



Logistics As An Added Value In Colombia

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Abstract

The art of logistics distribution involves various stages from the time of supply until the finished product reaches its final consumer [1]. This part of the supply chain process projects, executes and controls circulation, information and storage of the goods and services efficiently and effectively, with the firm purpose of satisfying the needs and requirements of the client [2]. This article begins with a timeline of logistics distribution evolution and changes. Then, the processes that influence the distribution of goods are described in broad strokes, mainly the transport in their different modalities and the costs derived from storage, based on the literature, it ends with a discussion about the added value of logistics in Colombia.

Keywords: Logistic distribution, transportation, competitiveness, supply chain.

1. Introduction

Logistics has its beginnings in the 1950's, which was a period of growth where production was much higher than distribution capacity; in 1960 there was a period of transition with the polarization of capitalism and socialism, the demand required faster delivery times, which established a priority in the development of transportation, especially the railroad in Europe and land transportation in North America, by 1980 the analysis of market distribution and customer service issues began to give a more timely response time, In 1990, international operations such as imports and exports increased. This globalization requires coordinating complex activities so that purchasing, production and financing occur in countries with lower costs. Such a global perspective has highlighted the need to manage logistics worldwide. More specifically, this new logistics must control the complex process of distributing investments within and among many nations with different laws, cultures, levels of economic development and aspirations. Example: Mac Donald's [3]

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Logistics has become a competitive advantage and added value in the time line, forcing companies to be more efficient and productive in each of the processes of the supply chain. It can be stated that logistics is the art of the correct administration of goods and merchandise, from suppliers to the final consumer, responding with the delivery of products in the established quantities and dates, guaranteeing quality in its distribution, storage and transportation processes [4] [5] [6].

It is essential for developing the logistics horizon of a country that is optimal and requires road and port infrastructure, complying with quality standards generating more competitiveness when supplying the market [7]. The key guidelines in the logistics chain is to know how to recognize and understand them, to use them effectively, they are timely instruments that link the company with the user, resulting in the art of logistics in the transport of goods. [8] [9] [10] Currently, one of the main causes of success and expansion in logistics processes for companies has been the use of new technologies (ICT) and technological development, facilitating the management of very high volume inventories and thus making it easier to control them at the time of moving them through transportation to their final destination. [11].

The logistics process begins with the supply and reception of the product that emanates from a supplier in the distribution centers, then it is classified and introduced into the inventory to be located within their physical facilities and this is subject to availability to be transported to the customer [12]; the physical distribution of goods is directly related to the market, according to the classification of the product its distribution takes a degree of complexity and its costs can vary even increasing 30% of the value of the product [13].

Logistics distribution models seek to organize an infrastructure that allows them to fully comply with the delivery of orders in the agreed quantities and products, timely dates and schedules, at previously established delivery points and minimum costs [14]. In logistics, one of the techniques most used by large logistics operators is CROSS DOCKING, which is a type of order preparation and organization, one of the storage functions known as "picking" for a subsequent shipment, making the flow of goods much faster and reducing storage costs for long periods; the stock that arrives is not entered into the stock [15] [16].

This system is used especially for fresh products or the press by large distributors, such as Centro Distribución Paris, Grupo Éxito, Servientrega, Carrefour, Cecofar, Grupo Eroski, Centro Cuesta Nacional, Celsur Logística Profesional, Jumbo Retail, Transfarmaco, Transportes Furlong, Walmart, among others [17]. Distribution channels are responsible for getting the products to where the final consumers are in a fast and safe way, distribution channels can be external or internal and this depends on the capacity of the company. The main characteristics of these channels vary according to the number of intermediaries involved in the movement of the product [18].

Transportation is the fundamental piece of distribution logistics since it helps to distribute and store the product to later be marketed in the different points of sale, which generates economy in business, it is important to highlight that the presence of various means of transportation at sensible costs, is a key factor in the development of trade [19] [20]. Transportation is constituted as a primordial process of the logistics strategy of the organization, it is essential to determine the factors that influence transportation, the existing means of transportation and the costs associated with it. [21]

In our country we can identify that not all companies have the ability to operate on their own the transportation of their goods, which require outsourcing with other platforms or companies specializing in the physical handling of goods (servientrega, TCC, FedEx, sends, among others) so it is very important

that each organization according to its nature and structure determine the most convenient mode of transport, Other important activities within the distribution processes and that should be taken into account: Conditioning, Packaging, Complementary transports to the port or airport of shipment, Handling and intermediate warehouse points, Customs clearance formalities at the exit of the exporting country and at the entrance of the importing country, Customs duties and taxes to be paid, The transport insurance, The modalities of delivery from the port or airport of arrival, The selection and control of service personnel during the movement of the goods and The security of payment. [22].

