REVERSE LOGISTICS, ITS IMPORTANCE AND IMPLICATIONS IN RESPECT TO PERISHABLE PRODUCTS

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Abstract: The concept of reverse logistics is universal to any business. The buzz about reverse logistics is a recent trend having learnt that its existence can improve the way of business. Reverse logistics is remanufacturing, refurbishing and reuse of products and materials. Time factor is most critical to realize value with perishables in the case of logistics or reverse logistics. This market for perishable goods sees a very short product life cycle where the shelf life of each product is low when compared to the prices charged for the good. Hence there results a huge loss of value in the absence of a planned and systematic reverse logistics. Supply chain management is the plan and control of material and information flow among suppliers, facilities, warehouses and customers with the objectives of minimization of cost, maximization of customer services and flexibility. The supply chain of a business process comprises mainly five activities viz., Purchase of materials from suppliers, transportation of materials from suppliers to facilities, production of goods at facilities, transportation of goods from facilitates to ware houses and transportation of goods from ware houses to customers. In this paper, the importance of reverse logistics and its implications in perishable goods market is analyze.

Introduction: Logistics is the management of the flow of things between the point of origin and the point of consumption in order to meet requirements of customers or corporations. According to the Council of Supply Chain Management Professionals (previously the Council of Logistics Management) logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods including services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements and includes inbound, outbound, internal and external movements [1].

Many organizations falsely believe that controlling the quality of the product is the only way to control returns. Nevertheless, review of the literature and different organizations shows that returns continue to happen, even for quality-centric companies.

To remain competitive, all organizations need to move away from focusing only on quality in the production cycle and to look at quality throughout the entire operation. In addition to this shift in organizational perspective, many organizations need to recognize the importance of the entire sale-repair-return cycle. Too many organizations fail to accept that the process of moving product from the point of origin to the point of consumption (traditional supply chain) is different from the process of moving the product from the point of consumption to the point of origin *(reverse logistics)*.

In simple terms, logistics is ensuring that whatever has to reach the consumer from the seller does so in a timely and cost effective manner and reverse logistics ensures the reverse of it i.e. whatever has to reach the seller from the consumer does so without a wastage of time and money.

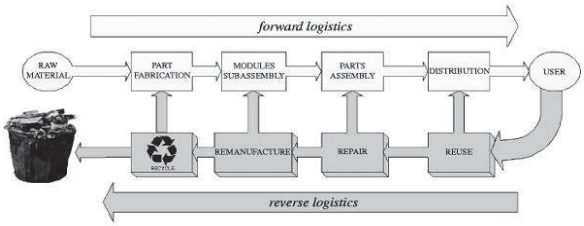

Figure.1
Source: http://cerasis.com/2014/02/19/what-is-reverse-logistics/

Review of Literature: Traditional supply chains have skilled negotiators, professional managers, and highly specialized individuals to control the now of materials to an organization (Garrett, 2010). This professionalism will also support operations that manage inbound quality. Organizations have long understood that having a highly trained and professional supply chain group will yield organizational benefits beyond the cost of these professionals. What many organizations are only beginning to realize is that applying the same level of training and professionalism to reverse logistics can yield the same level (if not greater) of benefits.

Current research in the field of reverse logistics has shown that the field is specialized enough that it should be its own separate department headed up by a senior management professional with specialized skills.

Studies in reverse logistics have shown that a portion of products that are returned and tested have no quality problems *(Kempter, 2009)*. These 'no fault returns' cost accompany money, time, and prestige.

They will often outnumber the quantity returned for actual quality issues, yet few organizations try to learn what causes these types of returns *(Kempter, 2009). One notable exception is Hitachi America. Blanchard (2012) reports that Hitachi America reduced service calls to consumers by 33% by implementing a service-call avoidance program. A technical services hotline assisted consumerism walking through and addressing some problems, thereby reducing services calls.*

Historically, supply chain management attempted to address material now known as reverse logistics as a subset of supply chain management. There were early arguments that reverse logistics was simply the reverse of an existing supply chain. This led to some interesting research by supply chain individuals, but it quickly became apparent that reverse logistics encompassed a much larger scope. Research became even more complicated as the nomenclature changed from titles such as of supply chain management, *reverse supply chain, or returns management to reverse logistics.* This created the need to search both current and early work in reverse logistics to get a suitable cross section of material for study.

