CHAIN ON COMPANY PERFORMANCE

Carol J. Johnson
University of Denver

Lidiya Sokhnich
University of Denver

Charles Ng
University of Denver

ABSTRACT

This paper explores the role that several supply chain dimensions play in achieving overall firm performance. Measures suggested in prior studies were factor analyzed for convergent and discriminant validity and then used in a regression model. This study uses data from the Council of Supply Chain Management Professionals (CSCMP) member firms, with top level supply chain managers as informants. The results suggest that of the three dimensions tested, two are significant contributors to firm profitability, including customer service and business process usage. Relationship confidence was not found to significantly impact overall firm performance.

INTRODUCTION

Supply chain management has become an important topic to both practitioners and researchers alike. Practitioner definitions of supply chain management are numerous and emphasize different aspects of firm relationships. For example, the definition may emphasize meeting the "real needs of the end customer" (Wisner, Leong and Tan, 2004) or it may emphasize logistics-type processes as suggested by the Supply Chain Council definition:

Managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order
PURE PALLETs: EFFECTIVENESS AND EFFICIENCY IMPACTS ON THE DEFENSE TRANSPORTATION SYSTEM

Michael B. Mongold
United States Transportation Command

Alan W. Johnson
Air Force Institute of Technology

The views expressed are those of the authors and do not represent the official policy or positions of the United States Air Force, Department of Defense, or the U.S. Government.

ABSTRACT

The military supply chain must explore initiatives to improve its ability to meet warfighter needs. One initiative, developed during operations in Afghanistan and Iraq is the pure pallet process—by consolidating material early in the supply chain into user-specific pallets, these pallets are able to transit the defense transportation system without being broken down en route, theoretically arriving to the warfighter in less time than prior break-bulk methods required. The pure pallet initiative’s effectiveness and efficiency was assessed by measuring customer requisition wait time, cargo throughput, and revenue performance. It was found that effectiveness increased, without corresponding losses in efficiency.

BACKGROUND

Initial analyses show that the defense transportation system has not yet fully learned the logistics lessons of the 1991 Gulf War. A December 2003 Government Accountability Office (GAO) report investigating the preliminary effectiveness of Operation Enduring Freedom identified what it termed as “substantial logistics support problems” (Solis 2003). In particular, the GAO identified “[i]nsufficient and ineffective theater distribution capability” as a major problem. They state “[t]he distribution of supplies was also delayed because cargo arriving in shipping containers and pallets had to be separated and repackaged several times for delivery to multiple units in different locations” (Solis,
MANAGEMENT GUIDELINES FOR THIRD-PARTY LOGISTICS

Michael Maloni
Kennesaw State University

ABSTRACT

There is a significant amount of useful yet fragmented research in third-party logistics (3PL). This article seeks to review, summarize, and structure this 3PL research to provide a reference guide for managers interested in exploring, building, or improving logistics outsourcing opportunities. Topics covered include reasons to outsource, functions to outsource, 3PL provider evaluation, implementation and relationship success factors, contracts, and performance measures.

INTRODUCTION

Third-party logistics (3PL) has become an effective tool for supply chain management. Synonymous with logistics outsourcing, 3PL involves external providers supplying multiple logistics functions to a user (Capgemini, Langley, and FedEx Supply Chain Services, 2003). Since its emergence in the 1980’s, the concept has continued to grow as companies constantly seek to drive greater value from logistics in the form of lower costs and improved service levels (Lynch, 2004). Capgemini et al. (2004) indicate significant benefits from logistics outsourcing, including average reductions of 15 percent in costs, 16 percent in fixed assets, 7 percent in inventory, 5.4 days (from 12.2) in order cycle times, and 2.4 days (from 22.2) in cash cycles.

The 3PL industry is still rapidly expanding and maturing. Recent estimates put the North American 3PL market at around $65-$70 billion annually (“The North American 3PL Market,” 2004). Multiple surveys indicate that approximately 80 percent of companies outsource at least some logistics functions, averaging 40 percent of their logistics expenditures (Capgemini et al., 2004; Lieb and Bentz, 2004a). It is clear that 3PL has established a strong foothold in industry.

Academic research in 3PL has also expanded over the last few decades, providing contributions across key topics of logistics outsourcing including drivers, services, success factors, and performance measurement. Despite this wealth of 3PL research, it is not easy to navigate, accumulate, and summarize the findings. 3PL relationships are too multi-faceted and complex to completely survey in a single study, so research projects tend to examine individual pieces of the 3PL puzzle. Some papers address reasons to outsource (Rao and Young, 1994; Bienstock and Mentzer, 1999), while others will investigate success factors or performance measures (Tate, 1996; Knemeyer and Murphy, 2004). Some examine service provider (i.e., seller) perspectives (Leahy, Murphy, and Poist, 1995;