As for the costs of logistics operations, a relationship can be established between storage time versus added cost, i.e. they are directly proportional, the less time the product spends in storage, the lower the logistics cost values [23]. Therefore, to differentiate the company from its competitors, it is not only necessary to analyze the internal costs of its product and maintain a margin of profit and quality of the company, but also to know the competition closely to make the appropriate adjustments better than the competition and generate competitive advantages that result as an added value to the costs of its product. In the end, it is the customer who perceives it [24].

2. Method

The research inquiry for the present article began with the compilation of literature in databases: Google Scholar, Scencedirect, Redalyc, Scielo, as an exploration tactic, concepts and keywords were used; the selection of information was limited to fifty relevant authors. Then, analysis was started using techniques to extract data systematically, orderly and structured way, providing a logical and ingenious visualization and structure of the ideas. Another study strategy used was the reference base that allowed the combination of the main contributions of each cited author.

3. Results

Globalized trade, the complication of logistics chains and the need to reach consumers more quickly and efficiently are some of the factors that have led companies to seek different strategies to respond to the ever-increasing demands of the markets. Indeed, logistics outsourcing has become an increasingly relevant alternative to meet the new challenges that various industries face. It is proposed that, in order to achieve added value and a competitive advantage in organizations, it is necessary to execute a series of strategies, and one of them is logistics in which the stability of the structure of the business value chain will be achieved, the implementation of strategic prototypes in the organization is important in each of the processes and operations of the logistics chain since it tolerates identifying each of its tasks by performing them efficiently. [25]

The challenge of logistics is based on three fundamental pillars: first, all the effort must be concentrated on adding value to the product for the customer. Second, logistics must be integrated as part of a process that requires the unconditional availability of the entire organization as a single compliment. Finally, it contextualizes the work of a process as the sum of its parts for better performance and greater effectiveness [26]. Another success factor of large companies in the direction of modernity is the implementation of logistical, organizational and technological innovations, which have gradually changed the way of transporting very large volumes from production to the final consumer. [27] [28]

In a study conducted in the municipalities of Meta and Cundinamarca, the authors show the importance that has taken the distribution of agricultural products from the farm to the consumer's table, the agri-food supply chain (ASC) has a degree of complexity at the time of transport compared to other types of

products, in the world it is estimated that approximately 30% and 50% of food produced in the world is not consumed, Around 95% is wasted in the initial stage of production in developing countries, therefore the logistics and transportation of this type of items define between 20% and 60% of the price of the product in developing countries [29] It has been possible to establish in a sample of 80 companies in the food sector the benefits of the application of software in the logistics routing processes, reducing logistics costs in the following way; distribution 35%, distances traveled 27.5%, orders delivered late 20% and the use of the transport fleet increased by 12.5% [30].

In a frozen and refrigerated food company, it is proposed to minimize transportation and distribution logistics costs through an optimization model, considering capacity, packaging and demand limitations. This type of analysis applied to logistics processes allows visualizing how to generate significant cost savings, which positively impacts the organization [31] [32].

The correct implementation of logistics management, based on physical distribution, accumulation of raw materials, information management, timely response times, inventory control, demand projections and customer service, is projected in return on investment, with an increase in profitability [33]. For example, in 1994, Federal Express officially assumed as "FedEx" brand recognized worldwide for providing fast and reliable service. During this same year, it created fedex.com as the first transportation website to offer online package status tracking. It allowed customers to conduct business through the Internet, resulting in logistic evolution and innovation in customer service issues [34].

DHL has a worldwide capacity network for all goods transportation needs, its connections are standardized, and its schedules are fixed in all major routes. Additionally, a plus in its logistics operation is the ability to integrate any connection in the route of destination of goods and shipments of different characteristics. [35]. The added value of logistics is directly related to giving value to the supply chain and this value is linked to profitability. Therefore, it is the profit that is achieved between customer revenue and total costs of the supply chain. There is only one source of revenue for any supply chain: the customer [36].

