International Journal of Engineering and Science Invention (IJESI)
ISSN (Online): 2319-6734, ISSN (Print): 2319-6726
www.ijesi.org ||Volume 13 Issue 1 January 2024 || PP 46-56

Standardization of the Purchasing Process in the Company Construcciones S E Inversiones LJ SAS

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ABSTRACT: *Construcciones e inversiones LJ, is a civil engineering construction company founded in 2005 in Colombia, this company is dedicated to bidding with the Colombian state. In the project "remodeling of the CAPS. libertadores and Antonio Nariño" began to have problems associated with the high demand of requests in the purchasing area, since in addition to not having a clear procedure to respond to the requirements, there was also no minimum staff established to comply with the activities. Thanks to the creation of new documents, time study and procedures for the four new sub-areas (purchasing, warehouse, accounting and engineering) the process of acquisitions was standardized, giving a specific role to each actor of the flow and providing the company with a structure of continuous improvement, thanks to this, it was established that the total process should last 21 working days from the analysis of the materials to be required until the receipt of the sales invoice.*

Keywords: ***Materials, tools, services, demand, standardize***

Date of Submission: 09-01-2024 Date of Acceptance: 23-01-2024

I. INTRODUCTION

Construcciones e Inversiones LJ SAS, was founded in 2004 and is dedicated to the construction of civil, electrical, sanitary and environmental works for public and private entities, has guild recognition in the presentation of contests under the bidding modality that have allowed the execution of projects in several cities of Colombia.

The locations of the company are established in the city of Bogotá, where, in addition, the company has participation in a project currently, which consists of the remodeling of the priority health care center (CAPS.) located in the town of Antonio Nariño in the city of Bogotá D.C; which will be the object of study to establish the weaknesses and opportunities for improvement of the purchasing process.

The integral management of the project is totally established by the company, in which the process consists initially in presenting the offers in the SECOP II platform as regulated in decree 1510 of 2013 1, the entity proceeds to present itself under public tender individually or at the consortium level, once the project has been awarded, the staff, schedule of activities and material required for the initial execution of the project are established, adapted to the requirements in terms of experience that the terms of reference and signatures established in the periodic reports in which it is determined by the entity.

According to the schedule, the different requisitions are initiated to establish the materials, tools and equipment that must be on site, which must comply with all the quality requirements established in the different national regulations.

The purchasing process consisted fundamentally of three factors, which are purchasing, billing and inventory, everything starts in the requisition that was provided by the project manager to the site warehouse controlled by the purchasing area, there they had to select suppliers by means of established forms, in which they were cataloged and established if they are suitable for the process throughout the work. When they already had specific suppliers for the different types of materials, they had to send to a minimum of three (3) of them for quotation and choose the best option taking into account the quality-price interaction..

When selecting the supplier, the purchasing area requested a proforma with each of the items to be paid, which was taken to the accounting area to deduct all the withholdings and cause in the accounting platform, then it was taken to the treasury area, along with the purchase order, the RUT, Chamber of Commerce certification and bank account certification of the supplier for subsequent registration and payment by transfer. Once the payment support was downloaded, it was sent to the supplier along with the purchase order and received on site or sent to pick up as agreed with the supplier. As can be seen, the process involved several items, which had to be harmonious and have a minimum time between the first step of the process and the last, however, they did not have a supporting documentation of each interaction.

The purchasing process ended when the material arrived on site, and at times of high demand flow, the error of not attaching to accounting the internal supports of the transaction was incurred, this generated that there were sales invoices without any attached document, which was not consistent with the guidelines that the company had, however, due to the need to comply, these factors went unnoticed as they were ignored by the area managers and the real scale of the losses was not known.

1.1 Background Review

In the review of similar projects, some executed at the national and international level were evaluated, in which similar standardizations are made that served as an object of study for this article.

Initially, there is a standardization for the processes of a construction company called "Standardization of processes in a company dedicated to the construction and remodeling of works" that defines the problem as "poor project management" [2], this due to certain practices such as waste of materials, breach of contracts, unjustified absences, and unnecessary material entered on site.

To provide a possible solution to the problem, quantitative research was conducted, in which a technical study process is described that includes different relevant aspects for the development of the project, such as the conceptual design of the service, product or good to be studied, the description and analysis of the process, and the requirements necessary for its execution.

In conclusion, this first project, despite having different causes with the research, concludes that the focus of a project should initially be structured through design, since, if the planning phase is deepened, in critical moments there will be options to provide a solution, therefore, the detailed resources will facilitate learning by the entire work team and their assigned functions. [3]

Secondly, there is the project of "standardization of managerial processes in a construction company that develops buildings for businesses with a corporate image" [4], which shows that the implementation of a structure contributes to the competitiveness and growth of organizations, since "Small construction companies carry out their projects without defining clear guidelines for the management of important processes such as costs, risks, quality, and communication. Due to this, in all processes, management is carried out empirically and disorganized, and the order and efficiency in which tasks are done depend on the staff in charge of the project."

