

UNIVERSITY OF WISCONSIN, PLATTEVILLE

UNITED STATES OF AMERICA



The attached educational project, by Kristina Boon, entitled Reverse Logistics: Why Business Embrace or Avoid It, when completed, is to be submitted to the Graduate Faculty of the University of Wisconsin- Platteville in partial fulfillment of the requirements for the MASTER OF SCIENCE IN INTEGRATED SUPPLY CHAIN MANAGEMENT degree.

Approved: Mary R. Bartling Date: 5/20/21

Project Advisor

Professor Mary R. Bartling

Suggested content descriptor keywords:

Reverse logistics, reverse supply chain, remanufacturing, product recovery management

A Paper

Submitted to the Graduate Faculty of

the

University of Wisconsin, Platteville By

Kristina Boon

in Partial Fulfillment for the Degree of

MASTER OF SCIENCE IN INTEGRATED SUPPLY CHAIN MANAGEMENT

Year of Graduation: Spring 2021

REVERSE LOGISTICS: WHY BUSINESSES EMBRACE OR AVOID IT

A Seminar Paper

Presented to

The Graduate Faculty

University of Wisconsin – Platteville

In Partial Fulfillment

Of the Requirement for the Degree

Master of Science in Integrated Supply Chain Management

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Year of Graduation – 2021

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## **Reverse Logistics: Why Businesses Embrace or Avoid It**

Kristina Boon

Under the Supervision of Professor Mary Bartling

### **Statement of the Problem**

Reverse logistics, a topic that for many years had received little to no attention, has gained traction in recent years. More and more companies are realizing that reverse logistics can be a source of competitive advantage and a strategic activity that can create value, cut costs, and create customer loyalty.

Although many companies have realized and taken advantage of the myriad of benefits that reverse logistics has to offer, there are others that have not. Some companies view this concept as a burden or a necessary cost of business that can be costly and time consuming. Others lack the expertise or the resources to pursue the reverse logistics initiatives.

This paper analyzes the topic of reverse logistics and the significance it has on modern day businesses and supply chains. The research presented will examine the reasons why some companies choose to pursue reverse logistics initiatives while others stray away from it. The primary method of approach for this paper will consist of research and data obtained from scholarly and peer reviewed academic journals.

### **Purpose of the Study**

The purpose of this study is to examine the topic of reverse logistics and the impact it has on modern day supply chains and organizations. This study aims to explore and understand why some organizations embrace reverse logistics, while others overlook it.

### **Significance of the Study**

This study will be a significant endeavor in understanding the critical role that reverse logistics plays on organizations and their supply chains. The findings of this study will help uncover the immense value and cost savings that an effective and efficient reverse logistics program can bring to an organization.

Additionally, this study will be beneficial to supply chain professionals that are looking to improve their bottom line and enhance their customer service.

By presenting the advantages and challenges of reverse logistics, this study aims to educate supply chain professionals on this topic and help them make an informed decision of whether or not to pursue a reverse logistics program within their organization.

### **Assumptions**

The research and data that is collected from scholarly and peer-reviewed journals is assumed to be factual and peer-reviewed.

Additionally, this paper assumes that the reader is familiar with the topic of reverse logistics and its role within supply chain management.

### **Delimitation of the Study**

The seminar paper contains information collected online from primary and secondary sources such as articles, books, journals, statistical data, and the Internet in an attempt to provide a variety of expert perspectives and insights. It does not include information that was gathered through in-person interviews, surveys, or experiments due to time constraints and financial resources.

The paper is limited to articles that have been published in the last 20 years to focus on the impact of reverse logistics on modern supply chains and organizations.

The findings presented in this paper concerning the advantages and challenges of reverse logistics may not apply equally to organizations of different sizes or industries.

### **Methodology**

Multiple databases were used to identify relevant sources for this seminar paper. The University of Wisconsin-Platteville Karrman Library was extensively utilized in my research due to its large collection of electronic books, journals, and databases.

In addition to Karrman Library, I collected my data from databases such as JSTOR, EBSCO, ProQuest, as well as other reputable databases that published well-researched articles on the topic of reverse logistics.

