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SUPPLY CHAIN OPERATIONS IN REVERSE LOGISTICS - CASE STUDY

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ABSTRACT:

This case study aims to look into the complexities of supply chain management in the field of reverse logistics with a focus on laptop replacement. The analysis of operational optimization and the identification of potential areas for improvement for laptop spare parts reverse logistics are done using the case study methodology. Strategic planning and decision-making for innovation and optimization in this field will be guided by the analysis of the supply chain processes involved in laptop spare part reverse logistics, which will reveal barriers and best practices as well as important new information about them. This case study provides unique data and insights that enhance academic understanding of reverse logistics in the laptop parts market. It offers doable strategies that stakeholders can implement to enhance their reverse supply chain operations. It also encourages recycling, refurbishing, and reusing laptop parts. This supports resource conservation and environmental sustainability. In the end, it minimizes damage to the environment and reduces waste., with the aid of logistics companies, this study aims to create a service model for resolving the cost and productivity issues that furniture manufacturing companies encounter when applying raw materials and shipping goods to clients. To achieve this, a questionnaire. A study was conduct to ascertain the requirements and demand of furniture manufacturing companies. Several questions regarding the import and outward processes of furniture firms were included in the questionnaire. Key channels in warehouse operations are the inbound and outgoing logistics flows, which include planning and scheduling tasks that coordinate with the movement of goods between businesses and their external partners, such as suppliers and customers.

Keywords: supply chain, reverse logistics, Optimization and spare parts logistics.

Introduction:

The process of handling the return flow of used, damaged, unwanted, or out-of-date laptop spare parts from the end-user or reseller is described under the title "Exploring the Supply Chain Operations in Reverse Logistics for Laptop Spare Parts". In order to dispose of, refurbish, or reuse the products, this process entails gathering, packing, and returning them to the business. Reverse logistics supply chain operations are essential for inventory control, cost containment, and environmental sustainability in the laptop spare parts industry. Maximize the process's overall effectiveness. The study can offer insights into ways to save costs, speed up delivery, and improve customer satisfaction by examining the inbound and outgoing logistics, transportation, and RMA procedures. (Mohd Fathi Mohamad, Zulkifli M Udin, Kamal Imran Sharif 2020 [1]), this article's goal is to offer a framework for understanding the variables that affect logistics performance because there isn't universal agreement on these variables. This article has suggest several factors, including transportation, warehouse, and inventory management. It will also go over additional broad elements that influence the performance in logistics. These thorough reviews cover inventory management, warehousing, and transportation, and they offer more clarification on the relate variables and terminology. As a result, a framework has been suggested for additional research. (GyanKosh 2012), among the important responsibilities of logistics management are the strategic management of procurement, transportation, raw material storage, manufacturing, shipment, and delivery to end users. Two essential elements for the operation to be successful are cost-effectiveness and speed.

Reverse logistics, as it relates to laptop spare parts, is the process of handling the flow of old, broken, unwanted, or obsolete spare parts that are returned. Reverse logistics supply chain operations for laptop spare parts must be planned to guarantee that the parts are gathered, examined, fixed, repackaged, and either sold again or disposed of in an economical and efficient way. This procedure entails cost-cutting, inventory management, and environmental sustainability. "The logistics of a recall can be complex, involving multiple parties, including suppliers, manufacturers,

distributors, retailers, and consumers. Effective communication and coordination among all parties are critical to ensure a successful recall." (Corinne 2007 [2]))

To summarize, the title "Exploring the Supply Chain Operations in Reverse Logistics for Laptop Spare Parts" draws attention to how crucial it is to control the flow of returned laptop spare parts that are outdated, damaged, unwanted, or used. The study of Kajsa Eriksson and Vendela Nord Nilsson (2023), this thesis will not consider the effects on other departments, such as sales and marketing, and instead will concentrate on finding ways to improve pallet handling efficiency within a warehouse that works in tandem with a production facility. "Four main conclusions were drawn: supply chain orientation, including forward and reverse supply chain flows, is linked to effective returns management (Ivan Russo 2007 [3]). The thesis will not address the external material flow; rather, it will only address the internal handling of pallets. To provide a comprehensive understanding of the issue, the topic will be examined from the viewpoints of management, office staff, and floor workers. Instead of conducting a case study at a large organization, one at a small or medium-sized one, as this may offer a unique chance to obtain practice insights.

Reverse logistics supply chain operations for laptop spare parts must be planned to guarantee that the parts are gathered, examined, fixed, repackaged, and either sold again or disposed of in an economical and efficient way. "Reverse logistics can be a complex and challenging process, requiring specialized knowledge and expertise in areas such as product disassembly, testing, and refurbishment." (Mollenkopf, Diane A. and Closs, David J. 2005). This procedure entails cost-cutting, inventory management, and environmental sustainability.

