

A STUDY ON CHALLENGES OF REVERE LOGISTICS IN THE E-COMMERCE INDUSTRY IN INDIA

*A Dissertation submitted to the Indian Maritime University in partial fulfilment of the
requirement for the award of the degree of Master of Business Administration in
International Transportation and Logistics Management*

By

SHREE SHRAWAN KUMAR P

(REG:NO – 2005305030)

Under the guidance of

Dr. Sreeja K

(Assistant Professor, School of Maritime Management)



INDIAN MARITIME UNIVERSITY

(A Central University Under the Ministry of Shipping)

SCHOOL OF MARITIME MANAGEMENT

KOCHI CAMPUS

JUNE 2022

DECLARATION

I, **Shree Shrawan Kumar P (2005305030)** student of School of Maritime Management, Indian Maritime University, Cochin Campus hereby declare that the project report titled **A STUDY ON CHALLENGES OF REVERE LOGISTICS IN THE E-COMMERCE INDUSTRY IN INDIA** submitted in partial fulfilment of the requirement for the degree of **Master of Business Administration in International Transportation and 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.

SHREE SHRAWAN KUMAR

(2005305030)

ACKNOWLEDGEMENT

First and foremost, I thank the god almighty for showering all his blessings to carry out this summer internship successfully. I am grateful to my beloved parents who sacrifice themselves to help me to climb the ladder of my life.

It is my great pleasure to express my sincere thanks and gratitude to my faculty guide and supervisor **Dr. K. SREEJA**, Assistant Professor, School of Maritime Management for her kind support and guidance to complete my study.

I express my sincere thanks to faculties, **Indian Maritime University** for helping me throughout my academics. I'm indebted to my parents and friends who encouraged and helped me in various ways to complete the report. I extend my sincere gratitude to all those who have directly and indirectly helped me during the course of my work.

Abstract

The modern supply chain has become complex and multi-locational, and efficient movement of material contributing to business success. The industry that deals with the movement of goods from one point to another is known as the logistics industry. Reverse logistic is a process of moving materials back from their consumer destination to their point of manufacturer or the distribution centre in order to recapture their value for redistribution, or to dispose them properly. The COVID-19 pandemic has led to an increase in online purchases, which has inevitably raised the demand for express delivery packaging materials. A key benefit of reverse logistics is its effectiveness in exploiting opportunities for resource reuse, which is preferred to recycling. With the introduction of ecommerce and increase in the footprint of digitalization, the expectations of the consumers and the industries have reached an all-time high. In e-commerce business, one of the important factors is effective logistics management, specifically the backend supply chain management. Logistics management involving e-commerce can also be considered as the reverse logistics that is the procedure that works as a profit centre, i.e., product returns, repairs, maintenance, recycling, dismantling, etc. Today, the e-commerce market can undoubtedly be attributed to one of the most promising and fast-growing markets of this type in the world. The sign of rapid annual growth reflects the dynamics of online trade. The project focuses on the Challenges of reverse logistics in the e-commerce industry in India.

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CHAPTER 1

INTRODUCTION

1.1 TITLE OF THE STUDY

A study on “Challenges of Reverse logistics in the e-commerce industry in India”

1.2 INTRODUCTION

The COVID-19 pandemic has brought changes to our everyday lives, notably an increase in online purchases. Home-based shopping for groceries and other essentials became popular during the pandemic and remains so after it. According to a survey conducted in Singapore, Malaysia, and South Korea, more than 30% of consumers in each country responded that they made online purchases several times a month during the pandemic. After the pandemic, consumers in emerging economies shifted significantly toward online shopping, which increased single-use plastic waste, such as carrier bags, containers, and eating utensils (Simachaya, 2020; United Nations Conference on Trade and Development, 2020).

The ability to purchase a product in the comfort of one's home and have it delivered to one's doorstep is not something new. In the 1980s and 1990s, the system of ordering products over the telephone in response to magazine and television advertisements dominated mail-order sales. Later, with the growth of internet services, the general population's opportunity to shop online emerged in 1995 when Amazon introduced online book retailing services in the United States. Internet-based online shopping malls began to develop rapidly around the world in the 2000s. Mobile shopping also expanded because of the growth in smartphones, which allows for more commerce through mobile telephony. Livestreaming e-commerce, which is gaining popularity in the United States and China, is also attracting attention as a part of the future of e-commerce (Kharif & Townsend, 2020).

In e-commerce business, one of the important factors is effective logistics management, specifically the backend supply chain management. Logistics management involving e-commerce can also be considered as the reverse logistics that is the procedure that works as a profit centre, i.e., product returns, repairs, maintenance, recycling, dismantling, etc. This research paper has studied the commercial impact of the reverse supply chain in e-commerce in India. For the unprecedented growth of e-commerce in India, some of the major factors are the emergence of retail as a dominant segment of the market, the dedication of government to 'Digital India', and an Internet user database of 400 million. Whereas, profitability is reduced to an average percentage of 8% and 15% of the total costs of logistics in the industry is represented by the average costs of reverse logistics.

1.3 STATEMENT OF THE STUDY

The study is carried out to know the challenges faced by e-commerce industry in India in handling the reverse logistics of the products returning from the end consumers due to various reasons. It is also carried to study the e-commerce industry with its new policies and technologies to handle the products return in its fast-growing markets like India. The study is also focused to know the future of reverse logistics and some of the developing concepts of the industry to survive the competitive markets.

1.4 SCOPE OF THE STUDY

Adlmaier and Sellitto (2007) suggests, “reverse logistics can be described as the field of organizational logistics aiming to manage, in an integrated way, all the logistic aspects of the return of goods to the productive cycle, through reverse distribution channels of post-selling and of post-consumption, aggregating their economic and environmental value. Reverse logistics studies the reverse distribution channels; i.e., channels that follow the opposite flow to the original chain of materials, aiming to aggregate value of the return by their reintegration to a point of the productive cycle of origin, or to another productive cycle, as input or raw material”. This separate flow has a huge impact over the operations of the e-commerce industry that is focused in this study.

1.5 SIGNIFICANCE OF STUDY

Reverse logistics refer to monitoring the life-cycle of the products after they arrive at the end consumer. The reverse logistics that directly impact supply chains the most are the return of products from the end consumer back to the manufacturer. Today, reverse logistics can no longer be an afterthought for manufacturers, but is instead an integral part of supply chain planning. Rather than letting returns harm their business, manufacturers and retailers who are innovative and have efficient processes in place can benefit from reverse logistics. This made the study to focus toward the importance of reverse logistics in e-commerce industry that runs the major part of industry.

1.6 OBJECTIVES OF THE STUDY

The objective of the project is to focus on the crucial entities of the logistics industry in reverse logistics operations those are as follows,

- To cover the wider area of e-commerce industry
- How does the reverse logistics work in the e-commerce sector?
- Challenges faced in reverse logistics
- The future of reverse logistics
- Solutions for effective and efficient reverse logistics

1.7 RESEARCH METHODOLOGY

This study uses the secondary data to analyse and to understand the challenges of the reverse logistics in the e-commerce industry. The diverse data are collected and analysed with the help of information from the research papers, reports, journals, website, reference books written by industry experts, interview with the industrial players for the trends and suggestions. In this paper the conceptual findings are applied form sustainability of logistics, International business review of logistics that are used in the study.

1.8 LIMITATIONS

The limitations of a study are shortcomings which could be the result of unavailability of resources, methodology, etc. This study is based on secondary data, which is descriptive.

CHAPTER 2

INDUSTRIAL PROFILE

2.1 INTRODUCTION

The term electronic commerce or e-commerce refers to any sort of business transaction that involves the transfer of information through the internet. By definition it covers a variety of business activities which use internet as a platform for either information exchange or monetary transaction or both at times. E-commerce means using the Internet and the web for business transactions and/or commercial transactions, which typically involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services. Within logistics as a whole life the cumbersome process known as reverse logistics. Reverse logistics has long been a neglected area. However, growing market pressures, such as online retail and customer expectations, are increasing the strain on this area of supply chains. In order to stay competitive (and even profitable), it is crucial that companies carry out innovation in this area and adapt to shifting market demands. Traditionally, reverse logistics hasn't been anybody's favourite area of supply chains. Often largely neglected and ignored by companies, reverse logistics departments are even today working in widely acknowledged outdated formats, utilizing things like fax machines and spreadsheets.

2.2 E COMMERCE INDUSTRY

2.2.1 History of E-Commerce Industry

E-commerce originated in a standard for the exchange of business documents, such as orders or invoices, between suppliers and their business customers. Those origins date to the 1948–49 Berlin blockade and airlift with a system of ordering goods primarily via telex. Various industries elaborated upon that system in the ensuing decades before the first general standard was published in 1975. The resulting computer-to-computer electronic data interchange (EDI) standard is flexible enough to handle most simple electronic business transactions.

With the wide adoption of the Internet and the introduction of the World Wide Web in 1991 and of the first browser for accessing it in 1993, most e-commerce shifted to the Internet. More recently, with the global spread of smartphones and the accessibility of fast broadband connections to the Internet, much e-commerce moved to mobile devices, which also included tablets, laptops, and wearable products such as watches. E-commerce has deeply affected everyday life and how business and

governments operate. Commerce is conducted in electronic marketplaces (or marketplaces) and in the supply chains working on the Internet-Web. Consumer-oriented marketplaces include large e-malls (such as Amazon), consumer-to-consumer auction platforms (eBay, for example), multichannel retailers (such as L.L. Bean), and many millions of e-retailers. Massive business-to-business marketplaces have been created by Alibaba and other companies. The so-called sharing economy enables more efficient use of resources, as Airbnb does with online rentals of private residences. Almost instantaneous access to services is made available by on-demand platforms offering, for example, transportation (e.g., Uber), computation and storage resources furnished by cloud service providers, and medical and legal advice. Mass customization of goods sold online, such as garments and vehicles, became common. Electronic currencies (or cryptocurrencies) such as Bitcoin entered into play as the means of settlement. Semipermanent supply chains enable a hub company (such as Dell) to surround itself with suppliers that perform most production tasks and deliver other goods and services to the central firm.

