

# Overview of Reverse Supply Chain Management

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**Abstract**— The awareness about the environmental problems in the globe is also increasing results of the global agenda for bringing some changes. The report of Brundtland has put impact on industries in the entire world which shows the results of awareness in the products. This also increases recovery activities. Furthermore, the attraction has gain in academia through these activities. Some environmental issues have taken consideration in academic context. Furthermore, the supply chain management as well as reverse logistics is some types of environmental issues. On the other hand, these areas of research still considered as new resulting in lack of individual theoretical base for has gotten review and assessment regarding the contribution of these researches in developments of individual theory for closed loop supply chain management. Moreover, reserve logistics is deemed as a modern field of consideration, study and research leading to helpful information provision relating to the operations of the closed loop supply chain. There is no standard technique is suggested yet even though research relating to this field was started during early 1990's. The given paper has its own purpose, which deals with the establishment of a new approach to the reverse logistics study. This paper is primarily an evaluation of helpfulness of system dynamics when used in the field of reverse logistics.

**Index Terms**— supply chain management, reverse logistics, Recovery, closed loop, environmental problems, return reasons, Green Supply Chain.

## 1. Introduction

The closed loop supply chain management involves such processes as well as operations, which are not found in traditional management of the supply chain. Forward and reverse chain is two elements on which the closed loop supply chain is based. The closed loop supply chain also include the following factors such as acquisition of products, reverse logistics, testing, sorting, disposition and refurbish process. This process also includes distribution and marketing. Some theoretical considerations are also based on conventional supply chain management. Due to the lack of theoretical consideration especially for the closed loop supply chain, management has to set the relations regarding additional components. These components are covered in the reverse supply chain management system. From the theoretical point of view, the rational is set of general propositions which involved some rules and regulations related to the explanation and are also showing evident relationship for particular experiential phenomena. In other words, a theory can be defined as a set of claims or statements in relation to a particular phenomenon which is deemed as valid after experiment on various cases. Area of closed loop supply chain management in becoming mature and attracting attention. However, the absence of theoretical base relating to this area has resulted in criticism from researchers regarding lack of theoretical base.

Supply chain management is the most essential thing in the business of the world, because the organizational

success depends on supply chain management. Twenty years back, supply chain management supplies the raw material to organizations to produce goods and services. In the modern business sectors the services are increasingly essential part, as the prosperity and development of the companies depend on the level and the quality of their services. Services are the significant subtypes of business activities. To extend the business activities and services played a very important role. Moreover, the categories of the services analyzed the needs and requirements of the life cycle process. Distinguishing the status for conservatory organizations to be talented to differentiate amongst the categories of provision knowledge happenings and the connected consequences, a developing provision knowledge typology has been expressed that speeches the alterations among provision erudition happenings grounded on the gradation or glassy of scholar contribution, and provision to the communal.

It is important for the companies to know about some important risks such as operational, financial, and tactics risks because these all directly or indirectly related to the quality of products, management, health, sufficiency and environment as well as it belonged to the continuity of business. In the recent era, it is important for the managements to bring protection for the brands. Through this, the supply chains must run in the ethical and effective manner. Business concerns are increasing and continue the operations of business. It also focuses on the critical suppliers. This working paper presents arguments which are based on review of theories and concepts regarding similar areas which include systems thinking, sustainable development or industrial ecology might provide first components regarding what change can develop into closed loop supply chain management theory in the future. Furthermore, research contributors have argued that one of the main weaknesses of research is that the belief i.e. there

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is no appropriate theory. Moreover, these contributors have also criticized claimed lack of appropriate theoretical framework which is being used as a justification for application of case study strategies. The rationale for using cases as a research technique in operations management is no exception. Moreover, a major weakness of operations management researchers is the presumption at a very first stage regarding non existence of application theory. However, theories which can contribute might also exist outside boundaries of operations management. Therefore, a thorough evaluation of similar fields such as marketing, finance or manufacturing is recommended which might lead to application of these theories or components of theories in other disciplines such as operations management. This working paper initially reviews current theories, concepts and debates by environmental social sciences for the purpose of assessing whether these could be implemented to closed loop supply chain management.

