Winter 12-5-2004

Cooperation in Reverse Logistics

Yunfeng Zhang

Jianjing Sun

Cooperation in Reverse Logistics

Yunfeng Zhang, Jianjing Sun

School of Management, Xiamen University, Fujian, Xiamen 361005, China
yfzhang@126.com

ABSTRACT

Many businesses have now realized that a Reverse Logistics system can be used to gain competitive advantage. Even the best retailers and vendors now have reason to review how their returns programs are managed. New technologies and service providers now offer an opportunity to improve overall 'total returns performance'. This means not only reducing the 'total cost of returns', but utilizing returns to improve customer loyalty, merchandising and product performance. Improving 'total returns performance' can transform an increasingly costly and complex process into a competitive advantage. It has forced businesses to reengineer their business processes and look into what can be the next practices in business rather than adopt best practices. Reverse Logistics is a very complex and specialized area of any supply chain and it involves handling individual incoming parcels, opening and inspecting products, communicating with internal departments, customers and vendors and then directing products into disposition channels which will provide the highest value. It is necessary to have a synchronized effort from all the supply chain partners for Reverse Logistics to be successful. This paper explains the various elements of reverse logistics, the need for cooperation in reverse logistics and the opportunities which arise through the processes of Reverse Logistics.

Keywords: *reverse logistics, cooperation, supply chain*

1. INTRODUCTION

Reverse Logistics by its nature is a very complex and specialized area of any supply chain. No matter what the product is, how it is sold, or who the customers are, every company needs to focus on recovering the greatest value from returns. All of this while maintaining customer loyalty, cooperation cost and harvesting information that helps reduce returns in the future. Cooperation between all supply chain partners is the key to establish the smooth flow of products and information in reverse logistics. Returns require special information systems, dedicated equipment and personnel trained in non-standard processes. Returns processing involves handling individual incoming parcels, opening and inspecting products, communicating with internal departments, customers and vendors and then directing products into disposition channels, which will provide the highest value. To create visibility in the returns supply chain a firm requires greater information sharing and using automated notification to support integrated decision making.

2. WHAT IS REVERSE LOGISTICS?

Reverse logistics, that is, all operations related to the extension of useful lifecycle for used products, commercial returns, excess inventory and packaging materials, gains increasing attention globally for its promising financial potentials, its sustainable growth alternative and the environmental positive impact it could have. Reverse Logistics is a rather general term. In the broadest sense, Reverse Logistics stands for all operations related to the reuse of products and materials. The management of these operations can be referred to as Product Recovery Management (PRM). PRM is concerned with the care for products and materials after they have been used. Some of these activities are, to some extent, similar to those occurring in case of internal returns of defective items due to unreliable production processes. Reverse Logistics though refers to all logistic activities to collect, disassemble and process used products, product parts, and/or materials in order to ensure a sustainable (environmentally friendly) recovery.

Reverse logistics deals with five basic questions:
1. What alternatives are available to recover products, product parts, and materials?
2. Who should perform the various recovery activities?
3. How should the various activities be performed?
4. Is it possible to integrate the activities that are typical for reverse logistics with classical production and distribution systems?
5. What are the costs and benefits of reverse logistics, both from an economical as an environmental point of view?

Below is an example of the reverse logistics:

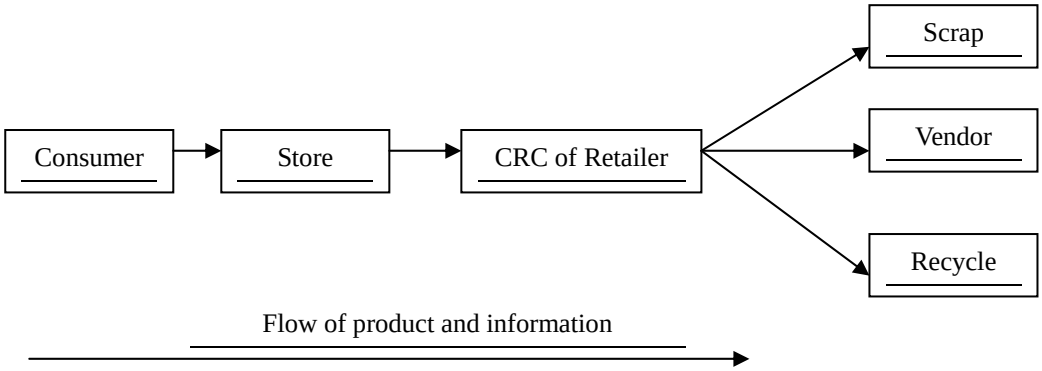

FIGURE 1: REVERSE LOGISTICS IN RETAIL INDUSTRY

3. FACTORS IN REVERSE LOGISTICS

3.1 Zero returns

Zero Returns is a program where the company in question does not accept returns from its customer. Rather, it gives the retailer an allowable return rate, and proposes guidelines as to the proper disposition of the items. This strategy basically passes the returns responsibility onto the retailer, while reducing costs for the manufacturer or distributor.

