Business And Economic Resources In Modern Inventory Management

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Abstract

With the constant growth and integration of technologies in the economic, political, social, cultural and environmental fields that allow framing globalization through trade and financial flows, organizations and companies are implementing tools to improve the efficient use of resources based on business policies that lead to economic growth. This article describes the circular economy and Cross Docking models that allow the correct use and implementation of techniques in business logistics, reducing times in the supply chain and increasing efficiency in business productivity, taking into account the needs of customers in the management of business resources, which can be done through the system called Enterprise Resource Planning (ERP Enterprise Resource Planning), the ERP system integrates and relates the Circular Economy and Cross Docking as in logistics. Methodology: Research was conducted in different educational platforms such as: IEEE Xplore, Web of Science, Publindex, Google Academy among others, in order to obtain and compare articles involving Circular Economy and Cross Docking Method in enterprise resource management.

Keywords: Circular Economy, Enterprise Resource Management, Cross Docking Method, ERP (Enterprise Resource Planning), Optimization.

Introduction

One of the tools that companies implement in the optimization of their business techniques is the information system in the management of business resources, because it is an essential technique that allows them to perform productive activities more efficiently, thus achieving the company's objectives in a more agile way from the correct use of information in the execution of business, strengthening the Client/Company link.

Enterprise Resource Management is related to the implementation of Enterprise Resource Planning (ERP), which is a software whose purpose of design and implementation is to cover all areas of
functionality in the company related to productivity.

Enterprise Resource Planning (ERP) is a set of packages or applications, designed based on the demands and requirements of each functional area of the company, in such a way that it allows to create and obtain a constant workflow with synergy among the different users that integrate it. This constant workflow allows to speed up considerably the daily work, avoiding repetition in daily tasks and allowing to achieve an increase in the communication in all the areas that integrate the company. This increase in communication allows to improve and optimize the sequential processes of the company, in addition, it allows all users to have in an agile way and in real time the information of each process and of the cycles that compose the logistics of the process. The ERP bases its logic on sequential processes, where if someone does not meet its objective, the process is delayed or stopped, which leads to create strength in the collaboration between the areas of the company, allowing to obtain the information of the processes in a timely manner and is the basis for decision making. (Cuellar)

Among the processes of a Business Management system are:

- Stock Management
- Control, commercial management and sales
- Integration with tax issuance
- Sales management
- Reports

In which the objective of each of the processes of the business management system is to centralize all the information in a place where all the sectors can access in an agile and simple way, managing the data of each stage of the business process. (Business), 2021)

There are several researches at international level; as is the case of Alshalfi (2018) which conducted a study in which he sought to assess the impact that ERP systems have on business operations which had the objective of explaining the challenges of ERP systems and their benefits reaching the conclusion that companies become competitive with the use of an ERP, since by integrating solutions in their operations, they achieve a cost reduction over the years since its implementation and use; It was determined that it is vital for the organization to move or upload their systems to the cloud by adopting ERP solutions based on the evaluation of growth indicators.

The ERP (Enterprise Resource Planning) has the facility to manage and organize data in the management system, certifying that it has more security, speed at the time of recording information and control of each process requested. However, it should be taken into account when choosing the ERP system, is the efficiency and intelligence in each managed process that allows to obtain an improvement in the internal processes of the company.

For an ERP software technique to be taken into account, it must exhibit a classification of functionality for two or more methods to evaluate its operation. However, some ERP packages are only allowed to safeguard two functions of a classification (Payroll and Accounting), while most ERP systems safeguard several occupations.

At the national level, studies such as Espinoza and Llerena (2018) evidenced the existence of a favorable influence of the ERP application on the worker's work motivation; this can be determined through the business results yielded by the system. In turn, Bustamante (2018) concluded that there is significant evidence to affirm that the BAAN system for enterprise-level resource planning has a favorable influence on the various business processes of the company in question. (Souza, 2021)

Today's ERP systems can encompass a wide range of functions and integrate them into a unified
database. For example, functions such as human resources, supply chain, inventory systems, customer relationship management, finance, industry and management functions were once separate software applications, typically housed with their own database and network, today, they can all fit under one umbrella ERP system. (Informacion, 2018).