## 2. Methodology

### 2.1 Definition and a brief history

Closed loop supply chain is an ideal where supply chain completely reuses, recycles or composts all wastes generated during production. Moreover, closed loop supply chain shows at the minimum level, the manufacturer of the product is also responsible for the ultimate disposal of the product. Closed loop supply chain management is described as the design, control and operation of the system which is to maximize the creation of value over the entire life cycle of the product with a dynamic recovery of value from different volumes as well as types of returns over the time period.

From the simple combinations of reverse and forwards channel of supply chain, the definition is developed, and this showed the ecology in industry. The industrial ecology is high lightening the perspective of industry along with sustainable developments. This concept also encompasses an idea of sustainability. Furthermore, it also have focus on actions of companies within industry without acceptance and rejection significant material of other subsystem sustainability. It is explained in the definition that ecology is also trying to make investigations in total materials from the starting point till the last points. The entire aim or objective of industrial ecology must recover which is out of date and showing the product's life along with the closing loop as compared to dispose of it. When the companies have a desire to close an endless and repetitive cycle of materials, then there is need of industrial ecology along

with various practical examples. Furthermore, the ecology of industry also needs to be replaced and ultimate disposals should change as well for the recovery of obsolete products.

### 2.2 Reverse Logistics: the basic dimensions

The following dimensions are basic in reverse logistic; such as reasons of receiving and the reasons of returning. The current section is dealing with the fundamental of reverse logistics through analysis the topic from important viewpoints. These points are:

- Reasons of returning
- Reasons of receiving
- Deal with what, why and who

One more classification is provided for each dimension. This section also deals with the typologies. The interrelation of dimensions is a deal in the next section. The following sections also come in further consideration:

- The why receiving forces are dealing with companies and institutions for reverse logistics.
- Why returning is ask questions and find out the issues related to the products return.
- What are things, which returned, means the types of products along with features.
- The How part deals with the solutions and recovery options
- Who part of dimensions is dealing with the roles of personalities and the actions.

### 2.3 Reverse Logistics: Why? What? How? Who?

#### a) Why-returning: return reasons

The literature regarding the reverse logistics deals with pointing out the driving forces such as economies of countries, environmental rules and legislation as well as consciousness of the customers. It is a fact that the companies are involved in the reverse logistics because this will give them more profit as compared to other companies. The driving forces are organized with interconnection of typologies. These elements are following:

- Economics (direct and indirect)
- Legislation
- Corporate citizenship

#### b) What: types and characteristics

The products are returned and discarded due to different functions such as lack of proper operations and no longer function means they are operating in the short term period. The return reasons are also presented over here. The return

reasons are presented with conformity along with phases of usual supply chains. These phases are:

- Starts with manufacturing
- Going for distributions

The following groups are differentiated; such as

- Manufacturing returns
- Distribution returns
- Customer returns

### c) How: processes and recovery options

The one of the activities of reverse logistics is the recovery. The other processes which are including are:

- Collection
- Inspection/testing selection
- Sorting

Collection means bringing products and services from the customer's point of view. The products are inspected at this point. At this point, quality is assessment and a decision regarding the products are made especially on the type of recovery. At this point, the products are sorted and routed according to decisions of recovery. So, we have to do:

- Collection
- Inspection/ testing
- Selection
- Sorting
- Recovery itself

The quality must be as good as new which show that the products can be fed in to the market on an immediate basis. This can be done through the direct recovery. The other types of recovery also included, but there is need of more actions such as reprocessing.

The products can be fed in to the market if the quality of the products is as good as news. The marketers on sudden basis work through direct recovery. Other types of recovery are also indulged but it is a fact that the demands of the quality and products need more and superior actions and this is another form of reprocessing. Therefore, there is a difference between two groups of recovery which must be discussed further.

