A Project Report On

A STUDY OF "REVERSE LOGISTICS MANAGEMENT IN INDIA"

Submitted for the partial fulfillment of the requirement for the degree of

MASTERS OF BUSINESS ADMINISTRATION

(International Transportation & Logistics Management)

By

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SCHOOL OF MARITIME MANAGEMENT INDIAN MARITIME UNIVERSITY KOCHI CAMPUS 2023

INDIAN MARITIME UNIVERSITY

(A Central University under Ministry of Port, Shipping and Waterways)

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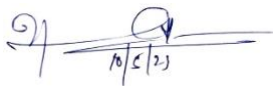
CERTIFICATE

This is to certify that the Project titled "A STUDY ON REVERSE LOGISTICS MANAGEMENT IN INDIA" submitted by ARJUN ASOK G register number 2105305009 student of MBA ITLM is a bonafide record of her internship report and submitted to the School of Maritime Management, Indian Maritime University, Kochi campus, under the supervision of Dr. Yogamala H L, Head of the Department IMU, Kochi campus. It is also certifying that the above work has not previously formed or submitted for the award of any degree, diploma, associate ship, fellowship, or other similar titles, and it is an independent work done by the candidate.

Dr. Yogamala H L



Self-Declaration

I, **ARJUN ASOK G (2105305009)** student of School of Maritime Management, Indian Maritime University- Kochi Campus hereby declares that this project report titled **"REVERSE LOGISTICS MANAGEMENT IN INDIA"** submitted in partial fulfillment of the requirement for the post-graduation of **Masters Of Business Administration (International Transportation & Logistics Management)** is my original work carried under the guidance of my project guide. It has not formed the basis for the award of any degree/ diploma or associate ship of any University/ Institution. The information submitted is true and original to the best of my knowledge.

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AKNOWLEDGEMENT

The success and ultimate conclusion of a project need a great deal of direction and support from many individuals, and I consider myself quite lucky to have received this along the way to the project's conclusion. I'd want to use this occasion to convey my heartfelt appreciation to everyone who helped me prepare this project. Throughout the endeavor, I am grateful for their aspirational leadership, invaluable constructive criticism, and pleasant advice. I am grateful to them for giving their candid and enlightening perspectives on a variety of projectrelated difficulties.

I express my thanks and responsibility to **DR.YOGAMALA H L, HOD of the School of Maritime Management**, for her invaluable support in completing my research. It brings me great pleasure to thank for her invaluable assistance, support, and recommendations as my project guide. Her advice was important in the project's successful completion. I also want to thank everyone who took the time to answer to the survey and provided me with all of the necessary information and ideas.

I'd want to express my heartfelt appreciation to my parents and friends for always encouraging and inspiring me to finish my project studies.

Above all, I thank God Almighty for providing me with the grace, strength, and optimism I need to succeed in my mission.

CONTENTS

EXECUTIVE SUMMARY

"A Study on Reverse Logistics Management in India" is the title of this investigation. A modern approach to business strategy and sustainable supply chain management is reverse logistics. The goal of RL is the coordinated optimization of the process of organizing, implementing, and managing an 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 with the aim of recovering value or disposing of them properly.

The features and functionality offered in a state-of-the-art RL solution can be used to create a number of quantifiable and real benefits. These advantages include profitability, client retention, and generating income and building brand equity organizations frequently fail to recognize the value of RL. Many businesses think about RL as only an expense. This perspective is flawed.

In this study, the state of the art in RL will be defined, along with its present trends and usage in India. Determining the level of RL activity in India was part of the research agenda. The project addresses e-waste challenges; were discussed, and emphasis was placed on the current patterns of Indian end users' use of electronic equipment.

In the project, a profile of the reverse logistics industry in India is covered. All garbage from electronic and electrical gadgets that have reached the end of their useful lives and are going to be recycled is called "e-waste". (Recycling, recovery, or disposal).
Here, it can be shown that among the e-wastes, outdated computers pose the greatest threat to the environment and human health. The generation of about 70% of all garbage was the responsibility of the public, private, and industrial sectors. If e-waste recycling was not correctly handled, it is expected that China, India, Brazil, Mexico, and other countries will experience increasing environmental damage and health issues. The informal sector was in charge of managing e-waste in these nations.

Due to the quantity of items that modern organizations handle and the requirement for precise and effective client deliveries, logistics information management is essential.

