

Chapter 7

Reverse Logistics: Automobile Recalls and Other Conditions

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ABSTRACT

Reverse Logistics has become an important concept in today's supply chain operations. Besides being an old concept, it was hard to find in literature a precise differentiation from some recycling terminology. This chapter starts with a detailed explanation of Logistics and Reverse Logistics concepts, and then continues with the processes carried out in reverse logistics systems, and also the effects on marketing of the products that are subject to the reverse logistics. With all that, the case of automobile recalls will be included in the research scope of this chapter as an exploratory example. Precisely, the literature shows valid examples of direct relationship between recall of automobiles and their demand. In light of the literature, and real-world examples automobile recalls are examined to better explain the concept of reverse logistics.

LOGISTICS

Definition and Scope

According to the Council of Logistics Management, logistics includes the integrated planning, control, realization, and monitoring of all internal and network-wide material, part, and product flow, including the necessary information flow, industrial and trading companies along the complete value-added chain (and product life cycle) for the purpose of conforming to customer requirements.

When we examine the historical roots of the word, the prevalent view is that the term logistics comes from the late 19th century: from French *logistique* (*loger* means to lodge). Also, others attribute a combination of two Greek origin words, which the first one means reason or speech and the second means accountant or responsible for counting (Tepic et al., 2011). Here, it is obvious that logistics is a

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combination of reasonable and countable tasks. In other words, logistics is the management of the flow of goods between the point of origin and the point of consumption in order to meet some requirements, of customers or corporations. The resources managed in logistics can include physical items, such as food, materials, animals, equipment and liquids, as well as abstract items, such as time, information, particles, and energy.

The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, warehousing, and often security. The complexity of logistics can be modeled, analyzed, visualized, and optimized by dedicated simulation software. The minimization of the use of resources is a common motivation in logistics for import and export.

The Oxford English Dictionary defines logistics as “the branch of military science relating to procuring, maintaining and transporting material, personnel and facilities.” However, the New Oxford American Dictionary defines logistics as “the detailed coordination of a complex operation involving many people, facilities, or supplies,” and the Oxford Dictionary on-line defines it as “the detailed organization and implementation of a complex operation.” As such, logistics is commonly seen as a branch of engineering that creates “people systems” rather than “machine systems.” Another definition comes from Council of Supply Chain Management Professionals (CSCMP), which defines Logistics as the process of planning, implementing, and controlling the effective and efficient flow of goods and services from the point of origin to the point of consumption.

Business Logistics

Besides the army forces, the logistics is mostly used in business activities. Business Logistics may be defined as the management of the flow of commodities from the location of origin to the location of consumption on behalf of the needs of customers or companies. One other definition of business logistics speaks of “having the right item in the right quantity at the right time at the right place for the right price in the right condition to the right customer”. (Malik, 2010) Business logistics incorporates all industry sectors and aims to manage the fruition of project life cycles, supply chains, and resultant efficiencies. McGinnis (1992) argues that the term “business logistics” has evolved since the 1960s due to the increasing complexity of supplying businesses with materials and shipping out products in an increasingly globalized supply chain, leading to a call for professionals called “supply chain logisticians”. The complexity of the terminology also exists in terms of logistics. It is hard to precisely differentiate logistics, so operations or production management concepts are usually confused with the logistics.

Academics and practitioners traditionally refer to the terms operations or production management when referring to physical transformations taking place in a single business location (factory, restaurant or even bank clerking) and reserve the term logistics for activities related to distribution, that is, moving products on the territory. For better understanding the concept, let's examine the nodes of a logistic network.

Logistic Network

The knots of a logistic network include: Factories, where products are manufactured or assembled. A depot or deposit is a standard type of warehouse thought for storing merchandise (high level of inventory). Distribution centers are for order processing and order fulfillment (lower level of inventory) and also for receiving returning items from clients. Transit points are built for cross docking activities, which

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