3.2 Asset recovery

Asset recovery is the "classification and disposition of returned goods as surplus, obsolete, scrap, waste and excess material products, and other assets, in a way that maximizes returns to the owner, while minimizing costs and liabilities associated with the dispositions."

3.3 Outsourcing

Many companies have established sound reverse logistics systems and procedures. In many cases, however, it makes more sense for the firm to outsource their reverse logistics functions than keep those in-house.

3.4 Gate keeping

Gate keeping has been defined as "the screening of defective and unwarranted returned merchandise at the entry point into the reverse logistics process."

3.6 Compacting disposition cycle time

Disposition cycle time is the amount of time needed to figure out what to do with returned products once they arrive. Often, when material often comes back in to a distribution center, it is not clear whether the items are defective, can be reused or refurbished, or need to be sent to a landfill.

3.7 Reverse logistics information systems

With the emphasis being given on Reverse Logistics today, the IT system developed to handle reverse logistics should be flexible enough for inevitable future expansion, as well as to have the ability to handle the many exceptions involved in reverse logistics. The reverse logistics system should create a database and track returns at the store level back through the pipeline to the manufacturer.

3.8 Centralized Return Centers

CRC's are dedicated specialized buildings to handle returns. All of the company's customers send their returns to such a central location where the items are subsequently sorted, processed, and "dispositioned." This system is essential for orderly and organized method of handling returns.

4. WHAT IS SUPPLY CHAIN COOPERATION? Cooperation = Getting to Know You, Much Better

All trading partners have a transactional relationship, and some even share lots of information about their businesses. Cooperation goes much further to take the uncertainty out of future product supply/demand through joint planning and action. By following a specified methodology – known as Cooperation Planning, Forecasting and Replenishment (CPFR) – companies can dramatically improve supply chain effectiveness with new product and package design, demand planning, synchronized production scheduling, and logistics planning. According to the CGE&Y survey mentioned earlier, this practice is catching on: 25% of respondents indicated that CPFR has been implemented in their firms. CPFR's popularity is spreading beyond company-to-company initiatives to include industry consortia as well. Supply chain visibility and cooperation capabilities are evolving rapidly, and, not surprisingly, logistics experts often disagree on where this whole effort is headed.

5. WHY COOPERATION IN REVERSE LOGISTICS?

5.1 Return-to-vendor adds significant and unnecessary cost.

Retailers in many industries simply send returned products back to vendor/distributors for credit. Devaluation of product as it moves backward slowly in the supply chain is dramatic. Handling, storage and shrinkage costs mount at every step of the way as the product becomes increasingly out of date. The administrative costs of managing the complex, diverse returns policies among hundreds, or even thousands of retailers, distributors and manufacturers is another major cost of return-to-vendor programs.

In an effort to reclaim some of these costs, leading retailers are now negotiating attractive "no returns" pricing with their suppliers in exchange for taking over all returns, including warranty and repairs.

5.2 Merchants going online are finding returns a challenge.

With this boom in online retailing has come some chaos in all areas of customer service and fulfillment, particularly with returns. According to data from a number of industry research firms, return rates for online sales are substantially higher than traditional retailing. Rates of 20% to beyond 30% for certain categories have been reported. Most fulfillment centers, information systems and customer service centers designed for handling traditional retail simply cannot efficiently process this volume of returned merchandise. As a result, returns costs are high and returning credit to consumers has often been slow. This poor performance is a barrier to new or repeat sales to time-focused buyers.

5.3 The total cost of returns is high.

The total costs associated with returns are significant. These costs are cross-functional and hit numerous expense lines, cost centers and budgets. As a result, retailers and manufacturers have difficulty measuring all of the hidden costs or fully understanding the business impact. The hard costs can, with effort, be measured. These include warehouse staff, customer service associates, shipping, storage and inventory space, third party vendors, packaging for disposition, disposal fees and other direct costs. Higher prices from suppliers for accepting returns can also be identified. The soft costs, such as customer satisfaction and loyalty, are much more difficult to measure but can have a major impact nonetheless. Retailers interviewed recently believe that the total cost of returns could be as much as 5-10% of sales.