A focus on customers and policy was identified in all the literature since most articles were looking to improve the process (hence being best practices) and all felt that the customer and policies should be central. Although different authors had different ideas on how to address customers and policies, all felt that improving the returns process should be a priority and hence should be a best practice of any organization (Blanchard, 2012; Hoffman, 2006). What is interesting about this is that many organizations recognize the importance of customer service, and they recognize that returns are part of customer service, but many still did not want to admit that reverse logistics management (or at least returns management) was an important function. This was made clear by the widespread absence of a senior level manager directly responsible for reverse logistics management (or even for returns management). Often the returns function was combined with the role of another functional manager, who would see it as secondary or tertiary.

Significance of Reverse Logistics: Between logistics and reverse logistics, more emphasis is given the former as against the latter concept. Reverse logistics mainly helps the firm to reduce costs, by reusing materials as much as possible. For products that cannot be reused in anyway due to its poor condition, legal implications, environmental issues, etc. the firm then attempts to scrap the products at least possible cost. Now businesses are realizing that the more reverse logistics system is in place, the more they can add onto their advantages of,

- Cost reduction
- Waste reduction
- Competitive advancement
- Regaining value through recycling of materials
- Positive environmental impact.

Reverse Logistics in Perishables Markets: Time is one the critical factor governing the perishables market. This market for perishable goods sees a very short product life cycle where the shelf life of each product is low when compared to the prices charged for the good. The producers and distributors run a race to ensure the product reaches the customer on time. In case the product is returned, it would go to the wastage pile. The absence of a planned and systematic reverse logistics will result in a huge loss of value. In this market customers generally go to the product, the rejection of product takes place in the store itself (within few hours of purchase) not giving much time for returns management. Before the product reaches the correct level for further processing or operations, its shelf life is over rendering nil value.

Though the process of managing the returns and using them effectively is a challenging task it can be very profitable. The goal of a perishable goods brand should be to minimize stagnation and damage of goods through the production and logistics system and the need for reverse logistics but when needs arise, follow a pattern that can overcome the time constraint and provide an added advantage.

The following are some models and techniques which can be used in reverse logistics to achieve cost reduction through recycling and distribution channels.

Reverse Distribution Technique: Reverse distribution is the collection and transportation of used products and packages. Reverse distribution can take place through the original forward channel, through a separate reverse channel, or through combinations of the forward and the reverse channel. Guiltinan and Nwokoye (1975) provided one of the first analyses of reverse distribution networks, identifying four major types of reverse channels according to the actors involved. Pohlen and Farris (1992) claim that the reverse channel may take several different forms depending on individual channel members' functions and ability to perform recycling or remanufacturing tasks. A major, issue in reverse distribution systems is the question if and how forward and reverse channels should be integrated. In order to set up an efficient reverse distribution channel, decisions have to be made with respect to:

- Who are the actors in the reverse distribution channel?
  Actors may be members of the forward channel (e.g. traditional manufacturers, retailers and logistics service providers) or specialized parties

(e.g. secondary material dealers and material recovery facilities). This distinction sets important constraints on the potential integration of forward and reverse distribution.

- Which functions have to be carried out in the reverse distribution channel and where?
  Possible functions in the reverse distribution channel are: collection, testing, sorting, transportation, and processing (Pohlen and Farris (1992)).

Closed-loop supply chains: Closed-loop supply chains (CLSC) focus on taking back products from customers and recovering added value by reusing the entire product, and/or some of its modules, components and parts. Over the last 15 years closed-loop supply chains have gained considerable attention in industry, as well as academia. Today we define closed-loop supply chain management as the design, control and operation of a system to maximize value creation over the entire life-cycle of a product with dynamic recovery of value from different types and volumes of returns over time.