Social network sites, such as Facebook, undergird a great variety of individual relationships and are the site of so-called social commerce, driven by the opinions and reviews shared by the participants as the electronic word-of-mouth. Online communities bind together participants who wish to share their knowledge, forge lasting relationships, or present themselves on a broad forum. Those communities became a potent source of cocreation of value by individuals who together and over long stretches of time, for example, produce open-source software or continually replenish an online encyclopaedia.

Among innovations that have contributed to the growth of e-commerce are electronic directories and search engines for finding information on the Web; software agents, or bots, that act autonomously to locate goods and services; systems that recommend products to users based on their profile; and digital authentication services that vouch for identities over the Internet. Those intermediary services facilitate the sale of goods (actually delivering the goods in the case of information), the provision of services such as banking, ticket reservations, and stock market transactions, and the delivery of remote education and entertainment. Businesses often deploy private Internet-type networks (intranets) for sharing information and collaborating within the company, usually insulated from the surrounding general Internet by computer-security

systems known as firewalls. Collaborating businesses also frequently rely on extranets that allow encrypted communication over the Internet.

Security is a central concern in e-commerce. It includes authentication of the parties, authorization to access the given resources, confidentiality of the communication, and the assurance of message integrity. Many of those goals are accomplished with public key infrastructure, a system of specialized organizations and computerized means for providing electronic certificates that authenticate firms and, if desired, individuals; provide the encryption and decryption keys for communication; and furnish the protocols (algorithms) for secure communication. However, absolute security is not an attainable goal. Many spectacular data breaches are testimony to this, as well as to the neglect of this vital aspect of e-commerce.

Several important phenomena are associated with e-commerce. The role of geographic distance in forming business relationships is reduced. Barriers to entry into many types of businesses are lower, as it is relatively inexpensive to start a retail Web site or a community of producers. Some traditional business intermediaries are being replaced by their electronic equivalents or are being made entirely dispensable. (For instance, as airlines have published fare information and enabled ticketing directly over the Internet, storefront travel agencies have declined.) Prices of goods are generally lower on the Web—a reflection not merely of the lower costs of doing electronic business but also of the ease of comparison shopping in cyberspace. Consumers benefit greatly from the availability of products that are bought only rarely and would not be stocked by physical stores (the so-called longtail effect). Ever-new business models emerge and are pivoted (modified) as the marketplace reaction can be gauged rapidly. Since the incremental cost of producing a unit of content good (such as a software product) is close to zero, freemium business models are often employed in the content domain: the basic product is free, the premium versions are charged for. A new form of corporate cooperation known as a virtual company—which is actually a network of firms whose information systems are integrated over the Internet, each firm performing some of the processes needed to manufacture a product or deliver a service—has flourished. Broad publics are drawn in to contribute their labour, ideas, or funds in crowdsourcing initiatives.

2.2.2 E-Commerce Development

The Internet was conceived in 1969, when the Advanced Research Projects Agency (a Department of defence organization) funded research of computer networking. The Internet could end up like EDI without the emergence of the World Wide Web in 1990s. The Web became a popular mainstream medium (perceived as the fourth mainstream medium in addition to print, radio and TV) in a speed which had never been seen before. The Web users and content were almost doubled a couple of months in 1995 and 1996.

The term electronic commerce or e-commerce refers to any sort of business transaction that involves the transfer of information through the internet. By definition it covers a variety of business activities which use internet as a platform for either information exchange or monetary transaction or both at times. For example, the numbers of consumer brand retail sites like Amazon(dot)com and Flipkart(dot)com which normally provides information about products and also allows monetary transactions to happen over the internet.

On the contrary there are the auctions sites like Quicker(dot)com and Ebay(dot)com where the information about certain listed products and services are provided but the monetary transactions normally happen physically. Apart from these two categories of e-commerce sites, there are some sites which enable businesses to exchange trading goods and also service between two or more companies. All of these forms of internet-based business platforms are known as e-commerce.

Over the last decade the advent of e-commerce has actually transformed the manner in which people used internet. People now are not only just using internet for gathering information, leisure or socializing online but also at the same time they are seeking measures to conduct business. Even popular social networking sites like Facebook(dot)com are allowing people to promote and sell products and services online and the introduction of computer and mobile based e-commerce application software like Shopify provides evidence of how e-commerce have boomed over the past 5 years.



Fig 1 E-Commerce Development

2.2.3 Objectives of E-Commerce

The primary goal of e-commerce is to reach maximum customers at the right time to increase sales and profitability of the business. Functions of e-commerce include buying and selling goods, transmitting funds or data over the internet. The following are main three objectives of e-commerce,

2.2.3.1 Development of Business Relationships

The business development can be done through the e-commerce being the primary and the basic object. As their direct contact in between the company and the consumer, their business relationship will be enhanced. Hence the area of the market can be increased.

2.2.3.2 Better Customer Service

As all the information is furnished to the customer, it becomes easy to him to choose the best product among all other alternatives. As even the service can also be done through the net immediately, the customer service will be ballooned. By highlighting the customer service, the companies are trying to subjugate a lion-share in the market.

2.2.3.3 Getting more customer

In these days it becomes the mandate of the companies to double its customers, and this can be done by rendering the value-add service and maintaining the quality. Hence, it is also one of the primary objectives of the companies which supply impetus for the robust growth in sales and overall profit.

2.2.4 Major Types of E-commerce

2.2.4.1 Business to Business (B2B)

Business to Business or B2B refers to E-Commerce activities between businesses. In E-Commerce B2B, transactions are usually carried out through Electronic Data Interchange or EDI. EDI is an automated format of exchanging information between businesses over private networks. EDI is composed of standards that enable businesses' computers to conduct transactions with each other, without human intervention. For Example- Manufacturers and wholesalers are B2B companies.

2.2.4.2 Business to Customer (B2C)

Business to Customer or B2C refers to E-Commerce activities that are focused on consumers rather than on businesses. For instance, a book retailer would be a B2C company such as Amazon.com.

2.2.4.3 Customer to Business (C2B)

Customer to Business or C2B refers to E-Commerce activities, which use reverse pricing models where the customer determines the price of the product or services. For example – tele workers and online auctions are C2B processes.

2.2.4.4 Customer to Customer (C2C)

Customer to Customer or C2C refers to E-Commerce activities, which uses an auction style model. Customers are also the business and C2C enables customers to directly deal with each other. An example of this is peer auction giant, E Bay.

2.2.4.5 Mobile Commerce (M Commerce)

M-commerce (mobile commerce) is the buying and selling of goods and services through wireless technology i.e., handheld devices such as cellular telephones and personal digital assistants. Japan is seen as a global leader in m-commerce. As

content delivery over wireless devices becomes faster, more secure and scalable, some believe that m-commerce will surpass wire line e-commerce as the method of choice for digital commerce transactions. This may well be true for the Asia-Pacific where there are more mobile phone users than there are Internet users.

2.2.5 Need for E-Commerce

Electronic commerce, known as E-Commerce, occurs daily when sellers and buyers use the internet to conduct business transactions. Technology makes it possible for anyone to buy or sell practically anything online.

The following factors show the need for E-Commerce in modern business era:

2.2.5.1 Wider Audience

The internet provides businesses, access to millions and millions of people. As of April 2022, there were five billion internet users worldwide, which is 63% of the global population. Of this total 4.65 Billion were social media users. On the World Wide Web, companies move beyond geographic limits to reach wider audience.

2.2.5.2 Cost Efficiency

At the beginning of the internet age in the 1990s, creating websites was a costly undertaking. As the years passed, building websites became less and less expensive. In fact, small businesses can now build their own sites.

2.2.5.3 Faster Information

The information superhighway permits speedy exchange of data across the world, which also means new information, is available faster.

2.2.5.4 Enhanced Service

Development of E-Commerce equipped domestic providers to offer more services to clients.

2.2.6 E-Commerce Business Applications

2.2.6.1 Sale & Purchase of Goods

By using E-Commerce, consumers can buy the various products and services from the different manufacturers. Industries can purchase raw materials, components etc. using E- Commerce. Sellers can sell their products by using E-commerce.

2.2.6.2 Real Estate Market

Online real estate services are provided by websites that show listing of houses, shops and flats put up for sale and rent. Online real estate sites play supporting role for property dealers. Now builders can use virtual reality technology on their website to demonstrate three-dimensional floor plans to buyers. This helps real estate companies to attract buyers. So, transactions normally can be initiated online but materialize offline in a face to face contact of parties. Many websites are providing online real estate services.

2.2.6.3 Online Banking

Online Banking is also known as electronic banking, Net banking, virtual banking and internet banking online banking is defined as automated delivery of new and traditional banking products and services through electronic and interactive communication channels. Customers can access online banking services by using electronic devices like personal computer, laptop, palmtop, ATM, kiosks etc.

2.2.6.4 Delivery of Goods

E-Commerce allows the delivery of products. For example, the computer software is directly downloaded by the software manufacturer on computer of the customer.