I used a variety of keyword descriptors when searching the above-mentioned online databases. These included: reverse logistics, reverse supply chain, remanufacturing, product recovery management, to name a few.

The resources were selected by reviewing article titles and abstracts to determine if the contents of the article were relevant to my topic.



### **Abstract**

Reverse logistics, a process that was overlooked for many years, has been receiving more attention in recent years. Reverse logistics can be defined as the “process of planning, implementing and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin, for the purpose of recapturing value or proper disposal” (Fassoula, 2005).

While this process can be a source of competitive advantage and enhanced customer service, it can also be costly and time consuming. Murphy and Knemeyer (2018) point out that in the United States alone, the annual cost of reverse logistics exceeds \$100 billion. Furthermore, reverse logistics can be approximately four to five times more expensive than forward logistics and can take twelve times as many steps. Greve and Davis (n.d.) argue that reverse logistics is not simply managing the process of returning unwanted goods, but that the science of reverse logistics includes “return policy administration, product recall protocols, repairs processing, product repackaging, parts management, recycling, product disposition management, maximizing liquidation values and much more.”

### **Why Companies Pursue Reverse Logistics Initiatives**

In recent years, many organizations have come view reverse logistics as a strategic activity that can result in immense savings, improved customer service, and a way to stand out among competition in the global market.

Curtis Greve and Jerry Davis (n.d) were commissioned by UPS to put together a report that outlines the ways that organizations can recover lost profits through an effective and efficient reverse logistics program. In this report, the authors attempted to explain how companies can realize near and long-term benefits by taking charge of their reverse logistics programs and activities. Greve and Davis argued that the topic of reverse logistics has received minimal attention, even though an average manufacturer will spend 9-15% of total revenue on returns. They pointed out that many executives go out of their way to avoid dealing with this process, because “it can be ugly and is thought of as nothing more than a cost of doing business” (p.4). Moreover, they advised that if reverse logistics continues to be ignored by management, it can “cost companies millions in lost profits due to damaged customer relationships and external liabilities that could have an enormous impact on their business” (p.4). However, if properly managed, this process can help organizations discover hidden profits, improve customer relationships, and minimize liabilities.

Figure 1 provides an overview of some of the areas where reverse logistics can recover value for an organization.

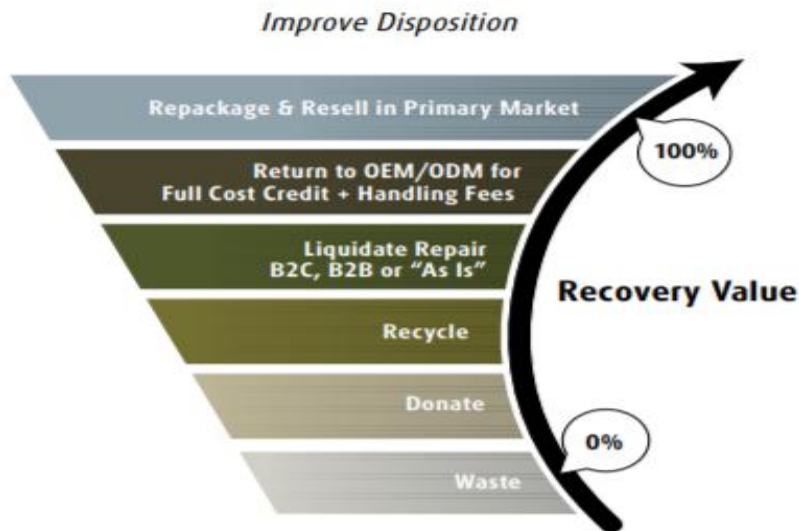


Figure 1 Improve Disposition

The authors claimed that there are several key areas where companies can positively impact revenue with reverse logistics activities. One of the key areas is the “Returns-to-Revenue” activity that includes refurbishing, repackaging, and reselling to parts, reclamation, and recycling of returned products to reclaim some revenue and value. Next area includes “Protecting Profits,” in which companies can avoid fines and penalties from various government regulatory agencies by properly handling returns and tracking all activities related to returns. Additionally, effective and efficient reverse logistics activities can positively impact customer loyalty since research has shown that “95% of customers will not buy from a company if they have a bad returns experience” (p.5). Furthermore, companies that are considered best-in-class in reverse logistics have consistently enjoyed a “12% advantage in overall customer satisfaction” over their competitors. “Disposal Benefits” is another key area where companies can positively