A suitable RL information system can help businesses predict future returns and reduce the volume of returned goods. Partners and intermediaries can now properly find their shipment anywhere in the globe utilizing a global positioning satellite network thanks to information technology that enables tracking and tracing of returns.

CHAPTER 1
INTRODUCTION

Introduction

Reverse Logistics (RL) is currently an important focus area, particularly in the markets for electronics, computer hardware, and aftermarket replacement parts.

RL is a brand-new approach to managing corporate strategy and environmentally friendly supplier chains. A coordinated optimization of the product's economic and social efficiency is sought after by RL. Reverse logistics is not just the cornerstone of the circular economy, but it has also evolved to work in harmony with efforts to create a healthy environment.

The definition of RL according to Rogers and Tibben-Lembke is: "The process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, and finished goods."

From the point of consumption to the point of origin, commodities and accompanying data are transported with the aim of recovering value or ensuring correct disposal. According to Bayles, RL makes it possible to utilize leftovers from commercial returns and manage excess product and resource inventories. It involves handling damaged goods returned, seasonal inventory, restocking, salvage, recalls, and surplus inventory. Programs for managing hazardous materials, disposing of outdated equipment, and asset recovery are also included in reverse logistics management. Regaining value is one of the advantages of reverse logistics also gaining an advantage over competitors.

The company can gain greatly from RL in terms of both major and little advantages. Companies are first able to reclaim damaged equipment and parts that are either salvaged or refurbished. The salvage recovers value from the damaged components. Second, the packaging and defective materials are gathered and recycled, providing the business with scrap value. Thirdly, unsold and outdated equipment is retrieved from the point of sale, which encourages distributors and stock lists to confidently purchase the company's stocks because they always have the option of returning unsold product. In such circumstance, the distributors won't think twice about keeping both rapid and slow moving commodities in stock.

If an organization manages the e-waste and hazardous trash generated, it will achieve a positive reputation as a responsible business in the eyes of the public and its customers.

In the west, RL has been successfully adapted as a marketing tactic. All reputable companies provide refurbished laptops at lower costs, and the market for them appears to be expanding. Refurbished components are among the spare parts used by computer manufacturers to repair laptops and PCs under warranty or for sale. When a customer plans to buy a brand-new product, many manufacturers of consumer durables and electronics offer to buy back or swap the old products from the customer.

Objectives of study

To investigate the RL management's theoretical foundation.

- To research the Indian e-waste economy
- To determine and examine the Indian electrical products' life cycles.
- To examine how end users perceive their comprehension of RL managemet.
- To assess the level of knowledge and assistance offered by Indian industries fo r RL and
- To provide appropriate answers to the issues that comes up when Implementing RL activities.

The main objectives of this work were to explain and understand the RL. Researchers should consider a value-addition model that may be used to assess future company actions.

This research is a ground-breaking project that will be very helpful to policy makers in the production of electronic goods and other industries.

The use-and-throw mentality had been ingrained in people's minds as a result of modern technology. This investigation demonstrates that all the waste materials are not wasted.

All of them are not wastes because some of their components can be recycled and reused. This research will welcome by the academic community, embraced by industries, and embraced by laypeople men. This study may be a trend-setter and a pioneering effort that inspires a lot of future research in this area.

Collection of Data

Both primary and secondary data are used to support the current investigation. The necessary information was gathered from the different sectors of industry and consumers for the analysis of e-waste and reverse logistics. The information was gathered from the end users, dealers, and industry professionals.

For the purpose of gathering the necessary primary data, questionnaires based on the following topics were created in accordance with the study's objectives.

Reverse logistics performance was examined from three perspectives, including EWaste measurement, end-user support, and industry-wide support. Common information on RL practice includes supply chain and RL strategies, factors influencing RL concept, RL system structure, planning and control, and IT support.

To learn about significant RL trends and advancements to learn about the difficulties faced by managers of connected departments and the supply chain.

To assess the obstacles and bottlenecks in Reverse Logistics, assess the key success elements, and gather information on the performance metrics of reverse logistics.

Three different versions of questionnaires were created to cover all of these factors. The questionnaire's primary focus was on consumer perceptions of how electrical and technological items are used. The questionnaire-II sought to learn more about consumers' knowledge of and understanding of RL activities. The third questionnaire asked about the manufacturers' assistance with the RL process.

LIMITATION OF THE STUDY

- The timeframe of the study may be limited, and it may not be possible to assess the long- term effectiveness of the reverse logistics project.