- Direct Recovery
- Process Recovery

### Direct Recovery

There is a slight difference in the re-use, re-distribution and re-sale. Re-sale means the products will be sold again, but re-uses means the products are ready to use after first time usage. In the situation of re-use there is no process

regarding purchasing. Re-distribution deals with the concept of carriers of products which are distributed on a general basis and on the repeatedly basis. The direct recovery is based on the following options. Such as:

Direct recovery involves the three following options:

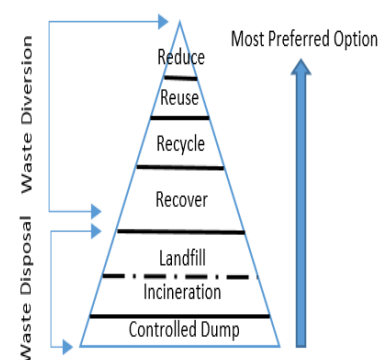
- Re-use
- Re-sale
- Re-distribution

### Process Recovery

The recovery procedure is based on several operations such as cleaning, disassembling, and re-assembling. The process recovery occurs at different levels, despite of detailed operations. Thierry in his 1995 article and Fleischmann in 1997 shed the light on reprocessing and recovery levels. The products are recovered in the production department after repairing the process. At the level of the module, the products are upgraded through installation, building, or other civil object. On the other hand, in the component recovery situation, the process starts from dismantling the step and these new parts are used for the production of same products as well as these can be used in different product manufacturing. The reprocessing is also based on guided selection process of parts for recovery. In material recovery case, the products are a grind and sorted in groups on the basis of quality. Through this, the recycled material is the input for the industry, which includes paper pulp and glass (recycling). As the products are concerned in, the energy industry, then recovery products are burned and released energy is captured. No one process occurred in the recovery process then products will go for landfill. In summarizing the process, the recovery product includes the following options.

- Repair (at product level)
- Refurbishing (at module level)
- Remanufacturing (at component level)
- Retrieval (at part level)
- recycling (material level)
- Incineration (energy level)

Through the following image, the typologies for processes and recovery options are highlighted for the dimension of how. The figure highlights the recovery options regarding the recovery levels. The recovery options represent orders regarding recover level. These levels include product as a whole;



module; component; part; material; or, energy level. In the form of an inverted pyramid, the recovery process is enhanced at the global level. On the other hand, recycling and incineration are the types of recovery based on content levels from top to the bottom pyramid. The similarities can be finding in the pyramid shape. Lansink's waste hierarchy is introduced in the 1979 through a remarkable personality of parliament called a Dutch member based on prevention, re-use, recycling, and proper disposal. At the initial stage, one can think about the recovery options at the top of the pyramid regarding the high values and based on the environment friendly options. These options are closed to the bottom and show less recovery as compared to other products. There is needed to show stress especially in both thoughts which is not compulsory as well in the process. The Lansink's hierarchy is putting together regarding the environmental friendliness of recovery options. It is a fact that the entire hierarchy is not true regarding the environment. Take the example of papers recycling process and land filling process. Different arguments are raised for paper biodegradable. The land filling is requiring less energy as compared to the bleaching processes, which also have importance regarding recycling. According to the economic value of recovery options which is dependable, for instance, the existence of the matching market. After recovery of products, the market can gain energy and this is valuable as the collection of spare parts. Through the process of recovery the market for all options select different things from top to the bottom to recover the entire process. The return reasons of the products are playing the role over here. If the customers are returning products due to the need of restored working conditions then direct recovery is very likely. The recovery options are separate due to the different effects in the organization. It main have the effects regarding the distribution process, and planning regarding the production. The third group is likely to outsource by the production department of the company. So, the entire dependence of the recovery options is based on the production department and recovery department. The reverse logistics is providing the opportunities for certain types of players.

#### d) Who: actors and roles

The following players are most crucial part.

