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Transport logistics and its modes

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ABSTRACT
The main objective of any entity, regardless of how it is set up, is to reduce its internal costs in order to increase the company's profits. Managers constantly seek to use tools that meet the real needs of the company. Logistics is of paramount importance to a company's growth. It plans and effectively distributes the materials and supplies an organization needs. It is separated into four types: supply logistics, production logistics, reverse logistics and distribution logistics. Nowadays, as technology advances, access to products and goods has increased, so has the need to expand the means of transport to meet demand, since transport is the main component of the current reality of globalization.

Keywords: Logistics, Transportation, Company.

INTRODUCTION

The main objective of any entity, regardless of its form of incorporation, is to decrease its internal costs in order to increase the company's profit. Administrators constantly seek to use tools that meet the real needs of the company. Logistics is of paramount importance for the growth of a company. She is the one who plans and makes the distribution of an organization's necessary materials and supplies happen effectively. It is separated into four types: supply logistics, production logistics, reverse logistics, and distribution logistics. Currently, with the advancement of technology, access to products and goods has increased, as has the need to expand the means of transport to meet the demand, since transportation is the main component of the current reality of globalization.

The new requirements for the logistics activity in Brazil and in the world include greater control and identification of opportunities in cost reduction, reduction in delivery times and increase in quality in meeting the deadline, constant availability of products, scheduling of deliveries, ease in order management and flexibility in manufacturing.

Logistics is as important a sector as the areas of marketing, finance and production, as it is through it that products and services reach end customers, and transport is responsible for making a link between the entire value chain of an organization.

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Gasnier (2002, p.46) states that "logistics management must consider the dimensions of time, quality and costs, and defines the end customers, using the "jargon" of total quality programs, that is, that customers are all stakeholders in the results".

Transportation has always been regarded as a dependent economic factor. It is inextricably linked to the movement of goods and people, but its cost sometimes represents a barrier which prevents the establishment of exchange currents, or at least modifies the direction and restricts them. Due to the lack of interest in the cost of transportation, knowledge of its correct definition and, consequently, knowledge of how to use and manage it effectively, in most companies, large or small, errors, costly waste and loss of earning opportunities are noted (D L'HUILLIER, 1962).

OBJECTIVE

This study aims to research the importance of modal management in relation to competitiveness in the transportation market, highlighting processes and decision-making.

METHODOLOGY

This work presents, based on the literature, a research of how logistics is divided and its modalities in order to better understand the logistics process in the market, an area that is responsible for a large share of the costs of companies.

A qualitative research was carried out in order to achieve the objectives proposed in this study. According to Denzin and Lincoln (2006) "qualitative research involves an interpretive approach to the world, which means that its researchers study things in their natural settings". In this sense, this type of research values the detailed description of the phenomena and elements that involve it.

The method of data collection from the literature was used, collecting information from several renowned authors in the area, organizing the subjects in a dynamic way, making it easier to understand the importance of logistics and its modalities today in the market.

DEVELOPMENT

Logistics is the process of planning, implementing, controlling the flow and efficient storage of raw materials, in-process stock, finished product and related information, from the point of origin to the point of consumption, in order to meet customer requirements, in the same organization. In an industrial context, the art and science of management and engineering to obtain, produce, and distribute manufactured or industrialized materials to a specific location and in specific quantities. In a military sense, it can also involve the movement of personnel/resources (MOURA, 2004, p.136).

According to Novaes (2007), logistics is a concept that allows the achievement of the goals defined by the company and, without it, there is no way to achieve these goals adequately.

According to Daskin (1985, p.67) "logistics is the planning and operation of physical systems (vehicles, warehouses, transport networks, etc.) necessary for inputs and products to overcome physical and temporal constraints in an economical way". Above all, the benefits of having good transport logistics make the company increasingly competitive, as there are costs involved and a better management of these expenses makes the company ahead of others, having benefits that help both the company and the customer for the growth and satisfaction of both.

TYPES OF LOGISTICS

INTEGRATED LOGISTICS

Integrated logistics is a set of interconnected activities and processes to develop a logistics strategy that aims to achieve the balance of costs and services, whose purpose is to improve the system as a whole, reducing costs and consequently maximizing value for the customer.

According to Ortolan (2014), "the lack of logistics and transport infrastructure results in inefficiency and loss of competitiveness, which results in a cascade effect of increased costs in the production chain".

According to Faria and Costa (2007), the great challenge of integrated logistics is to add value through a level of service of excellence, but at the lowest possible total cost, as a condition of improving the economic result and continuity of the organization.

Ballou (1993) describes that the great motivator for making logistics management integrated is the potential for rationalization of operations costs and the potential for service improvement caused by this transformation.

INDUSTRIAL LOGISTICS

Industrial logistics is a multidisciplinary, comprehensive activity aimed at improving the services provided to customers, improving productivity and efficiency of operations. It includes the improvement of the company's supply, the joint operation with manufacturing, the interrelationship with marketing, the market service and the perfect integration with the characteristics of retail logistics (GURGEL, 2000, p.186).

