Commercially Viable Reverse Logistics in Pakistan: Extending the Supply Chain for a Sustainable Competitiveness

Authored by

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Abstract - In today’s competitive business environment, companies with stronger Supply Chain are likely to cover the farthest of miles. In conventional business practices focusing only on financial bottom line, companies focus on their forward logistics. In recent times, mindset has been changed owing to the underlying benefits of reverse logistics and its impact on company’s sustainable business. This study is an attempt to gain an insight into the transition process from conventional non-sustainable business practices toward more responsible practices. Reverse Logistics has gained more importance in recent times as it is known to reduce operational cost by reusing products or services. Also, by implementing efficient reverse logistics strategies companies can gain more trust of their customers which result in more business with both social and economical benefits. However, this study suggests that the companies in Pakistan have been treating Reverse Logistics as cost center only and see it as part of conventional accounting, in contrast with modern approach of sustainable accounting. The study also suggests that the lack of commitment toward sustainable business practices is attributable to lack of awareness and benefits realization on part of the top management in a given company.

The study has chosen three companies from three different industrial sectors namely Pharmaceutical Automobile and the Newspaper industry. Within each industry, three levels of participants were picked to represent Manufacturers, Distributors and Retailers. For each level three respondents were picked for interviews. The study intended to undertake an exploratory approach; therefore, direct interviews (structured) were conducted. Some of the variables playing part in dynamics of Reverse Logistics in Pakistan include Company’s competitive strategy, impact on profitability and possibility of reuse. The study also has been viewed from viewpoint of Michael Porter’s Value Chain analysis. It is essential for all organizations to think in terms of extended organizations – and extended value chains. The study also tenders an explanation as to why and how managing the returned/reversed products bears competitive advantage for the participating companies, what are the types of returned products, what happened to the returned product, who manages the returned product and what are the product recovery options. Return of the products strategy is unwilling for all three major industries Newspaper, Pharmaceutical and Automobile.

It is found that the return of the products affects the customer retention, competition and penetration in general, whereas, in Auto industry clean channel is also resulted by dealing with return of the products. Life cycle of a typical product varies from industry to industry, however Life of the products is directly concerned with the rate of the Return of the products, lesser is the product life, the rate of return will be higher and bigger the product life lower the rate of the return. Profit factor also varies as newspaper and pharmaceutical industries have no major impact on their profit while automobile industry has 50 percent impact on their profit. We have also identified that there is no return policies in Newspaper industry for recycling purpose. However pharmaceutical industry focuses on awareness of reverse logistics. Auto Industry is focused only on profitable ventures in the area of reverse logistics, without any heed to the other two bottom lines i.e. Social and Environmental. Primarily, the objective is to minimize the return.

Keywords – Reverse Logistics, Triple Bottom Line, Operational Tradeoffs, Corporate Social Responsibility, Environmental Impact & Compliance, Ethics, Product Lifecycle, Product Disposal & End of Life,

1 INTRODUCTION

Globalization of economy has heightened the strategic importance of Supply Chain management in today’s business environment and companies are using supply chain strategy as one of their competitive tool. 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. Management now has clear understanding that actions taken by one member of the supply chain can affect the profitability of the company.

In Pakistani market, Reverse logistics is a new and emerging area for a majority of the businesses, and only a limited amount of information has been published to date. This study takes its inputs from contemporary knowledge of Reverse Logistics in the modern theory of Supply Chain Management, Internet and also from respected advisor Mr. Raja Asif Manzoor (renowned Supply Chain consultant) and through Interviews from different markets. The primary focus of this project is to determine current practices and develop awareness of reverse logistics practices in the Pakistani market.

1.1 Defining Reverse Logistics

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.”

Reverse logistics includes all of the activities that are mentioned in the definition above. The difference is that reverse logistics encompasses all of these activities as they operate in reverse. Therefore, reverse logistics is:
“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.”