- Forward supply chain actors and these include supplier, manufacturer, wholesaler, retailer, and sector the organizations

- Chain players and specialized and these are based on jobbers, recycling specialists, dedicated sector organizations or foundations, pool operators, etc.
- Institutions of Government and opportunistic players

At the level of management, parties are responsible for organizing reverse chain. Other players are simply executing the activities in the network or chain. In the accommodator role, the final role is setting and adding something in an accommodator role. The sender as well as giver and future client perform this addition and this leads to future client. Without the client, the recovery is not making sense. In the reverse logistic, the group of actors are involved, especially in the collection, processing and there is interdependence of intermediaries. The other interdependence is included or based on reverse logistic service providers, municipalities taking care of waste collection, and public, private foundations created to take care of recovery. Each actor has divergent capabilities.

At the management levels, parties have the responsibility for the process of organization reverse chain network. Other players are executing activities for the network. The final step is regarding adding of accommodation and this is performed through the sender and givers as well as future client in the market. Without the future client the recovery will not be possible and do not show much sense. In the reverse logistics, the group of actors is involved in activities of reverse logistics and this includes the collection and processing. The specific companies are providing reverse logistics services, providers and municipalities. These organizations are taking care of waste collection, and public-private foundations created to take care of recovery. Different objectives belonged to each actor such as manufacturers are recycling to prevent jobbers regarding re-sales of products at lower prices. Various parties are competing with each other at this stage. Some parties are responsible according to legislation and they organize their network. These parties belonged to the forward chains such as OEM. The organizations are government entities such as EU. At the level of execution, there are collectors, processors, and re-distributors, which can be divergent parties. Exchange information exists between managing and the execution level.

### 3. Literature on Reverse Logistics

In the reverse logistics, all operations are standing for entire operational production. It is also related to raw materials and products. The reverse logistics is also belonged to the

procedure of the plan, implement and control. These must be efficient, effective in the term of cost. Furthermore, the entire information must belong to the in process inventory, finished goods and consumption information. The entire reverse logistics needs to recapture value or paper disposal (Isenmann, 2003). The reverse logistic can also be defined as the procedure of movement of goods to the final destination. This is due to capturing value. This includes management and sale of the surplus. This is also based on returned equipment and machines through hardware leasing business. The logistics are dealing with events and this brings the products for customers. In reverse logistics case, the resource goes for one step back in the supply chain. The entire supply chain is based on the customers, distributors and manufacturers. In the supply chain network, when the supply chain is moving, the manufacturers are moving and this reach towards distributors and customers.

For example, if the product is defective then the customers will return the products. Manufacturing firms will take the next step regarding the organizing shipping for defective products. Further, this also includes testing the product, dismantling, repairing, recycling or disposing the product. The traveling is reversing logistic in the network of supply chain. This is due to retain and make use from defective products which comes under the reverse logistics. In the current market place, retailers treating merchandise returns based on individuals and disjointed transactions. For the retailers and vendors, the challenge is return procedures are related to proficiency level and this allows quick, effective and efficient collection as well as related to return merchandise. The demands are facilitated through the requirements of customers and this brings high standards for customers (Jayant, 2011).

The timeliness and accuracy is included in standards of services. It is a responsibility of company logistics, which shorten the linkage from return from the return origination at the reselling time. Through the following best efforts and practices the retailers are achieving return procedures, and this also addressing with customer retention and operational issues and this having the associations with the merchandise returns. There is a connection between reverse logistics and retention of customers. For the SLM, this is the key component and the entire business strategy aimed at retains customers through bundling with the help of coordination regarding the services of the company. This also increases the operations efficiency. Reverse logistics is not just limited to the return management. These activities are also including returns avoidance, gate-keeping, disposal, all other after-market supply chain issues. The

fame of management returns also effecting competitive positions (Krikke, 2002).