2.2.6.5 Import and Export

Electronic payments are playing a great role in import and export business. The internet has simplified the import and export business. By using E-commerce importers can make enquiries about the products, their manufacturers, price, quality, other terms and conditions etc. Exporters can also make enquiries about suitable customers. Payments can be made by electronic modes including digital means like internet payment or internet money transfer.

2.2.6.6 Supply Chain Management

A supply chain is a set of relationships between a number of companies who have a symbiotic relationship with each other in that one company supplies commodities or services to other companies which, in turn, supply commodities or services to other companies, and so on. An important point about an application such as this one is that information should be kept confidential as it flows across the internet.

2.2.6.7 E-Tailing

E-tailing refers to retailing over the internet. Thus, an e-tailer is a B2C business that executes a transaction with the final consumer. E-tailers can be pure play businesses like amazon(dot)com or businesses that have evolved from a legacy business, Tesco(dot)com. E-tailing is a subset of e-commerce.

2.3 REVERSE LOGISTICS

Reverse logistics refers to all the procedures associated with product returns, repairs, maintenance. Overall, it means running products in reverse through the supply chain. Change of customer expectations and customer-friendly return policy have led to an increase in return requests more than ever. Everyone is feeling the pain of returns including retailers and manufacturers. Chances are you have bought something from Amazon and returned it. In e-commerce, facilitating quick and easy returns is the cost of doing e-commerce business. E-commerce reverse logistics is the customer-faced side of the e-commerce market.

When we think about e-commerce logistics, we think of forward moving process with the end goal – getting the product fulfilled to the customer. However, the growth of e-commerce and a rise in consumer awareness has created a new challenge for retailers of moving products backwards. The days of the linear supply chain are long gone, there is this second cycle comes into the picture once the product is delivered to the customer.

As online shopping volumes grow, so do returns volumes. Returns are widespread in the online retail industry. The rate of product return in offline stores are nowhere in comparison with the online retail stores. This has to do with the fact that when people purchase online, usually, they can only see the pictures of the products and can get the product information by its description. There is no trying or testing. That is why returns are familiar in retail e-commerce.

2.3.1 Meaning

The full definition of reverse logistics, as according to **The Council of Logistics Management**, is the process of implementing, controlling, and planning the cost-effective flow of finished goods, raw materials, and in-process inventory. The flow is from the point of consumption (i.e. the customer) to the point of origin (i.e. the manufacturer), to properly dispose of these or to recapture value.

Reverse logistics comprises of the sector of supply chains that process anything returning inwards through the supply chain or traveling 'backward' through the supply chain. Hence the name reverse logistics.

Reverse logistics is a type of supply chain management that moves goods from customers back to the sellers or manufacturers. Once a customer receives a product, processes such as returns or recycling require reverse logistics.

Reverse logistics start at the end consumer, moving backward through the supply chain to the distributor or from the distributor to the manufacturer. Reverse logistics can also include processes where the end consumer is responsible for the final disposal of the product, including recycling, refurbishing or resale.

2.3.2 Reverse Logistics Usage

Organizations use reverse logistics when goods move from their destination back through the supply chain to the seller and potentially back to the suppliers. The goal is to regain value from the product or dispose of it. Worldwide, returns are worth almost a trillion dollars annually and have become increasingly common with the growth of ecommerce.

The objectives of reverse logistics are to recoup value and ensure repeat customers. Less than 10% of in-store purchases are returned, compared to at least 30% of items ordered online. Savvy companies use reverse logistics to build customer loyalty and repeat business and to minimize losses related to returns.

2.3.3 Reverse Logistics Vs Traditional Logistics

Traditional product flow starts with suppliers and moves on to a factory or distributor. From there, the goods go to retailers and customers. Reverse logistics management starts at the consumer and, moving in the opposite direction, returns products to any point along the supply chain.

Well-designed supply chains are responsive to changes and can handle some reverse logistics requirements. This reverse process can return products one step back in the chain or to the original supplier. They can even send returned products back to regular sales or discount channels (like liquidators).

2.3.4 Reverse Logistics Processes

Reverse logistics moves goods from the traditional endpoint of the supply chain at least one step backward. This process can involve various plans and controls. Some companies prefer to outsource this work.

The reverse logistics process involves managing returns and buying surplus goods and materials. The process is also responsible for dealing with any leases or refurbishments. Reverse logistics vary across different industries, and there are different economic incentives for improving reverse logistics management.

For example, in the beverage industry, the reverse logistics process uses empty tap containers. Beverage production companies want to recapture the value of their containers by reusing them. This requires planning transportation, managing shipping loads and cleaning the containers. In the construction industry, reverse logistics moves and recycles salvaged materials to new sites. As the construction industry adopts more sustainable practices to reduce waste, there is an opportunity for cost savings by using reverse logistics.

In the food industry, reverse logistics is responsible for returning packaging materials and pallets. Companies also must deal with rejected food shipments. Rejections can create logistical challenges due to delays that lead to food spoilage and concerns over tampering. The Reverse Logistics Association is developing secure, quick, reliable, login (SQRL) codes on packaging to provide detailed product information and address these logistical challenges.

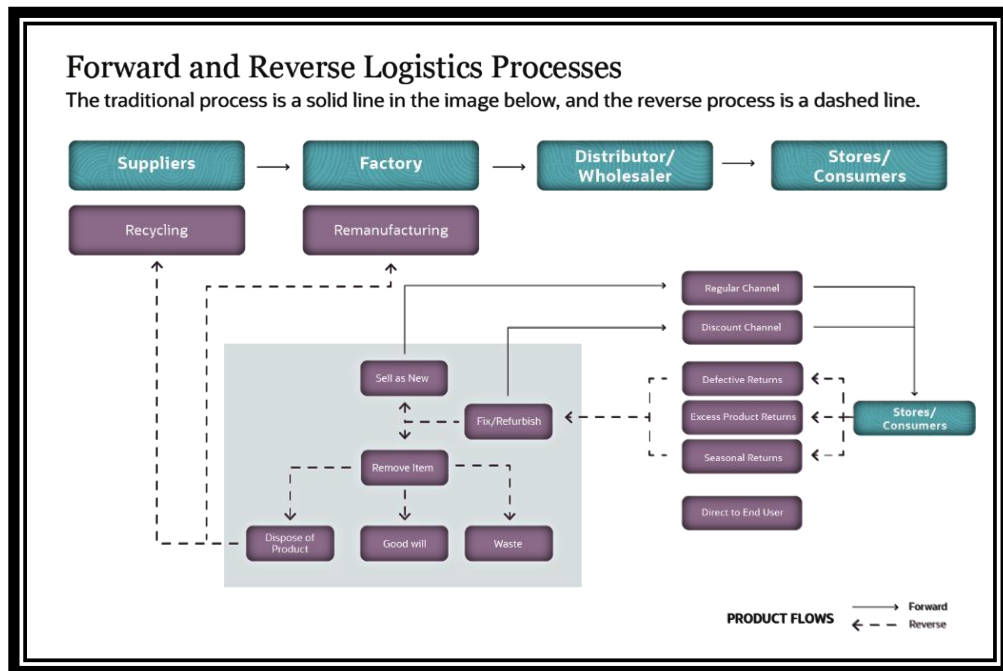


Fig 2 – Forward & Reverse Logistics Processes

2.3.5 Reverse Logistics Steps

2.3.5.1 Process the Return

The return process starts when the consumer signals they want to return a product. This step should include return authorization and identify the product’s condition. This process also involves scheduling return shipments, approving refunds and replacing faulty goods.

2.3.5.2 Deal with Returns

Once a returned product arrives at your location or centralized processing centre, inspect it and determine its return category. (Note: If you have optimized reverse logistics, you should know where the product should go before it arrives.) Sort products into the disposition options: fix, resell as new, resell as a return, recycle, scrap or refurbish.

2.3.5.3 Keep Returns Moving

Reduce your daily waste by sending repairable items to the repair department.

2.3.5.4 Repair

After reviewing the returned item/equipment and determining whether it can be repaired, move it to the repair area. If not possible, sell any sellable parts.

2.3.5.5 Recycle

Any parts or products that you cannot fix, reuse or resell should be sent to the area for recycling.

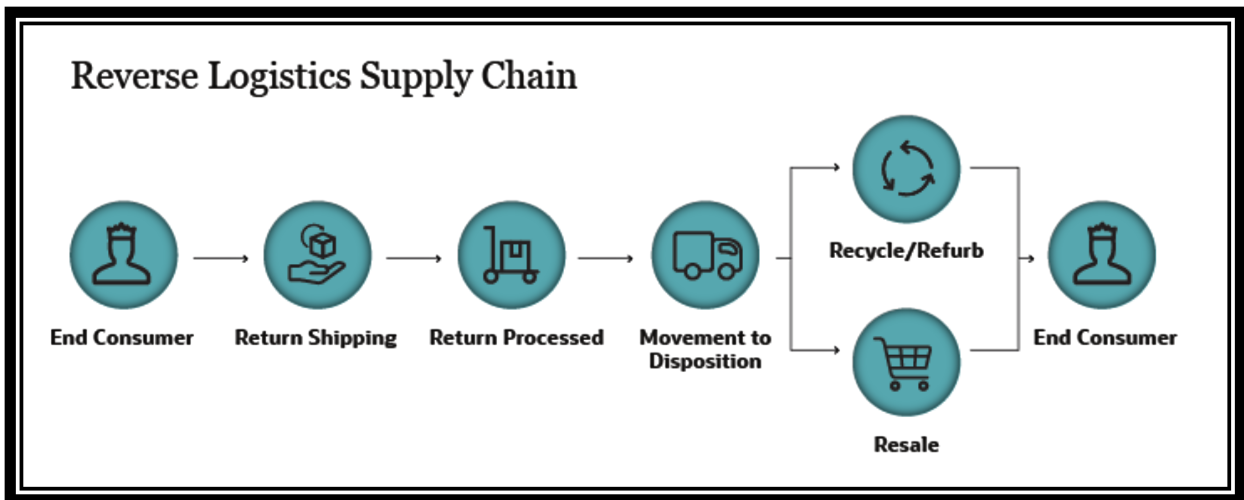


Fig 3 Reverse Logistics Steps

2.3.6 Types of Reverse Logistics

The different types of reverse logistics are also known as reverse logistics components. They focus on returns management and return policies and procedures (RPP) and account for remanufacturing, packaging, unsold goods and delivery issues. Other types of reverse logistics account for leases, repairs and product retirement.