- The sample size of the study may be too small to draw general conclusions about the effectiveness.
- The quality of data collection methods could impact the accuracy of the results.
- The study may not have taken into account external factors that could influence the results.

CHAPTER 2 LITERATURE REVIEW

- **The major goal of Patricia, Chad, and Alexander's research (2001)** was to examine the relationship between resource commitments to reverse logistics and the effectiveness of the reverse logistics programme.

  Think about two things When evaluating the performance of the reverse logistics programme, six factors are taken into account, including improved customer relations, environmental regulatory compliance, cost containment, improved profitability, recovery of assets (products), and reduced inventory investment and their effects on overall effectiveness. First, management resource commitment to reverse logistics came in at second place, followed by financial resource commitment.

  For this, they studied 212 catalogue sellers of electronics products, and their findings showed that there were significant correlations with management resource commitment for four of the six performance goals of the reverse logistics programme. Specifically, management resource commitment was most strongly correlated with environmental regulatory compliance, along with decreased inventory investment, increased profitability, and asset recovery. One of the six reverse logistics programme performance objectives, environmental regulatory compliance, was found to be significantly correlated with financial resource commitment, according to another result. Finally, all six reverse logistics programme objectives were found to be significantly correlated with the program's overall effectiveness.

- **Different service providers use various versions of the reverse logistics concept, according to Kivinen (2002).** For instance, some businesses may just mention the recycling of products, which may actually involve complex Reverse Logistics aspects. Given that different people will likely have different perspectives on reverse logistics, his advice is for the parties involved to clearly clarify what reverse logistics will mean in their relationship.

- Reverse logistics is the planning, implementation, and control of backward flows of raw materials, in-process inventory, packaging, and finished goods from a manufacturing, distribution, or use point to a point of recovery or point of proper disposal, according to **De Brito and Dekker (2001)**

- **(2010) Eric, Thomas, and Lauren** The primary goals of their research were to examine how customer orientation, customer opportunism, higher levels of resource commitment, and contractual arrangements connect to reverse logistics capabilities, as well as to evaluate the effectiveness of reverse logistics.

  Reverse logistics efficiency is correlated with reverse logistics skills. Customer orientation was not significantly correlated with reverse logistics capabilities, but customer opportunism, higher levels of resource commitment, and contractual arrangements were significantly correlated with reverse logistics capabilities. For this, they conducted a study on 1429 respondents, and the tools they used for data analysis were reliability, validity, EFA, CFA, SEM, and multiple regression results. In addition, they carried out a post hoc study to determine how reverse logistics skills mediated the relationship between the reverse logistics cost reductions and four antecedents (customer orientation, customer opportunism, Results showed that resource commitment, contractual agreements, and cost reductions were partially mediated by reverse logistics capabilities, but that customer orientation was not mediated by reverse logistics skills.

CHAPTER 3 OVERVIEW OF REVERSE LOGISTICS

There are several ways to explain reverse logistics. They are considered in relation to supply chain management, closed-loop supply chains, and inverse and forward logistics. Below is a discussion about them.

Inverse logistics

Reverse logistics is focused with managing activities, post-sale service, returns, and repairs. They are a collection of tasks performed by businesses with the intention of gaining value from goods and packaging.
Those are past the point of no return. It's a crucial organizational skill in the modern business environment.

Organizations as a whole are responsible for this. In addition to product returns, it also includes customer returns, obsolete products, seasonal inventory returns, and excess stocks.
Return to the original point of sale or to other secondary markets, as well as withdrawal, reclassification, and reconditioning.

The goals of inverse logistics include asset recovery and recycling, gaining a competitive edge, acquiring improvements and benefits in the processes of production and market supply, and the fulfillment of legal requirements Inverse logistics adds extra costs to organizations, but it also creates new business prospects and potential to gain a competitive edge. Lack of investment, ignorance, interest, government subsidies, and difficulties implementing such processes legally are the challenges in inverse logistics.

Forward logistics

The process of delivering finished items to clients is known as forward logistics. It is that portion of the supply chain process that organizes, carries out, and regulates the effective flow, storage, and related information from the point of origin to the point of consumption in order to satisfy the needs of the consumers.
Forward logistics includes both outward logistics, which is the process of delivering finished items to clients, and inbound logistics, which is the process of supplying raw materials and supplies for finished goods.