impact revenue with reverse logistics activities. Proper disposal and accurate tracking of returned products makes it easier for companies to deal with regulatory issues and less time-consuming to evaluate returned stock for possible secondary sales channels. Additionally, proper disposal and tracking of returned products can help companies avoid excess inventory carrying costs, minimize taxes and insurance, and manage staff levels. Lastly, efficient reverse logistics activities can maximize recovery rates since mishandled or misplaced returned products could end up being a total loss for a company instead of a potential revenue source.

To summarize, Greve and Davis believed that companies that establish reverse logistics programs can recover value and revenue from returned products, increase customer loyalty, and minimize liabilities.

Closs and Mollenkopf (2005) indicated that reverse logistics can be seen as a strategic activity than can provide a competitive advantage to most organizations, as well as increase customer loyalty and improve company image. The authors discussed the different ways that reverse logistics can provide value and enhance supply chain competitiveness over the long term. They also mentioned that, for many years, reverse logistics was seen as a “necessary cost of business, a regulatory compliance issue, or a ‘green’ initiative” (p.34). However, in recent years, more companies have viewed reverse logistics as a strategic activity that can create value, cut costs, and enhance customer loyalty.

From a marketing viewpoint, an efficient returns operation can “enhance customers’ perceptions of product quality, help minimize the purchase risks, and boost goodwill by demonstrating good corporate citizenship” (p.34). For example, Nike demonstrated good

corporate citizenship by converting their returned shoes into public basketball courts and running tracks as part of its community action efforts. This effective and efficient returns program helped Nike enhance the value of its brand and create customer loyalty. From a logistics perspective, returned products that are handled promptly and efficiently can be reintroduced into the forward supply chain in their current state, as refurbished or remanufactured products, or as repair parts.

As shown in Figure 2 below, reinserting returned products into the forward supply chain can create “additional revenue, reduce operating costs, and minimize the opportunity costs of writing off defective or out-of-date products” (p.35).

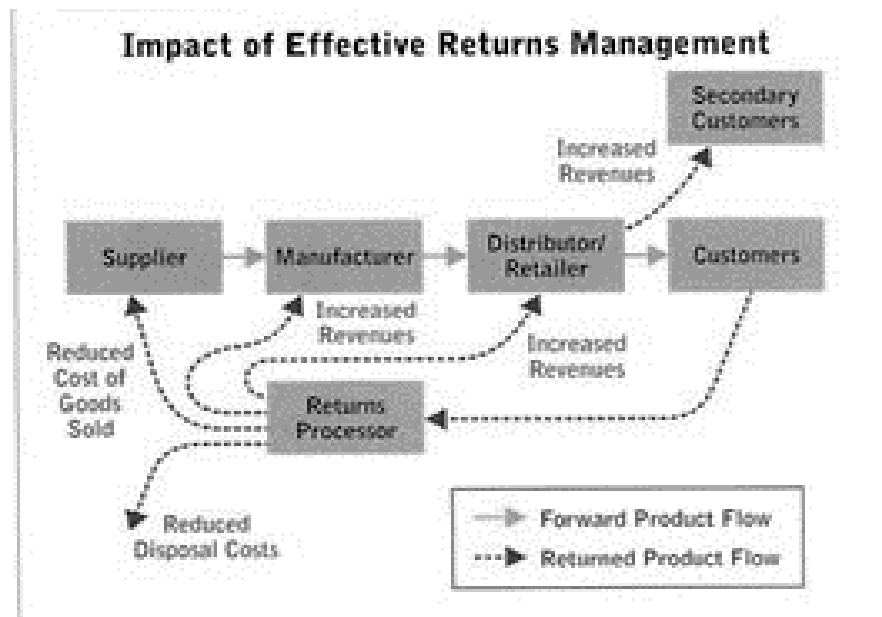


Figure 2 Impact of Effective Returns Management

Closs and Mollenkopf pointed out that many returned products and parts can be reclaimed, and while the reclamation process may incur some costs, “every product or component that can be reinserted into the forward supply chain for sale is one less unit that must be procured or manufactured” (p.36). For example, many computer manufacturers are able to

significantly reduce their procurement costs by removing usable parts from returned computers and reusing them in their new equipment.