2.3.6.1 Returns management

This process deals with product returns from customers or avoiding returns in the first place. These activities should be fast, controllable, visible and straightforward. Customers judge a company on its return flow and re-return policies. A re-return is the return of an item a second time. Often, these returns trigger the extended return policies, such as offering store credit. For example, a customer buys a returned product on clearance, takes it home and discovers it broken. The store policy would not normally accept the return, but it does allow for a store credit for the faulty product. A re-return can also occur when a vendor rejects the return and gives it back to the purchaser without a refund. This scenario could happen with custom-made items.

2.3.6.2 Return policy and procedure (RPP)

The policies about returns that a company shares with customers is its RPP. These policies should be visible and consistent. Employees should also adhere to them.

2.3.6.3 Remanufacturing or refurbishment

Another type of reverse logistics management includes remanufacturing, refurbishing and reconditioning. These activities repair, rebuild and rework products. Companies recover interchangeable, reusable parts or materials from other products, also known as the cannibalization of parts. Reconditioning involves taking apart, cleaning and reassembling products.

2.3.6.4 Packaging management

This type of reverse logistics focuses on reuse of packing materials to reduce waste and the disposal.

2.3.6.5 Unsold goods

Reverse logistics for unsold goods handles returns from retailers to manufacturers or distributors. These types of returns can be due to poor sales, inventory obsolescence or a delivery refusal.

2.3.6.6 End-of-life (EOL)

When a product is EOL, it is no longer useful or does not work. The product may no longer meet a customer's needs or be replaced by a newer, better version. Manufacturers often recycle or dispose of products that are end-of-life. These goods can create environmental challenges for manufacturers and countries.

2.3.6.7 Delivery failure

With failed deliveries, drivers return products to sorting centres. From there, the sorting centres return the products to their point of origin. While rare, some sorting centres may have the staff available to identify why a delivery failed, correct the problem and resend.

2.3.6.8 Rentals and leasing

When a piece of equipment comes to the end of its lease or rental contract, the company that owns the product can remarket, recycle or redeploy it.

2.3.6.9 Repairs and maintenance

In some product agreements, customers and companies maintain equipment or repair it if issues arise. In some cases, the company sells damaged returned products to another consumer after repair.

2.3.7 Five R's of Reverse Logistics

The five Rs of reverse logistics are returns, reselling, repairs, repackaging and recycling. Companies apply metrics to each of these options to track improvement and success. Your business may want to take a closer look at the Five Rs to streamline its reverse logistics processes and reduce losses there.

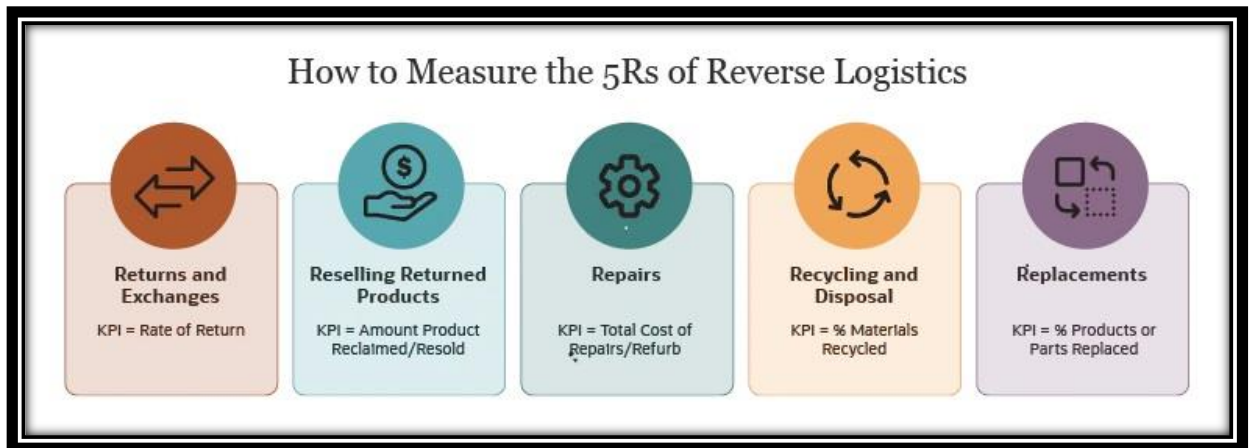


Fig 4 - Five R's of Reverse Logistics

2.3.8 Importance of Reverse Logistics

Reverse logistics is important because it maintains an efficient flow of goods. The process reduces costs, creates value, decreases risk and completes the product life cycle. Gartner Research says that about 70% of businesses plan to invest in the "circular economy." This circular economy follows traditional logistics and then continues around through what Gartner calls a closed-loop supply chain.

With this practice, companies are participating in a system focused on a sustainable economy. Companies find new uses for disposed products with recovery, repair and recycling. Materials once typically viewed as waste have value again.

The circular economy also ensures compliance as many countries institute a policy requiring "producers" to develop more sustainable practices. The guidelines outline subsidies for waste prevention, research and development and recycling. Other policies restrict landfills, mandate collection and recycling programs, and penalize certain waste practices.



Fig 5 – Importance of Reverse Logistics

2.3.9 Optimized Reverse Logistics

Optimized reverse logistics produce financial benefits while positively impacting the environment and business culture. Refining the processes for what happens to products after delivery helps retain customers and save money. The product data collected when engaging with customers after delivery is an advantage of well-executed reverse logistics. Data provides insight into an organization’s supply chain and an opportunity to improve products and/or the customer experience.

Optimized reverse logistics also leads to better supply chain visibility, which leads to benefits like:

- Cost reduction
- Greater customer satisfaction
- Better customer retention
- Faster and better service
- Loss reduction
- Improved brand sentiment
- Waste reduction and greater sustainability

2.3.10 Impact of Reverse Logistics on Supply Chain Management

Reverse logistics provide another critical opportunity for supply chain optimization. Supply chain management accounts for the reverse and forward flow of goods, and a surge of returns can drive up supply chain costs, harming profitability.

The reverse supply chain is the backward movement of goods (such as defective products) from vendors back up the supply chain. It is the opposite of the typical supply chain, where items go from manufacturer to retailer to consumer. Reverse logistics refers to everything related to returns and what happens to those products after the consumer takes them back. That includes planning and implementing strategies to reduce costs and losses related to returns and to build a better returns experience.

2.3.11 Key Metrics to Monitor & Confirm

There are five key reverse logistics-focused supply chain metrics that will help increase asset recovery. Supply chain analytics can help management make data-driven decisions at all steps of the supply chain. Key supply chain metrics include:

2.3.11.1 Volume

The volume of products returned and subsequently resold, reused and recycled is a top metric used to track reverse logistics. Companies should use these measurements to identify missed opportunities or problems and determine where process improvements can make a difference.

2.3.11.2 Percent of Costs

Compare the costs attributed to resales, refurbishing, reuse and recycling to the total supply chain cost. Determine the difference in the price of these activities versus the cost of returns. Be sure to calculate the percent of expenses recovered by item.

2.3.11.3 Condition of Returned Products

Some products come back in perfect resale condition, and companies can turn them around for resale at full value. Other goods may need some work before a company can resell them. In that scenario, companies should consider other sales channels for those products. For example, companies may sell refurbished electronics through another sales channel. Determine the cost of materials and workmanship to determine the full value. Review the percent of items sent to each sales channel and whether the company is recouping enough money.

2.3.11.4 Financial Value

Each part of the supply chain has economic value. Understanding what financial stake your company has in each step can lead to better processes and efficiencies.

2.3.11.5 Errors

Every step in the supply chain also has the potential for errors, such as unaccepted deliveries or defective materials. Review the cost of mistakes and how frequently they occur to identify opportunities for improvement.

Supply chain analytics should exist throughout the entire value chain, from sourcing materials through distribution and delivery. Useful metrics lead to growth in revenue, better margins and controlled capital. Supply chains are increasingly going digital, so collecting the data is easier. Read the supply chain analytics guide to learn how to make the most of this practice.

2.4 REVERSE LOGISTICS EXAMPLES

Globally, companies are changing the ways they address waste, and the supply chain is a big piece of that initiative. These reverse logistics examples focus on returns, exchanges and recycling.

People are more likely to buy products from a company if they think returns are easy and they are even more likely to become repeat customers if they've had a good return experience. For example, Home Depot offers reverse logistics help for online purchases via its website. In 2020, the company's online sales represented almost 15% of total sales. When a customer returns goods, they have a choice: send products back by printing a shipping label, or drop them off in-store. These items are then sent to Home Depot reverse logistics centres that handle damaged and misdirected products.

