ANNALS of the ORADEA UNIVERSITY.

Fascicle of Management and Technological Engineering, Volume VII (XVII), 2008

REVERSE LOGISTICS IN SUPPLY CHAIN MANAGEMENT

Sunhilde CUC

University of Oradea, Faculty of Textiles and Leatherworks , e-mail: hectic@rdslink.ro

Keywords: Reverse Logistics, Logistics, Supply Chain Management, Reverse Supply Chain ,Costs, Textiles Industry,

Abstract: For a number of decades, industries have been concentrating on development, implementation, and management of forward logistics processes to reduce operational costs. In the age of quality, the attitude toward forward logistics has evolved to include enhancement of customer service quality. Meanwhile, ever growing concern for environmental problems, and pressure from the global competitive marketplace toward further improvement of customer service, have been presenting industries with a new challenge; development and management of effective reverse logistics processes. The purpose of this paper is twofold: to present an overview and introduction to reverse logistics, and to provide insights on how to manage reverse logistics well.

1. MOTIVATION FOR RETURNS

Reverse Logistics (RL) or Reverse Distribution (RD*)* is defined as “the logistics management skills and activities involved in reducing, managing, and disposing of hazardous waste from packaging and products.” It includes reverse distribution, which causes goods and information to flow in the opposite direction from normal logistic activities.[1]

Reverse logistics has traditionally placed low in the supply chain hierarchy. Recently, however, apparel businesses, service providers, and technology companies have begun to understand that strategic reverse logistics management can have a large impact on overall operations.

The reverse logistics process begins when a customer decides to return one or more products. The majority of the time these are new products which the customer has recently ordered and received.

There are a variety of reasons why a product may enter the reverse logistics flow. A part of these are summarized in Table 1 below. There are, of course, more reasons why a product will enter the reverse logistics system, but these are the most common. Returns can be also divided between those that are unplanned and undesired – what we might call “traditional returns” – and those that are planned and desired. Reasons for return often include the customer changing his mind, wanting a different color or size, etc. In addition to return of new products, customers also return used products that they feel did not live up to expectations, so these would fall under the category of warranty returns. Regardless of whether the product is old or new the customer will request either an exchange or a refund. An advantage of planned returns is that it is much easier for the organization to know what is coming back.

Table1. Reasons for Returns

<table>
<tr><th colspan="2">CUSTOMER</th><th>RETAILER</th></tr>
<tr><td colspan="2">• Product did not meet customer's needs
• Customer did not understand how to properly use the product
• Product was defective
• Customer abuse of liberal return policy</td><td>• Product packaging outdated
• Seasonal product
• Product replaced by new version
• Product discontinued
• Retailer inventory too high (overstock, marketing returns, or slow-moving)
• Retailer going out of business</td></tr>
<tr><th colspan="2">UNPLANNED RETURNS</th><th>PLANNED RETURNS</th></tr>
<tr><th>Returns of new products</th><th>Returns of used products</th><td rowspan="2">· Return of reusable packaging or shipping containers - can be environmentally and/or economically motivated.
· Trade-in programs - where a customer exchanges an old product for partial credit on
a new one.
· Company take-backs - where a customer returns an old product to its manufacturer at the end of the product's useful life. The motivation can be either economic, environmental, or both.
· Leased or rented products - where the customer
returns the product at the end of the lease.
· Service work - where the product is shipped to
a service location and then back to the customer.</td></tr>
<tr><td>· The customer changed his mind
· The product was defective
· The customer perceived the product to be defective
· The product was damaged in transit
· A vendor error (such as wrong item or quantity sent)</td><td>· Warranty returns
· Product recalls</td></tr>
</table>

Returns are fundamentally complex because of how they impact physical inventory, electronic inventory and accounting systems. All items must be identified, assigned to a customer or account, assigned a disposition and then physically sorted for processing. Since some of the product might be discarded or kept back for vendor chargeback's, not all merchandise enters electronic inventory; some merchandise must be repacked and accounted for manually versus electronically. Finally, credits are generally issued at a later time and often for only some part of a return, including discarded or un-saleable goods.

In today's marketplace, many retailers treat merchandise returns as individual, disjointed transactions. By not planning for return-related issues at the order's inception, many retailers fail to control the entire return process. By following returns management best practices, retailers can achieve a returns process that addresses both the operational and customer retention issues associated with merchandise returns .