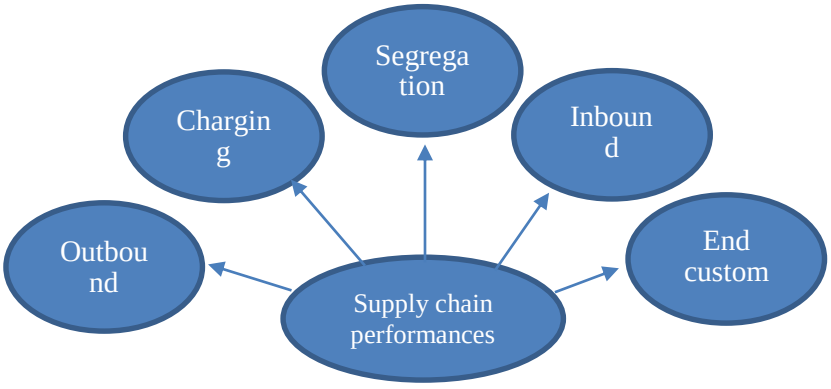
Keywords: return material authorization, supplier, and customer satisfaction

Supply chain performance:

Supply chain mapping, which entails compiling a thorough overview of the organizations and people in a business entity's supplier network, is closely associated with supply chain performance. Supply chain mapping promotes resilience in the supply chain, guarantees legal compliance, reduces reputational risk, and fortifies ties with suppliers. 6 "The design of a reverse logistics network depends on various factors, such as the type and volume of products being returned, the distance between the collection points and the processing facilities, and the available transportation modes and capacities." (Rogers, Dale S., Lambert, Douglas M., Croxton, Keely L 2002). Different map types, such as detailed maps, dynamic maps that are updated in real time, and high-level overviews, can be used to visualize it.

Identifying opportunities for improvement, lowering risks, visualizing the flow of products and services throughout a company's supply chain, identifying value and inefficiencies, reducing risks and getting ready for disruptions, and figuring out where the most cost is in the value chain to prioritize where to start are all goals of supply chain mapping. "(Stanley E. Griffis, Thomas J. Goldsby 2019[4]), the experiences of both transportation management system (TMS) technology adopters and non-adopters are reported in this study. The study of Anjali Mishra & Harshal Anil Salunkhe (2018), a fair inventory level can be maintained in the business using a variety of inventory management strategies. And determine what steps can be taken to enhance the company's inventory management procedure. The company's current inventory management system is effective. The business should use alternative inventory management strategies to enhance its current system. The raw materials are the first step in the manufacturing process, after which they are processed to create finished goods. Most of the time, a new by-product that serves as a raw material for another product is created in between manufacturing or the production process.

Supply chain Performance:



In conclusion, since mapping the supply chain can greatly enhance its performance, supply chain performance and map type are closely associated. A supply chain can be shown using a variety of techniques, such as supply chain cycles, geographic flow, product flow diagrams, and the SCOR model. "Warehouse management is concerned with the specifics of stock movement, inventory management offer a broad perspectives (CPA Namulengo Stephen 2022 [5])

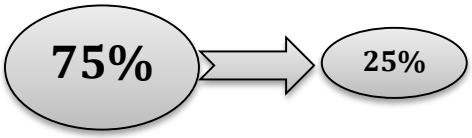
Problem statement:

4.1 Challenges

Organizing the movement of returned goods from the consumer to the producer, wholesaler, or retailer is the task of reverse logistics. Reverse logistics in primary distribution faces several difficulties, such as poor product quality, intricate routing, and lack of visibility. "The supply chain stuff is really tricky." (Elon Musk 2016) Businesses can use software to optimize routing and streamline the process, invest in technology that gives real-time visibility into the returns process, and put in place a quality control procedure that guarantees all returned goods adhere to predetermined standards in order to overcome these obstacles.

Every two days, the reverse logistics department's primary function is to remove the product from its carton box and send it to the scrap yard. "This article aims to identify operational warehouse issues that will significantly impair supply chain warehouse performance. Siti Norida Wahab (2019 [6]). However, because the closing procedures are always changing, this operation presents difficulties like space optimization and confusion in the reverse logistics department. Space optimization is the primary requirement for the reverse logistics department. Enough space is needed for the department to move around and manage returned goods. To prevent confusion and guarantee smooth operations, a more structured and effective closing procedure is also required.

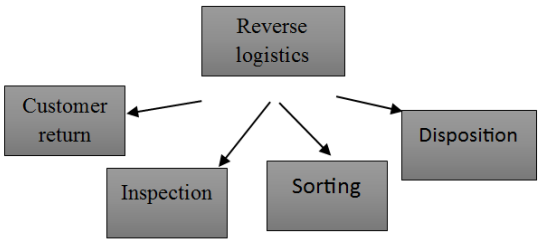
In this case study highlights the Reverse logistics space optimization. For every two days, they separate the product from the carton box and send it to the scrap yard. Here, the Closing Process Is Always Changing with reverse logistics. Thus, the reverse logistics department will become confused about it. Space optimization is required because there is never enough room to walk around in the reverse logistics department. Here, there is updated in software, so they didn't give time for process. Mainly 75% of scrap product will be loaded in the warehouse so there is a lack in space optimization.



