

BARRIERS IN IMPLEMENTING REVERSE LOGISTICS BY ONLINE RETAILERS SPECIAL REFERENCE TO ELECTRONICS INDUSTRY

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Abstract: *With the boom of online retailing across the industries, customer's purchasing pattern, and the way all the products are bought and sold changing day by day. Everything goes in to online this scenario necessitates the study of logistics in depth. Because logistics decides the success of the online retail stores, the online retailers try to make a confidence among the prospect customers through on time delivery and replacement of damaged goods immediately. No sooner Forward Logistics came into picture than the Reverse Logistics (RL) started. Reverse Logistics is too critical for Online Retailer since the products and transactions are huge. The returns are huge since the customer is purchasing products without touch and feel. Not only high pilferage but also environmental concerns forced by Governments making Reverse Logistics function critical for many organization. But there are many barriers for online Retailers to implement Reverse Logistics. The aim of the study is to identify the barriers that hinder the implementation of Reverse Logistics with respect to online Electronics Industry. Empirical evidence and statistical analysis provide insights in implementing Reverse Logistics by online Retailer. In this paper, Analytical Hierarchical Process is utilized to recognize the most influencing obstructions for Reverse logistics execution.*

Keywords: *Reverse Logistics, Forward Logistics Analytical Hierarchical Process, Electronics Industry, etc.*

INTRODUCTION

A critical zone of the production network is converse logistics. Traditionally characterized as the procedure of moving item from its purpose of utilization through channel individuals to the point of beginning to recover value or guarantee appropriate disposal. Reverse logistics incorporates exercises to stay away from returns, to decrease materials in the forward framework so that less materials stream back, and to guarantee the conceivable reuse and reusing of materials. Returns can influence each channel part from shoppers, retailers and wholesalers

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to makers. Returns are brought on for diverse reasons relying upon who starts them – end shopper, wholesaler or retailer and producer – and on the way of the materials included – bundling or items. Reusable bundling is turning out to be more normal, especially in Europe where producers are required to take back bundling materials. This paper will concentrate for the most part on opposite store network for items. The measure of converse logistics is impressive. As indicated by Stock et al (2001), reverse logistics expenses are as high as 4 for each penny of total logistics costs, which sums to an expected \$35 billion in 2001 for the US alone. Buyers cause most item returns. As per a study of 311 logistics administrators in the US in 1998, normal shopper returns crosswise over retailers are 6 for each.

REVIEW OF LITERATURE

Although Industry-particular boundaries upset environmental advancement, the writing builds up Organizational obstructions as the fundamental hindrance to the appropriation of environmental practices (Hillary, 2004; Post and Altman, 1994). These internal hindrances inside of the firm incorporate the absence of duty to nature with respect to laborers and administration, and additionally an absence of preparing or qualifications in HR (Hillary, 2004; Post and Altman, 1994; Ravi and Shankar 2005). The presentation of another innovation or development in an association requires a critical change in staffing to encourage adjustment to the new technological procedure (Ravi and Shankar, 2005). Furthermore, best administration must demonstrate its dedication to the exercises of converse logistics and additionally to different associations so as to coordinate all the individuals from the store network (Ravi and Shankar, 2005).

Rogers and Tibben-Lembke (1999) characterize reverse logistics as ‘the procedure by method for which products are exchanged from their final destination to the point of root with the point of recuperating value or of diminishing waste’. Reverse logistics is connected with the exercises of reusing, repair, reuse and reprocessing, and with the assignments of accumulation, dismantling and the handling of utilized items, parts and/or materials (Kokkinaki et al., 2001).

Reverse logistics is the hidden operational capacity vital for augmenting the life of materials and items and item stewardship, two critical parts of lessening environmental weight from industrial operations. The thought processes in returning expendable items from the end purchaser to the point of birthplace may emerge for a variety of reasons. Aside from environmental concerns, the most well-known reasons incorporate deformities in the item itself, absence of buyer fulfillment, or surplus stocks at outlets propelled by lower than anticipated sales (Barsky and Ellinger, 2001). Competitive, marketing, monetary and environmental reasons are all components that have been recognized as significant for the

organizational appropriation of converse logistics exercises and works (Ravi and Shankar, 2005).