Retailer Levi Strauss uses reverse logistics to improve sustainability in textiles. The business repurposes jeans or recovers and reprocesses the fibres into raw materials to make new jeans. By partnering with other companies for repurposing, Levi Strauss can produce reconstructed jeans at a higher price point.

Microsoft has a large global initiative to deal with end-of-life for devices, batteries and packaging. Microsoft's product packaging is 100% recyclable, and it has a program for refurbishing and reusing personal computers.

Some organizations resell overstocked goods to the secondary market, like factory outlets, off-price and discount stores, and online auction sites. Retailers such as TJX Companies (TJ Maxx, Marshalls and HomeGoods) buy these overstock items and sell them at a discounted price to consumers.

CHAPTER 3
LITERATURE REVIEW

3.1 LITERATURE REVIEW

Logistics and supply chains have always been open to introduce new technological developments, Supply chain managements has undergone a lot of changes in the past decade E-commerce has brought advanced methodologies in supply chains Kayikci(2019). Jap, S.D. (2007) earlier predicted the impact of closed loop supply chains on the buyers of products and the sellers too. Molla, A. (2007) predicted e-commerce and its benefits in developing countries. Terzi, N. (2011) studied the impact of rising e-commerce trends and gave an estimate regarding the future growth. Biswas (2018) highlighted that for the unprecedented growth of e-commerce in India, some of the major factors are the emergence of retail as a dominant segment of the market, the dedication of government to 'Digital India', and an Internet user database of 400 million. Wang et al., (2019) suggested that the revenue of the e-commerce of India is expected to increase to 120 billion USD in 2020, increasing at a yearly rate of 51%.

The reverse logistics involve replacements, disposal, and recycling, repairs, reselling returned products, exchanges and returns. The flow of reverse logistics also involves the complete ownership cost, energy used in the complete process, distance, percentage of cost recovery, handling cost per item, percentage of recycled material, disposition of cycle time, and amount of resold and returned products. Dutta *et al* (2020) tried out in developing sustainable e-commerce model for Indian markets. A multi objective optimization model is developed by them.

In the areas of reverse logistics of the supply chain, an impact by return policy decisions and pricing areas have been found in both indirect and direct channels of distribution. These impacts also involve the impact of discounting of price on inventory level and ordering decision. Moreover, an increasing amount of attention has been acquired both from the industries and from the academic world by reverse logistics (Zhang, Dong & Sarker, 2018). There are numerous reasons for this. In 1997, \$862 billion was the total cost of logistics (Zhang, Dong & Sarker, 2018). Besides, the wastages from the system can be minimized through effective utilization of resources and implementation of practices of reverse logistics.

According to the widely accepted definition of reverse logistics made by Fleischmann “reverse logistics network is the process of planning, implementing and

controlling the efficient, effective inbound flow and storage of secondary goods and related information, opposite to the traditional supply chain directions for the purpose of recovering value and proper disposal”, reverse logistics network can be regarded as the configuration of nodes and the arrangement of lines in reverse logistics system, reverse logistics network covers three main sub-fields distribution planning, inventory control, and production planning. Research on reverse logistics network has been growing since the 1970s. Most research about the strategies and models on reverse logistics network can be seen in the publications in and after the 1980s. However, efforts to synthesize the research in an integrated body of knowledge seem comparatively limited. Most research focuses only on a small area of reverse logistics network, such as network design, production planning or environmental issues. For instance, a study was carried out from the perspectives of distribution planning, inventory control and production planning. Another study, as a review of reverse logistics network literature, focused on the transportation and packaging, purchasing and environmental aspects. The interactions between sustainability and supply chains was studied by considering environmental issues regarding product design, product life extension and product recovery at end-of-life. More studies can be found in the literature review on reverse logistics network published between 1995 and 2005 by focusing on management of the recovery, distribution of end-of-life products, production planning and inventory management and supply chain management issues. Design and optimization of reverse logistics network is a major focus in the recent years. This includes the network structure, the number of layers, the type of necessary facilities as well as the technology needed to be employed. The responsible parties need to decide the number of facilities required, their capacities and their most appropriate locations as well. In the design and optimization of a reverse logistics network several issues should be considered: actors in reverse logistic network, functions to be carried out and the relation between the forward and reverse logistic network. Some researchers have proposed several design principles for reverse logistic network. However, these principles were limited in certain circumstance and cannot form a widely accepted criterion. Design principles were put forward for closed-loop logistic network according to characteristics of reverse logistics from the perspectives of economics, environment and logistics channel.

CHAPTER 4

**REVERSE LOGISTICS IN
E-COMMERCE**

4.1 INTRODUCTION

Reverse logistics is the process of returning products from customers back to the producer or seller. Especially in online retailing, the entire returns management process is taking on an increasingly important role. This includes the return of products to the supply chain and the transport back to the relevant warehouse, fulfilment centre, or production facility. A quality check is then carried out on-site and the products are then either restored, processed, and made functional again. If the faulty product is beyond salvation then it is disposed of properly. Returns have been gaining importance in online retailing for years. Successful e-commerce companies have recognized this and are placing increasing value on transparent returns policies, optimized reverse logistics processes, and smart strategies to reduce returns. In the best case, you as an online retailer can even use returns to increase customer loyalty and as a sales argument.

4.2 REVERSE LOGISTICS & E RETAILING

Reverse logistics has attracted attention as a strategic tool that can meet customers' demands while simultaneously conferring economic benefits and improving corporate social image (Agrawal, Singh, & Murtaza, 2015; Govindan, Palaniappan, Zhu, & Kannan, 2012). It has evolved over the years from solely being a reverse flow of goods (P. R. Murphy & Poist, 1989; Pohlen & Theodore Farris, 1992; Rogers & Tibben-Lembke, 1999) into multiple duties or objective systems embracing environmental, economic, and social aspects (Carter & Ellram, 1998). Its main goals are twofold: first, to minimize wasted resources through reuse and recycling; and second, to be a value-added process for meeting customers' demands, whether for product returns or through recycling. Bernon, Tjahjono, and Ripanti (2018) proposed using reverse logistics to facilitate the circular economy. The successful management of product returns is, in fact, product recovery, and is associated with waste management (Srivastava, 2008; Thierry, Salomon, Nunen, & Wassenhove, 1995). Manufacturers and retailers are sometimes legally obliged to take back and recycle products at the end of their service life (Walther & Spengler, 2005). Bal and Satoglu (2018) examined a reverse network design for waste electric and electronic equipment (WEEE) to achieve multiple objectives of minimizing costs and environmental effects while managing its legal targets. In eastern Slovenia, a transportation system was

optimized to enable more efficient reverse logistics for collecting industrial packaging waste from large retailers (Lisec, Antic, Campuzano-Bolarín, & Pejic, 2018).

With the increase in the amount of business-to-business (B2B) and business-to-consumer (B2C) e-commerce, traditional fulfilment responsibilities, previously borne by consumers at physical stores, have been transferred to retailers. This final extension of the supply chain, bringing products to customers' homes, has added a layer of complexity to the distribution system. However, Xing, Grant, McKinnon, and Fernie (2011) found that successful online retailers tended to deliver consistently and reliably. They had a first-mover advantage and were often equipped with the latest technology and technical expertise in logistics. For example, through Big Data technology and collaboration with various delivery partners, Cainiao Network successfully developed a smart logistics system across China (Falcone, Kent, & Fugate, 2020). Cainiao's successful use of automation, algorithms, and digital networks suggests that it is worth examining the possibility of further resource recovery and optimization in the context of online shopping.

4.3 RETRURNS IN ONLINE RETAILING

The pandemic made a clear idea that online retailing can make the difference between success and failure for e-commerce companies. To emphasize the importance of returns and reverse logistics in online retailing, and how customer behaviour has changed in regards to returns, we curated some facts and figures about its decisive role in your business' success.

Even before the pandemic, the likelihood of a return after an online purchase was already 3 times higher than for offline purchases. Despite this, 66% of consumers have since preferred returns in brick-and-mortar retail regardless of purchase method.

However, that has changed dramatically. E-commerce has grown at an unimaginable speed. As a result, both fulfilment toward customers and reverse logistics have become critical factors in customer satisfaction. For this reason, 40% of online retailers changed their return policies during the first phase of the COVID pandemic. Another 27% considered adjusting their returns strategy already back in May 2020.

In fact, returns created costs of \$642 billion in 2020. Incidentally, that is equivalent to the entire GDP of Austria and Portugal combined.

In addition, the largest proportion of people in Europe, who have returned goods ordered online within 12 months after the buy, come from the following countries:

- Germany (56%)
- Spain (49%)
- Sweden (46%)
- France (46%)
- UK (45%).

In addition to the heavy burden on online retailers, returns also contribute to harming the environment. Returns added 2.27 million tons of waste to landfills and 15 million metric tons of CO2 emissions, according to figures from Optoro (2020).

4.4 REASONS FOR ONLINE RETURNS

The online retailers cannot put a board like retail shops for “no returns”. There is a number of reasons that make reverse logistics inevitable including delivery of incorrect product, customer behaviour, damaged product, delay in order fulfilment and many more.

4.4.1 Product returns by the customer

Some goods are inevitably returned to the seller. It is true in case of physical as well as an e-commerce store. Customers return the products because of,

- Incorrect product or product size ordered
- When customer no longer needs the product
- The product fails to match customer expectations
- When retailer ships wrong product or product size
- The product was damaged upon arrival
- When the customer engages in wardrobing
- Customer cancelled the order
- Mal-functioning product

4.4.2 Wardrobing

Wardrobing is when a customer buys a product, use it and attempt to return the product for a full refund. For example, a job hunter who buys suits for an interview returns the suit after the interview to save the money. This tactic is not limited to clothing and accessories.

