



Faculty of Legal Sciences

International Studies undergraduate program

**PROPOSAL OF A QUALITY MANAGEMENT
MODEL FOR A COURIER COMPANY BASED
ON ISO 9001 STANDARD**

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DEDICATION

This work is dedicated to my parents Michelle and Ricardo, my grandparents Rosa and Victor, and my uncle Diego, who have always supported me and have been my strongest motivation to achieve whatever I set my mind to, follow my dreams, and accomplish my goals over time. Also, my four-legged companion Jonás, they give me the strength I need to keep moving forward.

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I thank God for giving me a second chance in life and for allowing me to move forward despite the health problems I have had to face. I also thank my parents for always supporting me in my decisions, for being present and pending in every step I take, my sister Rafaella for being my constant companion, my grandmother for giving me peace in times of uneasiness, for encouraging me to be a better professional and person, my grandfather who wanted to see me happy and fulfill my goals and my uncle, for being my role model.

I would also like to thank my thesis tutor, Juan Maldonado Matute, and my examining board, Antonio Torres, who have been present and have supported me in the long process of this work with their knowledge.

ABSTRACT:

The purpose of the following work was to present a Quality Management model for a Courier company based on the ISO 9001 standard. Topics such as continuous improvement, description and history of ISO standards, and the benefits of implementing this international standard in companies, were addressed. In addition, the work included a description and analysis of a Courier company, with proposals for improvement and recommendations to increase quality and business management. The methodology used was qualitative, seeking opportunities for improvement in the companies and eliminating deviations from it. One of the key products of this work was presented as an evaluation model based on the ISO 9001 standard, allowing companies to identify deviations effectively. In conclusion, the model applies to any courier company and can be expanded to other sectors, since the standards are not exclusive.

Keywords: quality, continuous improvement, requirements, international standards, quality management system.

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PROPOSAL OF A QUALITY MANAGEMENT MODEL FOR A COURIER COMPANY BASED ON ISO 9001 STANDARD

INTRODUCTION

Continuous improvement is an indispensable pillar in today's business strategy, being especially relevant for companies in the Courier sector. These companies face the need to stand out in a highly competitive market, where efficiency in operational processes and the ability to expand internationally are key to success. In this context, the implementation of ISO standards plays a crucial role by providing a reference framework to standardize both products and services offered globally. The main objective of this work is to offer a current situational analysis of a Courier company located in the city of Cuenca-Ecuador, identifying areas for improvement and proposing an action process for its implementation. The following work will be structured in three clearly defined chapters.

The first chapter analyzes terms that are relevant to the management model, these are divided into continuous improvement, quality management, process management, and description and history of the ISO standard. Taking into account the background and definitions provided as support, a broader understanding of the actions to be addressed in the next chapter is consolidated.

In the second chapter, a situational analysis will be made based on a Courier company employing two analyses, SWOT and CAME, accompanied by a process map detailing the organization's activities, Porter's value chain, a process interaction matrix, and, finally, a summary of the different sections and requirements of the ISO 9001 standard.

In the last chapter, the action processes for improvement will be presented in detail, as well as the continuous improvement cycle also known as PHVA, which Courier companies can implement if necessary. Finally, it closes with recommendations and conclusions.

CHAPTER 1

1. CONTINUOUS IMPROVEMENT AND QUALITY MANAGEMENT

Continuous improvement is a necessary topic that has been developed over the last decades and has become a key factor in the competitiveness of companies. It is also considered important in the implementation of a quality management model since it provides the necessary guidelines to achieve the total quality of the company through concepts and information that can serve as a guide. This chapter will include topics such as continuous improvement, process management, and a description and history of the ISO standard.

1.1. Continuous improvement

The concept of continuous improvement has evolved and adapted according to humanity's needs, creating great importance within society. To have a clearer concept of what continuous improvement includes, Bravo (2008) in his book *Process Management (with Social Responsibility)* mentions that these are small improvements of a system to obtain a quality product or service, this desirable goal can be achieved through various ways. Taking into account the importance of what continuous improvement encompasses, it is key that through these forms it is possible to reach a clearer goal that can create an environment that proposes an integral scheme of how to promote continuous improvement in any type of company. On the other hand, Gadea (2005) determines that continuous improvement is a combination of tasks necessary to be included in the development of management activities.