More precisely, reverse logistics is the process of moving goods back from their consumption point for the purpose of capturing/adding value, or proper disposal. Remanufacturing and refurbishing activities also fall in the realm of reverse logistics. Reverse logistics is more than reusing containers and recycling packaging materials. If no goods or materials are being sent “backward,” the activity probably is not a reverse logistics activity. Reverse logistics also includes processing returned merchandise due to damage, seasonal inventory, restock, salvage, recalls, and excess inventory. It also includes recycling programs, hazardous material programs, obsolete equipment disposition, and asset recovery.

Effective management of Reverse Logistics leads to better customer service and consequently, higher customer satisfaction. The more customer satisfaction the company has, the more business the company can get and therefore some companies are using Reverse Logistics as an essential part of their business and they began to realize that reverse logistics is a revenue opportunity.

Many companies setup Reverse logistics because of philanthropic reasons and they earn both social and economical benefits. For example Cisco, the leading producer of networking equipment and routers used to connect computers to the Internet, grew rapidly over the past decade.

But as Internet use expanded, customers around the world encountered a chronic shortage of qualified network administrators, which became a limiting factor in Cisco’s—and the entire IT industry’s—continued growth. Cisco received the faulty Network Equipment from its customers and after remanufacturing Cisco donated these refurbished networking equipment to Universities and colleges. It turned out to be a marketing stunt for Cisco as the students who had opportunity to work on the donated equipment, preferred working on the same or similar equipment with same communication protocols. Furthermore, Cisco sold these refurbished equipments on cheaper cost and maintained inventory of refurbished equipments in their Amsterdam Warehouse. Normally, Cisco new equipment delivery takes 8 to 10 weeks but if customer requirement is on urgent basis than customer have the option to purchase these refurbished equipments where delivery will be made on immediate basis.

In order to implement reverse logistics, companies need to re-engineer their business processes and systems. For instance, not all the products in a given product category are required to be moved backward. From another perspective, not all the products might be as commercially viable to be moved backward. Another perspective suggests, there may be some products which must have an engineered reverse logistics process, even if reversing it back to origins is not commercially viable or required by law / regulations in a given territory. Mandating the requirement of engineered systems, companies tend to downplay importance of reverse logistics or they cannot fathom the underlying longterm benefits of the practice. Also in implementing Reverse Logistics, senior management’s commitment is of paramount importance. In The Senior Management needs to have realization of importance of the reverse product flows and its role in company’s sustainable commercial interests.

Internal barriers to reverse logistics include awareness of top management, incompatible processes, systems and infrastructure required to handle returns, while external barriers include amenability of the customer base. As companies are now realizing the importance of managing the entire product life cycle, more investment in this area cannot be overemphasized.

Cost reduction may not be the only motivation for a company considering incorporating reverse logistics in tor their extended supply chain. RL also helps gain insights into areas like: customer preferences, consumption practices, design improvement / innovation opportunities, after sales support requirements, need for built-in obsolescence, and root cause analysis of product malfunction / failure and market segmentation considerations.

2 LITERATURE REVIEW

Jifan Li, Master of Engineering in Logistics at the Massachusetts Institute of Technology conducted a research in June, 2004 to find how a hi-tech company makes a decision on selecting reverse logistics software system or service.

The research concluded that the technology for reverse logistics is getting improved. A versatile system enables the company to best control costs in return management and well improved customer service. However, due to diversified business requirements and reverse logistics system/services. When selecting reverse logistics (software) systems, companies should loll at future business requirements. The companies need to consider all the detailed tactical operations and balance the tradeoffs before making the decision.

Another research conducted in 2003, by Marisa Paula at Erasmus University Rotterdam on “Managing Reverse Logistics” was designed to provide a better understanding objective of reverse logistics. The research was aimed to Structuring reverse logistics as a research field, a better understanding of reverse logistics practices, and structuring and supporting reverse logistics decision-making.

The research concluded that it goes without saying that reverse logistics is also logistics, so a priori one can also transfer lessons from traditional logistics management to the management of reverse logistics. On the other hand, traditional logistics management mainly thinks forward. Logistics managers are ultra-focused on dispatching the goods, on moving them forward to the client. They are not to blame, after all, this has been the formula to keep businesses going, and many companies have reward schemes based on it. But this is not going to been enough in the

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1 Pradhan, Swapna (2006 ), Retailing Management, 2E, p-396, Tata McGraw Hill
future, where companies are eager to add value to their products, by providing more service and by becoming corporate citizens.