BUSINESS LOGISTICS

According to Ballou (2006, p. 26): "business logistics is a relatively new field of the study of integrated management, of the traditional areas of finance, marketing and production".

According to Novaes (2007), modern logistics seeks to encompass previously agreed and met deadlines throughout the supply chain, integrate all sectors of the organization, integrate partnerships with suppliers and customers, optimize processes in order to reduce costs and satisfy customers by offering a pre-established and adequate service level. Therefore, logistics deals with the evolution of the process that goes from the purchase of raw materials to the delivery of the final product to the consumer, within the expected standards.

REVERSE LOGISTICS

According to Souza (2008, p. 1), reverse logistics is a logistics process aimed at removing new or used products from their starting point in the supply chain [...] and redistributing them following material management procedures.

Leite (2009, p.17) defines that Reverse Logistics is the area of business logistics that plans, operates and controls the flow and the corresponding logistical information of the return of after-sales and post-consumer goods to the business cycle or production cycle, through reverse distribution channels, adding values of various natures: economic, service provision, ecological, legal, logistical, corporate image, among others.

According to Leite (2009), reverse logistics is responsible for the return of unused or already consumed products back to the production cycle. Products used in reusable condition, defective or in-warranty products, obsolete products, unconsumed or underused products, all of them can return to the business cycle and regain some value.

Currently, large companies have been looking for different management models that solve their problems and that mainly generate value for their customers through their products and services, so that they can satisfy their needs (LACERDA, 2005).

MARKETING LOGISTICS

According to Santana (2006), logistics based on marketing is in the services that it can provide within the conception of the 4P's of Marketing: price, product, promotion and point of sale, and it should be clear that there are still some tools such as research, point of distribution.

The challenge for globalized companies, according to Christopher (1999, p. 166), "is increasingly logistical, that is, how to integrate and manage the interconnections between suppliers, factories, distribution centers and customers". In this way, companies are faced with the constant need to create strategies beyond their borders, coordinating a chain of services, products, materials and information that is more complex and larger than in previous periods.

By associating the concepts of marketing and logistics, Pereira and Oliveira (2009) state that marketing performs the function of promoting and adapting the promotion, the price and the product to a level of service that satisfies the customer, while logistics strategically manages the overall costs of the logistics system, aiming to reduce costs, generating greater profit for the company, and promoting a high level of customer service with quality and efficiency.

TRANSPORTATION

According to Nazario (apud Fleury et al., 2000 p.126), the transportation system is essential for companies to use the service as a competitive strategy, as it allows them to meet market requirements related to punctuality and travel time, door-to-door delivery capacity, flexibility in handling large varieties of products, risk management (theft, etc.). damage and damage to cargo and products), in addition to the ability to offer a differentiated service with other logistics functions.

According to Alvarenga and Novaes (2000, p.93), in order to organize a transport system, it is necessary to have a systemic vision, which involves planning, but for this it is necessary to know the flows in the various connections of the network; the current level of service; the desired level of service; the characteristics or parameters on the load; the types of equipment available and their characteristics (capacity, manufacturer, etc.); and the seven principles or knowledge related to the application of the systems approach.

Therefore, it can be seen that in the transportation of products, several parameters need to be observed in order to have a level of service desirable by the customer. Depending on the characteristics of the service, the selection of a mode of transport or the service offered within a modal will be made. According to Ballou (2001, p.156), the selection of a mode of transport can be used to create a competitive advantage of the service.

In logistics, according to Rodrigues (2006, p.26), it is understood that a transport system is constituted by the mode or modal (transport route), form (relationship between the various modes of transport), means (transport element) and complementary facilities (cargo terminals).

MODES OF TRANSPORT

The modes of transport are divided into five different types: rail, air, road, waterway and pipeline.

RAIL

According to Ballou (1993, p.127) there are two forms of rail service, the regular carrier and the private one. A regular carrier provides services to any user, being regulated in economic and safety terms

by the government. The private carrier, on the other hand, belongs to a private user, who uses it exclusively.

Rail transport has a low cost, but it does not have much flexibility and delivery times are long and variable, in addition to the need in some cases for transfer to change trains, as there are railways that have a narrow gauge, while others have a broad gauge. This type of transport is indicated for large quantities of products, long distances and non-perishable and non-fragile products (MARTINS and LAUGENI, 2006, p.271).

AIR

According to Ballou (1993, p.129), in the air mode there are regular, contractual and own services. Air service is offered in seven types: regular domestic trunk lines, freighters (cargo only), local (main routes and less populated hubs, passengers and cargo), supplementary (charters, no regular schedule), regional (fill routes abandoned by domestics, smaller planes), air taxi (cargo and passengers between city centers and major airports) and international (cargo and passengers).

ROAD

The road mode is the most expressive in cargo transport in Brazil, and reaches practically all points of the national territory. With the implementation of the automobile industry in the 1950s, with the paving of the main highways, the road mode expanded in such a way that today it largely dominates the transportation of goods in the country (ALVARENGA and NOVAES, 2000, p. 82).