It is also providing the important links between marketing and logistics. The cross-functional impact is based on broad nature and the firms would take advantages through improvement of internal integration efforts and activities. Specifically, the ability of the company is to react and plan for external factors impact in the procedure of returns management. This also improves internal integration. The logistics of the third party also see 7% gross sales of companies and these are captured through return costs. The entire reverse logistics contracts are customized through fitting size as well as types of company to whom contracts made. The realization is made for the 3PL, which is related to 12 to 15% profit of businesses. The 4 to 6% retail purchases are shown in studies regarding retail purchases which are returned studies also shown the purchasing costing about \$ 40 billion per year (Lifset, 2002).

The goods in certain industries are distributed towards the down streams members for the supply chain, and this shows the understanding of goods regarding the return and credit which is not sold. The most important examples are newspapers and magazines. This process belongs to the incentive for the members of downstream so that they can carry more stocks due to the obsolescence risk is born through upstream supply chain members. The suppliers of the stocks effectively finance inventories for downstream members. It is important for financial advisors to analyze the accounts of customers regarding the hidden costs (Linton, 2002).

#### **4. Aspects of supply chains in closed supply chains**

The reverse logistics occur due to cost effective and efficiency reasons. The other reason is increasing the product value for the customers. For the analyzing contracting role as well as coordination in the management, are based on reverse, flows and turn several key lessons. These are also emerged in the existing supply chain literature. There is a basic premise and in most of the cases the coordination is beneficial for the entire supply chain. This process ranges from product design and touches manufacturing, logistics, marketing and management of return flows. This process ends on recycling and disposal. Different and various aspects come in consideration of supply chains. Aspects are emerged from the existing literature in the following areas:

- Flow of physical goods and this range from the upstream towards downstream. But the entire flow is based on the reverse flows
- The flow of information are related to inventories, demands and forecasts
- The flow of money is high lightening demands, purchase as well as lease payments. This also include buyback agreements

For the success of supply chain, there is a need to understand and manages each flow. There are interactions, which are related to the notion of coordination. The supply chain mostly requires management of three flows at once. The changes of financial flow are helpful to increase the information flows as well as for improvements of physical flow. There is a need to bring coordination in each flows as well as types of contracts which are used for enhancing the coordination.

#### 4.1 Physical flows

The coordination related to the physical flows needs agreement signals on quantities, timings as well as the place of product's deliveries. In close loop supply chains, the forwards physical flows are induced for the futures reversal physical flows and there are chances to raise the coordination issues. The appropriate capacity levels need coordination as well such as manufacturing, transportation, collection, etc. Several aspects of product design also require coordination among the parties as well. For example, the product design and the reuse number of cycles; this also affects the process of remanufacturing.

#### 4.2 Information flows

The information flows needs modification of supply chain which includes the short and the long term demands of forecasts along with actual orders, this also belongs to the availability of inventory. For the coordination in close loops, the information is required about timings, quality and return. As it is concerned with the producer responsibility laws and the actions of stewardship actions, the information is also required for the product disposal as well as for the flow between all system parties. The external parties are also included in this; such as external agencies, consumer groups and regulatory bodies.

#### 4.3 Financial flows

The financial flows are based on the price of purchase, lease payment, service payments. In the case of close loop supply chain, this also includes the buyback clauses, the cost of disposal and end use cost. The original product price is straightforward and design contracts for specific conditions. This also undertakes more challenges for use

where the quality of products is unknown and sometimes it is difficult to make observations. Suitable financial flows are helpful for physical return flows.

### 5. Closed Loop Supply Chain

The world is facing a serious and alarming situation due global warming. The International Panel on Climate Change (IPCC) unveiled two main facts about global warming in 2007. The first was named as Linear Warming Trend over 50 years in which was shown that, since 1956 the temperature had been changing of over the years, i.e. 0.13°C every ten years, until 2005. As compared to the facts of the report from 1906-2005, the temperature is increasing at a double rate. The latter, the institution provided the report named Global Average Seal Level in which it was claimed that the sea level increased at a rate of 1.8mm per year between 1961 and 2003. Furthermore, Sea levels have increased by 3.1mm per annum since 1993 to 2003. Consequently, these facts have made the governments, people and corporation more incline to save the environment and aware the world about the environment or climates change which will eventually affect everyone on this planet. Therefore, the roles of business or corporations, especially manufacturing concerns are more apprehended.