The operation of the ERP is located in a division by modules that are independent, but taking into account that it has a facility to interact between them, taking into account the customer's need. This saves time and subtracts several errors, not having independence between each operation of the company, avoiding the transmission of data or different knowledge of sending information.

One of the procedural needs for which today the acquisition of a system with these peculiarities is requested, is because the market is growing every day, embracing globalization, where it is more related to customers and suppliers in every part of the world, where trade barriers are disappearing little by little and companies are forced to increase their catalog of products and services.

Many people know what an ERP is, however, it is not clear that companies always understand what their problem really is. ERP, for its implementation and success, requires a change in the company's mentality, which, if not achieved, puts at great risk a very important investment. (Padilla, Rafael Landivar University)

**Circular Economy**

The circular economy is a maneuver that aims to create economic growth by perfecting the use of resources, increasing the useful life of products and reducing the production of pollutants and harmful environmental impacts.

The circular economy is a new model of production and consumption that guarantees sustainable growth over time. The circular economy promotes the optimization of resources, the reduction in the consumption of raw materials and the use of environmental waste by recycling it or giving it a new life to turn it into new products. (REPSOL, 2022).

The main objectives of the circular economy are focused on:

- Generate savings: Optimizing raw material management.
- Optimizing costs: Optimizing waste management.
- Generate new income: Generating new business opportunities (FIDUCOLDEX).

With the circular economy it is intended that projects with innovative products, business models and services, in addition to being beneficial, promote the recirculation of materials in the value chain and also lead to business union.

In these efficient structures, a company alone is not entirely responsible for the closure of the product life cycle; it is responsible for fulfilling its role to properly manage resources, while considering the circular economy allows perfecting the use of resources and the useful life of products, the appropriate work path to be carried out within the company including different roles and responsibilities of the organization, in order to optimize, and even innovate in the production processes.

The objective of the circular economy is, therefore, to make the most of the material resources available to the company by extending the life cycle of products, whose idea arises from imitating nature, where everything has value and everything is used, where waste becomes a new resource. In this way, the balance between progress and sustainability is maintained (REPSOL, 2022).
In Colombia, there has been an evolution of environmental policies (see figure 3) that have emerged in the last 25 to 30 years, which have gone from being aimed only at protecting natural resources to disseminating sustainability as a fundamental factor to increase the country's capacity. Large companies with financial muscle, and also more scrutinized and demanded by their investors and society, are leading the changes in this area, but they are not the only ones, nor are they enough. Small and medium-sized enterprises (SMEs) have an important role to play in this transformation, as they are the largest group of organizations in the countries. SMEs have the opportunity to join this production model for six reasons:

- Conviction
- Reputation
- Profitability
- Requirement
- Economic Opportunity
- Obligation

Ferrán Curtó, deputy director of the ESADE Chair of Leadership, states that it is documented that companies that adopt a circular economy model gain in reputation: "It is beneficial for investors, for a possible acquisition by third parties, when it comes to bidding for public tenders...". So the improvement goes beyond the relationship with consumers. But he adds: "Collaboration between the Administration and companies is needed, society in general has to take sides, otherwise trends will not be reversed". (Pais, 2021), from which it can be concluded that although it is believed that these changes only belong to the industry, the services section can also provide a more sustainable model, taking into account that some SMEs of the different sections are still not wise to think that they can access and annex to this model and that they can or should start with small changes betting on digitization, recycling in offices and also encourage workers to share this knowledge.

In the experience of implementing the circular economy, it involves reducing waste to the very smallest. When a product reaches the end of its life, its raw materials are retained within the economy as long as possible. These manage to be productively manipulated over and over again, thus instituting added value, whereas with the traditional linear economic model, based mainly on the "use and throw away" concept, which requires large quantities of cheap and easily accessible materials and energy, resource utilization is wasted. (European, 2016). One of the drivers for progressing towards a circular economy is the extension of the demand for raw materials and the inability to emit resources. Several decisive raw materials are limited and, as the world's population becomes larger and larger, the demand also becomes larger.