Attributable to the volume of developments included, and thus the expenses of such exercises, reverse logistics could empower the firm to accomplish an imperative competitive point of preference (Rogers and Tibben-Lembke, 1999). Numerous associations consider the hindrances defied while building up these practices to be more noteworthy than the favorable circumstances that they would acquire as an outcome of their usage (Rogers and Tibben-Lembke, 2002).

European Countries have stringent law and regulations so Electronics makers work capably for appropriate accumulation, recuperation and removal/disposal of items after end-of-life. (Lambert et al.) There is less research accessible on the obstructions of RL selection by Online Retailers for Indian Electronics Industry. Indian web purchasing is becoming exponentially, especially clients are purchasing Electronics items more and need of Reverse Logistics is essential to keep away from area fill.

This enlivened me to deal with the Barriers of Reverse Logistics execution by online Retailers. The goal of this study is to distinguish the boundaries of Reverse Logistics inside the Organization of online Retailers and to rank them utilizing Analytical Hierarchical Process. Finally the aftereffects of the empirical analysis will be outlined with conclusion.

PROBLEM DEFINITION

This paper presents an empirical study of the barriers that hinder the implementation of Reverse Logistics by Online Retailer. i.e., which of these barriers constitutes the greatest obstacle, which is most influential etc. There are number of barriers for RL implementation. The five important barriers for implementing the Reverse Logistics by Online retailer are listed in Table below.

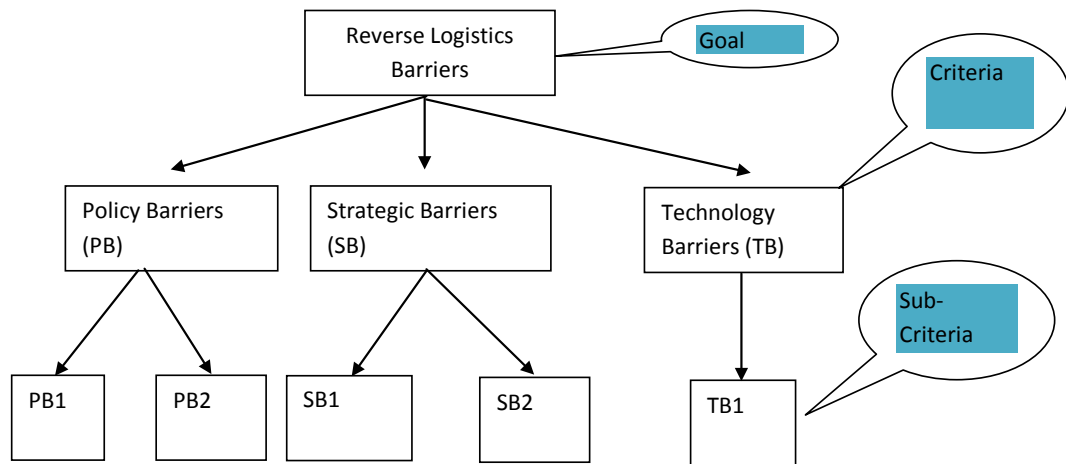
<i>S.no</i>	<i>Barriers</i>
1	More concern about Forward Logistics
2	Not interested in Reverse Logistics since there is a notion that returns are waste
3	Online Retailers thinking to sell returns in secondary market and not optimizing it.
4	Lack of commitment from Top and Middle Management
5	Lack of information in Technological systems since not investing in Reverse Logistics systems.

RESEARCH METHODOLOGY

The study was conducted among the online Retailers who are dealing with Electronics products. A structured self administrated questionnaire was designed and floated thorough online to obtain the response. The snowball sampling method was adopted to obtain the responses of the online retailers.

The analytic hierarchy process (AHP) is a structured technique for organizing and analyzing complex decisions, based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then. AHP is used in this paper to rank the reverse logistics barriers. The Hierarchical structure of AHP is shown in Fig. 1.