The management process of production and logistics, like at the input level, i.e. raw material procurement, at processing level, i.e. transporting unfinished goods to finishing the department for products to be finished and lastly, transportation of finished goods to the end consumer which includes activities like distribution, warehousing and retailing, is called Supply Chain Management (SCM). Supply Chain Management is an integral part of any state of art corporations because it is one of the best ways to cut down the costs, which eventually increase profits amid meeting the service level requirements. Moreover, the climate changing issues have propelled business to take measure and as a result the corporations have started to integrate the provisions into the whole supply chain systems. The whole supply chain management has completely changed since the global warming issues have been raised. As a result, businesses are now running waste management program and are hot spilling the waste unprocessed to prevent intoxication and climate. The essence of the concept is to reduce the energy wastage, materials and any type of pollution and toxic releases from production plants. Moreover, to promote the usage of recycled material to reduce environmental footprints, use of replenish able energies to make more sustainable the world for future generations. This process of integrating such provisions into the supply chain management system is

called the Integrating Environmental Thinking into supply chain management.

## 6. Future Challenge of Closed-Loop Supply Chains

The product return is increased due to:

- Increased Global competition
- Shortened life cycles
- Expanded environmental legislation
- Lenient commercial take-back policies

The decreasing of profit margins in the global market are also another factor along with over capacity has increased returns. This is also expensive to handle when products and business procedures are not designed for the accommodation and this increase the losses as well. The companies know the importance of the life cycle approaches for products and this approach integrates all the products back as well. The products return also includes the commercial returns, warranty returns, repairs, end-of-use returns, and end-of-life returns. The companies therefore should design the forward supply chain and reverses supply chain for taking the advantages. Furthermore, there is need to include the final disposal friendly environment. The life cycles approach is going beyond the ideas for the forward supply chains. There are pressures for the companies while handling return and finding better ways of returns. This also led them for exploration news territory in management supply chains. Through taking one step ahead while the companies are handling different types of returns, the companies are developing business models for the replacement of product ownership and there are creative services offerings. These companies are returning towards providing the services as compared to the other products. The researchers who belonged to the traditional supply chains needs to venture into unexplored to explored territories. Through these changes, there are some side benefits which are related to business concerns, and this also create the values along with industrial ecology concern for the sustainability. This is also helpful for resolving perceived or real conflicts between the profits and environments through showing the business that is sustainable from the perspective of ecology. This is also sustainable from the profit perspective. Due to technology and other inventions, the world and business s terminology as well as perspective are changing rapidly; so the companies have to focus on the cooperation and this develops supply chains for the forward coordination and reverse flow materials. The most important thing is there is need to develop methods for managers to show them benefits which need to obtain through developments

reverse supply chain. Secondly, there is need to adopt new business models which highlight the ways for top management to releases enormous value which is not recognized and not appreciated. Furthermore, there is need to focus on the operational models, which are helpful for management, the day-to-day tactical elements and this can realize their business objectives. Problems in the day-to-day environment are lack of tactics and operations within the nature of business. The structures are tending to be strategic and un-structured. The researcher department can invest maximum time and try to understand issues and problems with the help of practices and dig into details that through which methodology the companies are accomplishing things in reverse chain supply management. The researcher understands several companies who can realize about some issues in a sector related to the structure of problems, making abstractions and formulations a model, which can lead to nice and positive results. Most of the researcher is aiming to publish in top journals for obtaining tenure. This does not have patience or time for bearing all losses. It is suitable to work in the well-developed and conventional problem areas. This also derives extensions for the existing body of positive results. Researchers are also focusing on the conventional supply chains, and this like the researchers in any field. There are conservative and reluctant changes. It is not sufficient and comfortable to acknowledge new issues which are challenging existing notions and well-developed jargons. Some opportunities are also offered for academic research. This takes into consideration the problems interdisciplinary nature; so there is need of development related to frameworks and models which are based on the integrated-business-process perspective.