5.4 Value recovery from returns has traditionally been low.

There are a number of established methods for recapturing some value from returned merchandise. In-store sales and return-to stock are labor intensive, provide mixed results and also pose risks to brand equity and cannibalized sales. Traditional liquidation channels have provided low value recovery—often only 10%-20% of retail value due to slow and inefficient paths back to consumers. The Internet has enabled new channels for selected merchandise that offer more direct, faster resale paths with higher recovery.

6. Why focus on Reverse Logistics?

Following are a few forceful reasons to focus on Reverse logistics:

6.1 Return rates are higher than ever.

Return rates are high and climbing, especially for online businesses which are experiencing increased return rates as a result of trial and impulse Internet purchasing. Calls and traffic to customer service also increases as online buyers, in particular, expect fast credits and refunds.

6.2 The cost of returning items to vendors is ultimately absorbed by retailers.

Retailers in many industries simply return products to vendors. Sending more products back to vendor's results in necessary price increases to their customers, the distributors and retailers.

6.3 Do third party logistic providers handle returns efficiently?

Some retailers have successfully outsourced fulfillment and logistics functions to third parties for better service, lower costs and increased flexibility. However, few of these providers have yet to develop the special processes or to make the incremental investments necessary to handle returns efficiently.

6.4 Taking full-Advantage of new returns technology is the key.

New technologies and service providers have emerged to address the increasing demand for better solutions in returns management.

6.5 Returns as a competitive advantage.

Retailing has become competitive, so every opportunity should be taken for bottom-line improvements. Returns have the potential to be one of the greatest untapped sources for increased revenue and customer loyalty.

6.6 Returns: not just a necessary cost of doing business.

Returns have traditionally been considered just a necessary cost of business. However, the costs associated with returns are far from trivial when all of the hard and soft costs are calculated to determine true business impact.

6.7 The traditional liquidation of returns channels are slow, inefficient and costly.

Recovering value from returns is a difficult task through the traditional liquidation channels. Although these channels are widely used, they lack ease and efficiency, and the end result for merchants is the recovery of a mere 10 to 20 percent of cost. Products lose value at every step to final disposition.

6.8 Returns contain a wealth of information on products and merchandising.

Returns offer an immense amount of information about consumers and products that few retailers and merchants capture. For example, returns can provide information about the original merchandising, actual product performance, ease of use, product defects and consumer expectations.

7. COOPERATION IN REVERSE LOGISTICS

7.1 Warranty

The first steps towards collaboration need to be taken while dealing with warranty at the *customer-retailer interface*. Any product with a lapsed warranty should not be allowed into the reverse supply chain by retailers: such products consume time and effort in the reverse supply chain. If the product enters the supply chain it needs to be dispositioned – recycled, refurbished or returned deciding the appropriate course of action is a potential area of conflict at the retailer-vendor interface. Verification of products at the store level may be done using invoices or serial number of product. However, this is easier said than done because tracking of millions of individual items requires maintaining a large database which proves inefficient, retrieval of information is time consuming and not cost effective.

The next stage for collaboration comes at the *retailer-vendor interface*. Once the product is accepted by the store it is moved to the CRC of the Retailer. There generally is some time gap between these two events. This delay may be due to a minimum return quantity stipulated by the retailer to stores or specified time periods during which returns are accepted. For any product accepted close to the end of warranty, its warranty may expire during this time delay. Hence, information systems at the CRC should be responsive and raise exceptions and alerts to warn the retailer and expedite the returns process. The system should check if demand for this product exists elsewhere in the network of stores and accordingly arrange for movement of stocks.FIGURE 2 show the details.

7.2 Return Material Authorization (RMA)

Cooperation would be required between vendors and retailers to ensure the flow of products in reverse logistics. It is important that they understand specifics of the return supply chain and agree on disposition of returned products. To ensure this cooperation information on daily returns needs to be available centrally to both the retailer and vendor so that they may optimize the frequency and cost of transportation.

7.3 Return price rationalization

For any product in the retail chain two prices come into play. First, the price paid by the retailer to the vendor and second, the price a customer pays to buy the product.

