

Analysis Management of oil Company Logistics Supplier

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Abstract: *The evolution of markets, technology and transport has reconfigured the way companies relate to each other and the market. Basically, nowadays all companies operating in any market participates in a Supply Chain (or network), which facilitates the agility of responses in the face of market changes. This work aims to verify the level of Supplier Management, specifically Logistics, in a company in the oil and gas segment. A bibliographical research was carried out on the themes chosen and subsequently a case study with qualitative bias in depth. The results showed that the reduction of the supplier base constitutes an important factor to assist the company both in the management of its suppliers and in the improvement of services rendered*

Keywords— Suppliers; Petroleum Sector; Management.

I. INTRODUCTION

The search best distribution of supplies dates from ancient wars, when the soldiers went out for long battles, in places distant from their origin and lasting months. In These truly epic battles, the capacity to supply the resources needed to combat and maintain the troop in the medium/long term were factors that could define the outcome of a battle more than strategies used during the battle in Si (SILVA and MUNETTI, 2003).

The Second World War, the first oil crisis in the decade of 70 and the later profound depression, also of oil, in the mid-80, forced companies to change the market perception of a scenario where the company defined what was sold – production Pushed – to what is observed after the decade of 70, where the market begins to pull the demand for goods and services. This change in the way the company is positioned before the market, or is forced to position itself, can be observed through the formula sales price = Production cost + Profit for the formula Profit = Sales price – production cost (ANTUNES, 1998).

Despite being a seemingly subtle change, the fact that companies no longer imposed the final value of the product has triggered a series of internal changes to organizations in order to lower their internal costs in order to increase profitability. Tools such as Kanban, Kaizen, Total Quality Control and a procedural and transactional view accompany iteratively this need to reduce internal costs.

The Logistics stands out in this medium, then, as an activity of 1) cost reduction and increase of internal efficiency, not perceived directly by the client (Inventory control, point of order, physical arrangement of material etc.) and as 2) factor that adds value As a service directly connected to the customer (product delivery time, availability, distribution at physical points of sale, etc.) (BALLOU, 2004).

Also in the decade of 70, another movement was observed that would form a new model of business management.

Moura (2009) explains that companies were extremely verticalized, they manage to develop internally everything, or as much as possible inputs used in their production line.

According to Marinho and Neto (1997), the Japanese model of management was a major driver for the change of this paradigm. Focused on production management, companies began to work in their main business, generating a change of strategy denominated “de-verticalization” (MOURA, 2009).

The “Deverticalization” has been called in the literature, Vertical Disintegration, means the change of the extremely centralized modus operandi, for a model where the company starts to acquire, in an increasingly increasing way, materials and services of Other supplier Companies (ABRAMCZUK, 2001).

The Strengthening of this new configuration, where the company starts to focus increasingly on its product (core business) and depending on the supply chain which is inserted, that is, of its suppliers, has caused companies to develop new techniques for Maintenance of the quality of the products/services purchased (MARINHO and NETO, 1997).

In This context, the research carried out in this work aims to understand the company's relationship with its suppliers and to identify whether the practices are aligned with what is proposed in its Norms. In this way, we intend to answer the question: can the volume of logistics suppliers be optimized for better management?

II. SUPPLIER MANAGEMENT

The growing internationalization of markets has imposed a scenario of fierce competition between companies, demanding a high degree of agility and adaptation. The paradigm of verticalization that had been present, under the idea that the company should produce, as far as it was capable, its own material of consumption, had worked until the present moment. However, the centralization of production imposed many needs to which the dynamics of the new market did not fit: high inventory levels; coverage of materials produced; hierarchization (MOURA, 2009).

Abramczuk (2001) cites a passage where Henry Ford says the iron ore barges, the port that receives it, the railroad that it uses and the coal mines used by them were all of its property, which consistent with the maximum

vertical paradigm in force early twentieth century. This logic of operation made sense in a market where the supply was less than demand – production pushed – and the final consumer assumed the cost of internal inefficiency of the company (ANTUNES, 1998).

Already Moura (2009) exposes systematization for decision making in order to produce or buy – make or hire – determined well or service. Regardless of the systematic adopted in the decision to make or contract, several authors agree that the final result of disintegration should include, to a greater or lesser degree, depending on the company's strategy, elements such as: cost reduction; Increased profitability; Increased specialization in its area of expertise (core business); Increase in quality; Increased agility to change; Reduction of stocks (MARINHO E NETO, 1997) (LAMBERT, 2008) (MOURA, 2009) (MELO, 2012) (SILVA And ALVES, 2012).

In this way, Abramczuk (2001) ponders that Vertical Disintegration is initially "a reconfiguration of the boundaries between the internal structure of a company and its external environment", raising an environment of cooperation between companies Supplier and customer through the conjugate of actions and culminating efforts in a common goal.