There are various forward logistics micro-dimensions that can improve outcomes and provide value to processes. These parameters include production run duration, protective packaging, and third-party participation, seasonal demand, marketing mix, synchronized scheduling, carrier pricing, volume connection, channel competition, push and pull tactics, and wholesale and retail tactics.

It is believed that reverse logistics differs greatly from forward logistics. Even with seemingly related processes like forecasting, packing, distribution, pricing, and inventory, Marketing management, and communication. Similar to this, other variations show up in characteristics including product origin, destination, quality, operating costs, and visibility.

Differences between Forward and Reverse Logistics

Forward Logistics	Reverse Logistics
Forecasting relatively straight forward	Forecasting more difficult

One too many distribution points	Many distribution points
Product uniform quality	Product quality not uniform
Product uniform packaging	Product packaging often damaged
Destination / routing clear	Destination / routing unclear

Closed-Loop Supply Chains (CLSC)

When a consumer returns a product or a portion of a product, CLSC repurposes the entire product or a portion of it to recover the extra value. Selling a used computer is an old-fashioned example. If one exchanges his old computer when he purchases a brand-new one. This gives the dealer the option of either selling the used computer or using its components to repair other computers. By doing this, a new industry centered on repurposing current products rather than producing entirely new ones can be developed.

By dedicating resources to recycling existing products rather than creating new ones, this can improve the consumption model, with costs falling as a result. can be lowered for both existing and upcoming items. This approach can improve the consumption model for certain consumers by saving money and energy. This practice is widespread in the European manufacturing sectors that create commercial aircraft, computers, autos, and chemicals.

Reverse supply chain

'Open' and 'closed' systems' goods flows are reversed in this chain. A closed loop supply chain is characterized by the fusion of business procedures that adds value to all existing and new products.

Actors in the supply chain by stopping the flow of commodities back into the supply chain from the point of consumption.

Recovery options

One of the various procedures in the reverse supply is recovery. The categories of choices to choose from when and how products that are returned are recovered are as follows. These come in both direct and indirect forms.

- **Re-sale**

  Product sales are repeated. Sell as-is, repack and sell as-is, and sell to a broker are the several resale options.

- **Re-use**

  This technique involves inspecting, cleaning, and reusing returned goods. Unused spare parts are an illustration.

- **Re-distribution**

  This technology allows for the direct reuse of products like carriers by loading or refilling them.

- **Repair**

  Using this technique, damaged parts are repaired and replaced to get the product back in working order. Refurbishing entails upgrading the returning goods and changing essential components and sections.

- **Remanufacturing**

  This process entails creating a new product by swapping out the crucial parts and components from the returned goods.

- **Recycling**

  By breaking down things into different material fractions, such as shredding and sorting, the material can then be used to create new products.

- **Disposal/ Landfill**

  Products or materials are regarded as wastes are sent to landfill sites.

Value of reverse logistics

Companies are striving to take back returns of products voluntarily for a number of reasons, including lowering production costs, boosting brand recognition, safeguarding markets, and avoiding restrictions.
Reverse logistics' motivating factors can be represented in a matrix with the level of management involved on one axis and the position of stakeholders having claims against a producer on the other axis.

Customer service

Customers now have very high expectations and seek pre- and post-sale services. Customer loyalty and repeat business are two major drivers for businesses to priorities customer satisfaction in their strategic planning. Customers who are not pleased are inclined to tell others about this. Additionally, it can be far more expensive to recruit new consumers than it is to keep an existing one. For the same level of sales rise, it is much more economical to sell more to an existing client base. Customers react to how a company behaves. Reverse logistics and product disposal done well can build a lot of goodwill, which in turn can increase customer loyalty.

Economic benefits

Product returns can have several direct economic advantages.
Reverse logistics can have a negative financial impact on expenses, revenues, and assets. The following instances demonstrate the direct economic advantages of reverse logistics:

To avoid markdowns and retain profit margins, a producer can arrange to have unsold inventory taken back from retailers and replaced with the new season's model.

Cost savings resulting from lower operational costs and cost of goods sold (COGS).

Requirement for Reverse Logistics

Reverse logistics management is required for a number of reasons, some of which can be avoided by enhancing process efficiency and others of which are brought on by the place of origin of the items. Commercial returns, warranty returns, end-ofuse returns, and end-of-life returns can all be made for these reasons.

Commercial returns

Products returned to a manufacturer by a customer or merchant with a request for a refund or replacement are referred to as commercial returns because they don't completely fulfill the functionality that was stated for them.