Another important research was conducted at the University of Memphis, in 2000 by Dr. Mohammad M. Amini, Professor of Decision Sciences at the University of Memphis. The research on “Reverse Logistics Process Re-Engineering: Improving Customer Service Quality” concluded that many organizations are realizing that reverse logistics can provide a significant opportunity for competitive advantage whereby customer service can be improved while simultaneously reducing operating cost. Reverse logistics is and will continue to be a growing filed and should be viewed as an integral part of the organizations overall supply chain.

Logistics 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.

Reverse logistics includes all of the activities that are mentioned in the definition above. The difference is that reverse logistics encompasses all of these activities as they operate in reverse. Therefore, reverse logistics is:

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.

More precisely, reverse logistics is the process of moving goods from their typical final destination for the purpose of capturing value, or proper disposal. Remanufacturing and refurbishing activities also may be included in the definition of reverse logistics. Reverse logistics is more than reusing containers and recycling packaging materials. Redesigning packaging to use less material, or reducing the energy and pollution from transportation are important activities, but they might be better placed in the realm of “green” logistics. If no goods or materials are being sent “backward,” the activity probably is not a reverse logistics activity. Reverse logistics also includes processing returned merchandise due to damage, seasonal inventory, restock, salvage, recalls, and excess inventory. It also includes recycling programs, hazardous material programs, obsolete equipment disposition, and asset recovery.

New products enter in the market as a forward logistics process, then purchased and used by consumers, the used products are recollected and categorized as “Scrap” and “Reusable”, sorting or test of the products done for segregation of used products. Reusable products are recycled and forwarded again to the market. Recovery facilities play very important role in the reverse logistics, the efficient recovery of the products and sorting make it profitable.

Why to manage Returned Products:

Managing the returned products has become very critical for achieving economic and Environmental benefits. Returned products are used as input material for producing Bi-products and the cost of the material is reduced. Through effective management of returned goods an organization can have enhanced customer relationship, environment friendly activities that can help in the best use of resources in such a situation when the resources are depleting very fast. Land filling of hazardous waste creates pollution.

Types of Returned Products:

Return of the products occurs on three stages in an organization,

a) Manufacturing - Excessive supply of raw material, faulty product and components and By-Products are returned from the manufacturing stage. raw material is supplied for manufacturing.

b) Distribution - In Distribution stage sometimes products are recalled due to some quality problems, customers return and the packaging of the products is also returned from the distribution channel.

c) Customers - Customers return occurs for reimbursement purpose, warranty claims, service returns, End of lease returns and End of life returns.

What Happens to the Returned Products:

Discarded or used products are collected from various places like offices, residential areas etc at a specific place the segregation of the products is done in three categories, some of the products are sent for recycling purpose and recycled for converting in raw material, and some of the products are reprocessed and sold in the secondary market. From both places a certain portion of discarded products is not reusable that is disposed off.

Who Manages the Returned Products:

There are defined the roles of the actors involved in the managing returned products, conventionally suppliers, manufacturers, wholesalers and retailers perform the role of Forward Supply Chain Players where as “Remanufacturers and Recyclers” involve in the product recovery. Policy for returned products is made by Government through municipal authorities. Primary and secondary markets accommodate the returned products.

**Product Recovery Options:**

Sorting of the returned products is carried out in three different categories:

1. Remanufacturing is done for bringing a returned product to as – new condition, disassembling of the product to component level, cleaning of the components, painting of the components, reconditioning and rebuilding.

2. Refurbishing is done to renew or to restore a new condition and/or appearance. A returned product is cleaned, repaired and upgraded with new features.

3. Recycling involves processing used materials into new products to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials.

Returned products are categorized in four types, on the basis of usage life and innovation cycle.

1. Type I: Products with short term use and long innovation cycle like packaging materials are passed through recycling process.

2. Type II: Products with short term use and short innovation cycle like packaging materials are passed through recycling process.

3. Type III: Products with long term use and short innovation cycle like Computers, mobiles, laptops are passed through Refurbishing process.