To summarize, Closs and Mollenkopf argued that reverse logistics should be seen as a strategic activity that can provide value and a competitive advantage to many organizations by creating additional revenue, reducing operating costs, and enhancing customer service and loyalty.

In order to reap the benefits of an effective reverse logistics program, companies must first commit the necessary resources needed to develop and implement such programs. Daugherty, Autry, and Ellinger (2001) examined the impact that commitment of resources, specifically managerial and financial resources, had on a firm's reverse logistics program and its performance. The authors focused their research on the retail industry for which product returns have become an "epidemic problem" (p.110). They felt that catalog retailers were at the forefront of best practice of reverse logistics because of their extensive history and experience dealing with product returns. Product returns have only grown with time due to more liberal returns policies, shorter product life cycles, more demanding customers, and the trend of more direct-to-consumer marketing and internet retailing.

In response to the steadily increasing volumes of returns, many firms have implemented reverse logistics programs as a way to achieve cost savings and efficiencies related to reclamation, redistribution, and disposal of products returned "upstream" to the retailer or manufacturer. A well-managed reverse logistics program can provide a myriad of benefits for any organization. This includes improved customer satisfaction and service, increased control of inventory, as well as savings in inventory carrying, transportation, and waste disposal costs.

Additionally, an effective reverse logistics program can provide organizations with an opportunity to collect valuable data that can then be used to identify patterns of defects or irregularities, which in turn can drastically reduce the number of returns.

Daugherty et al.’s research sought to find a correlation between a firm’s commitment of managerial and financial resources, to the development, implementation, and performance of reverse logistics programs. The authors believed that there are six main objectives to an effective reverse logistics program, including: improved customer relations, environmental regulatory compliance, cost containment, improved profitability, recovery of assets (products), and reduced inventory investment.

Figure 3 shows the relationship between a firm’s commitment of resources and the performance of their reverse logistics programs. It also outlines the six main objectives of a reverse logistics program.