Main problem is that the space optimization in inventory. Mostly scrap product are placed in the warehouse so there is no available space in the warehouse for inbound and outbound. (Serafettin Sevim, Kemal Vatansever 2022), with the aid of logistics companies, this study aims to create a service model for resolving the cost and productivity issues that furniture manufacturing companies Mostly we can get revenue from the scrap product and space utilized for scrap products.

This lack in space optimization that affected the overall warehouse inventory and no availability of new inbound product and no walkable space in warehouse. We need to dispose the scrap product or additional space for the warehouse. (Mr. Syed Shamikh Ahsan 2020), the organization participates in an extensive Supply Chain Management program that involves ongoing learning.

Graph



Solution:

Industries should think about putting in place a returns management system, which can automate important procedures like return authorizations and approvals and offer real-time insight into the returns process, in order to enhance the closing process. Warehouse operations can access end to end visibility into a wide range of system (Dhanesh Thatikonda 2020 [7]) this can lower the cost of returns, shorten processing times, and increase operational effectiveness.

This case study will first establish a theoretical framework on reverse logistics and spare parts management within the laptop industry through a thorough review of the literature. There will be a selection of case studies or businesses that have noteworthy laptop spare part reverse logistics operations. Interviews with important stakeholders, including technicians and supply chain managers, will be used to collect primary data. Pratap

Chandrakumar. R, Gomathi Shankar (2017 [8]), the term "stock" refers to the goods or resources that a business uses to produce and trade. It also includes the items that are used as powerful materials to promote generation.

Where appropriate, quantitative analysis will be used in addition to qualitative analysis techniques to identify themes and challenges within the supply chain operations. Yanan Song 2022 [9]), For the taxed goods, the actual freight is generally determined by multiplying the allocated freight for each KG and the actual outgoing weight based on the outgoing order number on the outgoing bill. The results will be combined to create conclusions and suggestions for enhancing the efficacy and efficiency of the supply chain when managing laptop spare parts through reverse logistics procedures.

Conclusion:

Awareness of the intricate web of warehouses, distribution hubs, repair facilities, and service providers that collaborate to handle the return, repair, and replacement of malfunctioning or end-of-life laptop spare parts is essential to investigating the supply chain operations in reverse logistics for laptop spare parts. Reverse logistics firms can enhance value for their end users, reduce expenses, and boost customer satisfaction. Because it encourages asset repair and reuse, cuts waste, and supports recycling programs, reverse logistics is also essential to sustainability efforts. "The management of supply chain operations that are intended to increase customer value and provide a competitive edge is known as supply chain management or SCM." (Mr. Lalitkumar Premachandran Patil 2022 [10]). A comprehensive strategy that takes into account the full product lifecycle—from manufacturing to end-of-life—is necessary for effective supply chain management in reverse logistics. This will guarantee the availability of spare parts and their efficient management, which maximizes value while minimizing waste.

Abbreviations

SCOR – SUPLLY CHAIN OPERATIONS REFERANCES
TMS – TRANSPORT MAGAMENET SYSYTEM
SCM – SUPPLY CHAIN MANAGEMENT

Conflicts of Interest

The authors declare no conflicts of interest

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Biography:

Dr. S. Vasantha, professor of Vels institute of Science, technology and advanced studies. She, presently working as a Professor in the department of MBA at Vels Institute of Science, Technology & Advanced Studies (VISTAS) since 2011. She has published 10 books, 117 scopus indexed

articles .under her guidance 11 Mphil scholars and 24 Phd scholars awarded phd degree. During the year 2019-Seminar/Partial financial Assistance of Rs.15000 received from TANSCT for organizing National Conference on Technology enabled Teaching and learning in higher Education

Currently working in the project "STI Hub for Technology enabled production and marketing of value-added Agricultural Products to enhance the Livelihood of SC community in Thellar block, Vandavasi Taluk, Tiruvannamalai District, Tamil Nadu State" for Rs 266,13,618

2017: Received Patron's grant of 1000 GBP to organize Gender Workshop from The Association of Common Wealth Universities, London

2016: Grant of Rs.39000 received from NABARD for conduct of MEDP on Artificial jewelry making for 30 self-help group members for 13 days

2016: Research project: A study on lifestyle trends influencing processed food and impact on health among school going children - Tamil Nadu Department of Science and Technology for the period of 2 years- Rs.407000

2015: Seminar grant-aid Rs, 200,000 received from ICSSR for National Conference entitled "Achieving "Millennium Development Goals" - Challenges and Future.