4.4.3 Product returns by carrier

Everything is fine. The product is in excellent condition, it is the exact product which the customer has ordered, the customer is genuine and not wardrobing, yet it is being returned to seller! This still remains as a question due to various reasons.

There is a number of reasons where the product is not reaching the customer at all, and it is being returned back to the seller. Here is the complete list of reasons why the carrier is returning the product to the seller.

- The customer gave the wrong or incomplete address
- Customer opened the package and refused to accept it
- The customer is not available to collect the order
- There is an amount dispute between the delivery person and customer (generally happens in case of COD orders)
- Mis-delivered products
- The delivery person gave the fake comment (Fake delivery attempt)
- Product repairs

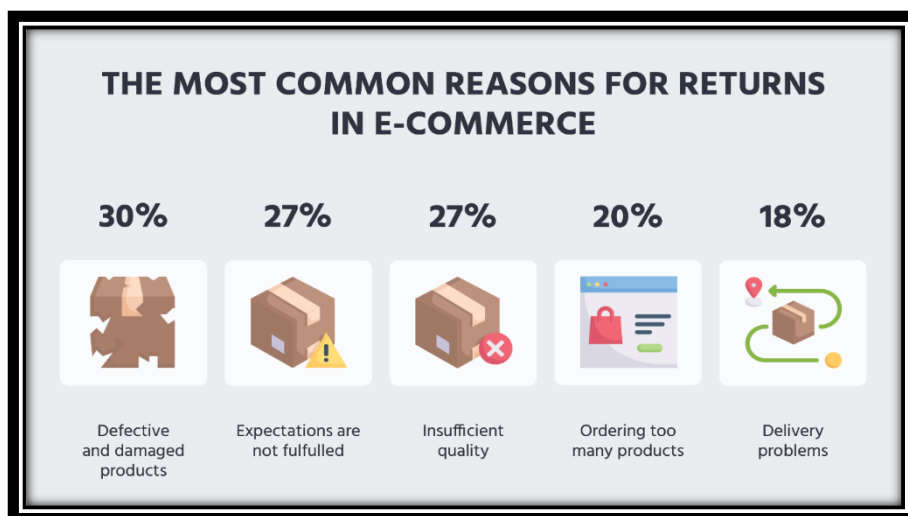


Fig 6 – Reason for returns

4.5 COST OF REVERSE LOGISTICS

The cost of reverse flow is usually high whereas generally, the cost of returned goods is typically low. The returns are extraordinarily expensive and eat up the already pressured profit margins.

Product returns add an estimated 8 to 10% of the cost price of the product. In the apparel industry, for example, return rates are typically higher by 40% than others as we offer multiple sizes & multiple colours. Retailers are going to see the cost of reverse logistics go up dramatically over the next decade.

The cost of Reverse Logistics is almost 1.5 times of forward. There are some factors which determine the shipping cost which are,

- From and to Country/region/state/city
- Product weight
- Package size
- The price of the product
- Base delivery rate
- Fuel surcharge
- CGST & SGST
- Customer group

The true cost of product returns are not only the logistics costs but also the damage to the customer experience due to the inconvenience caused to the customer. Each time the customer returns the product, chances are high that they will not buy again from the store. When a customer churns, store will lose the lifetime value of that customer. It also loses the cost of acquiring the customer.

4.6 STEPS TO REDUCE THE COST

There is no clear way you can avoid returns altogether. However, there are ways to reduce returns which in turn can reduce the reverse shipping cost.

- Sellers should stop selling on seller-unfriendly marketplaces.
- Sellers should disclose all the correct details about the products in product descriptions.
- Inspect the returned product properly.

- Keep the proof of orders shipped and received.
- Source products from trustworthy suppliers.
- Discontinue products that have highest return rates.
- Always respond to your customers to avoid negative reviews.

Hassle-free returns play a vital role in shaping customer expectations and overall experience with your brand. For many companies, customer-friendly return policies are one of the major components of their branding.

Some companies create a competitive advantage with offering free returns up to 100 days from delivery. They definitely captured a good share in the market over competitors, however, they experienced a downside where the returns have grown up to 50%. The cost involved in returns are immense. They are the same as (or more than) forward logistics.

Beside returns, reverse logistics also includes back and forth of items that need to be repaired or replaced. However, the total number of repairs is quite smaller than returns. However, the rate can be different from industry to industry.

4.7 CHALLENGES OF REVERSE LOGISTICS

Reverse logistics faces challenges similar to those for forward logistics in terms of capacity, infrastructure, and information handling (Lacy et al., 2020). To assess whether the objectives of reverse logistics have been met, these challenges can be categorized into three phases: planning, implementation, and control (Plaza-Úbeda, Abad-Segura, Burgos-Jiménez, Boteva-Asenova, & Belmonte-Ureña, 2021). Reverse logistics encompasses value-added activities such as testing, sorting, refurbishing, recycling, and redistribution (Ellen Macarthur Foundation, 2016). These activities compel manufacturers to concentrate on planning and implementation before undertaking reverse logistics. Therefore, trained personnel are needed to proactively establish standards and processes to enable reverse logistics (PlazaÚbeda et al., 2021). Effective communication is another critical factor for reverse logistics. This may involve asset visibility, real-time information updating, and package tracking issues. Communication with customers, suppliers, and vendors becomes an essential part of meeting customers' needs and coordinating the operations of the reverse logistics chain (Bag, Gupta, & Luo, 2020; Huscroft, Hazen, Hall, Skipper, & Hanna, 2013). Another

layer of complexity relates to the unpredictability of supply (Lacy et al., 2020). Manufacturers frequently face challenges in controlling the quantity, quality, and timing of returned products (Sundin & Dunbäck, 2013). Although facets of information technology such as Big Data and Cloud can help manufacturers to accurately analyze returned products, the capabilities that support reverse logistics are still significantly lagging, creating severe challenges (García-Sánchez, Guerrero-Villegas, & Aguilera-Caracuel, 2018).

A challenge of reverse logistics is that the flow must be bi-directional. Managers need to set up the right infrastructure for it to be effective. That often requires software that can automate and track every step of reverse logistics. Additionally, once that infrastructure is in place, management needs to continually monitor and evaluate the organization's reverse logistics processes to ensure efficiency.

Companies must track inbound and outbound logistics to get the full picture. Inbound logistics manages the receipt of raw materials or goods from the supplier to the manufacturer. Outbound logistics is the processes that deliver the finished goods to the end user. Both inbound and outbound logistics are measured from the manufacturer's perspective, while reverse logistics can be part of any point in the supply chain.

Reverse logistics face different challenges than forward logistics. They are,

4.7.1 Reverse logistics are unable to forecast

Returns unlike forward logistics start from many places and end up being in one place. It is hard to foretell who will return the product or what will be the origin of the return. This makes the budgeting forecast, logistics forecast and revenue forecast difficult. Reverse logistics is hence creating hindrances for online retailers.

4.7.2 The excess time to process the sale again

Returned products generally take more time to be ready for the sale again. Especially in case of damaged and malfunctioning products. Once the customer punches a return request, they have to be picked up, inspected, fixed and restored. This makes the resale lengthy. In some cases, the price may change because of the received product is damaged or the accessories with it is missing.

4.7.3 Conditioning items for resale

When a customer asks for a return, it is advisable to ask the customer to provide the reason for the return. Other than “defective” or “I changed my mind”, try to keep the reasons more specific. This helps you to process the return effectively.

In many cases, customers are genuinely interested in the product. However, because of the little information on how to exchange the product with a similar one, the customer ends up returning the product to the seller.

It is advisable to speak to your customer over a call rather than merely asking the reason on the return page. If you have a customer support team, this can work really well to reduce returns. A one-minute call can save you all the time and money processing the reverse logistics. Moreover, this also shows that you care for your customer and builds healthy relations with customers.

4.7.4 Lack of optimal policies for e-commerce returns

To fight with the rising return rates, some retailers have tightened their return policies. There is a difference between having a strict return policy and a clear return policy. A strict return policy can negatively impact customer loyalty. A clear and flexible return policy actually drive customer loyalty and retention even if they are returning some of your products. Read guidelines to write effective return policy for your e-commerce store.

4.7.5 Recover the value

Sometimes for retailers, it becomes difficult to recover the cost of returned products. Returned products become obsolete, and as a retailer, you neglect the same.

Many a time the returns are piled up and becomes obsolete for example, electronics of fashionable clothing will of no use once the trends are changed. In such a scenario, it becomes difficult, rather impossible to recover the product value.

4.8 CHALLENGES OF REVERSE LOGISTICS IN INDIA

On the customers part, the reasons that initiate the process of reverse logistics is wrong size or color, returns involve no cost, ease of exchanging the item with another of same cost, ease to return unwanted gifts. For a retailer or for the supply chain things that matter the most are framing customer friendly policies, handling the returned

goods, making a detailed record of reason of return, to decide about restocking or discarding the items, monetary loss involved. All these things make it difficult for a retailer to handle the products that come through reverse logistics. This process of returning the products in the recent years have become an essential part of the online shopping cycle. The customers want flexible return policies and suppliers are bound to provide flexible returns policies as the customer does not gets the privilege of checking the things by his own hands.

The returns in the e-commerce cost three times more than the first shipping but still the companies are providing customers with easy returns policies.