## 7. Green Supply Chain Management

The key conflict drivers saw that many theories cheer up some managers of supply chain management to introduce the green provision into supply chain management. On the other hand, there are some other theories which are stopping the people to do so i.e. introducing green provision into supply chain management. There are two important aspects, one that customers think that the products should be environmentally friendly, i.e. green products as a result, it gives the manufactures an opportunity to produce environmentally friendly products to earn profits. The latter, the intensity of the current environmental damage due to population and CO<sub>2</sub> emission propel the managers to include the provisions for saving the environment into the supply chain management, i.e. green supply chain management. According to these

aspects, the green supply chain management system can give corporations a good growth with increased profitability, brand recognition by the customers, the performance of the employees as well as company as a whole and customer's satisfaction, which is a critical success factor for any organization.

Corporations' managements are taking steps like recycling, reprocessing, refurbishment; revamping and reduction in designing reverse logistics to implement the green supply chain management system in its true essence or the managements are trying closed loop logistics. The closed loop logistics and reverse logistic networks are being used to reprocess recycled materials as well as new raw material simultaneously. The collection of used material and recycling that material can also protect the environment. Therefore, different steps should be accounted for to implement the green supply chain management system. The classified the green supply chain management system in to the following terms: "eco-design, green purchasing, supplier environment collaboration, customer environmental collaboration, and reverse logistics. Moreover, it is claimed in his empirical study, that green supply chain has three branches which are based on problems in the context of supply chain design.

## 8. Conclusion

In recent years different conceptual theories have arisen in environmental management that address, directly, the material, and information flow along the product life cycles and supply chains and thereby create a relationship among environmental aspects and supply chain management. These concepts include life cycle management, industrial ecology, Closed Loop Supply Chain, integrated chain management, and Green supply chain management.

Closed-loop supply chain management has arisen to be a mature field of supply chain management. In 2009, Guide and Wassenhove depicted how this research began with pondering upon operational and tactical issues like disassembly of products, shop-floor control and coordination. Later they started responding to the issues associated with entire reverse supply chain management, i.e. product acquisition and supply chain contracting. Recently literature has been starting studying the issues at the overlapping point with other disciplines, driving concepts from industrial ecology, investigating marketing issues such as positioning, pricing of a new and remanufactured product. Although most of the researches in this field are confronting with challenging issues, because the researcher presume the ineffectiveness of the

method prior to the research, but now the research is moving in an interdisciplinary direction due to the association of closed loop supply chain management with environmental and ecological factors.

Supply chain management is very beneficial for large cooperation as it provides cost efficiency and quality work. However, environmental changing impacts have induced the business corporation to set measures and bring provisions into the complete supply chain management system. For that Coordination in contracts and flows i.e. physical flows, information flows and financial flow must be settled.

Since businesses are now impacting the natural eco system because of their operations, so the main aim of the concept is to minimize the wastage and keep the production plant free of toxic effects. With the increase in product return and low profits on reselling many companies are planning to switch from product manufacturing to services providing. This step has put a positive impact upon the sustainability concerns. It is recommended to the managers of corporations to introduce green supply management in their system. Due to health and environmental related issues, consumer demand the safe product from every aspect? By incorporating green management supply system companies can get the benefits like increased brand recognition, customer satisfaction and profitability by increased sales.

Companies are bringing closed loop system into the process in the disguise of taking steps of recycling, reprocessing, refurbishing, revamping, and reduction in composing reverse logistics. The used material collection and its utilization is a very protective process in protecting the environment. However, researchers are not satisfied with the current level of research. They want to publish the journals to forward the major concepts, by doing research. They are focusing on conventional supply management to drive more ways of safer supply chain management.

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