The supply chain partners of the organization and the ability of the buyer to shift financial risk to the seller might have an impact on the quantity and quality of commercial returns. Warranty returns.

Products having a warranty may be returned if they malfunction while being used. Additionally, it covers items harmed in transit from the manufacturer to the customer.

Other justifications for commercial and warranty returns include product mismatch, safety issues, and manufacturer recalls.

End-of-Use and End-of-Life Returns

The management of reverse logistics is also necessary for end-of-use or end-of-life returns. End-of-use occurs when a lease, business contract, or other arrangement comes to an end and a product reaches the end of its planned life. the life cycle of a product occurs when a product has reached the end of its useful life and is no longer functional. The difficulty with end-of-use returns is figuring out how supply and demand for used goods match up. These are subject to the effects of time, quantity, and quality. By actively managing the information about returned goods, they can be controlled. The need to recover value from end-of-life items, competitive advantage, and environmental preservation has all sparked an increase in interest in reverse logistics in recent years.

E Business

E-business is the practice of substituting conventional means of selling through retail shops with the sale of things through electronic channels. Additionally, it is utilized to work with business partners and provide customer service. E-business, as buyers cannot inspect, touch, or feel the product before purchasing; businesses tend to provide more lenient return policies.

Although product descriptions at online stores have improved in the past, a lot of customers still return their purchases. Offering lenient return guidelines is insufficient on its own to increase and preserve client trust in e-businesses. They contend that the absence of face-to-face interactions with clients, as well as the invisibility and physical distance between the buyer and the supplier, necessitate the implementation of an effective reverse logistics management system.

Reasons for E-Business Returns

In the e-business paradigm, there are a variety of reasons why products are returned from supply chain partners. They include of mistakes in ordering, picking, or shipping; damage from handling and transportation; order cancellations; tradeins; and excess inventory as a result of seasonal economic cycles. Unfulfilled promises, inflated response times, and unsatisfied customers are the causes of some returns in the online business sector.

Development of Reverse Logistics in E-Commerce

Establish Return Policy

Marketing firms that sell relatively low-priced goods or some goods for one-time consumption, as well as those that offer discounts and a variety of products, will no longer accept returns. Next, the Businesses generate no profit, which lowers management expenses. Given the circumstances, buyers are required to purchase their goods with the understanding that they cannot be returned if they are proven to be defective.
Due to this circumstance, there are now fewer chances of disagreements when the products were shown to be effective after being discovered to be flawed.

Supporting Mechanism of Right Manpower

Development comes from the human resource base. Reverse logistics is inextricably linked to the creation of mechanisms for human resource planning. Reverse logistics currently has a rather small human resource; weak. The requirements of the development of reverse logistics are challenging to adapt to. In order to address the urgent needs of talents, prompt action should be done to plan effective procedures and reserve mechanisms.

Stronger Attention of Reverse Logistics

Reverse logistics and returns management should receive the full attention of the enterprise top management. Businesses should improve their relationships with

suppliers of goods and services. Enterprise information management must pick up the pace so that all business logistics may be completed more quickly.

Information systems can direct activities such that fast and accurate feedback, analysis, and forecasting can be achieved. Businesses should increase employee understanding of reverse logistics. Cost management helps all business sectors save costs by extending the job of reverse logistics management.

Industry support to RL activities

Samsung India Electronics137

The Samsung Take back And Recycle (STAR) Programme was introduced by Samsung India Electronics. In accordance with the concept, people are encouraged to recycle equipment such TVs, DVD and VHS players, Home Theatre Systems, Free cell phones, cameras, and computer monitors.
The Samsung repair Centre network has 235 locations in 20 cities where customers can dispose of portable items. For larger products, they can drop them off at any of the Company's 291 collection centers located in 21 cities or use the collection service for a little fee. This Programme will progressively be expanded across the country. The business had authorized e-waste recyclers to collect and recycle products, and it had signed contracts with the Central Pollution Control Board directly.

Motorola138

Motorola believed that its dedication to recycling went above and beyond the law. Any mobile phone or accessory is accepted for recycling in their take return programmes. In order to reuse them, some phones were repaired and sent to lowcost markets in developing nations are where they are sold. They create items that have futuristic characteristics and are of greater quality, upgradeability, and serviceability.

Motorola had implemented a number of initiatives to encourage customers to recycle old phones.