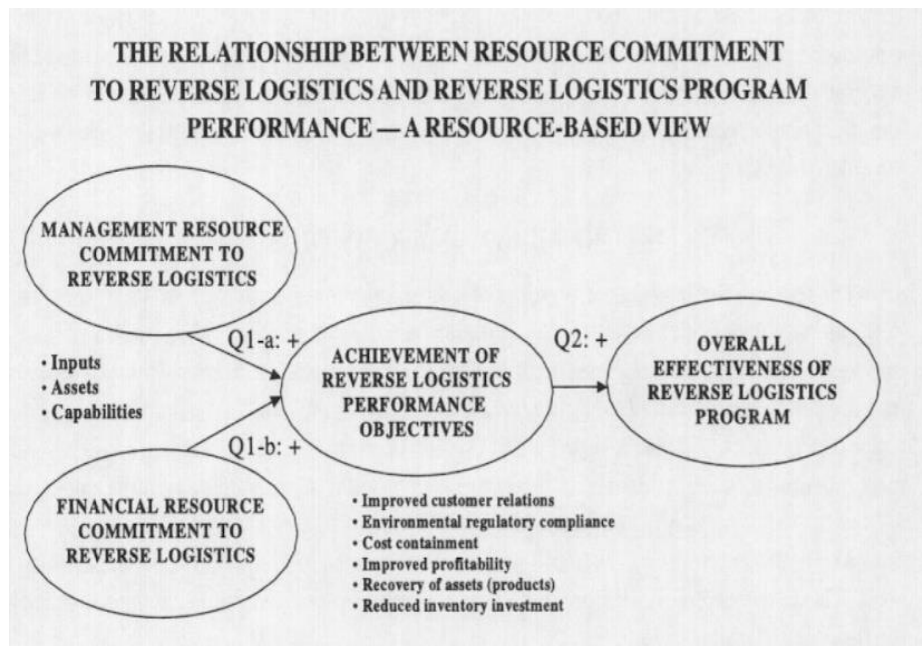


Figure 3 Resource Commitment and RL Performance

Daugherty et al. found significant correlation between management resource commitment and four of the six reverse logistics objectives. The four objectives that were positively affected by management resource commitment were environmental regulatory compliance, reduced inventory investment, improved profitability, and recovery of assets. However, the authors discovered that unlike the strong correlation between reverse logistics program performance and management resource commitment, it appeared that the correlation between financial resource commitment and reverse logistics program performance was relatively weak. Their research showed that only the environmental regulatory compliance objective was significantly correlated with financial resource commitment. Overall, the findings suggest that organizations that commit more management resources to reverse logistics programs, are in general more successful in achieving reverse logistics goals and objectives than firms that commit lower levels or none at all.

### **Why Companies Avoid Reverse Logistics**

While reverse logistics programs have been shown to provide numerous benefits for organizations, they can also present many challenges that some organizations may be unable or unwilling to take on.

Ronald Tibben-Lembke (2002) examined the impact that a product's life cycle has on reverse logistics and the obstacles reverse logisticians encounter at each stage of the product life cycle. The author contends that it is important to know what stage of life a firm's product occupies in order to anticipate the reverse logistics challenges that can be encountered as the product moves from one phase to the next.



According to Tibben-Lembke, the product life cycle typically follows four stages –1) introduction stage in which sales begin to grow slowly, 2) growth stage in which consumer awareness is achieved and sales begin to grow rapidly, 3) maturity stage in which the previously rapid growth begins to slow down and the product enters a period of slow growth, and lastly, 4) decline stage in which sales decrease and drop to zero when the product is terminated.

Figure 4 provides an overview of the product life cycle and the differences in sales volume at each stage.

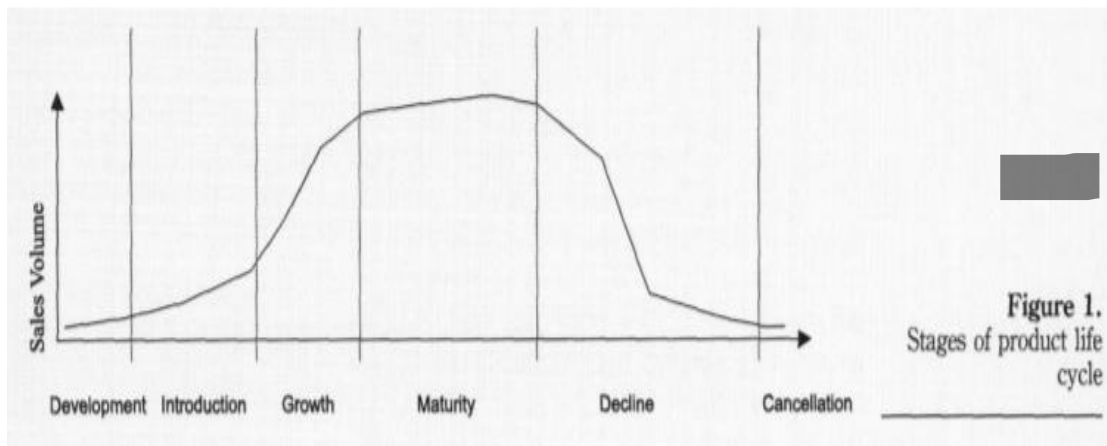


Figure 4 Stages of Product Life Cycle and Sales Volume

In the introduction stage, the volume of sales typically starts low and continues to grow slowly. Barring any significant quality problems, the returns volume at this stage is expected to be low due to the lower sales volume. At this stage, the reverse logistics function can play a critical role in catching and fixing quality problems by collecting information on returned products, identifying common defects or reasons for returns, and communicating them to the production or engineering teams. This feedback can be invaluable in reducing the number of returns in later stages.

