

# A Literature Review on Global Challenges for Third Party Logistics (TPL or 3PL)

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**Abstract** - Initially, all manufacturing industries had a separate logistics department of their own for the movement of their produced goods and services. This added to the complexity and cost to the industries since they had to maintain a huge workforce for the process. Thus, companies started hiring third parties for logistics purposes, these third parties are known as Third Party Logistics (TPL) or 3PLs. Nowadays every company employs TPLs for service to carry out shipments thus focussing on their core area of development than logistics. These 3PL firms face certain challenges globally in delivering services to their customers. The paper aims to have a systematic review of the challenges faced globally by 3PLs. The paper gathers information from many pieces of literature on three important challenges namely minimizing the lead time, adapting to the Industrial Dynamics, and adapting to the advancement in technologies. The review will be helpful for future scholars in listing the challenges faced by these industries globally.

**Keywords:** Logistics, Third-party Logistics, TPL, 3PL, Barriers, challenges, global challenges, service, Industrial Dynamics, Advancement in technologies, Minimising lead time, and solutions.

## I. INTRODUCTION

“Logistics” was the term that was initially used by the military to refer to the act of receiving storing and transporting equipment from one place to another. This term has become popular among the manufacturing industries nowadays as a reference to the movement of products along the supply chain. The term logistics in manufacturing industries can be defined as the set of activities that involve in planning and coordination of a set of activities that are involved in manufacturing activities. Though logistics play a vital role in the flow of the raw materials and products in an enterprise, not every industry can’t afford and maintain it. Thus, a new term called third-party logistics commonly abbreviated as 3PL or TPL evolved. The TPL can be defined as the use of a third-party service provider for transportation, inventory, and service fulfilment purposes which were carried out by the industry itself [3]. Fumi *et al.* described in his work that a TPL is a service provider that ships and stores appropriate products in the respective proprietary warehouses [1]. Cooper *et al.* inferred that there were two different levels of logistics providers namely third-party logistics providers and fourth-party logistics

(FPL) providers [7]. Aziz *et al.* mentioned that TPL and FPL are both similar in services and don’t have specific

distinctive features to differentiate among them [9]. Soderoa *et al.* (2013) stated that FPL handles the whole supply chain which is mostly customer-centric while TPL handles shipments for an organization [2]. Since the review focuses on TPL, more discussion will be given on that topic.

There were various definitions of TPL given by many scholars some are discussed here. Christopher *et al.* stated TPL as a business strategy that reduces the risk caused due to non-essential activities like warehouse management, shipping, etc and focusing on fundamental activities that directly impact the future growth of the firm [8]. Aziz and Sherzod (2014) mentioned that TPL was used as a tool in identifying intermodal marketing firms in the 1970s and that was mostly used to acquire talents, expertise, and services that are not available with the firm [9]. Evangelista *et al.* (2012) projected his view on TPL on basis of time and space, He states that TPL is an external agency which delivers the product to the desired customers in desired time to the desired destination at an appropriate cost [3]. Ell ram and Cooper (1990), referred TPL as the agency which undertakes responsibilities and offers services like management, warehousing, and shipping on behalf of the manufacturing industry [4]. Hertz and Alfredsson (2003) projected TPL in a different manner such that TPLs are firms that provide goods and services for which ownership can’t be claimed by them [5]. De Groote and Marx (2013) defined TPL as a distributor of multiple services and goods and does not assume any ownership over them [6]. From the above statement, it can be concluded that TPLs have been interpreted in different means based on the different services offered by them.

The TPL industry has survived evolved and has expanded throughout its existence in the past five decades regardless of the size of the service provider [7]. Considering the benefits obtained from such TPL’s most manufacturing industries around the globe use them for domestic as well as overseas operations [8]. The TPL’s are efficient, effectively manageable flexible, and are more time and money-saving while providing customers with better service and satisfaction. Though TPL’s have grown in size and are

Incorporating the latest developments with technologies like GPS internet etc they face several challenges in both internal and external means[3][9]. Among many challenges faced globally by TPLs, the most notable challenges were adapting to advancements in recent technologies, adapting the industrial dynamics, and reduction of lead time. These barriers pull down the growth of the industry. The success of TPL lies with redesigning the services based on the ability to overcome the barriers. In this review, there will be a review of previous literature on the above-mentioned challenges faced globally by TPLs.

## II. SCOPE OF THE ANALYSIS

The study conducted is a systematic literature review on Third-party logistics (TPLs). The main purpose of the review is to gather, analyze, and evaluate the different challenges faced globally by different scholars around the world. The literature will also help scholars in finding the research gap of the studies conducted and prepare grounds for further research.

## III. STRATEGY FOR LITERATURE COLLECTION

For the collection of data on global challenges faced by TPLs, both manual and automated search was used. The review is done by collecting data from reputed journals, conference publications, and book chapters. The search process was conducted in online-based databases like Web of Science, Science Direct, IEEE explore, Scopus, and ACM Digital Library this study. These databases have been selected due to their ability to provide correct and related information based on the search. To obtain the relevant literature certain keywords are used in the search like 3PL, barriers in logistics, Limitations in logistics, International challenges faced in logistics, barriers for TPLs, and TPL challenges. All the files are collected and sorted in order using the Mendeley application. The sorting in order aids in the elimination of duplicates.