The major challenges faced by Indian E-commerce retailers are:

- High volume of returned goods
- Costs involved in receiving returns
- Lack of human resources for handling returns
- Maintenance of reasons of return (data for future sales)
- Management of returns (restock or discard)
- Government policies
- Legal issues (for expensive items)

Some of the common challenges of reverse logistics that have been found in the environment of Indian Business are quantity of product return, kinds of products returned by customer, decision-making in operation of reverse logistics, the ratio of reverse logistics cost to cost of total logistics, the impact of return on profit, the impact of used product return on profitability of the company and liberal return policies .

4.9 TOP COMPANIES IN INIDA

It's easy to think order fulfilment is key to customer satisfaction but a poor reverse logistics system can be a death blow to customer retention and brand loyalty. Outsourcing reverse logistics to third-party logistics providers (3PLs) and courier services can help streamline the entire forward and backward supply chain.

With that in mind, the following are the list of five best courier and shipping companies for reverse logistics in India. These companies not only provide the best returns management program but also come with several different perks of their own.

4.9.1 E-com Express Reverse Logistics Company

Ecom Express is a courier service provider that came into being in 2013 with operations in 35 cities. Since then, it has expanded to cover over 27000 pin codes in 2650+ cities all over India and across the world. Though quite popular for freight forwarding, Ecom Express also offers QC-enabled (Quality Check) reverse logistics operation in India. They ensure pick-up and delivery of return products to the warehouse or establishment within 24-72 hours, even on Sundays and holidays. This hastens the process of arranging refunds for the customer.

4.9.2 First Flight Reverse Logistics Company

First Flight has been delivering timely and reliable courier service for the past 30 years. It is spread in 220+ countries around the world and covers over 5000 pin codes in India. They provide robust reverse logistics solutions to eCommerce businesses in India.

Apart from timely pick-ups, track and trace via real-time updates, they also provide immediate exchanges for "dead on arrival products". Of course, this is subject to the terms and conditions of the seller. First Flight offers super competitive pricing and partnering with them can help you cut costs on returns.

4.9.3 Shadowfax Reverse Logistics Partner

This customer-centric logistics partner specializes in reverse logistics. They started out in 2015 and now cover over 7000 pin codes in India across 500+ cities. Shadowfax has made its name in the eCommerce logistics industry as the best courier partner for reverse logistics.

They even do pick-ups from remote tier-II and tier-III cities that do not fall under the radar of a lot of bigger shipping partners. The Shadowfax Return Connect does faster pickups, makes mandatory quality checks, and offers instant refunds to your customers. After that, goods are immediately shipped to the merchant warehouse.

4.9.4 Blue Dart Reverse Logistics Company

Blue Dart is one of the most trusted courier partners in India. They started their operations in 1982 and since then have expanded their reach to cover 18000+ pin codes all over India and in 220+ other countries. Blue dart stands up as one of the most cost-effective courier partners for reverse logistics.

No matter where your customer is located or where the delivery destination is, you can get your parcel back in time. By tying up with them, you can also use their other noteworthy services like large volume and oversize package shipping, etc. They are the only courier service provider in India with a dedicated fleet of 6 freighters (Boeing 757s), for transporting goods internationally.

4.9.5 Safexpress Reverse Logistics for E Commerce

Safexpress is a leading supply chain and logistics courier service which began its journey in 1992. They currently have an expansive network of 31000+ pin codes in India and manage 7500+ GPS-enabled, weather-proof container vehicles.

Safexpress offers a unique returns feature. They offer reverse logistics to retail stores in malls and shopping complexes if their goods go unsold over a period of time. They do returns from individual customers as well. All returning shipments are packed in their branded cartons, free of cost.

4.10 FACTORS FOR A BEST COMPANY

A streamlined supply and logistics chain is essential for the survival of an eCommerce business. And choosing a courier partner with reverse logistics services for your online business should be done after considering a couple of things. Below, we discuss the few factors that an online business entrepreneur should always consider before tying up with a shipping partner for logistics.

4.10.1 Shipping Costs

One of the major reasons online sellers hire courier services to take care of shipping logistics is because of the cheaper rates they provide. However, it pays to keep in mind that logistics comes with many hidden costs.

So, even if your courier service provider offers lower base rates, the total expenditure on shipping can still become quite high. The cause of this is value-added

items, weight discrepancies, and other extra charges. Always contact your courier service provider to ascertain if they offer reverse logistics as an add-on service.

4.10.2 Reach

Generally speaking, every eCommerce business aims to have as wide a reach as possible. A wider reach, whether in e-marketplaces or geographical regions means a wider audience to add to your customer base. But we always ask online business owners to see if the courier service providers they select cater to the areas their customers come from. This is even more important in the case of reverse logistics.

It can be found that many shipping companies do not take returns from all the places they deliver to. So, if you are looking at the number of pin codes an eCommerce logistic company delivers to, also need to see if it accepts returns from all those places. Failing to determine this can land in a hot mess.

4.10.3 Order Tracking Visibility

Tracking orders through a track and trace platform is important for both forward and backward logistics. With reverse logistics, it needs to be able to track orders in real-time because the transfer of refunds to the customer cannot be initiated before the return shipment reaches the warehouse. To make sure customers remain happy and do not undergo a bad post-purchase experience, online sellers need to keep their order tracking feature transparent.

4.10.4 Returns Speed

A speedy return is perhaps the most coveted feature of a reverse logistics courier company. Ecommerce businesses should put as much premium on their reverse logistics as they do in their forward logistics. Really, there's no getting away from receiving returns. The only thing can be done is to handle returns so well that customers don't skip a beat in the buying journey.

4.10.5 Specialty Reverse Logistics Services

Before finalizing a courier service provider for reverse logistics, remember to ask if they provide any special shipping services like doorstep quality checks (QCs), instant refunds, packaging, temperature-controlled and weather-proof shipping containers, etc.

These services can come free or at an extra cost, but they are always a bonus. If the business deals with specific items that require such special shipping conditions, like medicine, perishable goods, etc., always ask your courier service about them well in advance.

CHAPTER 5

**SUGGESTIONS AND FUTURE OF
REVERSE LOGISTICS**

5.1 INTRODUCTION

Firstly, returns have now become one of the greatest supply challenges for companies today, a reverse logistics strategy is critical in maintaining healthy inventory management practices and regulating operating expenses. Secondly, understanding the dynamic consumer behaviour is extremely important in comprehending their purchasing behaviour and increasing customer satisfaction. Meaningful insights can be gained from each return and help to improve sales in the future.

5.2 STRATEGIES TO OPTIMIZE REVERSE LOGISTICS

To optimize reverse logistics, companies need cohesive strategies that account for speed, efficiency and cost. When taking action, consider policies, partners, data, capacity, logistics and transportation.

The seven strategic ways to optimize reverse logistics are:

5.2.1 Evaluate Relevant Policies and Agreements

Review and revise the procedures related to your company's returns and repairs. These policies should be clear and consider the root causes of returns and repairs. The way a company deals with returns and repairs can be competitive differentiators.

5.2.2 Collaborate with Suppliers

Close collaboration with suppliers can help ensure a smooth, integrated experience for customers, not a disjointed one they will struggle to navigate.

5.2.3 Use Data to Optimize Processes

By collecting data on product returns, you can understand why customers may be returning products. Then, you can make adjustments in sales, product design and forward logistics processes accordingly.

5.2.4 Track products forward and backwards

Linking raw materials to the finished good and the customer order allows you to trace ingredients in the event that you need to process recalls—instead of issuing them for entire lines, you can find the issue and selectively issue recalls.

5.2.5 Centralize Return Centers

With a centralized return center, you can better sort products and identify the best next step for each of them. With a center, businesses can more efficiently determine how best to reclaim product value. If your company lacks the resources to have a separate returns center, consider dedicating a portion of your warehouse or factory to returns.

5.2.6 Examine Logistics and Transportation

Regularly review the processes for forward and reverse logistics and transportation. Determine if it is feasible to integrate some of these processes and transit. For example, if your delivery drivers can pick up empty pallets as they drop off full pallets, you save trips, time and money.

5.2.7 Automate

Use cloud-based logistics software to help streamline operations. For example, a software system can track asset recovery, manage refurbishment and provide business intelligence analytics.

5.3 MANAGING WITH WAREHOUSE MANAGEMENT SYSTEM

Managing the reverse logistics is essential for the bottom line and reputation of the business. Consumers need to feel like they are buying products from companies with integrity, and improving the reverse logistics opens up opportunities for a number of sustainable business practices.

It is crucial to have a warehouse management system (WMS) that can manage inbound and outbound logistics and deliver analytics in real time. Businesses need insights across transportation and logistics providers, through warehouse and fulfilment and ultimately need to integrate all that information with financial data in an enterprise resource planning (ERP) system. ERP platforms like NetSuite, paired with a warehouse management system, allow companies to easily track returns, monitor the movement of goods, issue credits through the accounting system and update everything in the customer record.

Similarly, inventory management is key to efficient returns processes. A high rate of returns can lead to inventory build-up, and an effective inventory management

system will alert you when inventory levels are growing too quickly—faster than your rate of sales.

Many companies are taking a closer look at their reverse logistics as they realize returns are a major source of expenses and there are opportunities to recover more money on those goods. Additionally, rising return rates make it imperative for these businesses to figure out a more cost-effective way to handle products sent back to them. Evaluating your reverse logistics processes to identify inefficiencies and address those shortcomings can boost your bottom line by not only lowering costs, but increasing customer loyalty and elevating brand reputation.