**Cross Docking Method**

Nowadays, companies are looking for different ways and techniques to reduce costs in the processes, reducing inventory levels, increasing efficiency, productivity and satisfying each customer's request. Cross-docking is a creative maneuver that every day is trying to position itself globally. Although this method is not new, it is only in recent years that there has been a regeneration of interest in this practice, as its ability to reduce the shipping period, record inventory handling costs and timely delivery of goods, makes Cross-docking an attractive method for many companies dealing with economic pressures and competitiveness.

In recent years Cross-docking has been used by many companies, due to the usefulness that has been stimulated by the financiers of the logistics sector, however, there are still companies that have not entered this style, but that are in time to see the progress that Cross-docking can offer them, and thus, take into consideration the possibility of carrying it out in the short term in the future.
This distribution technique, such as Cross Docking, could be framed within the Efficient Consumer Response philosophy that seeks greater efficiency of the entire supply chain, involving customers and suppliers in all service chains. In order to carry out cross docking, it is important to synchronize all incoming and outgoing goods. The activities that are carried out through the implementation of Cross Docking are:

- Pre-distribution. Suppliers prepare the goods to be distributed.
- Receipt of goods
- Capture of information. Necessary for a good control over the merchandise.
- Re-packing. Consolidation of cargo and outgoing goods.

Cross Docking represents an interesting cost reduction in:

- Storage
- Distribution
- Inventory
- Staff
- Financial

One of the biggest advantages offered by cross docking is to eliminate or significantly reduce warehouse inventory as evidenced in Figure 1, where they intervene in the chain process from the dynamic flow of goods, fast and economical transportation, technical and strategic support to achieve savings in total costs. (School, 2018)

**Figure 1. Cost Savings from Cross Docking Method**

Cross docking has the foundation that when having new projects in different logistics companies, it has been one of the most used tactics to improve their ability to perform everything in the best way. A company must research on how to renew itself more and more every day, so as not to be left behind. The triumph of this method is to take into account all the needs of the consumer in order to be able to respond to them in the best way and always being efficient. There are three types of companies that benefit the most from using cross docking because it means a reduction of costs in different areas within the logistics process:

- Distributors: refers to manufacturers who send their goods to a distributor who assembles their products and ships them to customers.
- Conveyors: this involves consolidating goods that can be shipped to nearby destinations in order to reduce transportation costs.
• Manufacturing companies: for the reception, consolidation and shipment of products and into the manufacturing chain to directly serve customer orders.

Cross docking is a faster and more profitable distribution model for companies, so it is useful to increase the speed of product flow, reduce handling costs, reduce resources allocated to inventories, reduce resources allocated to increase their rotation, consolidate goods more efficiently, optimize capital, optimize human and physical resources, improve business relationships between business partners, and finally streamline the processes of payment and collection. (Novocargo, 2022). Direct cross docking pre-distributor cross docking is usually used for products with high turnover and reduced dimensions with many references, such as cosmetics, and for fresh products. For pre-distributed cross docking to be carried out, the goods are already received in the logistics units that have been agreed between supplier and customer, they can be boxes, pallets or others, they are transported to the departure dock together with the logistics units of other suppliers to consolidate them in the delivery vehicles so that they go to the indicated destination. In this type of cross docking the handling of the goods is minimal.

Indirect cross docking is where goods when received are fragmented and relabeled, placed into new logistics units that are transported to the outbound dock to consolidate the cargo into delivery vehicles. (School, 2018)

To reduce or minimize the costs of storage, handling and transportation of goods, a cross docking software would be indispensable, since it would be a very valuable tool to have an order in these.

It could be said that proper cross docking requires the synchronization of incoming and outgoing carts with as little handling as possible to the services and with little or no buffering between loading and unloading. If items are stored temporarily, this should be for a short period of time taking into account the active optimization sought within the distribution center.