To provide a viable solution, Palomeque proposes as the main objective to document the processes carried out by a construction company, as a contribution, a simple way to train the worker is through showing descriptive documents with the step-by-step execution of a certain activity, which end up being the guidelines of the company. [5]

In the international review, the "application of the Warehouse Management System to improve the productivity of the EISSA company's warehouse. Cajamarquilla, Huachipa work" established in the thesis of Azaña (2017) was evaluated, where the identified problem is that "the material deposit of the Cajamarquilla Unit project does not have a periodic inventory of tools and materials, generating receipt of incomplete and unnecessary orders in several cases". The research was initiated using tools such as ABC analysis, the Ishikawa diagram, and the Pareto principle, from which the search for solutions according to the diagnosis is given, specifying then that "with the proposal of the project it is intended to optimize the process in the deposits, reducing obsolete expenses thanks to a constant update of inventories and a new locative distribution of the warehouses."[6]

Finally, the standardization of minor civil works processes of the Neighborhood Improvement section of the Municipality of San José was reviewed, in the degree project of Chavarría-Vallejos, it is sought to carry out a "control of productivity and yields through data collection and the consolidation of a construction instruction manual for all types of sidewalks, ramps, curb and pipe" [7], they seek to develop improvement proposals and the elaboration of different types of verification sheets in order to work both in standardization and optimization of procedures. As an analysis, in critical moments, the responsibility for decision-making must be established, but there must also be a certain degree of flexibility in each of the activities and this must be understood by the staff to act in certain situations, generating that the process is understood and can be fed back through the same collaborators. [8]

II. METODOLOGY

The research carried out describes the methodology applied for the standardization of the purchasing, warehouse, and inventory process for the company Construcciones e inversiones LJ SAS, with the aim of unifying the operations and activities carried out, adding the documents, milestones, and tasks pertinent to the fulfillment of this purpose. Thanks to this, despite increasing the formats to be filled out, all stages were reduced to 21 working days, taking into account the tolerances between pessimistic and optimistic time, the assessment of needs on site, up to the delivery of the sales invoice by the supplier.

Initially, a diagnosis of the company's purchasing process was carried out, in which the linked parts, stages, formats to be filled out, and errors presented were analyzed. An interview was conducted with the purchasing director, who provided the base information. It was observed that there were specific months where the quantity and value of the invoices increased, but the staff in charge did not increase. This ended up causing procedures to be skipped in order not to delay the work, without taking into account the losses that could be created from these decisions.

Subsequently, document management was carried out. For this, it was documented how the process should be and what stages it should have to be successful, taking into account six new formats that were implemented, which complemented the existing ones in crucial parts of the cycle evaluation and provided real-time reports to strategic management. Training was given to the staff, and procedures were created for the four areas proposed with the study: engineering, purchasing, warehouse, and accounting.

As a third phase, a time study was carried out. As the focus project of the study had already been executed previously, experts were interviewed who estimated the duration of each of the activities of the flow. This concept was weighted and the standard time was established. With this information, the study of predecessors and successors was carried out to generate the time diagram of the process in which the critical path was evidenced that contained all the activities that could not be postponed because they would delay the total process.

To establish an evaluation that would allow measuring the performance of the process, management indicators were created that show the performance level of the fundamental parts, with the aim of avoiding reprocessing and system failures, seeking to avoid human errors resulting from distractions or lack of training. It must be clear that for this step to be effective, there must be constant feedback, in addition to meeting certain conditions to be successful, such as evaluating periodically, and using external agents to the process that give impartiality to data collection.

Finally, the impact evaluation of the process was carried out, which allows observing that document management benefits the purchasing flow, achieving clarity about the direct responsible for a certain activity, in addition to setting the duration limits of each of them. Concluding that if it is a plan that is carried out in an appropriate manner and with a continuous focus, in an established period it will generate economic, logistical, and human benefits for the company.

III. RESULTS

To carry out the diagnosis properly, the first step is to observe how the entire company operates, as this provides help and knowledge about the management of certain vital decisions that end up being a fundamental part of the entire purchasing and acquisitions process. Therefore, thanks to the information provided in the interview with the expert, an organizational chart was created, to which certain general roles were assigned that each of the areas fulfills, giving them a unique occupation so that the business process is beneficial.

Figure 1 shows the mentioned distribution, taking into account that for the investigative project that was carried out, there are three departments that relate to the purchasing flow: the civil works projects area, the purchasing and logistics area, and the accounting area. Each of these makes up a different direction, to which an appropriate report must be given allowing the general management to have an interrelated balance between each of them.

