

Analysis Mapping Logistic Processes of People Offshore Company located in Brazil

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Abstract — The present research had the objective of analyzing mapping personnel logistics process company located Macaé, Rio de Janeiro, Brazil, through the analysis of existing processes. The company chosen to be the source of the study, has been working in the area of submarine engineering for almost 30 years, has as one of its main focuses the client, a key part of the process to be studied. To carry out the work, a bibliographical research was carried out around the concepts of logistics and its various ramifications besides the mapping of the internal processes that served as a theoretical basis for the research and assisted in the design of the work. In addition, company documents were used to provide support and field surveys were performed with the technical assistance team involved, I was able to carry out the direct observation of the process studied. It was made a survey of the advantages and disadvantages of the process that is currently used, stating that the company should focus on the disadvantages encountered during the work to begin a process of continuous improvement in the personnel logistics department, where currently the absence of a procedure that designing all processes involved in people logistics hampers process efficiency and hampers cost reduction. It is suggested to set up an

action plan in order to correct the disadvantages encountered, and to maximize existing well-defined processes.

Keywords — Logistics, mapping processes, offshore, shipment.

I. INTRODUCTION

According to Rodrigues (2000), the emergence of the word logistical comes from the seventeenth century, from the term logistique, which is derived from a position existing in the French army, where the soldier occupying such a post was responsible for the activities related to displacement, accommodation and camp of the troops in campaign, referring to practices of moving armies.

Logistics first emerged as part of the military art, used in wars that were usually long-lasting and distant. Logistics was the area that took care of planning several important items, storing, distributing and maintaining various types of materials, such as weapons, clothing, food, hospital materials, transportation and even the movement of people.

At first, the logistics were made only as value-added for sale and manufacturing processes, from the raw material

to the finished product, and with time, the need for logistics as a post-sale instrument became visible.

The objective of this work is to analyze the processes of logistics of offshore personnel of a company that operates in the oil industry of the city of Macaé, mapping the processes used, raising good practices and possible flaws that interfere in logistics efficiency.

In the next topics will be analyzed the introduction of logistics, personnel logistics, process mapping, the company to be analyzed, as well as the mapping of personnel logistics, as well as methodology and final considerations.

II. LOGISTICS AND ITS DEFINITIONS

According to Novaes (2007, p.35), logistics is the process of efficiently planning, implementing and controlling the flow and storage of products, as well as associated services and information, covering from the point of origin to the point of consumption, with the aim of meeting the requirements of the consumer. According to Novaes (2007), logistics processes were focused with the sole objective of meeting the needs and preferences of the final customer.

Logistics is a growing area, since organizations are turning their focus to quality, since most of them understood that when they present quality, that is, a product or service that is well finished, delivered on time and has a reasonable cost, profit would only be a consequence, so it can be assumed that logistics contributes decisively in order to improve the economic standard of life of all involved in its process and that its activities are known as bridges connecting production sites and distribution markets through time and distance (KUEHNE, Jr, 2008).

The revolution mentioned above generated some initial discomfort in companies, but with the passage of time these companies adopted differentiated strategies focusing on process improvement, a mechanism that contributes significantly to the logistics process, despite the costs incurred in the change, in the long run the entrepreneurs glimpsed in logistics a competitive advantage.

"Competitive efficiency can be as relevant a promotional element as personalized sales, advertising, price discounts, training, among others. The presence of special transportation, constant inventory availability, faster order processing, and reduced transport losses or damage, in most cases, can affect customers' perceptions and, consequently, sales" (BALLOU, 2001).

Nowadays, a company must operate in a high-level economy, with good efficiency of logistics activities, becoming a survival factor and competitive advantage favorable to the market. In this way, logistic activities provide the link between the producing regions and their

markets, which can now be separated geographically. With this, logistics efficiency becomes a major competitive factor for the company at national and international level, and its management enables the integration of all the company's operations, he says (BALLOU, 2001).

The present work prioritizes and understands that the greatest resource of any organization is the human resource and it is fundamental to maintain a great effort to put the right people in the right moment, attending to the main demands of growth and control of the organization.

Personnel logistics is understood as the act of moving people neatly for a specific purpose, that is, ensuring that an employee is at the right time for a given function. This branch of logistics is extremely new, since until recently everything was included as logistics or allocated to other departments, such as human resources.