The principal commitments that Motorola pursues are:

- Offer a Programme for returning unwanted mobile devices and accessories. Inform consumers about product take back and mail-back initiatives.

- Accept to work with outside recyclers who abide by all applicable local, state, and federal rules about electronic recycling

- Offer simple and straightforward web resources for product take back programmes.

- Establish a standard method for calculating handset collection rates with the aim of directly or indirectly boosting device and electronic accessory collection by 40% by 2024.

- Make ensuring that the Restrictions of Hazardous Substances (RoHS) directive is adhered to by 90% of the mobile devices released each year.

By 2024, the proportion of devices in the portfolio that use recycled plastic for the phone housing will rise to 35%.

In order to eliminate the possibility that waste electronic equipment might be treated in dangerous circumstances, they had stipulated in their contracts that such equipment should not be transferred to underdeveloped nations.

From consumers, service centers, and take back programmes, they gathered more than 2, 30,000 accessories, batteries, handsets, modems, and other pieces of hardware in 2019.

The RL drivers differ from business to business. The obstacles to RL's operation are external. These obstacles were frequently seen in all businesses. In India, it was

difficult to apply RL since there were no enforceable regulations, policies, or directives to encourage manufacturers. Additionally, there were no economically sound and advantageous tax laws in place to assist firms in offsetting the high investment costs of RL.

CHAPTER 4 PROS AND CONS

PROS

- It enables a trader to pick up goods from customers or transport unsold goods back to the producer to be disassembled, sorted, reassembled, or reprocessed, which lowers an organization's overall costs.

- In order to retain efficiency and growth, reverse logistics results in longer product lifecycles, a less complex supply chain, sustainable practices, and consumer preferences.

- Gains include customer retention through improved service objectives and sustainability objectives.

- Used or returned goods can be more valuably utilized than the inefficient labor, time, and raw material expenses associated with the initial supply chain.

- By investigating problematic products and their fixes, it also leads to increased consumer satisfaction and loyalty.

CONS

- There is a possibility of losing control when third-party logistics are involved. Where the third party logistics provider does not extensively connect or communicate with the company's customer or supplier, it is especially prominent in outbound logistics.

- Unexpected expenses, such labor costs, occur. Labour expenses for customer contacts and service, labor costs for financial reconciliation, and costs for warehousing are just a few examples of specific costs that fall under this category.

- Cycle times are frequently longer. It describes the amount of time it takes a company to habitually complete customer orders and related tasks.

A summary of all the activities that can achieve effective reverse logistics is presented below

Design and production:

- Considering his possibilities during the early stages of product design following the recuperation of Life cycles is essential.

- If necessary, redesigning the production process.

- The product recovery procedures need to work with current procedures.

- A group of materials must be improved or reorganized; utilized packaging in Reverse logistics should not involve a lot of time, resources, or money be challenging to transport.

Process management:

- The existing transportation system must connect with networks and transportation;

- Because caring for him is so important, reducing delivery time errors and the quantity of returned goods has received special attention in the literature;

- Information gathering and analysis for efficient monitoring and management of reverse logistics procedures;

- The forecasting and management of the supply of used goods;

- Policies and practices for flexible management;

- The pertinent performance measures for gathering and analyzing data to track the effectiveness of reverse logistics.

Quality and organization:

- Consumers expect consistent quality from the manufacturer, regardless of the nature of the product, whether new or

- Remanufactured, and to determine the quality of their implementation;
- Managers should believe in the importance of reverse logistics;
- Create a sense of ownership among employees is extremely important;
- Establishment of effective leadership and organizational procedures used in reverse logistics is necessary;
- Effective implementation and development of ethical standards.

Finance and marketing:

- Capital investment and long-term commitments are important for recovery programs. Recovery options require investments, and investments require vision and commitment;
- Marketing plans show the efforts of companies to create green image;
- Educational programs for all stakeholders‟ commitment in reverse logistics, including customers;

CHAPTER 5
REVERSE LOGISTICS FLIPS THE SCRIPT FOR E-COMMERCE

The $160 billion Indian logistics business is being disrupted by reverse logistics, or managing the product return process in addition to repackaging and refurbishing them.

Reverse logistics, in comparison to goods shipping, offers superior margins, say industry analysts and participants.

Market forecasts indicate that 30% of items purchased through e-commerce platforms are returned, which is what is driving the category in India. The reverse logistics business was mostly unorganized up until last year, when tiny trucks helped move products. However, significant firms in e-commerce like Amazon and Flipkart were having trouble and favored organized players.