A growing number of companies are finding that there's money to be made by sending things back. The concept is called reverse logistics, but most people simply call

them returns. And all sorts of businesses, particulary fashon and apparel industry, have come to understand that their work is unfinished until their customers are happy, and the bottom line looks good. Despite the fact that returns operations are inherently problematic and do not yield to simple automation, some companies have gained competitive advantage by applying some of the industry's best practices.

And that bottom line impact can be a huge one. In 2005, in the U.S. alone, the cost was an annual $100 billion. So a growing number of companies have found ways to create a real business out of sending things back. Third Party Logistics Providers see that up to 7% of an enterprise's gross sales are captured by return costs. This is a staggering figure and part of the answer as to why they offer reverse logistics applications that range from $50,000 to $500,000 for a single site license. Almost all reverse logistics contracts are customized to fit the size and type of company contracting. The 3PLs themselves realize from 12% to 15% profits on this business.[2]

During the past decade, logistics has gained an increasing importance among businesses. Reverse logistics has now become the point of focus for all businesses. A report says that out of every $100 worth of sales, $5 worth of goods are returned. This report presents an introduction to Reverse Logistics, its importance, application in various industries, especially textiles.[3]

As the cost of Reverse Logistics continued to increase, and as the methods of transportation became more sophisticated, manufacturers and distributors began to look for alternatives in transportation for savings. Planning and consolidating freight for return products was identified as a way to reduce expenses related to fuel and labor. This also led to detailed analysis of transportation options.

The next step in the evolution of Reverse Logistics was the experimentation and cost comparison between multiple local hubs and single consolidated returns centers. The simple analysis for savings contrasted the costs of warehouse space and manpower to the amount of freight and transportation fees for handling the back end of the Supply Chain. Other factors also played a significant role in the financial analysis, including volume, material costs and inventory controls.

As the costs of Reverse Logistics continued to rise, the importance of returning refurbished merchandise to market also became more significant. Organizations began to place financial significance on the devaluation of product for every day lost in transportation, handling, processing or warehousing.

3. REVERSE SUPPLY CHAIN

In today's highly competitive business environment, the success of any business depends to a large extent on the efficiency of the supply chain. Competition has moved beyond firm-to-firm rivalry to rivalry between supply chains. Managers in many industries now realize that actions taken by one member of the supply chain can influence the profitability of all others in the supply chain.

Supply chain is defined by The Council of Logistics Management as "the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements." [4] However, a company's supply chain is not limited to delivering products to the end-consumers.

The Council of Logistics Management defined reverse supply chain as "the process of planning, implementing and controlling the efficient, cost effective flow of raw materials,

in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal." [5](see Figure 1)