4. Type IV: Products with long term use and long innovation cycle like Home appliances, Automobiles, copiers, printing machines are passed through Re-manufacturing process.

**Evolution of Value Chain Concept**

The initial concept of having separate departments performing distinct functions mutually exclusive and monitored by independent manager has been replaced by the concept of having a set of related activities being performed in coordination with other stakeholders and being lead by a single command structure.

There has been strong interconnectedness between the previously separately monitored functions or departments. The pieces have now been joined to form a chain – the supply chain. The evolution process can be summarized in the following manner: Initially the organizations were divided into functions working in their own domains to achieve their own targets. The led to high costs and low synergies; then came the idea of Internal Supply Chain which replaced the functional organizational structures.

The idea was to see all the functions as a sequence or a chain. All functions became connected under single accountability. The latest concept of value chain is to link the internal processes with those of the customers and the suppliers, sharing value between supply chain partners, thus forming an extended organization supply chain and ensuring the Value is delivered to the final customer. In the Value chain, the business model is supposed to be fully networked, end-to-end value chain managed on value, main emphasis not on turning raw-material into finished goods, but on delivering value to the end customer/consumer.

**Michael Porter’s Value Chain Model:**

The term ‘Value Chain’ was used by Michael Porter in his book “Competitive Advantage: Creating and Sustaining superior Performance” (1985). The value chain analysis describes the activities the organization performs and links them to the organizations competitive position.

Value chain analysis describes the activities within and around an organization, and relates them to an analysis of the competitive strength of the organization. Therefore, it evaluates which value each particular activity adds to the organizations products or services. This idea was built upon the insight that an organization is more than a random compilation of machinery, equipment, people and money. Only if these things are arranged into systems and systematic activates it will become possible to produce something for which customers are willing to pay a price. Porter argues that the ability to perform particular activities and to manage the linkages between these activities is a source of competitive advantage.

**Criticism on the Value Chain Model:**

Michael Porter’s Value Chain model despite being applied to a large number of industries, yet have some drawbacks or limitations. Some of the points noted for this model are as under:-

- The value chain model has been designed in a way that apparently is best suited to the manufacturing or operations intensive concerns only.

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- Value chain model is not fully applicable on the e-business models and the services industries which contribute a large share in global business.
- The Value chain model is built keeping in view the assembly line in a manufacturing plant, therefore the model is too linear, too unidirectional, and too sequential.
- Porter’s Value Chain model largely talks about Differentiation and Cost Efficiency and focuses on the tangible outcomes of cost, revenue, margin and basic configuration of business activities. The intangible margins, the cooperation and operational excellence are not given their due importance.

Extended Value Chain Model:

No living organization can do its business without having it connected with some suppliers and/or some customers. Organizations act as a single entity in a larger system that is composed of several such entities. An organization cannot effectively manage its own value chain till it has proper and timely inputs and till it is capable of producing the required mix of products/services at the right time. The concept of Value chain only applied to the organization only; ignoring the connections with other members of the system may result in disaster.

This gap is filled by the introduction of the concept of ‘Extended Value Chain’. The inbound logistics of any organization are dependent on the outbound logistics of its suppliers; similarly the outbound logistics of any firm is the inbound logistics for its customers in the downstream. It is therefore essential for a living organization to think in terms of extended organizations – and extended value chains. Organizations need to carefully consider their extended chain the way they are required to make their own chain efficient. The successful management of extended value chain means coordinating and sharing of critical information across the chain members so that timely decisions can be taken. For this purpose several software are also available in market that enhance the productivity of value chain by having meaningful sharing of information.

3 PROBLEM STATEMENT

“Why local industries (Pakistani) are not realizing the benefits of reverse logistics business processes in the context of triple bottom line i.e. Social, Environmental and Economical”

This study attempts to gain an insight into the motivations and demotivations of adopting reverse logistics in end-to-end supply chains.

4 OBJECTIVES

Reverse logistics area of operations is usually not considered a part of routine supply chain. Michael Porter’s model of Value Chain also considers Inbound Logistics and Outbound Logistics as its components; however, the said model has nothing on Reverse Logistics – at best it can very vaguely be treated as part of After-Sales services section of the model.