5.4 MEASURING THE PERFORMANCE

It is important to monitor the progress against the reverse logistics plan. It needs to have metrics to measure the financial impact of returns on the e-commerce business. To do this, need to develop the process where the return rates and getting the returns back can be analysed. Some of the metrics need to be considered are the following;

5.4.1 Reverse cycle time

The overall time to process the returns and reverse logistics can be an essential measure of reverse logistics. The more streamlined processes are; lesser the cycle time should be to process the reverse logistics.

5.4.2 The ratio of product returned and resold

Another important measure the returns performance is how much is the returns and how many products from the returns that can resell.

5.4.3 Product/material wasted

Measure how many products are moved to repairs and how many are scrapped as a waste. The objective to measure this is to minimise the product wastes.

5.4.4 Products sent back to the manufacturer for repairs

The number of products shipped back to the manufacturer or supplier cause of defect or repair. If it is dealt with multiple suppliers, bifurcate them accordingly. If there are significant returns from a particular supplier, proceed with the next one.

5.4.5 Handling cost

What is the per item handling price? This can be calculated by dividing the total cost of the reverse process by the number of returns processed. By doing this, you can measure the efficiency of the process.

5.4.6 The reverse distance travelled

Track the average distance travelled by the item reaching you. The lesser the time, the better.

5.4.7 The total cost of the product

Calculate the original cost of the product, reselling it to the customer, the reverse logistics cost, repairs, scrapping cost, and moving through the market again. This helps you to determine the actual cost of ownership of the particular product.

5.5 MATERIALS, RECYCLING AND RESUSE

5.5.1 Packaging Materials

Packaging materials play an essential role in assuring that products are delivered safely and in an acceptable condition to customers. Equally, customers see packaging materials as necessary for their online purchasing experience. However, once customers receive the goods, EDPMs are discarded with regular household domestic waste. Some of the discarded packaging materials will be recycled, but many will end up in landfills or incinerators. Duan et al. (2019) estimated that close to 90% of the EDPMs from online shopping deliveries are corrugated paper boxes and plastic delivery bags.

5.5.2 Recycling and Reuse considerations

Life cycle assessment (LCA) is an established systematic method that considers environmental and other potential impacts of a product's life, from cradle to grave. In the case of EDPMs, this may include consideration of their manufacture to the final disposal of waste. LCA studies can indicate better or alternative materials for the intended purpose and identify different options for recycling or disposal (Kaab, Sharifi, Mobli, Nabavi-Pelesaraei, & Chau, 2019; Perugini, Mastellone, & Arena, 2005).

5.6 FUTURE OF REVERSE LOGISTICS

The future of reverse logistics is all about minimizing disruptions from returns. Especially in ecommerce, and increasingly in the retail industry, the volume of returns is increasing. Companies can use reverse logistics to integrate all parts of the returns process.

One way to integrate returns is to connect the product's data to how staff needs to handle it. Documenting what happens to a returned product—whether the item will go to resale, repairs, or be recused for raw goods—the supply chain can support this integration. The future of reverse logistics involves integrated supply chain management software that helps make these determinations and can also provide valuable reports.

One of the main factors of Supply Chain Management is logistics. The companies are today looking for the best practices to optimize their logistics to gain a low-cost structure efficiently. In the past few years, the concept of Reverse Logistics has become increasingly important. The definition proposed by Dowlatshahi, seems very relevant. In simple terms, reverse logistics is the systematic process of flow of raw material, process inventory, finished goods, and any information from the point of consumption back to the point of origin. It can be to recapture the value or create new value or simply for the disposal process. This is a new concept that has now started to redefine the operations of any company. Companies have started to realize the importance of shifting their focus from the traditional forward supply chain channel to optimize costs and gain higher customer satisfaction. In today's world, reverse logistics has become extremely important. According to research, customers return \$650 billion worth of goods each year globally. The requirement for online returns is three times more than brick and mortar returns. With the onset of e-commerce, the requirement for effective reverse logistics has become a crucial component.

The future of reverse logistics is linked to the growth of e-commerce industry in the upcoming years. In July 2021, there were more than 4.8 billion users online. That was 63 percent of the world's population of 7.7 billion. Cybersecurity Ventures predicts that there will be 7.5 billion Internet users by 2030—that would be 90 percent of the projected world population of 8.5 billion in 2030. A high percentage of those additional internet users will live in emerging markets like India, China, Brazil, Russia,

and South Africa. That's going to lead to an extra 2.7 billion potential consumers on the internet. That could lead to a massive increase in profits for e-commerce-based companies of all sizes.

According to studies conducted by Social Media Today, 60% of shoppers would rather watch a product video than read a product description. Also, 64% of shoppers are more likely to purchase a product after watching branded videos on social media. These studies help prove that shoppers want more interactive experiences when making a purchase to better understand the value being offered. Additionally, the video format is ideal for providing product demonstrations and utilizing internet influencers. Amazon is already using more product descriptions in the video format and this trend will only grow throughout the entire e-commerce space.

E-commerce has transformed the way business is done in India. The Indian E-commerce market is expected to grow to US\$ 188 billion by 2025 from US\$ 46.2 billion as of 2020. By 2030, it is expected to reach US\$ 350 billion. In 2022, the Indian e-commerce market is predicted to increase by 21.5%, reaching US\$ 74.8 billion.

India's e-commerce market is expected to reach US\$ 111 billion by 2024 and US\$ 200 billion by 2026.

Much of the growth for the industry has been triggered by an increase in internet and smartphone penetration. The number of internet connections in 2021 increased significantly to 830 million, driven by the 'Digital India' programme. Out of the total internet connections, ~55% of connections were in urban areas, of which 97% connections were wireless.

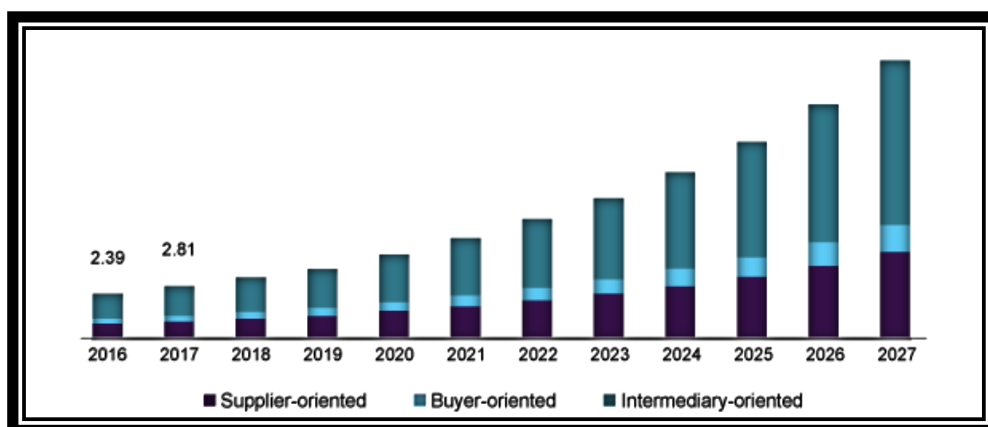


Fig 7 - – E commerce market 2027

(source – Grand View Research)

CHAPTER 6

**FINDINGS, CONCLUSION &
BIBLIOGRAPHY**

6.1 FINDINGS

Findings are basically the key outcome of the investigation. It is basically a key fact which you can discover during an investigation. Research findings are facts and phrases, observations, and experimental data resulting from the study. From the detailed study of reverse logistics in e-commerce industry the following are the findings;

- First, the contribution and function of e-commerce over the nation as well as the globe in day to day life is clearly screened.
- Following that, the role of logistics in the industry were described well from the study.
- Second, the role of reverse logistics in the supply chain is clearly known. In addition, the process and factors impacting the process are also found in the study.
- Third, the evolution of e-commerce and reverse logistics are described from the point of introduction to current development.
- The 5Rs of reverse logistics that has major contribution are found from the study and the metrics to monitor the RL supply chain are also known from the study.
- The key factors of reverse logistics process and its significance were detailed in the study.
- The importance of packaging, materials usage and recycling that helps to reduce and enhance the reverse logistics process were seen in the study.
- The future growth of e-commerce industry that is expected to reach US\$ 111 billion by 2024 and US\$ 200 billion by 2026.
- The key strategies to optimize the usage of reverse logistics in the future through automation, managing with warehouse management system were also discussed in the study.
- The factors that helps to measure the performance of reverse logistics and enhance it like reverse cycle time, product wasted, product returns and handling the cost are described from the study.

6.2 CONCLUSION

This project has tried to put together the basic concepts of reverse logistics in e-commerce industry and the benefits of having a good reverse logistics process. The progress to gather the information necessary to complete this project starting from collecting the data for the theoretical background, going through numerous articles to find the right kind of information, understanding the concepts, formulating the survey, getting the right people to respond on time, and finally analysing the gathered data. It can be seen that reverse logistics does play an important role for the manufacturing firms to stay competitive. Also, that having a good reverse logistics process in place leads to reduction in cost, optimal use of resources, better customer satisfaction and improved customer loyalty, reduction in returns process time, and creating a green image. E-retailers must ensure that sale of products as well as profit of these suppliers grows proportionally. Phenomenal growth is being experienced by the e-commerce market of India. With increasing competition, customers are acquired by providing added services and discounts by commerce giants, such as Myntra, Flipkart, and Amazon. These e-commerce giants can adopt trial and on spot return on a minimum number of items ordered. The trend of using e-commerce sites will not fade away in future too. In a developing country like India it opens up many employment opportunities too. Government and e-commerce giants must develop policies and some rules regarding return of products so that, local manufacturers can flourish their business and contribute as revenues to the Indian economy.

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