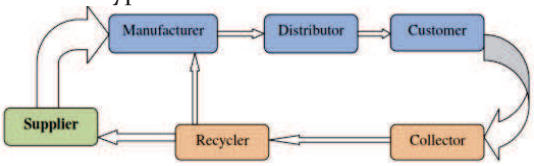

Figure 2 [5]

Let's take an example where these models are used. Astra Dairy Farms Pvt Ltd supplies farm fresh cow's milk in recyclable glass bottles at the customers' doorstep. They bottle their milk themselves. They use glass bottles for their reusable container because milk stays fresher in glass. Milk tastes like milk - not plastic, wax, or paper. Glass is a better insulator than other containers which helps the milk stay cold. Glass bottles are the only reusable containers that are non-porous. They can be thoroughly sanitized which ensures no residual flavors or odors. Thus not only providing fresh and safe milk and the company also achieves in recycling the bottles for future use. The company ensured that these bottles were brought back to the production place, recycled and used for packaging another time thus saving huge packaging costs. Hence it could be construed that the manner of use can deeply affect the role of the company in facilitating a useful reverse logistics. This is similar to the logistics system followed by Coco- Cola which does help one to notice that reverse logistics does have numerous dimensions and implications.

This system is also similar to the dabbawala network which is common in India but mostly operates in Mumbai it is a delivery system that collects hot food in lunch boxes from the residences of workers in the late morning, delivers the lunches to the workplace, predominantly using bicycles and the railway trains, and returns the empty boxes to the worker's residence that afternoon. They are also used by meal suppliers in Mumbai, where they ferry ready, cooked meals from central kitchens to the customers and back.

Having reliable reverse logistics plans will help firms manage their inventory more effectively. Outdated products could be liquidated to make room for items more in demand. Liquidation gives businesses a small amount of revenue for unwanted merchandise, while keeping warehouses operating smoothly. However, reverse logistics is about more than selling old products through clearance. Monitoring perishable goods and moving them before they expire is an essential part of maximizing profits. Every perishable market must target on zero percent defective goods. It is very tough to recycle or reuse the unsold, returned and defective product in a perishable market because of the time factor which practically governs the working of the same. This is because of the fact that the shelf life of the product is much lesser compared to other goods. But still reverse logistics can be implemented in other ways like changing the distribution channels, changing the packaging techniques and using reusable materials in the production process. The above mentioned models will help in revenue maximization, cost reduction and most importantly if properly planned and executed will also in help increasing the shelf life of the product. The above examples helps us to realize the importance and different method of implementing reverse logistics model in a perishable markets.

Conclusion: Reverse logistics in the recent business environment is hugely dependent on an organized, well planned system that functions to reduce wastage and to increase value to the business and customers through the apt diversion of products to suitable markets and customers. This is an important part of what ensures that businesses function efficiently and effectively. While many companies have yet to recognize the strategic potential of efficient reverse logistics, it is clear that the tide is beginning to turn. There is more interest in reverse logistics now than ever before.

This paper emphasis on the criteria that not only the E- waste can be reused or resold but the same logic can be applied in perishable markets also. While applying these concepts the percentage of loss is reduced the same time they develop goodwill with the customers and society. It effortlessly coordinates two-way traffic mitigating unnecessary disposal or damage of products. It is generally said that people learn the importance of some aspects when survival is tough. Businesses do stand testimony to this.

There have been many facets that businesses have learnt over the years because survival became tough. To achieve its business objectives, a company must respond to increasing customer demand for "green' ' products, comply with strict environmental regulations, and implement environmentally responsible plans as a good corporate citizen. Within reverse logistics, maintaining the environment and making profits are complementary. Fewer disposed products can benefit companies and the environment. *Reverse logistics is not simply a matter of "driving the truck the opposite way".*

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