Correctly executed personnel logistics become an important tool to increase the levels of internal and external customer satisfaction, such as the after-sales sector, that is, customer loyalty by adding value to the product. Understanding value as the relationship between the benefits provided by the product, the price paid by the customer plus the costs of accessing the product or the associated service, creating value for the customer through after-sales means reducing these costs. Logistics is a strategic weapon for business competitiveness.

In the company researched the work of personnel logistics is heated, since there is a need for mobility of employees throughout the national territory, aiming at customer service whenever requested.

This work goes beyond logistics, but an effective logistics begins from the negotiation of the contract to the service itself, this is because every company needs a time to attend a request, this time should be discussed and evaluated with the aim of be as small as possible, but enough for movement.

III. COSTS OF MATERIAL LOGISTICS AND THEIR IMPORTANCE FOR STAFF LOGISTICS

Logistics itself is about creating value for all stakeholders. The added value of logistics is manifested primarily in terms of time and place, products and services are worthless unless they are in the right time and place. Good logistics management interprets each activity in the supply chain as a contributor to the value-adding process, when the value added is small, the existence of this activity will be questionable. Logistics is becoming an increasingly important process of value adding for many reasons (BALLOU, 2006).

Over many years, numerous studies have been carried out to determine the cost of logistics for the economy as a whole and for each company, resulting in estimates of

cost levels for all tastes and preferences, size and disparity between each of them, according to the International Monetary Fund (IMF), logistics costs account for 12% of the world's gross domestic product on average. Logistic costs over more than two decades estimate that logistics costs represent 9.9% of gross domestic product (GDP) or 921 billion for the US economy (BALLOU, 2006).

During the last decade the costs of physical distribution fluctuated between 7 and 9% of sales, there may be a trend of rising costs for companies although, research shows that in the same period logistic costs as the percentage of Gross Domestic Product (GDP) reduction of about 10%. Logistics costs in most companies are second only to the cost of goods sold (purchasing cost) which accounts for about 50-60% of sales to the average manufacturer (BALLOU 2006).

The calculation of cost in the previous paragraph in the logistics of people is extremely applicable; people deliver certain services, and most often deliver these services out of their work bases. An entrepreneur in negotiation of a specific contract must raise all possible hypotheses regarding the movement of its employees to be providing the contracted service, the logistic cost must be included in some way in the value of the service, so that the value earned by the entrepreneur is enough to cover all your obligations including the logistics costs and still achieve a positive result.

The calculation of cost is important in the logistics of personnel and material, for this currently the process mapping tool is used, which is relevant in this context.

IV. MAPPING PROCESSES

For Rosemann (2006), process mapping seems to exist since man has mastered symbol writing.

According to Barbará (2006), in an organizational environment are numerous agents with different levels of training, the difference between the agents leads the organization the most diversified information occurring improperly within the company. The impropeness is due to the incorrect treatment of this information, occurring in the poor quality of the information generated. Communication among the agents of an organization is an object of great concern, this flow of information should be extremely important, because through it are made assessments of the functioning of various areas of the organization.

According to BPM (2008), the behavior of companies is determined by their procedures, which are specific sequences of activities to be developed as a result of company policy and the pursuit of their objectives, procedures guide employees in how to perform their tasks, this sequence of activities within a company, is called the customer-supplier chain.

Insofar as improvements are made in the flow of information, improvements are usually made in the process as a whole, having this registered flow helps in visualizing the operating deficiencies and consequently in the possible changes that may be implemented in the processes and as part of the process. system of communication (NASCIMENTO, 1999).

For this author, the most important part of process mapping is information considered as an indispensable resource in organizations, their treatment, flow and the evaluations that can be extracted (NASCIMENTO, 1999). The information flows in a company are presented in the following forms: information flow collected outside the company, but used by it as suppliers, customers and competitors that influence the existence, operation, actions and decisions; flow of information produced by the company and destined to the market, this information is generated within the company intended for external agents, such as purchase orders, invoices or advertising campaigns; flow of information produced by the company and destined to itself, this type of flow is generated and consumed internally as accounting information, production reports and internal communications (LESCA and ALMEIDA 1994).

Process mapping is a management and communication tool that is intended to help improve existing processes or to deploy a new process-oriented framework. Mapping helps the company to clearly see strengths and weaknesses and is a great way to improve understanding of processes and increase business performance. The objectives of this tool are to seek a better understanding of existing and future business processes, with the aim of improving the level of customer satisfaction by increasing business performance (LECIONI, 2006).