Cross Docking has as its principles the direct management of the goods without the need to be stored, i.e. the flow of goods between factory or distributor and transport without passing through a shelf or without being accounted for in a "stock" or said in a more technical way: the process of making available for transport, the product, the same day without going through the storage of the same. (Gisbert, 2018)

In the model proposed by this distribution strategy known as cross docking, there are two alternatives that are widely used depending on a series of needs presented by the types of products or goods that flow through the supply chain. In the first place, we find the direct or pre-distributed cross docking, which basically consists in that the cargo coming from the supplier or factory to the logistics platform is already organized in the quantities previously arranged, It is important to highlight that this model is the most elementary and used because it does not require additional handling since the merchandise does not require any type of preparation (Aldana & Bacca, 2014). Bacca, 2014). (Avila, 2018)

Method

For the development of this article a research of the topics was made, compiling and analyzing which were the most relevant and closest to the main topic "Circular Economy and Cross Docking model in the management of business resources" on which we wanted to investigate, which is done in English and Spanish language, in a limited time from 2016 to 2022, according to its scope and level of impact related to companies. In this way, several works, articles and degree projects were selected due to their broad spectrum of publications in research and studies, containing theses, journal articles, institutional documents, among others ranging from technological innovation, instrumentation, resource optimization, communications and innovation of business models and services that are areas at the end of business processes. This information was collected thanks to the database through the subscription http://www.webology.org
that the Universidad Francisco de Paula Santander offers us, in which are: IEEE Xplore Digital Library, Web Of Science, as well as search engines such as Google Academy, Publindex were also used searching by keywords, making an exhaustive search choosing those that best fit the main topic of the article.

Finally, a total of 40 articles were selected to compare information and gather knowledge on the circular economy and the cross docking method in enterprise resource management.

**Results and Discussion**

The implementation and evaluation of enterprise resource management in companies that are motivated to increase their productivity, are aimed at linking with the application of the circular economy and the method or technique of cross docking, this in order to reduce or minimize the costs of storage, handling and transportation of goods, direct management of the goods, transport without passing through a shelf, besides being linked to the maximum reuse of material resources available to the company by extending the life cycle of products, achieving balance in the different stages of the logistics process of the company. This reduces times in the supply chain and increases efficiency in business productivity, taking into account the needs of customers in the management of business resources, which can be done through the system called Enterprise Resource Planning (ERP Enterprise Resource Planning), which integrates and relates the Circular Economy and Cross Docking in logistics, where from the demands and business requirements it is possible to create and obtain a constant work flow improving production times in each of the stages of the company, allowing to speed up considerably the daily work, avoiding repetition in daily tasks and achieving an increase in communication in all areas that make up the company.

The integration of the circular economy, the methods or techniques of cross docking achieve an increase in communication, improving and optimizing the sequential processes of the company, in addition, that all users have in an agile way and in real time the information of each process, allowing to obtain the information of the processes in a timely manner and this is the basis to evaluate and know the performance of each section of the company.

These methods in enterprise resource management allow companies to reorganize their business, taking into account the valuation of each supplier to the dispatch of each customer, facilitating the flow of information between the areas of the company from production, marketing, finance and human resources to the end customer, minimizing time between processes and maximizing the use of company resources.

**Conclusion**

The enterprise resource management allows to optimize their productive activities from the implementation of business techniques thus achieving more agile and efficient way to achieve the objectives of the company, this from the correct use of information with the application of tools such as Enterprise Resource Planning (ERP, Enterprise Resource Planning), which is a software whose purpose is to cover all areas of functionality in the company related to productivity by strengthening the link Customer / Company.

The enterprise resource planning in the inter-company processes is to reorganize the business of the companies, taking into account the valuation of each supplier up to the dispatch of each client, since it facilitates the flow of information between the areas of the company achieving to centralize all the information in a place where all the sectors can access in an agile and simple way.

The circular economy in the management of business resources is a new model of production and consumption that guarantees sustainable growth over time as it is a model of production and consumption based on the optimization of own resources that allows the maximum use of the product of each of the production stages of a company.
The implementation of methods or techniques such as Cross docking allows to minimize considerably the management and evaluation of the company's own elements involved in the chain process from the dynamic flow of goods, the fast and economic transport, the technical and strategic support to the final customer, minimizing time and expenses in the logistics processes and in turn increasing the profitability of the company.

References


http://www.webology.org