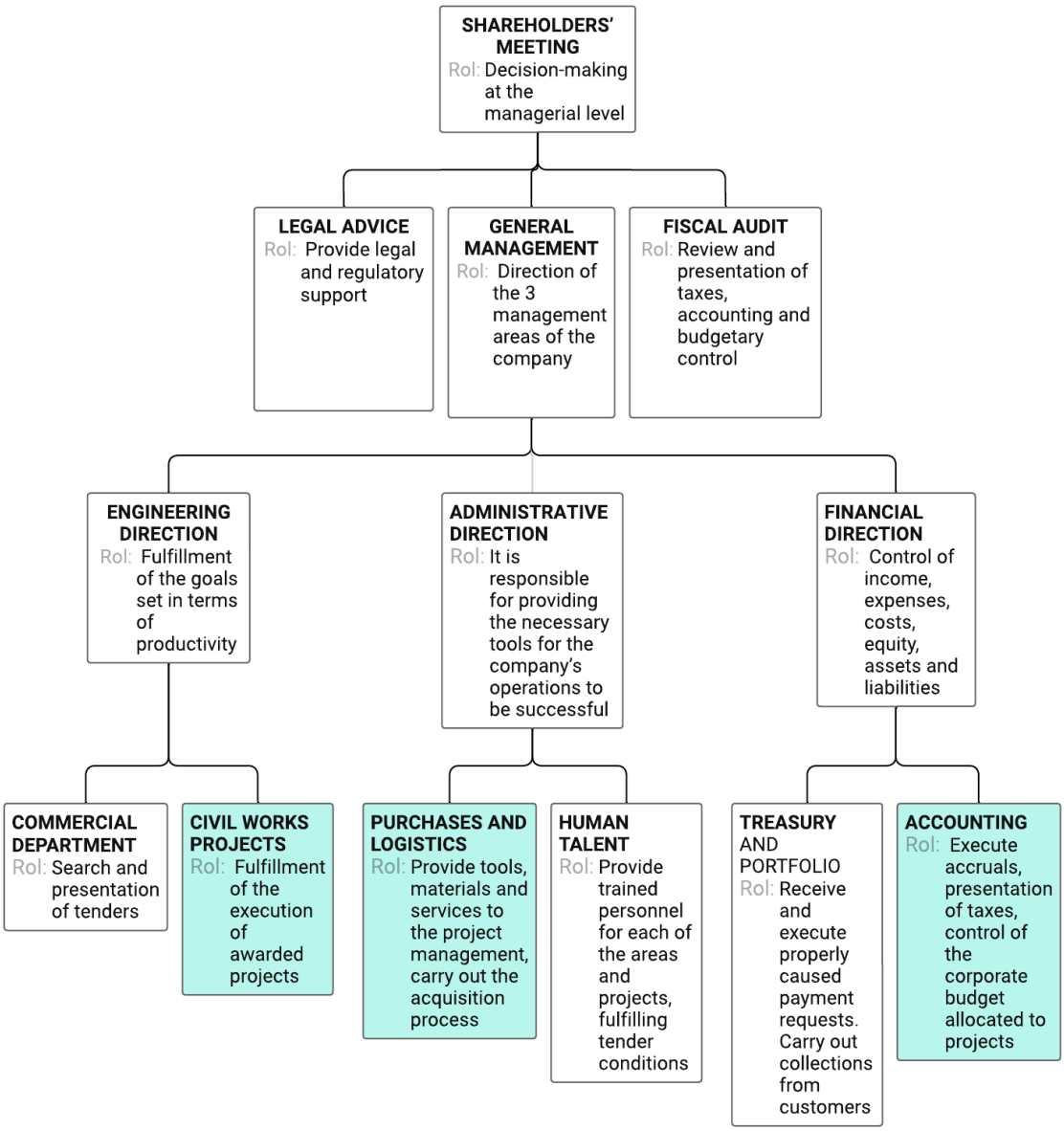
Initially, there is the board of shareholders, which is the space where all large-scale decisions are made, both in the medium and long term, and who are directly benefited from the purchasing, warehouse, and accounting process being successful.

On the second level, there is the legal advisory area, general management, and fiscal review, which are on the same level since in their respective areas they have the same degree of importance.

On the last level, there is the engineering direction, which is specifically divided into the commercial department, responsible for the search for contracts either in the private or public sector, and the operational area of civil works, where all decisions are made about all the projects that are being executed.

The administrative section is divided into two sub-directions. Purchasing and logistics, responsible for carrying out the entire acquisition process for the operational area, and Human Talent, which has the function of providing the trained personnel required.

Finally, there is the financial direction, which is divided into two functions. The first is treasury and portfolio, which is responsible for receiving and executing payments that have already been duly caused, making collections, requesting documentation to initiate legal collections, and maintaining constant communication with the client. The second is the accounting part, which analyzes and records all the financial movements of the company, legalizing assets, liabilities, outflows, income, equity, expenses, and costs. Figure 1. Organizational chart of Construcciones e inversiones LJ SAS



Source: The authors, 2023

In the interview conducted, the current detailed purchasing flow was defined, with responsible parties, functions, and relationships with different areas, all composed of trained personnel with experimental knowledge.

In Figure 2, the process flow is presented, but it is also broken down into the main areas that subdivide it, observing that on several occasions there is intervention between each of them, which can be a problem, because if there is not constant communication, the process begins to depend on another section that does not know the real urgencies of the work center.