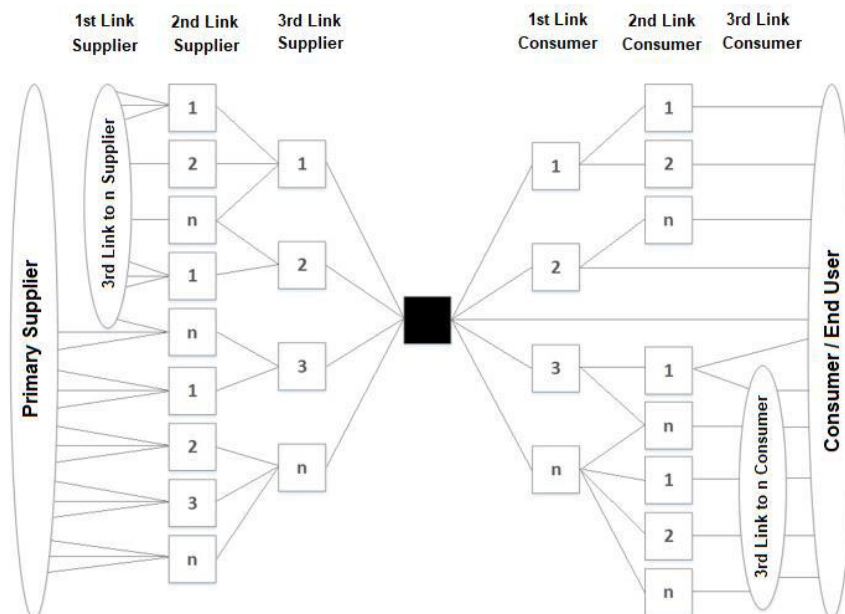


Fig. 1: Structure of Supply Chain connections. Source: An Executive Summary of Supply Chain Management -Processes, Partnerships, Performance. Source: Adapted from LAMBERT, 2008

This new configuration companies that operate a growing cooperation, form network and with common objectives, will be named Supply Chain, or Supply Chain.

Lambert (2008) draws up a discussion on the term Supply Chain Management, pointing out that many have confusing the term with Logistics, including Customers and Suppliers, or the combination of Operations and Purchases, and even the combination of Operations, Procurement and Logistics. However, it defines the term as being responsible for managing the entire network (its key processes), not just the chain, as the name suggests, from vendors and customers, from beginning to end of the process. Figure 1 Highlights companies in middle of a Supply Chain (network).

For Moura (2009), the relationship between the Members belonging to this supply chain occurs through a close relationship with related businesses. Companies immediately after before certain process, is given the name of customers and supplier.

Lambert (2008), citing the eight pillars for good supply chain management, points out that supplier management must act in a way to develop and maintain a long-term relationship with key suppliers. For him, a good acquisition does not depend solely on the lowest price, but of a partnership that, in the long term, will benefit the company customer, supplier and the whole chain.

Silva and Alves (2012) commented that understanding the management of suppliers and the flow of information resulting from this process "gives the organization the possibility to act strategically (...) [resulting in] meeting the demands of customers with adequate quality, prices and deadlines and reduced cost to the organization."

In This way, the company must seek to identify and rearrange its supplier base through a specific process geared towards the purpose of maintaining supplier management. In This process, the company must measure its needs and seek to verify that the supplier can meet reasonably, taking into account its ability to adjust against

market changes. In a dynamic environment, characterized by interdependence among companies, the agility of the client company is related to the flexibility of its suppliers (FORKMANN et al. 2016).

Garcia et al. (2015), when analyzing the phases of the relationship with the supplier, highlight 7 steps that encompass this process: 1) Search and selection/segmentation of suppliers; 2) Negotiation of contracts or agreements with suppliers; 3) Management of information flow with suppliers and use of Information Technology (IT); 4) Coordination of supply scheduling with suppliers; 5) Realization of the purchase/acquisition of materials, components or products; 6) Transportation, receipt, inspection, storage and handling of materials, components or products; and 7) Evaluation of suppliers ' performance.

During this rearrangement of the supplier base, Christopher (2007) states that there may be a tendency to decrease the number of supplier companies, through a partnership bias between the buyer and the supplier. This reduction can be accomplished in order to restrict the number of critical suppliers from the perspective of the client company, celebrating few contracts, but together with suppliers with expected service capacity.

Despite the degree of risk restricting supply to a single supplier, demand consolidation in a few vendors can mean gain for the company. (GARCIA et al., 2015). Melo (2012) talks about the importance of being a reliable company to be part of the supply chain. For this, in the client company's point of view, the supplying company must undergo a process of qualification, approval and evaluation, which will indicate the possible suppliers to its base (RAMBO et al., 2006). Figure 2. Strategic supplier management.