In the official ISO 9000 international standard document, continuous improvement is referred to as a recurring activity to improve performance, adding that it is a process that requires purposes, business analysis, and conclusions of the audits carried out, among other elements that verify how efficient and dynamic the company is at the moment. Similarly, several methods and tools can help to improve this practice if they are applied in the right way with a specific approach so that companies can reach their established goals.

In its totality, the improvement plan is a process used to progressively achieve total quality and excellence so that the company reaches its greatest success (Proaño et al., 2017).

In terms of activities, it is considered an important activity within a management system because it is oriented to obtain results, create value for customers, and provide answers, by the organization so that there are no misunderstandings. Thanks to these identified activities, it is possible to open an opportunity to show the expectations, have a defined time for each planned activity, and most importantly, achieve this technique by correctly performing the established processes.

Continuous improvement in a company plays an important role in making decisions that can affect or improve the business situation, among its benefits; Gonzalez, et al. (2020) argue that continuous improvement can "raise productivity, efficiency, quality or simply take a general control of any company or specific area, requires a greater effort towards quality, and continuous improvement on the process, product or service offered" (p.3). It is a reality today that quality has great relevance within companies and it is for this main reason that it seeks to take advantage of every available resource to improve the way the company is operating when offering a product or service, the effort involved in continuous improvement creates a solid and unbreakable infrastructure in the business that will help for the present and future decisions of the company.

1.2. Quality management

Quality management is well-known today as a topic of great relevance for companies; whether these are import or export companies because it has demonstrated its efficiency and effectiveness through a series of benefits, such as proper organization of the administration of the companies, organizing the resources they have, help ensure customer satisfaction and eliminate waste if necessary, in the same way, its importance is due to the accelerated changes that occur in the environment constantly, the context of the company that wishes to implement a Quality Management System, including the increased integration of markets. Harrington (2019) in his article "*Benefits of an adequate quality management system in a company*" states that if you put into action the implementation of a good quality management system there are several benefits. For example, enhance the image of the company in which you are working, improve the overall quality of the service offered to the customer, strengthen the work system that is being carried out by generating interest in workers, and create a much more competitive company. These and other contributions provided by a

Quality Management System help companies at both national and international levels, which is what companies are looking for today, an improvement plan helps national companies offer the best quality products and services.

It is crucial to recognize what are the principles of quality management since these provide us with an objective perspective of what it offers, their goals are divided into a customer-focused organization, leadership, staff participation, process approach, management-focused system, continuous improvement, decision-making based on facts and mutually beneficial relationship with suppliers (Garcia, et al. 2003). Each of these objectives must be applied to the issue of quality management, these are the cornerstone of good maintenance and efficiency of the companies, therefore, the reason for each one is to ensure quality at all times. (Rey Sánchez et al., 2022) in opinion of corporate quality management, indicate the following statement:

The technologies of the fourth industrial revolution transformed the vision of business management, supported by the impact of globalization and interconnected networked societies. Introducing these technologies allows redefining how companies and organizations are managed, organized, and financed; as well as how they communicate, serve their customers, and think about themselves. (p. 291)

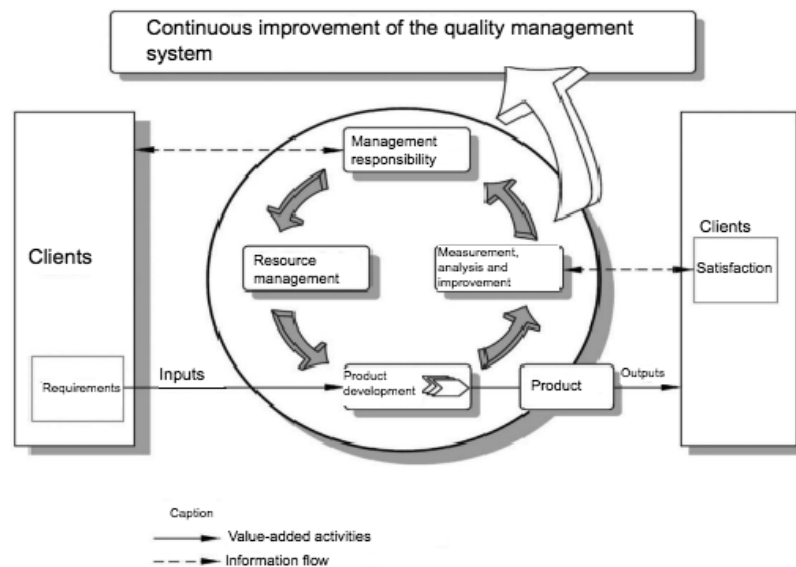
According to the International Standard ISO 9000, *Quality Management Systems-Fundamentals and vocabulary* (2015) includes quality management in its title, it is mentioned that this provides value to both customers and stakeholders, being stakeholders not only customers but also most of the part that contributes to the sustainability of organizations. Likewise, they consider the consequences of their determinations in the short or long term, which helps to have a clearer vision of what is needed to fulfill these standards.