The objective of the research was to find out if Reverse Logistics is in practice at various industries in Pakistan, and what are the practices for Reverse Logistics and its impact on business. Since there are very few researches made on the topic, and also that most of the researches are not within our local Pakistani context, the ultimate objective of this research was to explore the RL ideas and practices in the local context.

5 THEORETICAL FRAMEWORK

Based on the review of literature, following variables were identified to be key in finding the practices on Reverse Logistics in various industries in Pakistan.

Variables include: Life Span of the product(s), Impact on Profitability (Perception of Return on Investment and its placement in Company’s Competitive Strategy), Reversed Products as share in Sales, Possibility of Reuse after Treatment, Impact of Recycling (if possible) on Quality grade of Final Products, Impact of Recycling on Profitability, Development of Reverse Logistics Policies and their link with its Performance, Formalization of Reverse Logistics Systems as enabler to Performance Improvement and Managerial barriers in Implementing Reverse Logistics systems.

<table>
<thead>
<tr>
<th>Cost Based</th>
<th>Performance Based</th>
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<tr>
<td>Life Span of a typical product.</td>
<td>Factors of Reverse Logistics.</td>
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<td>Impact on Profitability.</td>
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<td>Reversed Products as share in Sales.</td>
<td>Role of Return in Company Strategy.</td>
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<td>Formalization of Reverse Logistics Systems as enabler to Performance Improvement.</td>
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<td>Barriers in Implementing Reverse Logistics systems.</td>
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6The Value Chain: The Original Breakthrough, http://www1.ximb.ac.in/users/fac/dpdash/dpdash.nsf/pages/BP_Value_Chain
http://www.ijmsbr.com
Direction of Relationship of the Variables:

<table>
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<td>Fail Reasons.</td>
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<td>Customer Relationship, Penetration.</td>
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<td>Life Span of a typical product.</td>
<td>Cost, Complexity, Customer Retention.</td>
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<tr>
<td>Possibility of Reuse after Treatment.</td>
<td>Cost Benefit, Quality.</td>
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<tr>
<td>Impact of Recycling (if possible) on Quality grade of Final Products.</td>
<td>Quality, Customer Satisfaction.</td>
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<td>Cost.</td>
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<td>Formalization of Reverse Logistics Systems as enabler to Performance Improvement.</td>
<td>Policies, Cost Benefit, Competitiveness.</td>
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</table>

For this purpose, Automobile, Newspaper and Pharmaceutical industries were chosen. As the topic was new and unexplored, a questionnaire was developed for interviews. The questionnaire included descriptive open-ended and pick-from-list type of questions. The interviews were conducted to gather the responses and were later punched in to have a comparative analysis across industries to find out similarities and unique patterns.

### 6.1 Population

Since the study encapsulates industrial research, number of respondents are select few, unlike consumer research where tend and hundreds of respondents constitute statistically reliable population representation. Unit of Analysis is an average local company of Pakistan having an end to end supply chain of material flow.

### 6.2 Assumptions and Limitations

Following are the assumptions and limitations of this study:

1. The distribution of the variables chosen is considered to be normal.
2. Limited numbers of factors of operations management are considered as the study focuses on local context only where these factors are predominantly found.
3. Personal unusual reasons and experiences, either good or bad, may render the analysis and inferences biased.
4. Keeping in view an apparent low level of awareness and literacy in the interviewees, the study may reflect personal opinions of few.

### 7 DATA ANALYSIS

Basically three categories of variables were analyzed in open-interviews conducted at three levels of the three selected industries. The responses gathered from the interviewees are summarized below.

For the factors that become the source of Reverse Logistics; all three industries agreed on ‘End of Life’ as the main cause of reverse logistics, however in Pharma Industry, ‘Product recall’ is also one of the key reasons of returns, whereas in Auto Industry Warranties, Manufacturing defects, and Servicing are also identified as the factors behind reverse logistics. In case of newspapers, recycling is the only opportunity for RL to be profitable.

In cases where product return was caused due to excessive inventory present in the shelves, primary reason was quoted to be as ‘Forecasting Errors & Bias’.

