

Chapter 8

Reverse Logistics in the Electronics Waste Industry

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ABSTRACT

Recently, due to the rapid world population growth, decreasing of natural resources and raw materials, increasing environmental awareness, interesting for wasting raw materials, using produced products more efficiently, and reusing of sources is rapidly increasing. Nowadays, reverse logistics as an important business strategy for profitable and sustainability is becoming important. The effective implementation of reverse logistics gives companies a competitive advantage in sectors. Due to mentioned reasons firms intend to incorporate reverse logistics activities such as the recovery, remanufacturing, recycling or disposal. Reverse logistics has become increasingly important as a profitable and sustainable business strategy. Therefore, more and more manufacturers have adapted the practice of recovering value from returned products and integrate product recovery activities into their processes. The electronic industry is one of the fastest growing manufacturing industries and the main purpose of this chapter is to explore the opportunities for waste returns within this sector.

INTRODUCTION

In recent years, the number of studies about the recovery of the limited sources increase due to rapid population growth, climatic changes, depletion of natural resources and increasing environmental awareness. Reverse Logistics (RL) has become attractive because of raised consumer awareness, the green laws performed by the governments, request of the producers to reduce the cost with lower business capital, increasing of the usage of the recovered containers, increasing of the request of services, raising the quality, re-production, fixing etc. (Sengul, 2009). Also today in many countries, the firms are responsible to collect some of their products back. According to the regulation came into force in Germany in 1991, the firms are responsible to recycle 65%-70% of the packages of their products. Beside the legal

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sanctions, the consumers are being more conscious every day and they are being more sensitive on environment. Also the green image has become an important selling factor for companies. That situation is forcing many firms to find new ways of recycling and recollecting of their products. The effective implementation of reverse logistics provides competitive advantage to the firms in their sector. Also the economic factors like needing less source of the recycled products compared to new ones is playing an important role in the development of the products. Because of this situation, a logistic network providing an affective flow only to forward is not enough, also proper reverse logistic structures are needed to be installed which provide possibilities for flowing of used and improved products for recovering of the used products. Today, the reverse logistic activities are gaining more importance for the firms as a profitable and sustainable business strategy. Because of that kind of reasons, the firms include the reverse logistics into their systems which provides recovering of the products from customers into the production, recycling of them or disposing of them. The goal is minimizing the harmful impacts of the used products to the environment, reducing the productions cost, gaining competitive advantage, etc. gaining maximum benefits from the used products. Because of all these reasons, the firms like Fuji Film, Hewlett–Packard, IBM Europe and Xerox, etc. have already voluntarily performed participation in the activities of recycling (Qiang et al., 2013).

In the reverse logistics network, there are more units than the ones in the forward logistics network. Supply chain including reverse flow, in addition to all the elements of advanced logistics network, includes 3rd party logistics companies which perform duty as demand point, secondary markets, disposal centers, collecting points and more. Transportation of the products from the customers to the facilities, determination of the settlements for submitting them in to the market from here, plants and the quantity of the products which will be carried, which recycling strategy will be performed to the products are important decisions which must be taken.

In this work, first, the basic elements of the reverse logistics issue have been explained. In pursuit of explaining the activities of the firms performed in the scope of the reverse logistics by the firms, the decision steps and the reasons of the application. At the last part, general characteristics of electrical and electronic goods, their recycling processes under the reverse logistics are described.

REVERSE LOGISTICS

Definition and Scope of the Reverse Logistics

There are different descriptions for “Reverse Logistics” in literature. First terms about the concept of the reverse logistics in scientific literature have been used in 1970’s years by Guiltinan and Nwokoye (1974) and Ginter and Starling (1978). In 1980’s years, the reverse logistics is described as reverse flow opposite to the forward flow in the traditional supply chain, in other words it is described as a wrong way flow (De Brito, 2004). The Council of Logistics Management, has made it first know description on the reverse logistics in 1990’s years. The concept of reverse logistics is “planning, execution and control processes for the purpose of recovering the information of the raw materials, the inventories still in process, the finished goods from the point of consumption to the point of production or disposing them in the correct way” (Yongsheng & Shouyang, 2008).

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