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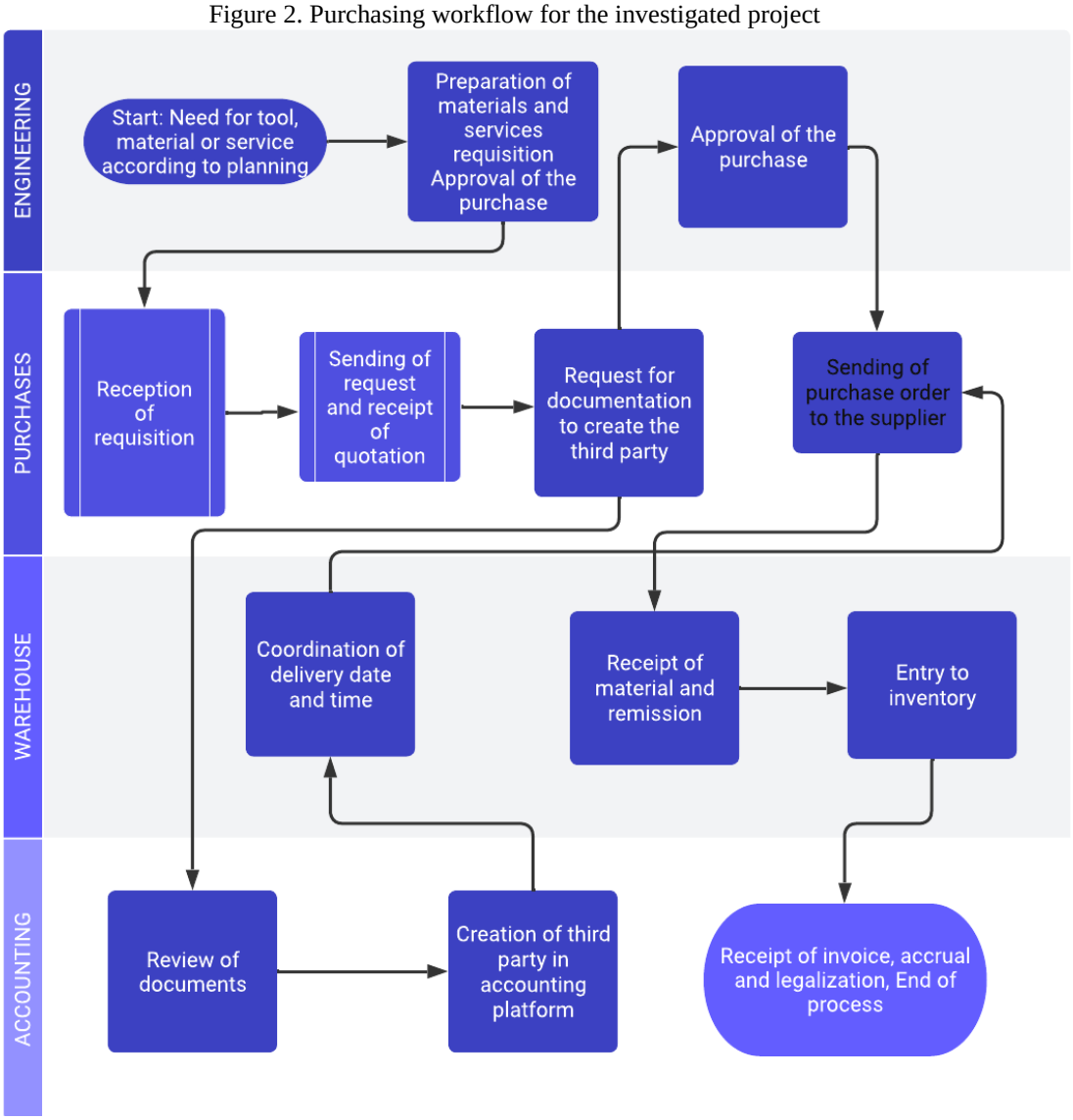
Figure 2. Purchasing workflow for the investigated project



Source: Interview, 2023

For an adequate analysis of the flow and documentation, a SWOT analysis was carried out, which allowed analyzing the entire essence of the process, its advantages, disadvantages, and opportunities for improvement, this with the aim of observing in general terms how the purchasing area is functioning, and if there are ways to improve the fundamental aspects.

The objective of the matrix is to carry out an internal and external analysis of the suppliers, allowing the development of strategies that can confront the weaknesses and threats of the company. Subsequently, planning is carried out so that the purchasing flow is successful and, above all, that it is in constant feedback to correct its errors, seeking continuous improvement which is the fundamental focus of this project. [9] (See figure 3)