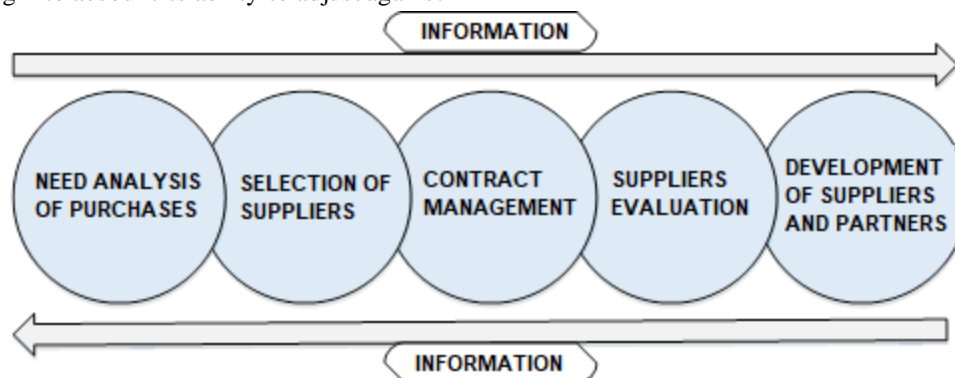


Fig. 2: Processes of Strategic Supplier Management. Source: Strategic Management of Suppliers. Source: Adapted from SILVA and ALVES, 2012

Finally, the Purchasing function is no longer seen as a routine of bureaucratic and repetitive activities, and takes the role of strategic role in supplier management. Since it is in direct contact with the market and the suppliers (current and potential), the Buyer today is ahead of the role of understanding the company's demand, from an interfunctional perspective (between functions), and is able to analyze, select, manage, to evaluate and develop partnerships with suppliers. (SILVA and ALVES, 2012) (RAMBO et al., 2006).

III. METHODOLOGY

Meall Tte research methodology used in this study consists in the bibliographic analysis of exploratory nature and case study with qualitative bias in depth.

According to Oliveira e Martins (2010), this method "allows to survey the theoretical and methodological aspects necessary to achieve the established objective.

"This way, the research methodology involves the three types: Review, Case Study and Qualitative in Depth Study – is the type of interview" that presents greater flexibility, allowing the interviewee to build their answers without getting stuck to a stricter level of directivity and mediation on the part of the interagency. " (OLIVEIRA, MARTINS et al., 2010).

IV. CASE STUDY

Object of the present case study, the ABC Company is a service provider in the field of large oil and gas, founded in 1927 in France. It Operates in more than 85 countries and has around 100 (one hundred) thousand employees worldwide. It has revenues exceeding US \$45 billion, according to data from 2013. In Brazil, it offers services related to the Oil and Gas industry broadly covering the oil extraction process, from the identification of oil potential, through the analysis of the fluid to the delivery of the well for operation.

Its service network is offered throughout the national territory, performing services both on land (on-shore) and at sea (offshore) and has several fixed operations bases installed close to the largest outlets. The size of the company, the specificity of the service and the range of materials and equipment mobilized for an operation can vary in such a way that a number of few containers up to approximately 60 containers may be needed to service at services, with high added value materials.

It is Emphasized the complexity in the treatment of some materials, namely, equipments that require high pressure testing and need specialized centers for certification; Radioactive material that requires license and special equipment for protection and handling; and

explosives, army-controlled material that has no free movement.

All these items integrate a problem in the assembly of an operational base, whether temporary or fixed, because they require the installation of structures of high added value. In This sense, the solution found is in transporting these materials, whenever necessary, between the smaller operating bases to the place where the service can be carried out, or the material stocked.

To meet the need for its operations, seeking excellence, quality and safety in its activities, the company currently has 23 (twenty-three) regulatory standards that meet the external specifications to the company as local and federal government, and internal standards, which together perform the basis of their operations. These standards are seen in such a way that they are presented in a comprehensive manner in the week of induction of new employees and serve as pillars for each activity performed, characterizing themselves impassable guidelines of orientation to their employees , where each exception must be expressly authorized in specific cases.

All 23 standards are available on the company's intranet and have at least two files: 1) Standard 2) Standard Guide and user Manual. Other supporting files may be included within each standard, such as a liability matrix and risk identification matrix. The rules can or do not cite each other, as in the case of items relating to the QHSE, which is exhaustively taken into account in the drafting of these standards.

In order to maintain the level of operational failures close to zero, the company encourages employees to report potential risk, incident or accident activities on the intranet constantly. Depending on their nature, these reports may be part of existing standards, or even the drafting of a new standard.

It can then be said that the norms are: 1) object of orientation to the employees; 2) regulating items; 3) periodic update target; 4) Once a standard has been established, it must be followed, except in a specific case, with the need for express authorization; and 5) Living document, since it can be altered in order to improve its process (s). In this sense, the three standards, which this work is supported, were presented in a more detailed manner below.

4.1. Audit

A norma que rege o processo de auditoria na empresa foi elaborada para fins de verificação da implementação dos padrões de conformidade na companhia e é regido de acordo com a legislação, políticas e protocolos locais, acrescido de observações dos funcionários sobre potencial

perda, seja de funcionário, dinheiro, ativo tangível e/ou intangível, processo (tempo) e/ou imagem.

According to the document, "Audits are carried out to verify the level of conformity of a given operation in an entity, according to the requirement (s) established in the norms that integrate the Quality Management System", having as Objective: a) to help management to identify areas of improvement; b) Development of an internal culture aimed at self-audits, regularly and with

confidence; c) stimulate continuous improvement; d) Facilitating the standardization of the company's operations at a global level; e) identify and share best practices observed during the audit; f) The consolidation of ideas and good practices among the various groups created for auditing; g) assist in the development of Corrective Work Plans; and h) Validate or dispute the current practice adopts. Figure 3 synthesizes the flow of activities related to the audit process.