In the growth stage, a firm experiences higher sales volume which ultimately leads to higher volume of returns. Additionally, as the volume of returns increases, the firm will be required to locate additional disposal options for the product, which may include hiring a third party to take over the returns process. However, during this stage, a firm is likely to have gained experience in diagnosing product issues and how to best deal with and process returns, which may make the return process smoother for both the consumer and manufacturer.

In the maturity stage, many of the difficulties encountered by the reverse logisticians in the earlier stages may be reduced, however, they may now be replaced by a new set of challenges. Tibben-Lembke argued that at this stage, a key focus for reverse logisticians will be cost reduction and taking advantage of every opportunity to increase revenue. One of those opportunities can be donating the product to non-profit organizations which may allow a firm to claim a charitable contribution for the retail value of the product and receive a tax break.

In the decline stage, the sales continue to decrease until eventually the product is cancelled and the volume of sales drops to zero. However, despite a decline in domestic sales, Tibben-Lembke claimed that some products may experience a reincarnation or second life in foreign markets that may not be as technologically advanced or whose tastes may not change as rapidly as they do in the domestic market. The challenge for reverse logisticians at this stage is figuring out what to do with a product once it has reached the end of its life. If a firm is unable to sell the product even at a lower rate, it very likely may not be able to give it away either. Many charitable organizations may refuse to accept product that has reached the end of its life cycle so as not to become a dumping ground for obsolete products that no one will want.

To summarize, Tibben-Lembke demonstrated the effect that the product life cycle has on reverse logistics and vice-versa. He presented the challenges and obstacles that a reverse logistician is likely to encounter at each stage and provides suggestions on how to overcome them.

Ho, Choy, Lam, and Wong (2012) examined the major internal and external barriers that may prevent organizations from developing and implementing reverse logistics programs. The authors believed that by understanding these barriers, firms would be better able to overcome them, while simultaneously cutting costs and increasing profits. Although their research focused on reverse logistics practices within Hong Kong businesses, their findings could be applicable to businesses on a global scale.

In Hong Kong, the concept of reverse logistics has been known for some time, however, many businesses are not ready or willing to implement it. Some businesses are overwhelmed by the growing volume of returned goods and do not have the knowledge or capability to deal with this issue. Others lack the support from management and supply chain partners who may be unwilling to spend the extra resources to build the infrastructure or processes to support reverse logistics initiatives.

Ho et al. identified three key factors that affect reverse logistics implementation, as well as six influential barriers to implementation. Figure 5 provides an overview of the key factors and barriers that affect reverse logistics implementation.