Figure 3. SWOT Analysis

ANALISIS SWOT

SWOT Matrix: Purchase flow of the organization "Construcciones e inversiones LJ S.A.S."	**Strengths (S)** **S1** The flow has 80% of it in document format, such as purchase orders, requisitions, among others. **S2** The company has experience that allows it to access a large number of suppliers, credits, and operational leverages. **S3** The flow is clear, and even though there are missing documents each part is aware of their responsibilities and deliverables.	**Weaknesses (W)** **W1** There are still missing formats that allow clarity about the process flow. **W2** Internal audits are not conducted to evaluate the development of purchases. **W3** The company does not have an ERP that allows it to systematize the flow under a system.
Opportunities (O) **O1** Learning is short and there are training entities like SENA or compensation box programs that allow expanding learning. **O2** The market is broad, allowing a large number of options for selecting suppliers.	**Strategy S1O1:** Agreements with external learning centers should be implemented to increase knowledge. **Strategy O2S2:** Commercial relationships with major suppliers should be strengthened as they represent viability in leverage.	**Strategy W1O1:** Complete the entire process and have internal documentation at each step**.** **Strategy W2O1:** Promote audits oriented to the purchasing area by the director, where the flow is evaluated and percentages of purchases with small suppliers are kept low.
Threats (T) **T1** There are competitors who have an ERP that allows them to be much more efficient and increase their responsibility **-T2** When acquiring supplies from small providers, there's a risk they're not quality products or aren't specified by a certificate **-T3** The response speed of competition can be superior which can influence a tender	**Strategy T1S2:** Replace an ERP for this specific area with a series of reports that each part must send; these reports consolidate totals. **Strategy T2S2:** Purchases with small providers must have authorization via email from the purchasing director justifying its urgency.	**Strategy W1T1:** Strengthening company's document management in PHVA process always being feedbacked

Source: The authors, 2023

The evaluation of the internal factors of the company (IFE) involves weighing the strengths and weaknesses, assigning scores according to the effectiveness with which the company is addressing each one. The work team establishes which ones are most relevant, such as, for example, documentary formats, which are of vital importance, they are given the maximum rating. [10] (See figure 4)

Figure 4. IFE Matrix

EFI MATRIX			
Critical success factor	**Weight**	**Rating**	**Score**
STRENGTHS			
The flow has 80% of it in document format, such as purchase orders, requisitions, among others	0.2	4	0.8
The company has experience that allows it to access a large number of suppliers, credits, and operational leverages	0.15	3	0.45
The flow is clear, and even though there are missing documents each part is aware of their responsibilities and deliverables	0.15	3	0.45
subtotal strengths	**0.5**		**1.7**
WEAKNESSES			
There are still missing formats that allow clarity about the process flow	0.2	2	0.4
Internal audits are not conducted to evaluate the development of purchases	0.2	1	0.2
The company does not have an ERP that allows it to systematize the flow under a system	0.1	2	0.2
Subtotal weaknesses	**0.5**		**0.8**
Total	**1**		**2.5**

Source: The authors, 2023

The evaluation of external factors (EFE) involves the weighting of these factors that are key to the company, assigning values according to the relative importance of each one. In the matrix, certain values are highlighted with higher scores, indicating that the team has determined that they have a considerably higher relevance compared to other external elements. In the case of opportunities, the breadth of the market is the greatest advantage, as well as the non-declaration of purchases due to the absence of VAT can be a drawback that means a lot to the company and can affect it in terms of tax presentation. [11] (See figure 5)