Mahindra & Mahindra has debuted its reverse logistics division with warehouses in Mumbai and Bengaluru to take advantage of the potential.

"Reverse logistics has overnight grown into a significant service. Prior to the advent of e-commerce, it did not exist. For all of us, it is brand-new, and the segment is still in its infancy. Pirojshaw Sarkari, CEO of Mahindra Logistics, said, "We see it as a major opportunity because it offers greater margins than goods shipping.

He stated that while India was still catching up, the segment was popular in the US and China.

Dead inventory refers to goods returned to online retailers. According to Sarkari, reverse logistics companies handle the product grading activities.

"Under reverse logistics, we are reviving the dead," the speaker said. Therefore, businesses are ready to pay a price. They used to receive nothing from it, but now that it costs, say, 70 dollars, businesses are willing to split some of the profits with logistical providers.
"Reverse logistics volumes for e-tailers have proven to be higher than anticipated during supply chain planning. Because of this, if someone offers them a solution, they will accept it, claims Nishant Nishchal, principal of AT Kearney.
Furthermore, by not pressuring them to grow their supply chains, such service providers aid in the scaling up of e-tailers. Margin levels are large because the segment has few players.
However, margins will compete with forward logistics once the sector begins to grow and more firms enter.

Nishant added that logistics companies could serve the re-packaging plant, but refurbishing was difficult and required significant investments, which the logistics companies would not be eager to make.

Arun Jaitley, India's finance minister predicted in his Economic Survey that the country's $160 billion logistics sector will increase at a compound annual growth rate (CAGR) of 10.5% and reach $250 billion by 2020. Over 22 million people are employed in the sector, which has grown at a CAGR of 7.8% over the past five years, it was said.

CHAPTER 6 INDIA & THE IMPORT OF HAZARDOUS WASTES

The management of E wastes in India in order to achieve sustainable development is the subject of the current study on reverse logistics.
Massive advances in science and technology had been made since the 18th century. Men and women's lives were drastically altered by the information and communication revolution. The realms of economics, industry, and institutions had all been affected by this revolution. The standard of living for both men and women around the world had improved and been elevated.
In addition to the countless benefits that information and communication had brought about, a massive amount of hazardous wastes began to emerge from the electrical equipment that was being utilized to transfer the information and communication data. Around the world, these wastes had created a serious hazard to both the environment and human health. The management of these hazardous wastes had been a major problem for humanity as a whole.
To solve the issue of managing these wastes, also known as e wastes, there needs to be concerted actions on all fronts.

India and the Import of Hazardous Wastes

India had become one of the biggest importers of trash in the world among emerging nations. They appear as inexpensive raw materials. In the past, India produced roughly 3, 50,000 tons of electronic garbage each year and another 50,000 tons from imports. India has become a dumping ground for hazardous and industrial wastes from practically all developed nations and the Middle East, including mercury, electrical and plastic trash, asbestos, defective steel and tin plates, etc.

The Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules from 2008 provide that actual users could only import e-waste with the Ministry of the Environment and Forests' approval and a license from the Directorate General of Foreign Trade.

Poor Checking Facilities at Ports

A large portion of the international garbage that was imported into India was shipped in consignments that were designated as rubbish or mixed waste paper. Customs officials could only afford sporadic checks due to a lack of people and equipment. In India, there are 14 intermediate ports in addition to 12 major ports. Due to its extensive coastline, India has developed a number of beaches and centres for the smuggling of hazardous waste.

Norms for Importing E-Waste

The transit sites on the e-waste route had changed to the nearby foreign ports like Singapore and Dubai. From Australia, North America, South Korea, and Japan, these e-wastes are shipped to Dubai and Singapore before being delivered again, including to India. India is one of Dubai's top buyers.
The exporters in Dubai keep an eye on changes in the price of India's sizable scrap market and keep their rates in line with it. The Hazardous Wastes Rules, 2008 govern the trans-boundary transportation of hazardous waste. It is not permitted for lone dealers to import e-waste.

Smuggling of Imports

An average of 500 container loads of scrap from affluent nations arrives in Indian ports each day. The customs officials in this place routinely come across illegal imports of junk and seize them. The inland grey market is where the imported scrap ends up. Computer displays, CPUs and processors, control panels, electrical motor parts, printers, and keyboards were among the very old, used, and unusable trash commodities.
They were brought in specifically for recycling. The Customs Act of 1962 and the Hazardous Waste (Management, Handling and Transboundary Movement) Rules of 2008 were determined to be violated by these imports.