According to Villela (2000), process mapping is an analytical and communication management tool that intends to help improve existing processes or to implement a new process-oriented structure. This analysis allows cost reduction in the development of products and services, reduction in system integration failures, and improved organizational performance, as well as helping to simplify existing processes.

Observed by Mello and Salgado (2005), in order to manage a process, it is necessary to first visualize it. Thus, the mapping is performed to represent the various tasks required and the sequence they occur for the realization and delivery of a product or service.

The main techniques of mapping processes are (LEAL, 2003):

- Process flowchart - used to register a process in a compact way, using some standardized symbols (BARNES, 2004);
- Mapofluxogram - used to represent the process in a plant or in the area in which the activity develops

(BARNES, 2004).

- Integrated Computer Aided Manufacturing (IDEF) - allows a complete analysis of processes through their inputs, outputs, constraints and interactions using the family (MAYER; PAINTER; WITTE, 1992);

- Systematic diagram of Unified Modeling Language (UML) - created for software systems development and adapted to model diverse systems other than software systems (WILCOX & GURAU, 2003);

- Service Blueprint - a technique developed for the mapping of service processes, differentiating itself from the flowcharts by considering the aspect of customer interaction representing all the transactions that constitute the service delivery process, including those of the back-end activities (WILCOX & GURAU, 2003);

- Map of the service - a service mapping technique derived from the Service Blueprint that involves the management of the service as a whole, it is a management technique to chronologically represent the tasks and activities performed by the client, front line staff and support personnel in the performance of a service (KINGMAN-BRUNDAGE, 1995).

V. METHODOLOGY

For the classification of the research, it is based on the taxonomy proposed by Vergara (2009) that qualifies it in relation to two aspects: as to the ends and the means:

- Regarding the ends, the research was exploratory, explanatory, and descriptive. Exploratory because, although the theme tools for improving personnel logistics are not widespread in developed countries, there is little accumulated and systematized knowledge in Brazil. Explanatory, as it aimed to clarify factors that contribute to the process of movement of people in the offshore market.
- As for the media, the research was bibliographical and documentary, as it will be based on a systematic study based on material accessible to the general public published in books and articles, with an investigation on the subjects: concepts, mapping of processes, perspective theory, behavioral tendencies. As well as telematics, since several documents available on websites will be used, since this theme in Brazil is still very recent.

The literature search focused on the search for studies that portray concepts and models of logistics focused on the mobility of people to perform a specific job, within a highly competitive and vulnerable scenario, which is the Oil and Gas market. journals and dissertations. It analyzed as a result the understanding of the human behavior as an improvement of the effectiveness of the decision making, as well as the generation of a referential.

VI. THE COMPANY

The company that bases its studies in this work is a multinational company of services and technology, currently the company operates in several business areas such as manufacturing of lamps, appliances, aircraft turbines, financial branch among others. The basis for research is the oil exploration and production branch, the manufacture of Wet Christmas Trees, Wellhead and BOP (Blow Out Preventer) (THOMAS et al., 1998). The company was founded in 1980 taking as a brand the invention of the lamp.

The researched company is a global company focused on research and innovation, has been present in Brazil since 1919 providing innovative products, services and solutions collaborating with the country to overcome the challenges of infrastructure improving people's lives. To contribute to the continuous improvement of humanity, it operates in the health, energy, household and financial markets; made history in the first radio transmission and changed the transmission speed for the time (THOMAS et al., 1998).

The company city Macaé, the main business is manufacturing and maintenance of submarine equipment, for that it has approximately 500 employees, 190 with offshore contracts and the other onshore.

In recent years company X and all its competitors have received an increase in demand from oil discoveries in a deep layer called pre-salt. The pre-salt is a layer of oil reserves that lies beneath a deep layer of salt, forming one of several rocky layers of the marine subsoil. In Brazil the pre-salt layer extends over 800 kilometers encompassing the states of Santa Catarina and Espírito Santo beyond the Campos and Santos basins. Its nomenclature is given by the time scale in which oil, its formation took place thousands of years and was covered by salt over the years.

VII. LOGISTICS STAFF MAPPING MACAE COMPANY

The main purpose of the job is to use the tools available to improve personnel logistics, moving people quickly, quality and safety.