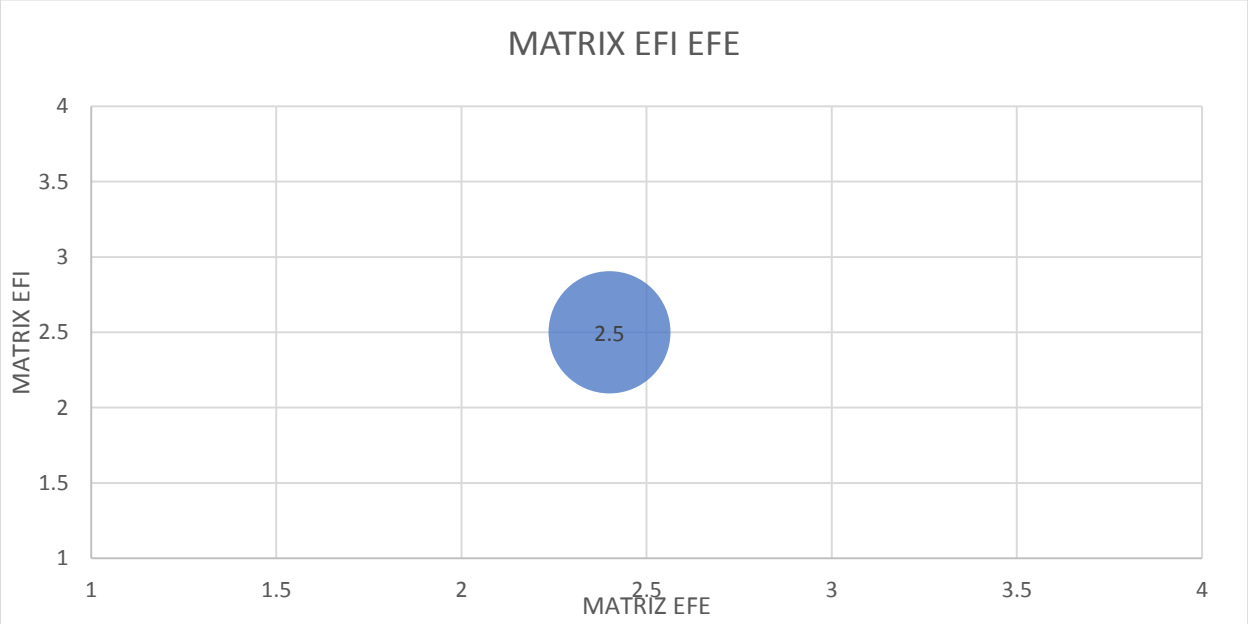
Figure 5. EFE Matrix

EFE MATRIX			
Critical success factor	**Weight**	**Rating**	**Score**
OPPORTUNITIES			
Learning is short, knowledge can be acquired and standardization does not require much time and engineering	0.2	4	0.8
The market is broad, allowing a large number of options for selecting suppliers	0.3	3	0.9
Subtotal opportunities	**0.5**		**1.7**
THREATS			
There are competitors who have an ERP that allows them to be much more efficient and increase their responsibility	0.1	3	0.3
When acquiring supplies from small providers, there's a risk they're not quality products or aren't specified by a certificate	0.15	1	0.15
Not declaring purchases made without an electronic invoice implies losing the deduction of this value to IVA when presenting taxes	0.25	1	0.25
Subtotal threats	**0.5**		**0.7**
Total	**1**		**2.4**

Source: The authors, 2023

As can be seen, the EFE and IFE matrix show a total, which comes from the sum of the total values, this allows the company to be located in one of three specific quadrants, the first one said that the company must grow and build, the second one that it must retain and maintain and finally, it says that it must harvest or disinvest. As can be seen in figure 6, Construcciones e inversiones LJ SAS is located in the second quadrant, therefore, it must maintain the growth philosophy it has, sometimes accelerating it a bit but above all maintaining good practices and working on the errors it has had. [12]

Figure 6. EFE vs EFI Evaluation



Source: The authors, 2023

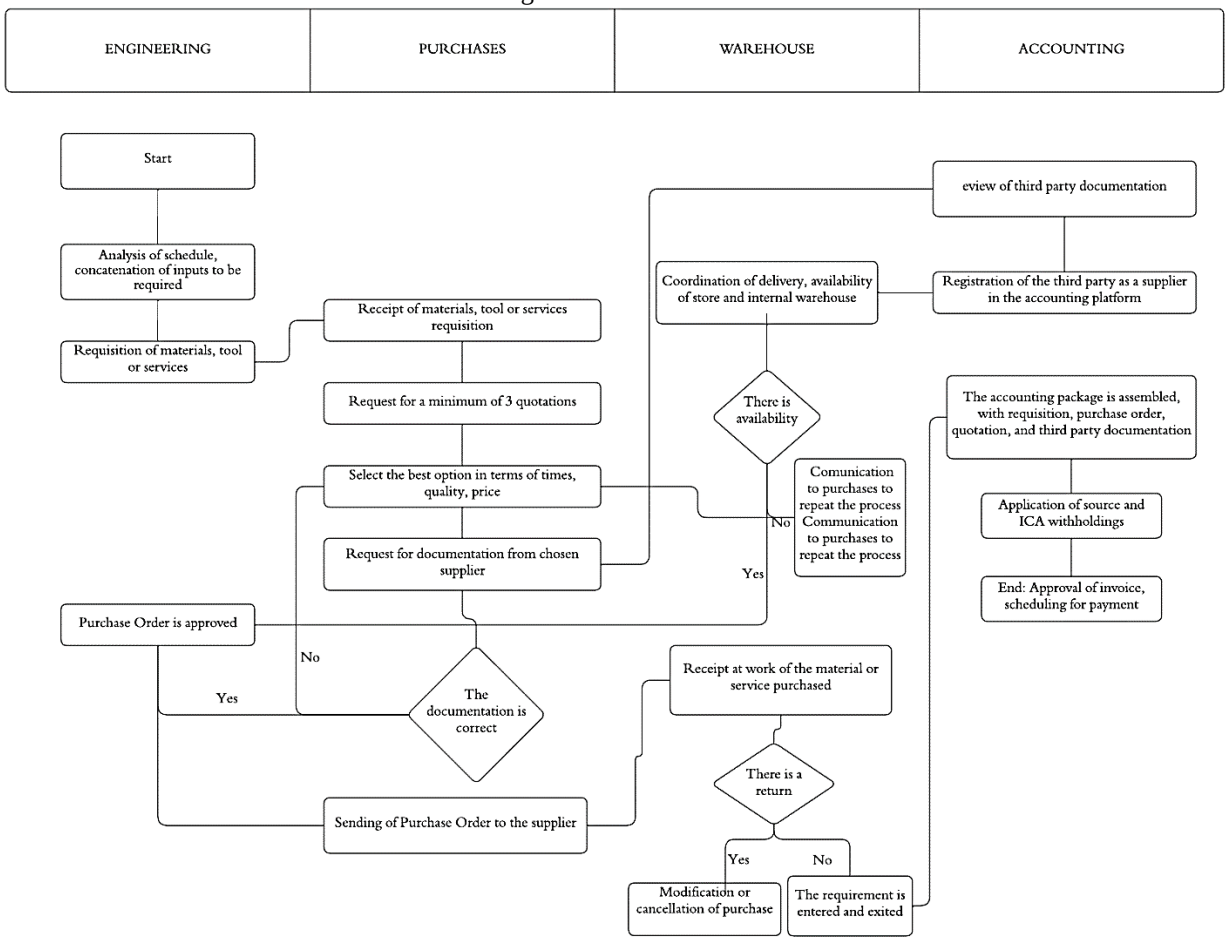
After the previous analysis, the existence of several essential documents for the purchasing process that were outside the scope of the company's management was identified. Although they are an integral part of the purchasing flow, the organization has not yet adopted them. In response to this situation, the research group has made the decision to develop them and present them to management.