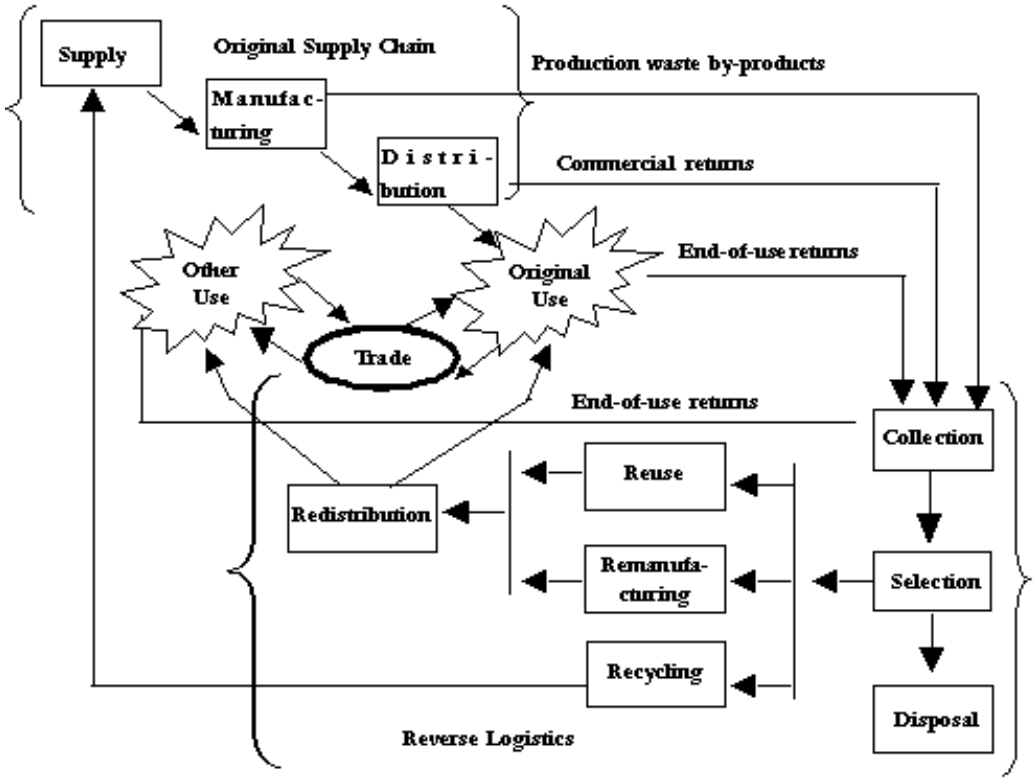

Fig.1 Reverse Supply Chain

Reverse supply chains differ from forward supply chains in information flow, physical distribution flow and cash flow. To manage reverse supply chain, companies need sophisticated information systems. Some of the technology involved in reverse Supply chain is similar while in some areas the technology used differs from that of traditional supply chain. Reverse supply chain also differs from forward supply chain in physical distribution flow. In the reverse supply chain, inbound logistics consists of defective units and other returns from customers. Inbound logistics follow sporadic or random routing. On the other hand, outbound logistics consists of repaired and remanufactured products; recycle items; or products meant for disposition. In forward supply chain, inbound logistics consists of flow of parts to a factory from the suppliers, which are consolidated, high-volume in nature and follows fixed routing.[6]

Suggestions for those facing reverse logistics cost or processing problems:

1. The outsourcing of reverse logistics to a third party logistics provider may be the wisest choice.
2. The way toward success in the reverse logistics process is through higher visibility of selective information and as close to "real-time" process knowledge as possible.
3. A smart reverse logistics system can prevent the cost of processing returns that are not actually the responsibility of the manufacturer and prevent useless transportation before it begins.
4. Above all, keep the process simple and inexpensive for all involved.

3 CONCLUSIONS

While much of the world does not yet care much about the reverse flow of product, many firms have begun to realize that reverse logistics is an important and often strategic part of their business mission and it can provide a significant opportunity for competitive advantage. Unfortunately, there is no one reverse logistics strategy that is ideally suited to all industries. This is largely because the frequency, number, and character of items returned will differ drastically from company to company.

To lay the foundations of a successful reverse logistics strategy, companies must recognise that it is not solely a supply chain issue. Without the direct involvement of an organisation's customer service and finance functions, the whole process will become unresponsive. When the main beneficiary is improved customer service, this equals failure.

Efficient reverse supply chains bring many benefits to the companies. However, reverse supply chains are different from forward supply chains and most of the existing forward supply chains are not designed to handle reverse supply chains. Many supply chain systems are equipped to initiate high levels of interaction with the rest of the business. This has given rise to the development of sophisticated supply chain execution systems that offer dedicated supply chain visibility and interaction applications.

4. REFERENCES

[1] Kopicky, R.J., M.J. Berg, L. Legg, V. Dasappa, and C. Maggioni, -"*Reuse and Recycling: Reverse Logistics Opportunities*," Council of Logistics Management, Oak Brook, IL, 1993.

[2] Malone, R.-Reverse Side Of Logistics: The Business Of Returns, http://www.forbes.com/2005/11/02/returns-reverse-logistics-market-cx_rm_1103returns.html, accesat 11.03.2008

[3]***Reverse logistics and its application in the textile industry, http://www.fibre2fashion.com/industry-article/paidArticles/892/reverse-logistics-and-its-application1.asp, accesat 12.03.2008

[4] http://cscmp.org/aboutcscmp/definitions/definitions.asp

[5] http://www.bizforum.org/whitepapers/CSC-3.htm

[6] Veerakamolmal,P., S. M. Gupta-„*Optimizing the Supply Chain in Reverse Logistics", http://www1.coe.neu.edu/~smgupta/4193-26-SPIE.PDF*