## IV. BARRIERS IN MINIMIZING THE LEAD TIME

Lead time is defined as the latency between the start of the process and its completion. In works of literature, scholars have defined lead time in logistics as the total sum of time spent in the process, transit, and storage in the inventory of the product from supplier to the customer [10], [11]. Lead time is a measure of time required for the supply chain to respond to the demand of the customer also increased lead time increases the inventory [12]. Many scholars in their work stated that minimizing lead time is a day to day challenges faced by 3PL industries [13].

Lead time is a function that directly impacts the turnover of the company. There are many factors involved in determining lead time such as the efficiency of production, technology involved, and operating personnel [14]. Scholars in their literature focus on minimizing the lead time by improving the available technologies and internal

management strategies. These technological advancements and modern strategies would aid in increasing the profit of the firm. Thus, many authors recommend a reduction of multi-level channels for authorization of services is essential in rendering services to the target customers [15][16]. Lieb and Lieb (2010) suggested certain ways to minimize the lead time like systematic planning and division of services into specializations. In his work, he also suggested the use of sharing vehicles across multiple specializations, usage of improved machinery, and implementation of smart transportation strategies would aid in minimizing the lead time [9]. From the above works of literature, it is clear that the division of services and improvising the existing technologies in information sharing would help in minimizing the lead time.

## V. BARRIERS IN ADOPTING THE INDUSTRIAL DYNAMICS

Industrial dynamics can be defined as the changes through which an industry undergoes over some time due to the technological and strategical advancements in the industry. Many works of literature emphasize the need for integration of the market, communication, organization, and logistics through information technology services. They also mention the advantages of resource sharing which was introduced to bring cost benefits to the industry.

The main challenges associated with such technologies are that it requires trained and experienced human resources for operations also it requires well established technological services for effective functioning which requires a huge capital investment [17][18][19][1]. It is also noted that the multi-channel approach and variability demand in logistics affects the effective utilization of resources and function of the firms [9][2].

Information systems, size downed inventory levels, and trust among the firms for technological adaptation and resource sharing are the essential factors that play a vital role in determining the turnover of the industry. On the other hand, misalignment of information within the firm diminishes the profit margin.

Also, there is only a limited lean time so that the firms do not lose their valuable customers. These problems lead to uncertainties, prohibit industries from experimenting with new technologies, and prevent them from investing large capitals both on technology and training [20]–[23][3]. Also, other problems like inefficient management, poor planning taxations and policies by government, lack of coordination and incapable communication systems, and lack of innovation among the workers and management are listed down as internal logistical dynamics[17][24][4].

This would lead to increased management costs, overhead costs, and increased time in delivering the services [25][26][5]. It is also stated that the systematic and structural approach towards such barriers would enable

TPLs in overcoming them [27][6]. It is recommended to train the workers and managerial members of the firm concerning technological advancement and changing industrial scenarios.

## VI. BARRIERS IN ADOPTING THE ADVANCEMENT IN TECHNOLOGIES

Technologies grow with time. The survival of the firm is based on the ability to incorporate the latest trends and technologies. In the past decade, tremendous growth has been witnessed in many fields especially in areas of logistics and information technology. Increased globalization and advancements in technologies emphasize the need for industries to incorporate new technologies and extract benefits from them. Thus, globally TPLs are encouraged to equip themselves with newer technologies [16][28]. Many pieces of literature discuss the inability of the TPLs in keeping themselves updated with such technologies. This was caused due to the misalignment in delivering services caused by such technological advancements and still, most of the TPLs were not flexible to such changes. Therefore, the TPLs need to resolve the misalignments in the supply chain to adopt the technological changes [8][29].

Lack of talent in the workforce is the most significant problem faced in the TPL industry. They not only affect the productivity of the firm also its turnover. Industries face problem in training the workforce due to the high cost and time involved in it. The workers also do show some sort of internal resistance for accepting the change instantly. The adoption of IT for rendering service in the supply chain is slower than the predicted. Other challenges associated are weaker managerial skills, misalignment of information, lack of awareness on the benefits of adopting IT, uncertainty in identifying and implementing technologies. Not adopting such technologies due to negligence would also lead to increased expenditure overhead costs that the competitors[30]. From the above works of literature, it is clear that priority must be provided to both incorporation of new technologies and also providing the workforce with technical training sessions which enhances their skills. Reflection of these activities can be visualized in the increased performance and turnover of the industries in the upcoming years.

## VII. CONCLUSION

The work done is a systematic review of the challenges faced by TPLs globally. The work is based on details extracted from a collection of many reputed journals, conference papers, and book chapters around the world. The paper identifies several challenges and gives a brief discussion on certain challenges like minimizing lead time, adapting to recent technologies, and change in industrial dynamics. The discussion highlights the gap between the service provided and the satisfaction of the customer. From the works of literature, it is evident that more focus to be

given on alignment of the service chain, sharing of resources, and training of the workforce. The review will aid future research scholars to find the gap in research and keep them up to date. This literature review confirms that TPL is still a capable logistics service; the review suggests that more focus should be given on building a strong and long-term relationship between them and customers.

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