Another analysis carried out in the company SERVIENTREGA highly recognized as a logistics operator, give answer to the following question what its added value is? As follows: "with the transformation of the initial market niche where it has now turned to E-COMERCE, to become the logistics department of a company without belonging to it, to find the weak points of the competition. E-COMERCE or electronic commerce is a relatively new business with a lot of potential. It was observed that anyone who has a productive initiative can focus on their idea and leave all the distribution and logistics to SERVIENTREGA. The weak points in other companies is the coverage of the entire operation and the accompaniment from the differentiated packaging of the product to its shipment. [37]

According to a research in Grupo Familia Medellin, the following conclusion is reached "The new modalities of e-commerce integrate logistics as a fundamental part to fulfill the promise of value, including infrastructure, storage, transportation and delivery of all products in the shortest time, because the modern customer is more demanding in terms of their shopping experiences and logistics will be key to achieve satisfaction, part of these new modalities are the technological development in the creation of new operating platforms, mobile connectivity, banking and reliability in payment systems, given the increase in demand for online customers and this is the opportunity to make a difference in commercial strategies [38].

Colombia has nine port areas, the most representative of which are located in Barranquilla, Cartagena, Santa Marta and Buenaventura. Unfortunately, the current infrastructure of Colombian ports faces numerous construction and technology barriers, Unfortunately, the existing infrastructure of Colombian ports faces multiple construction and technology barriers lack of investment in resources and access roads, limiting their competitiveness in comparison with Chile, which is also part of the Pacific Alliance and has 24 commercial ports, including bulk and multipurpose ports, which have taken advantage of their geographical location on the Pacific coast to exploit this resource that makes them highly competitive in terms of agro-export development. [39] [40]

Given the Colombian geography, the three rail corridors are located in the Cauca Valley, Magdalena and Bogota, which could be linked to the Pacific and Caribbean ports, achieving a total connection in different modes of transport and thus reducing transportation costs and time in the movement of goods, so much so that it would be projected that by 2035 19.5 tons per year could be mobilized. [41] [42]

A country's degree of progress could be determined by how it moves its cargo, being the result of productive capacity, and enables the evaluation of its logistics processes and position it in the competitiveness index [43]. Currently, in Colombia, between 80% and 90% of the goods are transported by road, and the least used modes of transport are rail and river, year after year the acquisition of cargo vehicles and aging of tractor-trucks is decreasing, knowing that they are the means to transport the national production, However, "Transportation logistics becomes relevant when the value of "time" in the transportation activity is taken into account, since it is a fundamental factor that destroys or generates value in the process of arrival of the goods to the different distribution centers or directly to the final customer".

In Colombia between 2016-2019, transporters did not assume the cost overruns due to increased freight, storage, container delays, and increased tolls and fuel, among other factors, making the final product price more expensive. [44]. According to the National Logistics Survey (ENL) of 2018, 35.2% of the costs of the distribution chain correspond to transportation and represent 13.5% of sales. For this reason, the lack of transportation infrastructure for Colombian business people is the main stumbling block in opening new markets because it impedes the commercialization of products, leaving Colombia in economic backwardness [45] [46].

Regarding air infrastructure, in Colombia, there are 590 airports, of which 14 are international. They are strategically located in major cities such as Cali, Bogota, Medellin and Barranquilla, the most modern and important loading and unloading terminal is El Dorado International Airport, mobilizing approximately 700,000 tons of goods per year, and corresponds to the largest air infrastructure in the country and in South America. However, it does not have infrastructures that support with the same capacity within the country, which makes it difficult for companies from different regions to mobilize their merchandise by this means. [47]

Thirty years have passed since the so-called globalization. Colombia still lacks reliable export numbers that manifest this context, Colombia is a country abundant in water resources, agriculture, fauna, and flora. Companies have not understood how to exploit this as a competitive advantage in the world, this implies for the country an essential challenge in improving logistics quality and infrastructure, Efforts should be focused on the development of means of transportation, roads and reduce international transportation costs, additionally as a member of the Organization for Economic Cooperation and Development (OECD) the requirements to develop its competitiveness should redouble efforts to

compare with the top six developed countries (Germany, Switzerland, Belgium, Austria, Japan and the Netherlands).