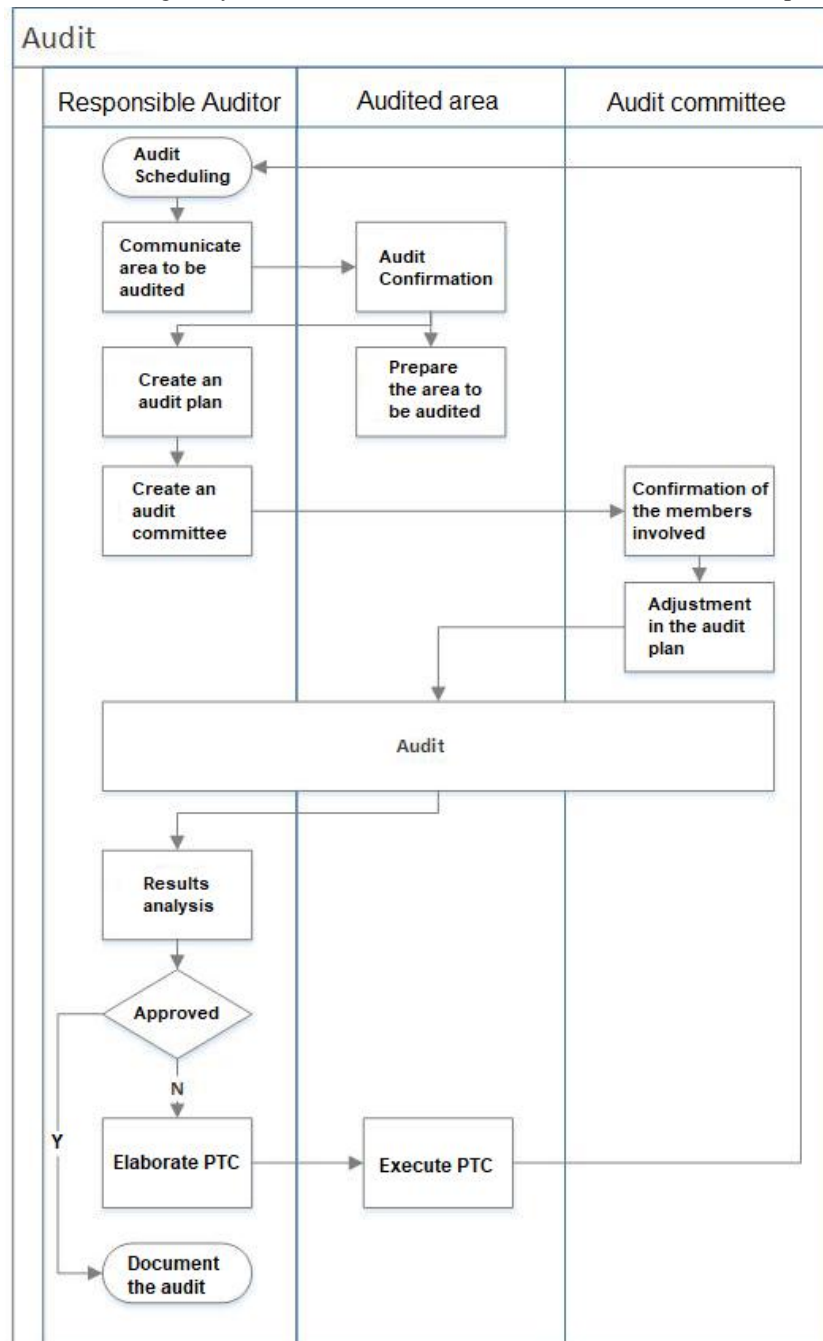


Fig. 3: Audit Process; Source: Own

These audits must be carried out at a maximum interval of three years, and the annual audit is considered

good practice. Areas considered as high-risk should be audited in a maximum interval of two years.

4.2. Contract

The norm governing the hiring process, whether with a customer or a supplier, aims to establish the fulfillment of QHSE policies and other standards established by the company. These policies should be considered in all parts of the hiring process, either in the 1) planning, in the 2) quotation, in the 3) selection and hiring, 4) mobilization and management, as in the 5) demobilization and

termination of the contract, because it is considered that A customer/vendor failure directly impacts the company. In This Way, the document shows that "the whole process of hiring (...) should be conducted in such a way as to ensure that the risks of QHSE and its obligations are identified, evaluated and adequately managed".

Figure 4 demonstrates the contract model selection flow.