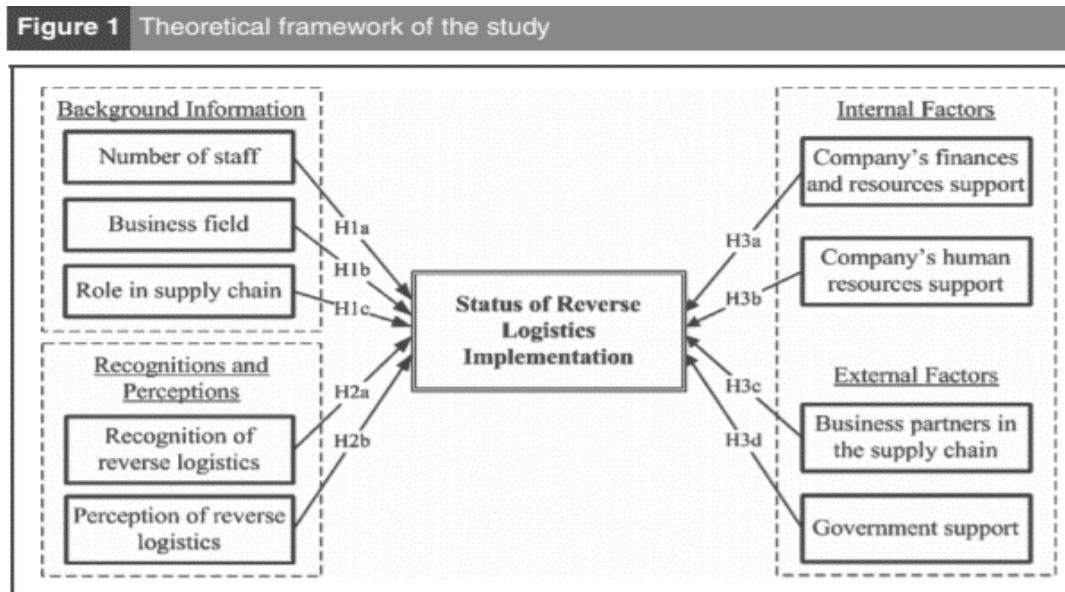


Figure 5 Influences and Barriers to Reverse Logistics

The three key factors that affect the likelihood and success of reverse logistics implementation within a business are: number of staff, business field, and role in supply chain. The authors found that the number of staff within a business is positively related to the success or failure of reverse logistics implementation. Their findings showed that companies with more staff are more likely to pursue reverse logistics initiatives, as well as have enough manpower to manage and plan for the reverse flow of product. The business field factor indicated that the return rates vary significantly among different industries and that there is no one size fits all model for the successful implementation of reverse logistics. The company's role in the supply chain, whether they are the manufacturer, retailer, distributor, etc., also influenced the likelihood of implementation of reverse logistics.

The six barriers to reverse logistics implementation are: recognition of reverse logistics, perception of reverse logistics, company's finances and resources support, company's human resources support, business partners in the supply chain, and lastly, government support. The

results of Ho et al.'s study have found that there is a strong correlation between recognition/awareness and the practice of reverse logistics. The degree of recognition and perception, such as the employees' and management's awareness of the benefits of reverse logistics, influences the implementation of reverse logistics within the organization. Internal barriers such as culture of organization, management support, and financial commitment, are all critical elements that could stand in the way of reverse logistics initiatives or push the initiatives through. The results of their study have shown a positive relation between high management, employee, and financial commitment and the success of reverse logistics programs. Lastly, Ho et al. have discovered that non-cooperation of business and supply chain partners, as well as lack of support from the government, and poor enforcement of environmental legislations, to be significant barriers to reverse logistics implementation. The authors contend that if these barriers were removed, the chances of development and implementation of reverse logistics within an organization would be higher, which will ultimately result in lower costs, enhanced customer service, and improved collaboration among supply chain and business partners.

Huscroft, Hazen, Hall, Skipper, and Hanna (2013) used the Delphi method to examine and rank seven key issues encountered by reverse logistics managers. The authors gathered data from practicing managers in the field of reverse logistics, compared how their practical insights aligned with those from academia, and used it to identify topics that may need further investigation.

The seven key issues (in rank order) that present a challenge to reverse logistics managers are – customer support, top management support, communication, costs, formalization, timing of operations, and environmental. Satisfying customers and measuring customer satisfaction is the

top consideration for any organization and should be given priority when establishing reverse logistics initiatives. Top management support is a crucial component to the success of any reverse logistics process. Management is responsible for “allocating the appropriate level of resources necessary for reverse logistics; this includes proper funding, personnel allocation, employee training, and effectively managing relationships with partners and customers” (p. 315).

The third ranked issue is communication among all affected stakeholders within the reverse logistics process, such as the buyers, suppliers, manufacturers, distributors, and customers. Communication among the stakeholders allows them to achieve collective goals, as well as the timely resolution of customer service problems, and the enhanced ability to meet customer demands. Costs is the fourth ranked factor and any benefits that may have been realized via reverse logistics could be diminished if the reverse process consumes more resources than anticipated. The formalization of reverse logistics processes is the fifth factor, and it refers to the establishment of “rules, procedures, instructions, and communications” regarding reverse logistics to ensure that expectations are clear to both internal and external stakeholders (p.318).