In particular, newspaper industry was sensitive to the timeframe it has to make its product ready on the shelves, as the product, if delivered late, is rarely sold, and is generally of no use to the customers.

Pharma industry identified a few more reasons, including Damages-in-Transit and the Quality defects. The damages-in-
transit usually leaves the product in dented form which is not
saleable and thus returned. Another fail-reason was Expiry of
products, which again is a subsequent effect of forecasting errors
– any product that has little demand but made available in access
to its demand sees its expiry and therefore returned back to the
previous level of intermediaries, up to the manufacturer.

Return of the products strategy is also observed to one of the
major reasons in all the three industries. Return of the products
affects on the customer retention, competition and Penetration in
general where as in auto industry clean channel is also resulted by
dealing with return of the products.

When asked about the life of a typical product, the answers of the
interviewees from all three Industries were different, according to
Newspaper Industry the life of the product is One day, in
Pharmaceutical Industry the life of the product is 3-5 years whereas as in
Auto Industry the life of the product is 6-12 months. Life of the
products is directly concerned with the rate of Return of the
products, lesser is the product life, the rate of return will be higher
and bigger the product life lower the rate of the return.

According to the 17 to 20 percent interviewees from Newspaper
and Pharmaceutical Return of the products have very significant
impact on the profit where as majority from Newspaper and
Pharmaceutical considers the there is no significant impact on the
profit. In Auto Industry 50 percent considers the significant
impact of profit where as rest of the 50 percent consider that there
is no significant impact on the profit. That shows the companies
with efficient processes and proper processing of the returned
products are less bother about the impact of Reverse Logistics on
profit.

To know the statistics of the Reverse Logistics, we asked from
the interviewees of all three Industries about the percentage of
the sales as reverse logistics, it was revealed that the 5-10 percent
of the sales in Newspaper Industry is reversed, in Pharmaceutical 3-7
percent of the sales is reversed where as in Auto Industry it is
very less that is 2-3 percent.

Reusing of the products is sometimes very favorable situation to
minimize rate of rejections but in the Newspaper and
Pharmaceutical Industries there is no reuse of returned products
where as in Auto Industry the returned products can be reused
after a certain treatment, but this is not possible in all cases and
by all companies 60 percent in the industry believe that returned
products can be reused after treatment where as 40 percent in the
industry think that the returned products with major damages can
not be reused even after treatment.

To analyze the impact of the recycling on Quality we asked from
interviewees about their companies, in Newspaper Industry there
is no impact on recycling of the returned products where as in
Pharmaceutical Industry there is 100 percent impact on the
Quality of the products because Pharmaceutical products are
concerned with life of the human and recycling is unfavorable. In
Auto Industry respondents were reluctant to answer this Question.
When asked about the impact of the returned products on the
profitability of the company from interviewees , the respondents
from Newspaper Industry showed that there is no impact on the
profitability of the companies in Newspaper Industry , where as in
Auto and Pharma there is minor impact on the profitability.

Link of the development with reverse logistics was mainly
concerned in Pharmaceutical and Auto Industry where as in
Newspaper Industry the respondents showed no response. Auto
Industry considers that the development of reverse logistics
mechanism is directly linked with the Reverse logistics. Majority
of the firms in Newspaper Industry considers that formalization of
the reverse logistics as enabler to Performance improvement
where as in Pharmaceutical and Auto Industries, all companies
consider the formalization of the reverse logistics as enabler to
Performance Improvement. We analyzed the influence of the
Liberalization of Reverse Logistics policies on reverse logistics
capabilities the 80 percent respondents from Newspaper Industry
answered positively by considering influence of Liberalization of
Reverse Logistics Policies on Reverse Logistics capabilities. 33 to
40 percent respondents from Pharmaceutical and Auto Industries
considered Liberalization of Reverse Logistics Policies as having
no significant impact on Reverse Logistics Capabilities.