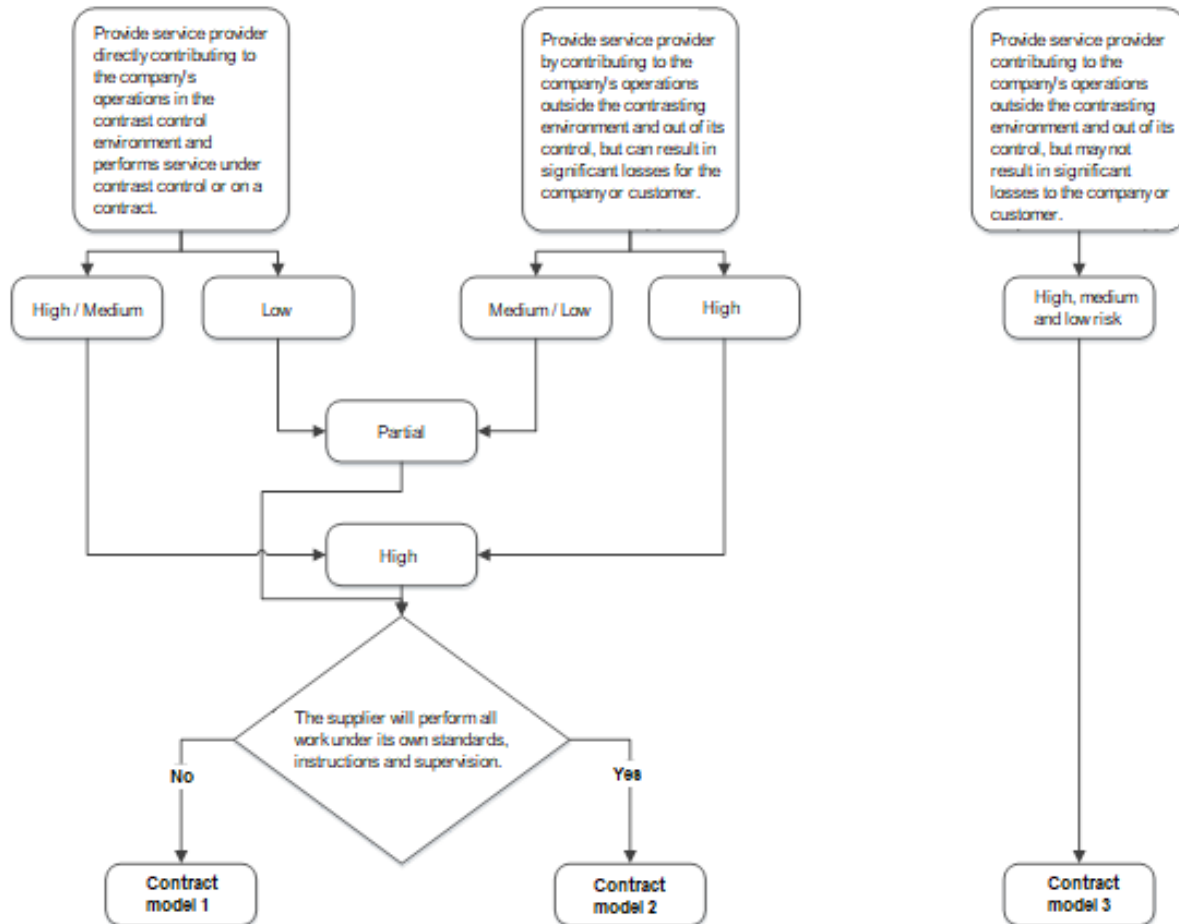


Fig. 4: Selection of the Contract Model. Source: Adapted

4.3. Management

The purpose of carrying out its activities in the most varied locations in the world, the company recognizes the need to transport both materials and people and points out that this need, intrinsic to its business, has a high degree of risk of accident with Potential for death and/or injury involving employees, relatives, suppliers or third parties and/or damage to their equipment. In This sense, this standard aims to establish standards for accident mitigation, and must be followed by all its employees and contractors, as defined in the category of management risk.

The data is extracted from several sources, but based, necessarily, obeying this order of relevance: Site of the Global Health Observatory/Injuries & Violence/Road

Safety; Global Status Report on Road Safety; United Nations Economic Commission; IRTAD Road Safety Annual Report; World Life Expectancy; Research elaborated by employees of the company; Independent organ reports; and reports made by the country itself.

This analysis should be updated annually by each country and will serve as a basis for the training policies of the drivers and the users of the service in each locality, allowing the greatest deficiencies in a given country to be identified and, through training, Mitigated.

In This phase, Risk Analysis and Hazard Control (HARC) are also carried out on the type of material transported in the locality, which will have a direct impact on the requirements of: 1) Induction Training; 2) Frequency of Recycling Trainings; 3) Travel

Management; 4) Steering Monitoring; and 5) Vehicle Specifications. Figure 5 points to the items that must be

checked in the drafting of the HARC.

Regulation and Laws	Operating conditions
Traffic regulations	Type of vehicle used
Licenses and Permission	Special vehicles
Vehicle Inspection	Transport of dangerous material
Transport regulations and dangerous cargo	Type of cargo
Consequence of non-compliance	Need for escort
Licenses / Permission for foreigners	Time of travel
Specific steering rules	Check the type of road and its conditions
Weather	Communication
Climate assessment (seasonal)	Safety
Climate assessment (non-seasonal)	Driving the night
Customer requirements	Limitations
Customer rules and regulations at your facility	Rules
	Exceptions

Fig. 5: Classification of Categories considered in the HARC. Source: Adapted

V. RESULTS OBTAINED

Over the years, the company has developed several process management software (ERP) capable of generating a large volume of data and information. However, the freedom to develop and acquire these tools, coupled with the lack of expertise to do so, has caused several ERPs, although useful, not to communicate with each other directly.