Lack of formalization can lead to confusion, delays, and knee-jerk reactions that contributes to unnecessary costs and customer dissatisfaction. Timing of operations is the sixth factor and may be indirectly related to vertical coordination and customers. Vertical coordination and timing of reverse logistics processes and activities is critical to the overall success and performance of reverse logistics and Huscroft et al. believed that this factor will gain more importance as more organizations attempt to integrate “the reverse logistics process into system-wide operations” (p.318). Environmental issues are ranked seventh in this study, but the authors argued that this issue will gain more prominence as the world modernizes and as more value is placed on organizations being environmentally conscious. As the environmental issue gains more traction,

organizations will be required to adjust their reverse logistics processes and activities to comply with state and federal regulations, as well as customer expectations.

To summarize, Huscroft, Hazen, Hall, Skipper, and Hanna presented seven key issues that management may face when attempting to implement reverse logistics programs within their organization. While most of the aforementioned issues can be managed with an efficient reverse logistics program, many organizations may lack the resources or the knowledge to deal with them.

## **Conclusion**

The process of reverse logistics has been gaining traction in recent years and many organizations are realizing the benefits that can be achieved through its implementation. While some organizations lack the expertise to carry out this activity or view this process as a burden, others have come to regard it as a strategic activity and a source of competitive advantage.

The research presented in this paper has shown that organizations that take advantage of reverse logistics programs can recover lost profits, discover new sources of revenue, and improve their customer service and loyalty.

Organizations may run into numerous internal and external barriers that may inhibit their attempt to develop and implement reverse logistics programs. These barriers include insufficient knowledge or capability dealing effectively with such programs, minimal resources, or lack of support from management and supply chain partners.



## Discussion

The research that I have done on this topic has helped me recognize the many benefits that an effective reverse logistics can provide to most organizations. While there are some challenges that supply chain professionals may encounter when attempting to implement these programs, the overall benefits, in my opinion, greatly outweigh the costs.

I have learned that organizations that take advantage of reverse logistics programs can create additional revenue sources by reinserting returned products into the forward supply chain in their current state, as refurbished or remanufactured products, or as repair parts. Along with recovering lost value, reinserting returned products into the forward supply chain can also positively impact an organization's public image and improve customer loyalty. However, in order to realize these benefits, organizations must first be willing to commit the necessary resources needed for the development and implementation of such programs. I was surprised to learn that managerial and financial resources and commitment played the greatest role in the performance and success of reverse logistics programs within an organization.

At first glance, it was difficult to understand why some organizations fail to implement reverse logistics programs internally when the benefits were so apparent. However, the research presented in this paper provided compelling evidence for why reverse logistics programs may not work for every organization. Internal barriers such as a company's finances and resources support, as well as external barriers such as lack of support from government or business partners in the supply chain, play a critical role in determining the likelihood and success of reverse logistics implementation within an organization. By understanding these barriers and planning

for them in advance, organizations are more likely to execute a successful reverse logistics initiative that will result in enhanced customer service and considerable cost savings.

### **Limitations and Future Research**

This paper has largely focused on the effect of reverse logistics on organizations and the consumer, with minimal attention to the broader supply chain. It is recommended that future research examines the reverse logistics process and activities across the supply chains within which organizations operate. For example, it is vital to study the impact that reverse logistics programs have on an organization's supply chain partners, such as suppliers and distributors and vice versa.

Furthermore, as the supply chains continue to globalize, it is important to consider the effect that globalization may have on the future of reverse logistics. Globalization and moving production overseas often result in quality issues that may cause an escalation in the number of returns. The increased distance between the producer and the customer, higher return shipping costs, and longer replacement wait times, may also contribute to returns avoidance. These adverse effects of globalization on reverse logistics can result in decreased sales, customer dissatisfaction, and poor brand image. Consequently, it is imperative that more research is done to study the effects of globalization on reverse logistics, as well as what organizations can do to combat its negative effects.

Lastly, in addition to globalization, the topics of sustainability and corporate social responsibility have been growing in importance in recent years. While these topics were not discussed in great detail in this paper, their significance on reverse logistics should not be overlooked. Future research should focus on how reverse logistics programs can contribute to the corporate social responsibility and sustainability initiatives of an organization.

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