When asked about the barriers in implementing Reverse
Logistics, the respondents from all three industries highlighted
Company Policies, Importance of Reverse Logistics relative to
other issues and Competitive issues as general barriers for
implementing Reverse Logistics in Newspaper, Pharmaceutical
and Auto Industries. Financial Resources is seen as a barrier
specifically for Newspaper and Auto Industries and Lack of
system in Newspaper Industry and Management inattention in
Pharmaceutical are seen as major barriers for implementing
Reverse Logistics.

We have collected suggestions from companies in all three
industries; firms in Newspaper Industry are looking towards
Leading Newspapers for developing a reverse logistics system in
order to develop strong relationship between distributor and
retailer. In Pharmaceutical Industry New recycling and
remanufacturing methods to be flourished, timely liquidation within
the expiry date to be incorporated. In Auto Industry there is need
of customer and employee awareness programs about reverse
logistics, timely and frequent response is essential to make
customers satisfied.

On the topic of types of system that are place for Reverse
Logistics in the selected industries, respondents from Newspapers
Industry said that there are Manual and Computerized tracking
systems, while in the Pharmaceutical Industry there were
Computerized Return Tracking systems, Batch numbering and
also Manual systems. In Auto Industry there are Barcodes,
Computerized return tracking, Computerized return entry at most
downstream points in the respective supply chain.

When asked about the decision center for Reverse Logistics the
respondents from Newspaper Industry answered that decisions for
Reverse Logistics are made on Retailer and Distributor end. In
Pharmaceutical Industry decisions are made at Distributor and
return processing centers, where as in Auto Industry decisions
vary case to case and are made at Manufacturer end. Distributor
end, returned goods processing centers and retailers.

http://www.ijmsbr.com
We have also collected comments on the recent trends of reverse logistics in all three major industries, respondents from newspaper industries have some concerns over the leading Newspapers that have no policy for return of the newspapers and the retailer bear loss in case of unsold newspapers, there is no compensation for the retailers and distributors.

Respondents from Pharmaceutical Industry have focused on the need of awareness about reverse logistics process and their impacts on the society, local pharmaceutical companies should adopt strong Reverse logistics system like Multinational Companies. Pharmaceutical Manufacturer should create awareness among customers about storage conditions through campaigns and also monitor it. Respondents from Auto Industry said that the manufacturer's objective is to minimize the return and reverse logistics plays very important role in auto industry.

The population has been analyzing on the basis of 6 key demographic factors. Results obtained on the basis of these factors have been discussed briefly as below:
<table>
<thead>
<tr>
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<th>Auto</th>
<th>Pharma</th>
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<td>Missing Parts</td>
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<td>Competition</td>
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<td>Penetration</td>
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<td>Clean Channel</td>
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<tr>
<td>Life Span of a typical product.</td>
<td>Cost, Complexity, Customer Retention.</td>
<td>One Day</td>
<td>6-12 Months</td>
<td>3-5 Years</td>
</tr>
<tr>
<td>Reversed Products as share in Sales</td>
<td>Cost, Complexity.</td>
<td>5-10 %</td>
<td>2-3 %</td>
<td>3-7 %</td>
</tr>
<tr>
<td>Possibility of Reuse after Treatment.</td>
<td>Cost Benefit, Quality.</td>
<td>Reuse not possible</td>
<td>60% Reuse the returned products</td>
<td>Reuse not possible</td>
</tr>
<tr>
<td>Impact of Recycling (if possible) on Quality grade of Final Products.</td>
<td>Quality, Customer Satisfaction.</td>
<td>No impact</td>
<td>N/A</td>
<td>100 percent impact</td>
</tr>
<tr>
<td>Impact of Recycling on Profitability.</td>
<td>Cost.</td>
<td>No Impact</td>
<td>Minor Impact</td>
<td>Minor Impact</td>
</tr>
<tr>
<td>Development of Reverse Logistics Policies and their link with its Performance.</td>
<td>Policies, Cost, Complexity in Operations.</td>
<td>N/A</td>
<td>100 % responded positively</td>
<td>60% believe it is true.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Formalization of Reverse Logistics Systems as enabler to Performance Improvement.</strong></th>
<th>Policies, Cost Benefit, Competitiveness</th>
<th>67% Responded Positively</th>
<th>100% Responded Positively</th>
<th>100% Responded Positively</th>
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</thead>
<tbody>
<tr>
<td><strong>Influence of Liberalization of Reverse Logistics Policies on its Capabilities.</strong></td>
<td>Policies, Cost Benefit, Competitiveness</td>
<td>80% Responded Positively</td>
<td>40% Responded Positively</td>
<td>33% Responded Positively</td>
</tr>
<tr>
<td><strong>Barriers in Implementing Reverse Logistics systems.</strong></td>
<td>Policies, Cost Benefit, Culture, Internal &amp; External Resistance..</td>
<td>Company Policy</td>
<td>Company Policy</td>
<td>Company Policy</td>
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<td></td>
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<td>Lack of System</td>
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<td>Importance of RL relative to other issues</td>
<td>Importance of RL relative to other issues</td>
<td>Importance of RL relative to other issues</td>
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<td>Competitive Issues</td>
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<td>Legal Issues</td>
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</table>
8 CONCLUSION AND RECOMMENDATIONS