Another important factor in the data analysis was the perception, by the users, in the lack of adherence between what was in the system and what the real world represented. Part of this problem was justified by the need to expedite the process of registering new suppliers; By high turnover, which included staff not yet well suited to industry practices in the process; And the difficulty of establishing metrics for suppliers framing.

Regardless of the real cause in the lack of adherence of the registers, it was necessary to analyze and segmentation of all the active companies in the Sourcing system, since these, once active, are visible by the Procurement team and thus can be used to Procurement of goods and services. Likewise, the correct segmentation provides greater accuracy to the analysis of Sourcing, because they are responsible for identifying and creating negotiation strategies with suppliers.

Thus, it was necessary to search for data in two company ERPs: The Sourcing, with the list of active suppliers in the system as well as various data related to them, including level of criticality and segment; And in the Financial, where we searched for data regarding the value spent by supplier between January/2015 and August/2016.

Thus, the first part of the data analysis was to identify the active suppliers in the company. To do this, a report with the status list of each vendor was extracted from the system used by the Sourcing team. The same was done in the system used by the Financial. Subsequently, the two databases were crossed, allowing the visualization of the value spent by an active supplier in the aforementioned period.

At This Point, it was possible to observe the total value spent by a supplier, however, two key factors for the analysis were still considered incongruent: the segmentation of suppliers and their criticality. To identify the first, the entire list of suppliers was revised and reclassified according to the nature of its operation, allowing the supplier to segment the suppliers correctly and, therefore, identify the logistics suppliers.

Figure 6 shows the dispersion of logistics providers based on the value spent between January and august/2016:

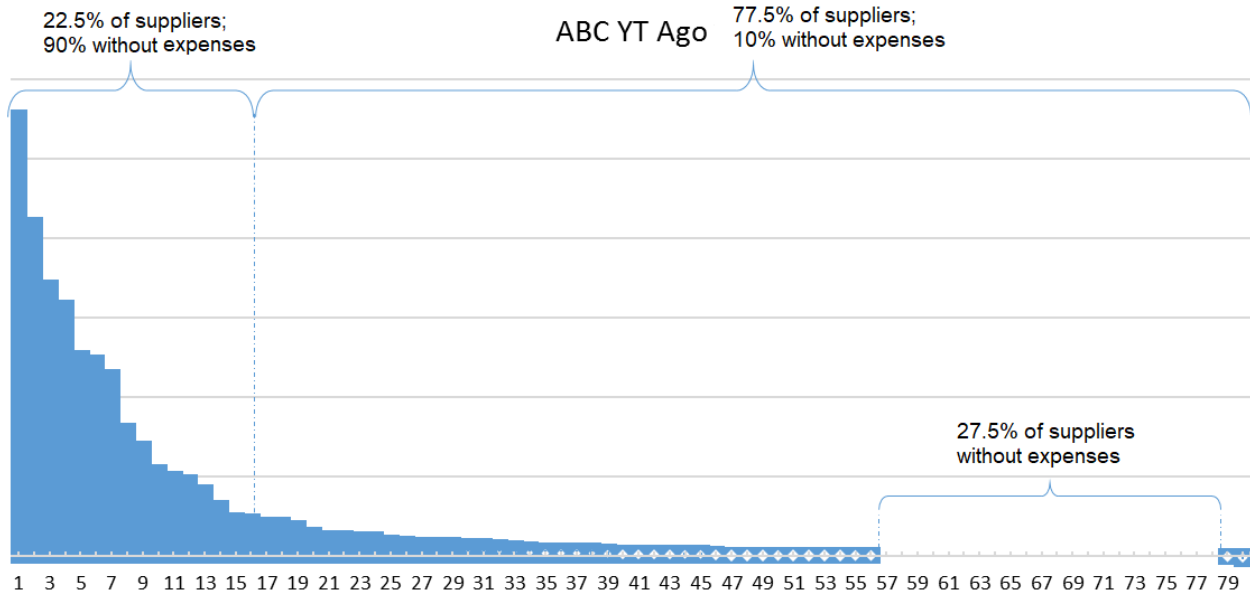


Fig. 6: Dispersion of Logistics Suppliers based on the value spent. Source: Own

After segmentation, it was possible to visualize in a clearer way how the expense with the logistics vendors was being distributed.

It is noteworthy that there was no expense with 27.50% (22) of 80 suppliers of this segment in the year 2016 until the month of August.