WATERWAY

Waterway transport is the transport of goods and passengers by boats, ships or ferries via a body of water, i.e. oceans, seas, lakes, rivers or canals.

In the composition of its freight, the costs are influenced by the characteristics of the cargoes, such as weight and cubic volume, fragility, packaging, value, distance between the ports of loading and unloading, and location of the ports (CAXITO, 2011).

PIPELINE

The pipeline modal is considered the most consistent of all modes, as the variance in the transport time is minimal and the pipelines work 24 hours a day and seven days a week with operating restrictions only during maintenance and change of transported product (Blog prepared by the academics of the 7th phase of Production Engineering - Unibave, 2015).

In order to choose the right mode for the transport of the product to be delivered, the relative operational characteristics per mode of transport must be observed. According to Nazario (In: Fleury et al. 2000, p.130), in relation to modes, there are five important points to classify the best transport: speed, availability, reliability, capacity and frequency.

SHIPPING COSTS

Several factors influence transport costs, which may be related to the product, for example, the density of the product and the ease of its handling; or be related to the market, such as the location of the product's destination market (ARANTES, 2005).

FIXED COSTS AND EXPENSES

Expenses or Fixed Costs are those that do not change in value in case of increase or decrease in production. Therefore, they are independent of the level of activity, also known as structure cost (ZANLUCA, 2012, p.1).

VARIABLE COSTS AND EXPENSES

Variable costs or expenses are those that vary proportionally according to the level of production or activities. Their values depend directly on the volume produced or sales volume in a given period (ZANLUCA, 2012, p.1).

DIRECT COSTS

Direct costs are all those cost elements that can be individualized with respect to the product or service, i.e., they are immediately identified with their production, maintaining a proportional correspondence. A mere act of measurement is required to determine these costs. Examples: raw materials used in the manufacture of the product, direct labor, services subcontracted and applied directly to the products or services (ZANLUCA, 2012, p.1).

INDIRECT COSTS

Indirect cost is the cost that cannot be directly appropriated to each type of good or cost function at the time of its occurrence. Indirect costs are appropriated to the final carriers through the use of predetermined criteria linked to correlated causes, such as indirect labor, apportioned by man-hours of direct labor, energy expenses, based on hours/machines used, etc. (ZANLUCA, 2012, p.1).

FLEET MANAGEMENT

Vehicle fleet management came about when businesses needed multiple vehicles to make deliveries, travel to talk to customers, transport equipment, etc. Most of the clients are located in different parts of the globe. For producers, it was convenient for them to manage transport well in order to reduce costs, waste and increase profits (CLEMENTE, 2008, p.4).

According to Santos (1999, p. 12) "fleet management (...) It is based on the principle that the performance of non-critical activities should be subcontracted to specialists, as well as all those where the organization does not have competitive advantages, with the objective of concentrating and focusing resources on the performance of activities that create added value for customers - *outsourcing*".

PRESENTATION AND DISCUSSION OF RESULTS

Transportation is part of a company's system, so it correlates with the others to carry out product distribution activities. As they represent a large part of the costs of companies, transportation needs to be analyzed at a critical level, its parameters must be observed so that companies do not lose their profit at the end of the chain. This is something that in practice often occurs, as its variables such as weight and dimension and compatibility are not observed and lead to excessive handling, product breakdowns and consequent loss in revenue.

According to the product, the company will have its modal options, each having its own transport characteristic, of course taking into account its costs, only then will it be known which is the best choice, respecting these specificities of each one. The infrastructure offered by the public and private sectors also facilitates the use of modes, as well as legislation and investments for access roads and product flow.

It can be seen that the logistics themes of transport and their modalities together form an area of knowledge that promotes a lot of research, because this occurs because a company does not reach the market if it does not have a planned logistics capable of promoting a high level of satisfaction, meeting the needs of customers, ensuring the integrity of the loads and being able to provide delivery services on time.

FINAL THOUGHTS

In view of the situation, it is considered that regardless of their form of incorporation, the main objective of companies is to reduce internal costs to increase their profitability. An efficient control of logistics costs is the differential in an increasingly competitive market, as the reduction of costs makes the company ahead of the others, becoming increasingly competitive, having benefits that help both the company and the customer for the growth and satisfaction of both.

The objectives proposed for carrying out this work were achieved, understanding the importance of reducing logistics costs in companies so that they are able to set reduction goals and pass on the gains to

the chain as a whole. The company's analysis was carried out and the results were discussed and presented through the aforementioned tools.

Logistics costs must be well dimensioned and controlled, because if before competition was limited only between companies, today this competition takes place between production chains.

Therefore, in the current context, the great challenge is cost reduction, for this, it is necessary to invest in strategic solutions, invest in the planning phase of the operation. Thus, this study ends with the certainty that the secret to success in cost reduction in transport logistics can begin with the incessant search for knowledge to technically carry out the operations necessary to achieve the proposed objectives.

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