It is important to note that some of these documents will be handled in digital format for sending by email, while others require being in physical form, as they must go through the warehouse for a periodic control of the system. Their correct elaboration and management will not only provide greater administrative control over the operations on site, but will also result in significant benefits for the company. Their effectiveness lies in their ability to be efficiently filled out, avoiding considerable delays. Each of the formats must be identified with a specific numbering. [13]

Once the formats are established, the relevant procedures are carried out for each of the areas following the structures proposed in the related article [14], in which the guidelines that the document should have for the engineering, purchasing, warehouse, and accounting department are described.

In order to provide accurate and timely follow-up to all stages of the process, a diagram is developed that comprehensively illustrates the complete flow of the procedure, identifying those responsible for operating and making decisions in each specific area. In figure 7, this flowchart can be observed, which is based on the instruction [15], and seeks not only to establish the activities in which each area has responsibility, but also the interaction that exists with respect to the responsibilities that other areas of the process have.

Figure 7. Flowchart



Source: The authors, 2023

The purchasing process encompasses a full range of activities, involving four fundamental areas: engineering, purchasing, warehouse, and accounting, each with its specific role. However, it is important to underline that some of these tasks only need to be executed once per supplier. In this way, the aim is not only to minimize execution times, but also to maximize efficiency in achieving each phase of the purchasing process, thus enhancing the overall performance of the project.

To obtain an accurate estimate of the average times required in project development, it was decided to conduct interviews with highly trained experts in civil works. These professionals have a deep understanding of internal processes.

Once the experts were interviewed, the average time for each activity was determined. Each of them was subjected to a work breakdown structure (WBS) [16], in which they were initially sectioned by departments, subsequently assigned a unique code, and then the responsible parties and time units were established.

Subsequently, the milestones, predecessors, and successors of each of the activities were established to determine the critical path. In figure 8, the assignment given to each of the activities is observed, in addition to mentioning their EDT code, the responsible department, and the time in days.

Figure 8. WBS

EDT	DEPARTAMENT	ACTIVITY	MILESTONES	DAYS	PREDECESSOR	SUCESSOR
ING001	ENGINEERING	Validation of tool, material, or service needs according to project schedule		3	START	ING002
ING002	ENGINEERING	Preparation of Needs Requisition	NEEDS REQUISITION = H1	2	ING001	ING003 COM001
COM001	PURCHASES	Receipt of Requisition for required elements		1	ING002	COM002
COM002	PURCHASES	Quotation of required elements		3	COM001	COM003
COM003	PURCHASES	Documentation for Creation of Suppliers		1	COM002	ING003 CON001
ING003	ENGINEERING	Approval of the Purchase Order		1	COM003 ING002	COM004
CON001	ACCOUNTING	Review of Supplier Documentation		1	COM003	CON002
CON002	ACCOUNTING	Creation of Suppliers	APPROVED SUPPLIER = H2	1	CON001	ALM001
COM004	PURCHASES	Sending of Purchase Order	PURCHASE ORDER = H3	1	ING003 ALM001	ALM002
ALM001	STORAGE	Coordination of Delivery of elements to Buy		1	CON002	COM004
ALM002	STORAGE	Receipt of Elements and remission	ENTRY TO STORAGE = H4	3	COM004	ALM003
ALM003	STORAGE	Entry to Inventory		2	ALM002	CON003
CONT003	ACCOUNTING	Receipt and accounting legalization of invoices	INVOICE = H5	2	ALM003	END

Fuente: Los autores, 2023.

A maximum time of 21 working days was established for the process, taking into account that new suppliers will be worked with. figure 9 visualizes the order of the activities using the PERT technique [17], providing a visual guide for the team and ensuring that each key document is managed in a timely and accurate manner to maintain the integrity and efficiency of the process as a whole.