The base company for this research works with maintenance of Christmas Trees and Wet and Well Head, which are equipments that are part of the petroleum production process.

Christmas tree is an equipment consisting of a set of valves type drawers that allow to control the activities required in the production of oil, allows the flow of fluids from the reservoirs to the production platforms, as well as injects fluid into the reservoir, and can even intervene in the wells when necessary; cleaning, stimulation, control and tamponade for abandonment.

The wet christmas tree is an equipment for submerged use

consisting basically of a set of drawer valves, a set of flow lines and a control system to be interconnected to the panel located on the production platform. The studied company works with wet Christmas tree as shown in figure 1.



Fig. 1: Christmas tree. Source: Tomas et al. (2006)

The company studied provides service to company Y (customer). The demand for work arises in the department called active, undergoing an analysis of the Department of Operations Planning and Underwater Equipments (POES), and the Subsea Equipment Planning (EQSB). The employee of company X interfaces between the ATIVO and EQSB departments, when the project is approved it arrives at the EQSB and enters Operations

Planning (OP), as can be seen in figure 2.

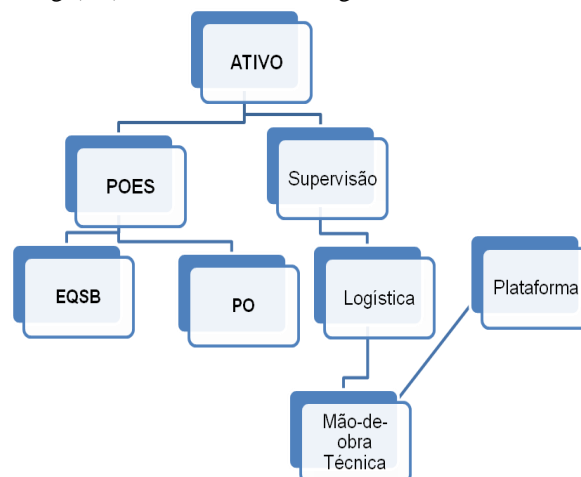


Fig. 2: Flowchart Client - Company X. Source: Own.

Microsoft Excel is software for creating and maintaining spreadsheets. It is used as a control tool in the logistics of personnel, such as counting of days on board, control of clearances, control of double shipments, control of the mandatory training for the function, control of queue of shipment and control of official to qualify.

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Fig. 3: Board of control of shipment - Partial - company X. Own Source.

The Excel software allows the control of the days of shipment of offshore employees, allowing the logistics to control the days of shipment not allowing the folds that increases the cost and the risk of accidents.

The motivation of the employees with respect to the function performed, allows a greater ease in the contact of the logistics with the employee in offshore regime and a quick assimilation of the requested work.

The disadvantage is a contract with a single tourism company, responsible for supporting logistics in the

search for airline tickets and hotels throughout the country, with the best price and location, through the daily practice was raised that the company meets the requests of the best possible, but that the creation of a competition could bring benefits to company X in order to reduce costs and the effectiveness of the operations themselves.

Absence of a procedure that raises all the particularities of personnel logistics, minimizing doubts and possible injustices. The logistics expressed doubts on some issues

and claims to try to raise all the relevant points, but report that you feel insecure, for not having a procedure that ties up all the necessary issues.

VIII. FINAL CONSIDERATIONS

The case study was carried out based on the personnel logistics process of an oil and gas company from Macaé and was based on the identification of a reality that needs to be constantly improved, improving the personnel logistics process. With the aid of a bibliographical research, internal documents of the company and direct observation, a mapping of processes was done, raising all the pertinent points from the beginning of the process of logistics of people in offshore regime until its outcome with the landing and beginning of the clearance. During the course of the work some advantages and disadvantages of the process were raised.

The company should focus on the disadvantages encountered during the work, to begin a process of continuous improvement in the personnel logistics department, building and improving over time a personnel logistics procedure that contains all the pertinent particulars, with the purpose of procedural work and reduce errors by increasing the range of companies providing taxi services and tourism agencies.

It is concluded that the tools used to assist people's logistics effectively assist the process itself, but there is a need for a well-written procedure that addresses all the peculiarities pertinent to the people logistics process, knowledge of all, aiming at the improvement in the movement of employees and the reduction of costs.

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