Customer-Retailer interface: On returning a product, customers demand a reimbursement from the retailer. The retailer is hence obliged to pay the customer at the price at which the product was bought. However, customers may have misplaced or lost the invoice making it impossible to verify the price for reimbursement. Two cases emerge from this scenario:
(i). Reduction in price of product after it was first purchased. Owing to lack of information ,customers are reimbursed at the reduced price, they suffer a loss. This leads to loss of face of the retailer and a loss in customer loyalty and brand image of the retailer.

(ii). Reduction in price of product after it was first purchased. In this case the retailer is at a loss since he has to reimburse the customer at a higher price. The retailer hence suffers a financial loss on the return in question.

Hence, it is important to be able to track the price of individual products while being retuned by customers. Serial number tracking could be the answer to resolve this issue.

Retailer-vendor interface: Once the product is in the reverse supply chain and the retailer needs to return the product to the vendor an important question arises, at what price should the vendor reimburse the retailer?

7.4 Product returns with damaged packaging

Many a time products returned by customers to retailers or vendors are not in the original package. Either the package in which the product is returned is damaged or is of a different product all together. This creates problems in reverse logistics since any identification put on the product is lost and products are not in a position to be identified by any scanning media leading to a discontinuity in information flow in the supply chain.
At the retailer-customer interface: Retailers may refuse to accept products not returned in the original packaging, this leads to friction between customers and retailers which ultimately results in an irate customer thereby affecting customer satisfaction, retention and loyalty and diminishing the brand equity of the retailer.

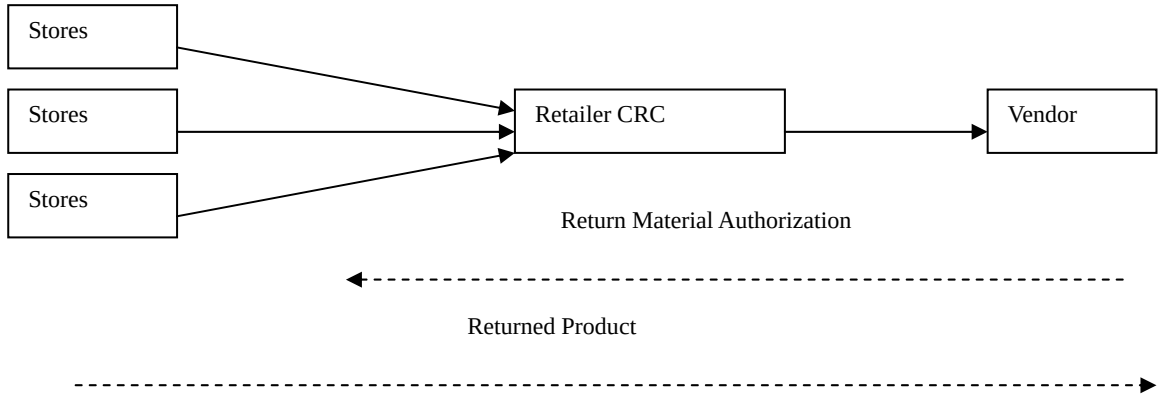

FIGURE 2: FLOWS IN SUPPLY CHAIN

8. CONCLUSION

Reverse Logistics has been stretching out worldwide, involving all the layers of supply chains in various industry sectors. While some actors in the chain have been forced to take products back, others have pro-actively done so, attracted by the value in used products. One way or the other, therefore, Cooperation in Reverse Logistics has become a key competence in modern supply chains.

ACKNOWLEDGEMENT

ICEB2004 is supported by the National Natural Science Foundation of China.

REFERENCES

[1] A. I. Kokkinaki, R. Dekker, J. van-Nunen and C. Pappis, "An Exploratory Study on Electronic Commercefor Reverse Logistics", Supply Chain Forum, An International Journal, vol. 1, no. 1, pp: 10-17, 2000.

[2] Carter, C. R. and L. M. Ellram “Reverse logistics: A review of the literature and framework for future investigation”，Journal of Business Logistics, Vol.19 No.1，1998.

[3] Norbridge(2004) “Supply Chain Collaboration and Visibility”,www.businessweek.com

[4] Tibben-Lembke. R. S. (1998) Going Backwards: Reverse Logistics Trends and Practices. Reverse Logistics Executive Council, www.rlec.org

[5] Wipro Technologies Inc, www.wipro.com

[6] Fleischmann, M., M. Jacqueline, M. Bloemhof-Ruwaard , R. Dekker, E. Vander Laan, J. Van Nunen and L. Van wassenhove “Quantitative models for reverse logistics: A review”，European Journal of Operation Research Vol.103 No.1，1997