Figure 1: Hierarchical structure of AHP



**Table 1
Barrier perceptions**

1. Perception of Barriers for implementing Reverse Logistics

Criteria Code	Criteria	Sub Criteria Code	Sub Criteria
PB	Policy Barrier	PB1	More concern about Forward Logistics
		PB2	Not interested in Reverse Logistics since there is a notion that returns are waste

SB	Strategic Barrier	SB1	Online Retailers thinking to sell returns in secondary market and not optimizing it.
		SB2	Lack of commitment from Top and Middle Management
TB	Technological Barrier	TB1	Lack of information in Technological systems since not investing in Reverse Logistics systems.

The above Table shows the statistics of Barriers for implementing Reverse Logistics in Online ecommerce specific to Electronics Industry.

Here, the criteria will be compared as to how important they are to the decision makers, with respect to the goal. Each pair of items in the criteria will be compared; there are a total of three pairs (PB&SB, PB&TB, and SB&TB).

If one Barrier is more important than the other then as per AHP Model the importance is expressed by entering a number. The below Table-2 give the intensity according to the importance of the barriers.

Table 2
Intensity given for Barriers

The Fundamental scale for pair wise comparisons

<i>Intensity</i>	<i>Definition</i>
1	Equally important
2	Equally important - Slightly more important
3	Slightly more important
4	Slightly more important - Significantly more important
5	Significantly more important
6	Significantly more important - Very Significant proven importance
7	Very Significant proven importance
8	Very Significant proven importance – Extreme Importance
9	Extreme Importance

First, the judgments about all the comparisons of criteria is made by entering them in AHP as numbers as per the Table-3 shown below.

Table 3
Criteria preferences with Intensity

Criteria Preferences

<i>A</i>	<i>B</i>	<i>More Important</i>	<i>Intensity</i>
SB	PB	B	3
SB	TB	A	5
PB	TB	A	7

Use the scale to define the importance of alternatives by Criteria SB, compared with other alternatives.

Table 4
Criteria preferences with Intensity – with respect to SB

Criteria SB

<i>A</i>	<i>B</i>	<i>More Important</i>	<i>Intensity</i>
SB1	SB2	B	7
SB1	PB1	B	5
SB1	PB2	B	8
SB1	TB1	B	3
SB2	PB1	A	5
SB2	PB2	B	2
SB2	TB1	A	4
PB1	PB2	A,B	1
PB1	TB1	A	5
PB2	TB1	B	4

Repeat the same procedure and use the scale to define the importance of alternatives by Criteria PB and criteria TB compared with other alternatives.

Table 5
Final Ranking of Reverse Logistics Barriers

2. Analysis of Results

<i>Sub Criteria</i>	<i>Weight</i>	<i>Rank</i>
SB1	0.0392	5
SB2	0.4254	1
PB1	0.1211	4
PB2	0.1751	3
TB1	0.2391	2