CHAPTER 7 FINDINGS AND SUGGESTIONS

FINDINGS

- In addition to the advantages these communication devices provide, the electronics sector has experienced a spectacular amount of obsolescence due to the exploding growth of technology and the rising multitude of technical breakthroughs.

- Mumbai, Delhi, Bangalore, Chennai, Kolkata, Ahmedabad, Hyderabad, Pune, Surat, and Nagpur were among the top 10 cities with regard to e-waste production.

- E-waste is often disposed of in landfills. Burning e-wastes is a different way to get rid of them. Reusing and recycling e-waste is another technique used. Reusing something is using it either directly after it has been used by someone else or after it has undergone minor alterations, such as memory upgrades.

- Through stringent domestic regulations, the developed countries had shielded themselves from the dangers of e-waste. They discharge this trash via ships off the coasts of underdeveloped nations, where there are lax regulations on the disposal of e-waste.

- The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules of 2008 and the E-waste (Management and Handling) Rules of 2010 are the regulations in place for The Hazardous Waste (Management and Handling) Rules of 2003 that govern e-wastes.

- Except for mobile phones, it was discovered that the majority of participants were utilizing at least one item of e. products. The equipment had a lifespan of five to seven years on average. The shops were the primary means of equipment acquisition. For the purchasing of the equipment, there was a used

equipment market. Most of the respondents traded in their old equipment for new ones.

- The recycling station and collection Centre concepts were unknown to consumers.

SUGGESTIONS

- The laws in India are not strong enough to tackle the environmental issues head-on. The laws should specify who is responsible for what, from the manufacturer to the customer in managing the e-waste, as well as the recycler.

- It is important to effectively implement the EPR concept, which places the whole burden of collection and safe disposal of end-of-life electronic equipment on the producers.

- The collecting of e-waste should involve community organizations and municipal governments. The involvement of small and medium-sized businesses (SMEs) is necessary for the organization of e-waste.

- In the supply chain, managing reverse logistics involves more than one department. Cooperation between all appropriate departments and direct partners is crucial for optimizing the whole supply chain.

- The degree of end-user satisfaction affects the RL process. Market volatility and the general business climate had an impact on the process that led to the establishment of RL. Environment is impacted by inadequate RL Procedures are not adhered to. Users can enhance their surroundings by adhering to the RL processes' tenets.

CHAPTER 8 CONCLUSION

CONCLUSION

A product's life cycle is divided into two main phases: forward logistics and reverse logistics. Forward logistics starts with product production, marketing, and consumption and continues up to the level of its final expulsion.
Reverse logistics starts where forward logistics finishes, i.e., with the consumer's final disposal of the product. Due to the product's disassembly, separation of the metals and materials, and utilization of the product's undamaged parts, reverse logistics has its own world.

This could contribute to a product having a longer lifespan. A new product's manufacturing costs may decrease. In India's largest cities, recycling of the product's usable parts is practiced. The E trash, also known as abandoned goods, is imported and lowers production costs while also creating huge employment prospects.
Manufacturers are more eager to produce consumer electronic items and include dangerous materials in them. Later on, the abandoned product reveals its dangerous characteristics that are harmful to both the environment and human health.

Manufacturers ought to consider creating products without the metals and components that have dangerous impacts. If consumers consider the following, it will greatly benefit them in this area: purchasing recycled goods. The forward logistics of numerous e-products were covered in this chapter. The consumer's awareness of reverse logistics is examined in the following chapter.

The RL initiative is driven by more than just cutting expenses, boosting profitability, and enhancing customer happiness. Additionally, it requires end-user comprehension and a healthy human life. These elements greatly influence RL management's role in implementation.

Growing e-waste piles are posing an environmental threat as poisons and metals, such mercury and lead in the devices, are dumped in landfills at a quicker rate than residential and public garbage rather than being recycled. The project, which is only intended to involve recycling of televisions and computers, is still under development by the government and business.

Despite little public awareness being raised, several private businesses and the majority of states have already begun to collect and recycle electronic garbage. Typically, folks wouldn't be aware of, because there hasn't been any genuine vigorous publicity, there are wastes even now.

For the e-waste Programme to be successful, increasing consumer awareness of the buildup of e-waste is essential.

CHAPTER 9
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