Figure 9. Result of the study of purchasing cycle times

ACTIVITY	AREA	TIME
Validation of tool, material, or service needs according to project schedule	Engineering	3 days
Preparation of needs requisition	Engineering	2 days
Receipt of requisition of required elements	Purchases	1 days
Quotation of required elements	Purchases	3 days
Documentation for creation of suppliers	Purchases	1 days
Review of supplier documentation	Accounting	1 days
Creation of suppliers	Accounting	1 days
Coordination of delivery of elements to buy	Storage	1 days
Sending of purchase order	Purchases	1 days
Receipt of elements and remission	Storage	3 days
Entry to inventory	Storage	2 days
Receipt and accounting legalization of invoices	Accounting	2 days

Source: The authors, 2023

Evaluate the flow, the process, and the parties involved, a series of efficiency indicators were implemented in the process [18], which will determine whether the practices carried out by the company are adequate, in addition to giving them a specific score with the aim of taking improvement plans that allow for an evolution of the process.

The indicators will guarantee the company that in a percentage specified in figure 10 the activities will be developed fulfilling all the objectives of the process. It is important to emphasize that these values must be evaluated periodically to update them according to market demands..

Figure 10. Minimum compliance percentages by objective

Indicator	Percentage
Requisitions completed in the appropriate time	90%
Efficiency of response of selected suppliers	60%
Meetings on time for evaluation of the 3 minimum quotes	90%
Delivery of complete and current documentation by the supplier	95%
Purchase orders accepted without return by the third party	98%
Adequate performance of supplier delivery times	90%
Adequate use of the required products	90%

Source: The authors, 2023

As a final result of the process, an impact evaluation of the project was carried out [19], obtaining satisfactory results from the standardization process that contribute to the training of personnel regardless of their area of specialization. In figure 11, the overall rating of the project is observed in the incursion into fundamental aspects for the company.

Figure 11. Weighting of the project impact

Criterion	Variable	Weight	Rating	Result.	Justification
Times	Duration	10%	4	0.4	The reduction of duration is not the main focus of the process, since it is not essential for the company, because first you must be clear about the process to avoid feedback
	Reduction of delays	5%	5	0.25	The fundamental focus is on the reduction of delays, as document returns are avoided at all costs
	Established deadlines	5%	5	0.25	Just like the reduction of delays, the focus is also on meeting established deadlines, this because they are quite wide and can even be optimized
Economy	Benefits	20%	4	0.8	Despite requiring staff, it must be clear that as quality projects are delivered, economic damages will be greatly reduced
Institutional	Reputation	10%	5	0.5	By properly carrying out the processes, it is understood that the reputation will be good, this is positive insofar as the client handles a word of mouth
	Organizational structure	10%	5	0.5	Purchases are the heart of the company, if the flow is constant the total organization will benefit
Documentation	Training	10%	4	0.4	Training is required for all staff and it depends on the company to guide those in charge of this
	Processes	15%	4	0.6	The processes will benefit from standardization, this thanks to the clarity of the procedures and the order of deliveries
Operations	After-sales	15%	3	0.45	After-sales was a factor that was not too studied in the project, however, as long as there is complete documentation, there will be conditions to give guarantees
TOTAL		100%		4.15	

Source: The authors, 2023

IV. DISCUSSION

In comparison with the project of practical guide of technical supervision for the standardization of mandatory procedures in the construction of building structures according to NSR-10. 2016 [20], there are quite a few similarities in the general approach, this because the current project has as a priority continuous improvement, and in the mentioned work the importance of having constant inspections in the execution of the work is highlighted, ensuring the quality of the services and products installed on site, guaranteeing resolution of future conflicts.

In the mentioned work, a manual is proposed to supervise the structures of buildings, which aims to trigger that each of the processes are standardized involving all the personnel, this is similar to what the current project offers, because it requires the participation of all the personnel, in addition to the acquisition of knowledge that is given through the training offered by the area directors.

What cannot be observed is the definition of indicators and project impact, which are aspects that help to substantiate the success of the treatment carried out and document the guarantee and demand that the company has to continue in the improvement process, to constantly restructure the processes and quantitatively evaluate their flows.

To feedback the discussion work, it is suggested to carry out a process mining [21] that admits that there is a constant evaluation of each activity and stage of the purchasing flow, this will allow the system not to become obsolete, but to always be updated in an appropriate way guaranteeing its validity over time.

V. CONCLUSIONS

According to the diagnosis, the company needed to reduce its times and costs associated with the bad practices adapted in the acquisitions area, in addition, it did not have the complete documentation to carry out a successful purchasing process, which generated a risk of suffering external or internal fraud and the high probability of presenting delays in work or absence of necessary materials to continue the project.

To the document management that the company had, six formats were added that must be requested and filled out by the specific areas in charge, in addition to this, the need arises to establish a clear and structured procedure for the four main areas, if these measures are adopted and carried out properly, it guarantees a follow-up to the workflow, thanks to the full knowledge of functions, activities, responsibilities, and deadlines.

For the indicators to be effective, functional, and precise, it is necessary to carry out a process mining that allows establishing an analysis of established records and data, allowing a constant update of all the activities and their specific characteristics such as duration, feasibility, and obtained results.

The process allowed to know specific details of the functioning of the purchasing process, allowing to return integral solutions that end up consolidating in the medium and short term, this ended in a high impact of the executed project in the company, since it adds a global and structured vision that will allow a business growth for the company Constructiones e inversiones L.J..

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