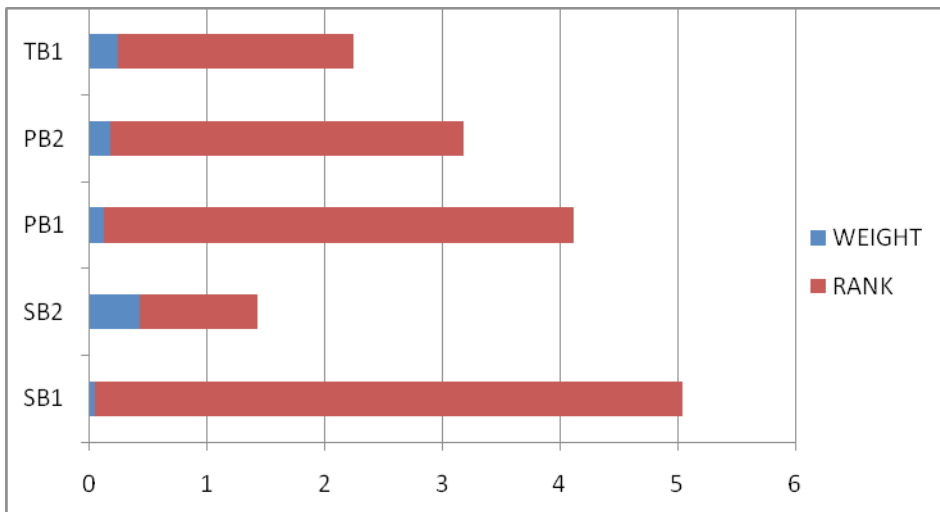
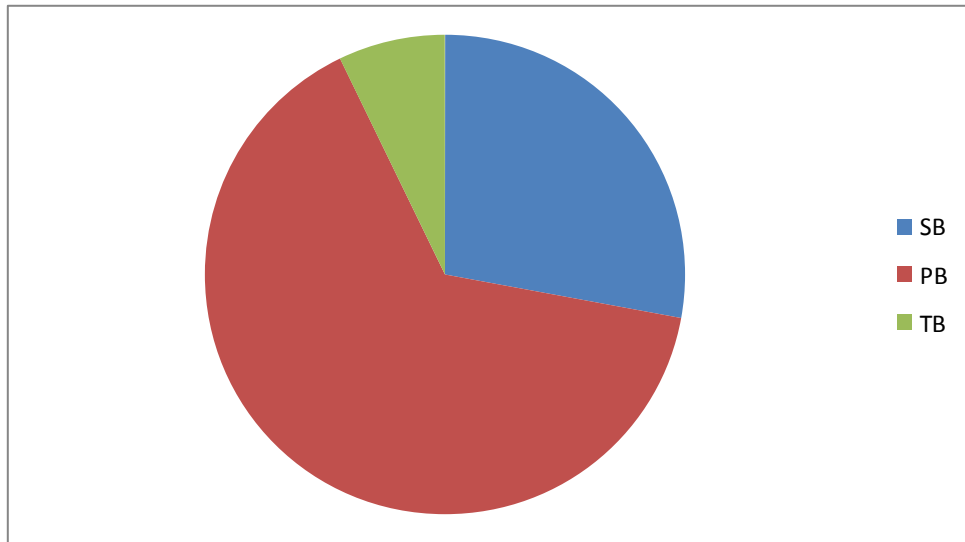


Table 6
Final Ranking of Criteria

Criteria Importance

<i>Criteria</i>	<i>Weight</i>	<i>Rank</i>
SB	0.2790	2
PB	0.6491	1
TB	0.0719	3



Using AHP, the strategy barrier is found as the most important barrier for RL implementation in online electronics industry. The ranking of the barriers will help the decision makers to proceed and act accordingly. The rank prioritization has been done by seeing the highest weightage value which shows Lack of commitment from Top and Middle Management as the first, Lack of information in Technological systems since not investing in Reverse Logistics systems as the second and Not interested in Reverse Logistics since there is a notion that returns are waste as the third. The online Retailers should handle these barriers priority basis as per the ranking.

CONCLUSIONS

Online Retailers are having some system in place for handling Reverse Logistics due to huge spillage, increased pollution, customer dissatisfaction and government restrictions. But these barriers are blocking the Online Retailers to make use of Reverse Logistics efficiently. This study will be using the multi-criteria decision-making method for prioritizing the barriers. This study will help to understand the priority of the barriers and how to address them to make the Reverse Logistics work. The rank prioritization has been done by seeing the highest weightage value which shows Lack of commitment from Top and Middle Management as the first, Lack of information in Technological systems since not investing in Reverse Logistics systems as the second and Not interested in Reverse Logistics since there is a notion that returns are waste as the third. This step will help the Organization to be profitable and also helping the Mother Earth a good place to live.

Limitation of this study is mainly analyzing one Industry that too in Online Retailer perspective. Also the factors may vary across industries and the model may be developed with extensive brainstorming sessions and taking into consideration of expertise and knowledge within the organizations. A possible future research can be carried out in different sectors where the importance level of drivers may change.

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