The last two suppliers of the chart are listed as a negative balance by applying a contract fine, that is, they are being used, but the company still has credit with them. Figure 7 and 8 show the evolution of spending with active suppliers in the system:

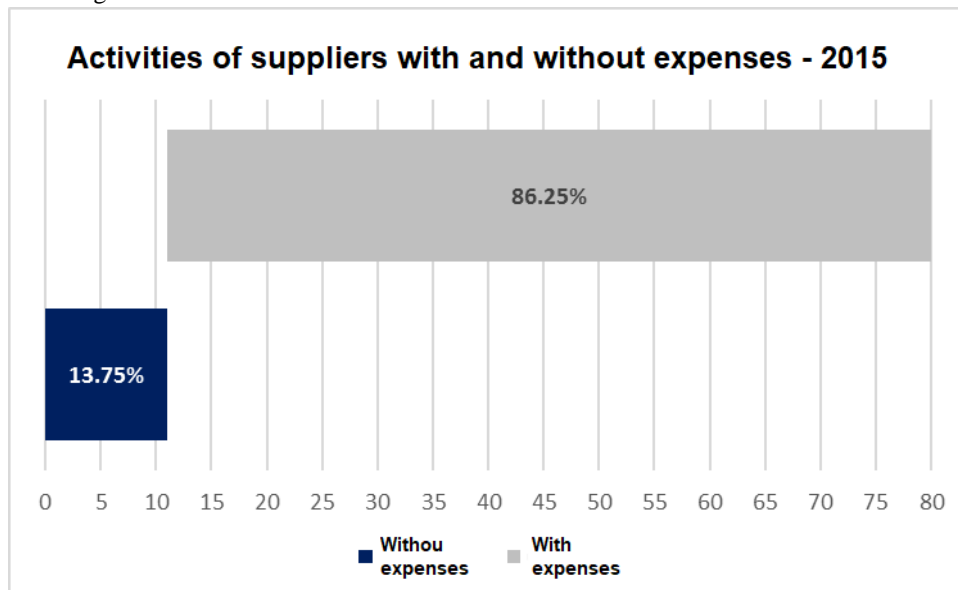


Fig. 7: Supplier Activity with and without expense 2015. Source: own

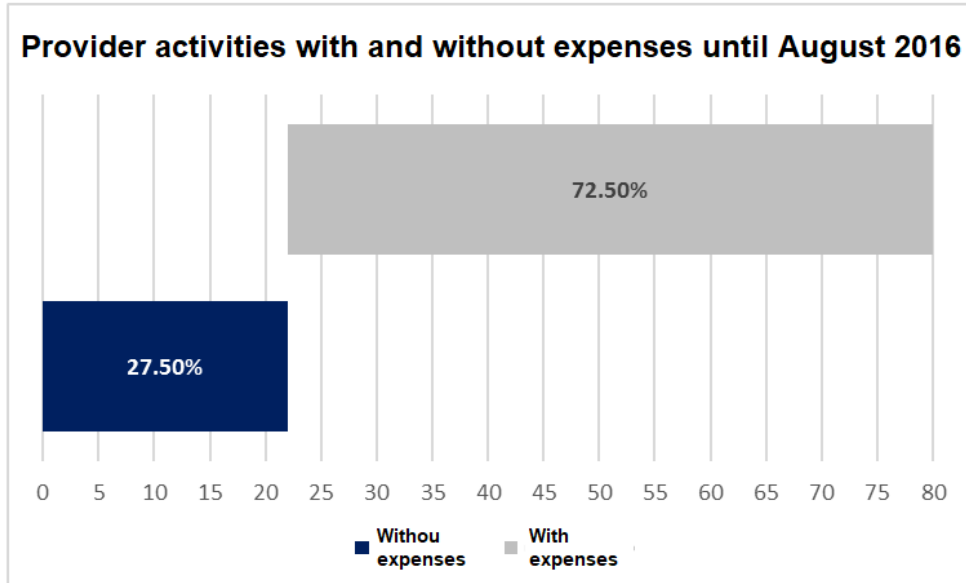


Fig. 8: Supplier Activity with and without expense until Aug/2015; Source: Own

Despite the discontinuity of services having doubled between 2015 and 2016, the fact that the vendors are active in the system is characterized by a problem situation for the audit team, since they need to create an audit plan at the beginning of each year. Thus, as there is no confidence in the data presented by the ERP, nourished by the Sourcing team, and then problems of redundancies are subject to appear.

In fact, difficulties were reported regarding the effectiveness of the annual audit plan. In addition to being

included companies that were no longer part of the supplier base, but which are listed as active in the system, the auditors pointed out that the criticality classification was not consistent. Thus, vendors who did not need to be audited were included in the plan and critical suppliers stayed out. In Figure 9 can view the generic flow of information about the vendor data:

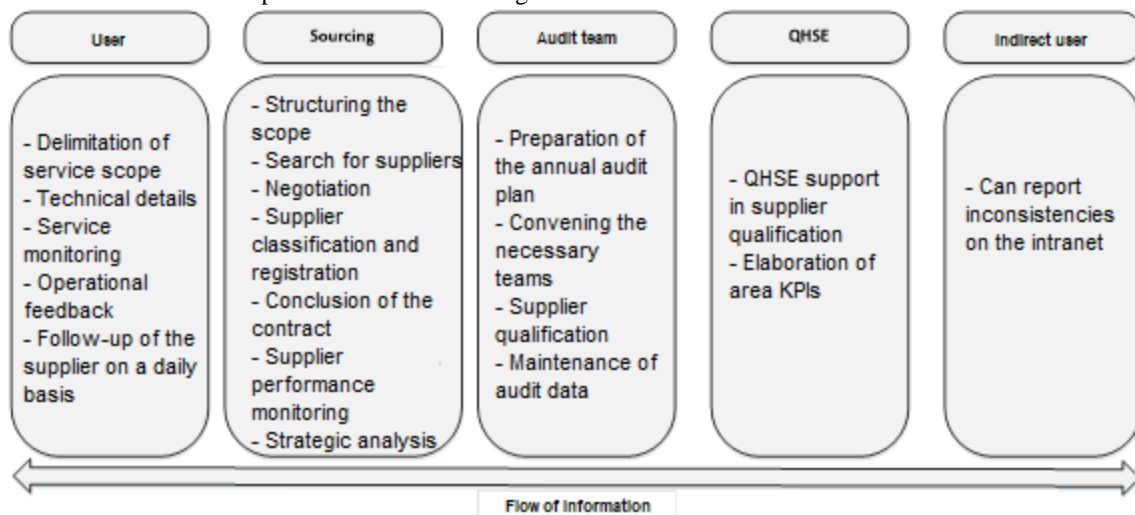


Fig. 9: Information Flow that integralizes Supplier Management. Source: Own

It was observed that due to the engagement of several areas of the company, regarding the quality of suppliers, it makes its management maintain high levels. However, inconsistencies in the classification of suppliers implies that part of this management occurs in a reactive manner. To some degree, a large part of the suppliers that need to be audited goes through the audit process, but escapes the

control of the Sourcing team the broad view of its supplier base to develop proactive strategies for identification, qualification, Selection and development of suppliers.

Through the review of segmentation and criticality of suppliers, it is possible to have a full overview of the suppliers that the audit team should stick to during the

programming of the annual audit plan. Figure 10 shows the total number of critical vendors after reclassification,

without discontinued vendors:

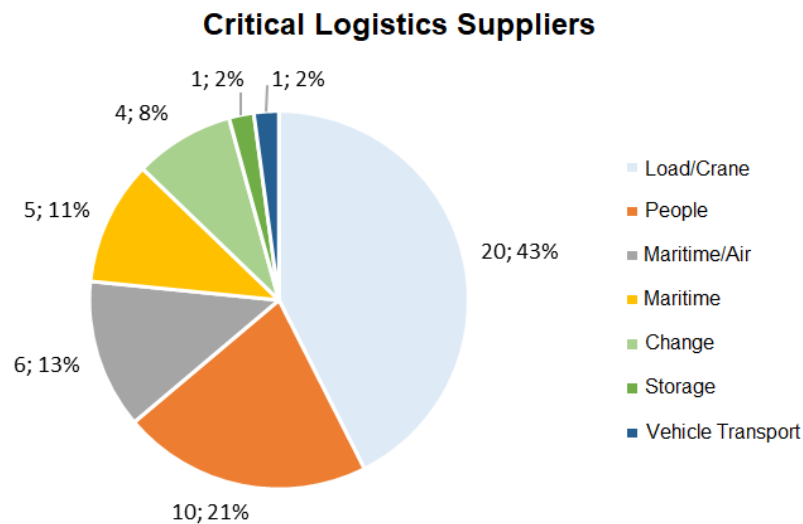


Fig. 10: Critical Logistics Suppliers Active and spent in 2016 after reclassification. Source: Own

It is evidenced that the correct classification of suppliers regarding segmentation and criticality, in the memento of the register, makes the activity of sourcing more practical. In this way, the team manages to obtain more accurate data and more agility to play its strategic role in the development and relationship with suppliers.

VI. FINAL CONSIDERATIONS

Through the discussion of the Supplier Management theme, we sought to answer the problem question: can the volume of logistics suppliers be optimized for better management?

The problem related to the question posed is based on the high complexity that the logistic suppliers who provide or intend to provide services to the company studied are subject.

Thus, it was understood that the reduction of the supplier base could be a factor to assist the company both in the management of its suppliers and in the improvement of services rendered.

One of the factors analyzed to achieve the answer to the problem question was the analysis of the suppliers' registers. According to the users' perception of the system, the registers presented inconsistencies of character to interfere in the routine of the agents participating in the supplier management process.

Based on this assumption, data were collected and elaborated verification metrics that corroborated the users' perception: part of the registers did not fully reflect the real universe of the contracted and practiced services. The analysis and therefore reclassification of suppliers made possible to see the entire frame of active suppliers in the

system, with and without expense, according to their segment and criticality. A sub-segmentation of the suppliers was also conducted in order to differentiate the types of service that each one performed.

The sum of these efforts allowed the elaboration of the answer to the problem question, being positive the answer, because: 22 suppliers were identified with discontinuity of service in the year 2016 that could be listed as inactive, decreasing the range of suppliers in the management step called auditing.

In addition, the sub-segmentation of the services showed that there may be strategic synergies in the Sourcing stage, by joining the suppliers of Cargo, Crane and People Transport, because there are large companies in the market that offer the three types of service.

The same occurs with the subsegment with the second and third largest number of vendors, respectively. Maritime suppliers could integrate Maritime/Air Suppliers.

As the company studied carries out several operations with hazardous materials, logistics was chosen by embarking on the handling and transport of all dangerous content, besides presenting a competitive factor in itself.

For this reason, the need to monitor their logistic suppliers becomes quite urgent.

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