According to the World Development Bank, Colombia ranked 58th in the Logistics Performance Index (LPI), a tool for comparison among more than 160 countries [48] [49]. On the other hand, for companies dedicated to the shipment and transportation of goods, their main objective is to attract customers by offering quality in their portfolio of packages and services; competition is key and decisive in customer loyalty, which is what makes the company conceive of itself as the best purchasing alternative; there is a close relationship between satisfying customer needs and requirements and customer loyalty for the commercial development of the logistics sector, the challenge is in the service and added value that companies give to this, therefore the greatest value of logistics distribution is the customer himself, without diminishing the importance of the profitability that he represents, data from the World Development Bank point to the progress of Colombia's logistics performance which has advanced 10 positions concerning the year 2017 according to the LPI ranking 66th [50]

The country has the potential capabilities and strengths to become a strategic logistics platform in Latin America, considering the geographical advantages of countries in the rest of the continent, as mentioned before. The authors agree that the state and evolution of infrastructure in logistics issues is not the most convenient, which has affected productivity and economic growth, if port positions, specialization of logistics operators and originate interest are taken advantage of. Taking into account the above, the implementation of multimodal transportation would bring benefits such as port decongestion, cost reduction, increased security and control of goods, lower prices for customs processes, and more competitive products in the international market. [51]

Beyond the importance of transportation, which is a fundamental part of logistics distribution processes, it is appropriate to emphasize the safety of goods through the use of new technologies, i.e., through logistics 4.0 to improve internal and external processes for the development of trade and competitiveness of the country, then "Industry 4. 0 and the supply chain operate together to facilitate the connection between supply, demand and industrial production processes allowing to optimize time, activities and generating new ways or opportunities to improve the business model of companies through the use of new technologies and good communication between the participants involved in the process".

Logistics 4. 0 brings significant improvements compared to traditional logistics, allowing all the information to be readily available and easily accessible, allowing decision-making in the processes at more opportune moments, additionally facilitating the control of operations, for example, "the sensors that are inserted in the trucks can provide information to the fleet manager and the end customer about the fuel consumption, its geolocation, possible failures of the vehicle and if it requires some kind of maintenance, its geolocation, possible failures that the vehicle may present and if it requires some kind of maintenance, or a forklift that is hyperconnected can provide information on the inventory of goods and transmit that data to the process manager or users to obtain a better management and control of the products in transit" [52].

4. Conclusions

The country has the potential and capabilities to become a logistics platform for Latin America. Still, Colombia currently requires an investment by government agencies and the private sector in road, port, rail, air, maritime infrastructure and transportation fleets, considering that approximately 90% of the production of different trades and goods are transported by road at a general level. The capital injection

in logistics would represent for the country to be more commercially competitive since it would be possible to establish intermodal transport models to take advantage of the geographical conditions of the territory, improving delivery times and reducing costs.

Companies dedicated to logistics operations have ventured into E-COMERCE or electronic commerce by applying technological innovations given the potential that has been developed in this new form of commercialization, taking into account the increase in the demand of this type of customer.

Transportation represents the backbone of logistics distribution, allowing the mobilization of goods from production to the final customer, generating the organization's economy and profitability. Although, according to the literature cited in this article, it can be concluded that the art of logistics distribution goes beyond the simple fact of transporting goods. It is evident the degree of complexity, responsibility and commitment of the organizations when carrying out the movement of goods since the profitability of the companies depends on this to a great extent through the fulfillment of their deliveries for customer satisfaction, resulting in competitiveness, productivity and added value.

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Appendix A. An example appendix

Authors including an appendix section should do so after References section. Multiple appendices should all have headings in the style used above. They will automatically be ordered A, B, C etc.

A.1. Example of a sub-heading within an appendix

There is also the option to include a subheading within the Appendix if you wish.

Makalenin Türkçe başlığı buraya yazılır....

Özet

Türkçe özet.

Anahtar sözcükler: anahtar sözcükler1; anahtar sözcükler2; anahtar sözcükler3

AUTHOR BIODATA

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