‘End of life’ is the main cause of reverse logistics, however in other industries product recall, manufacturing defects and warranties etc. are also the basis of reverse logistics. Forecasting error has a significant role in above problems coupled with transit and quality issues. Product expiry or missing components lead to initiation of reverse logistics mechanisms. Implementation of Reverse Logistics helps organizations retain their customers and build relationship by cleaning the channels.

Average age varies by the nature of product, but definitely all products have a limited life, thus requiring disposal or reversal. Majority of the respondents see it supportive to the business while very small portion of respondents see reverse logistics as having negative impact on the business. Key concern for the companies is the impact on profitability due to reverse logistics.

At an average, 2 to 8 percent of the sold products need reverse logistics, where the range varies from industry to industry. Returned products can be reused after a certain treatment but this is not applicable in all cases. About 60% of the firms believed that returned products can be reused after treatment but remaining 40% have different perception for the same, it may vary from industry to industry. Quality issues are always there in recycling irrespective of the nature of the product. Respondents from the different industries agreed that proper formalization of Reverse logistics in the firms leads to performance improvement.

Liberalization in reverse logistics policies leads to improvement in the reverse logistics capabilities of the firms. However, it may not be applicable in every industry. But majority of the respondents are in the favor of liberalization. Company policies, financial resources, Reverse Logistics importance relative to other issues, management inattention & competitive issues are the major barriers in the implementation of reverse logistics. As such there is no special tool used for the monitoring of reverse mechanism in industries, however Computerized return tracking systems, batch numbering & manual systems are currently used in most of the firms. Barcodes are also used in some specific industries like auto industry.

Decisions for the reverse logistics are mostly take at retailers & distributors end. These decisions are made at manufacturing end as well, again depending upon the nature of the product. Collective suggestions regarding reverse mechanism are that build strong relationship among distributors & retailers for proper implementation of this mechanism. There should be a need to build awareness among employees as well as among customers about positive aspects of reverse logistics on environment & society.

In essence, it can be concluded that the organizations using Reverse Logistics, see this as a key enabler to their Supply Chain Performance and as a significant player in their customer retention and management policies.

Reverse logistics is not treated as a cost but contributor to the business profitability.

Reverse mechanism are suggested to be used to build strong relationship among distributors & retailers and there should be proper implementation of this mechanism. There should be a need to build awareness among employees as well as among customers about positive aspects of reverse logistics on environment & society.

9 AREAS OF FURTHER RESEARCH

Globally, companies have implemented Reverse Logistics as an integral part of their Business environment. In Pakistan, this practice has not been not followed in its spirit. This study documented the reverse logic practices that are currently followed in the three different Industries. Due to the lack of awareness of Reverse Logistics among senior management, these practices are not carried out in a systematic and holistic manner. Furthermore, reverse logistics, by and large in local context, has failed to find its position in competitive strategies of the organizations, especially the companies having no international / global presence.

There is a high need to investigate reverse logistics in the context of CSR (Corporate Social Responsibility) and whether it truly has potential to benefit the company on social as well as environmental bottom lines. Furthermore, there is a need for investigation into possible methods for reuse and recycle of the returned products for more economical/commercial justification of the reverse logistics.

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