According to Udaondo (1992) in his book "*Quality Management*" there are three characteristics that support and facilitate the good performance of a company, these are time, cost, and quality. Generally, only the first two characteristics are being prioritized by the management. However, in this new approach, what is desired is to promote the quality of the companies and provide them with mechanisms that allow them to spread with a better business environment, knowledge, and higher market demand. Adding to what has been said, it is important to take into consideration that it is currently necessary to apply a modern

administration since it is in improvement processes that allow the approach and accessibility to customers, which provides a much more general and specific point of view of quality management as an easier system.

Figure 1 is a representation of continuous improvement where it shows the evolution towards total quality and the approaches in which it has been given greater importance to have a clearer idea of what is sought through the activities that are intended to perform as a company, including the importance of analyzing customer satisfaction and what are the requirements and activities that are needed to provide value within an organization.

Figure 1
Model of a process-based quality management system



Note: Retrieved from ISO (2015)

Another topic to take into consideration is the history, where it is known which organizations have tried to adapt to this system and thanks to these attempts, these have found much more adaptable instruments over time. The economist and philosopher Adam Smith introduced through his published works the division and specialization of labor, where he recommends that specialists are those who are responsible for different tasks to perform the activities that are necessary for better development (Junta de Castilla y León, 2004).

1.3. Process management

A new branch of quality management shows how important it is to take into consideration process management, which is known because the company was not yet thought of as an integral system of processes where only the organization was the most important thing. As Pérez (2004) mentions in his book *Process Management*, the word process is very old, however, it is a word with a lot of weight and is very much used in the business world. As for the word management, the same author defines this word as direction or command, which is related to planning. In consideration of these descriptions, it is interpreted that the processes of each company are important as well as the structure of these too, if there is no control by the management there may be failures, even mentioning the individual analysis of the progress that companies have been making known over time based on the importance of total quality and open to more national or international areas. Mallar (2010) “The process-based management model is oriented towards developing the organization's mission by satisfying the expectations of its stakeholders - customers, suppliers, shareholders, employees, society - and what the company does to satisfy them” (p. 3).

Continuing with the topic of process management, González et al., (2019) in the article “*Tools for Process Management*” mention the following statement:

Thanks to the development of Information and Communication Technologies, more applications or software are appearing, that support the need for flexible and agile processes. Hence, it is recognized that every organization is consistent with a basic structure, formed by the strategy, processes, and software applications. The latter ensures that the processes have the information they need. Examples of the use of IT to support the management of business processes are Workflow Management Systems, Customer Relationship Management Systems, and Enterprise Resource Planning Systems. (p. 4).

These types of tools that come hand in hand with technological advances can help to simplify some processes; to access services or information that is needed at any time where it is necessary. Likewise, it provides updated information and global access, which makes it easier to connect with any market in the world.

1.4. Description and History of the ISO International Standard

The history and trajectory of the International Organization for Standardization (ISO) began in 1946. Originally, this standard has been operating since February 23, 1947, in Geneva-Switzerland, where 25 countries met in search of a solution to promote the development of international standards in manufacturing or service companies. Its main goal is to provide tools that simplify global transactions of goods, services, and technology, among other elements that help companies grow (Universidad EAFIT, n.d.). According to Burckhardt et al., (2016) "This organization arose from the need to develop standards with a global scope" (p. 9).

As can be seen, this organization was created from the importance and concern on the part of the members who were trying to seek a standard that would regularize processes and to ensure the effectiveness of quality in every sense. As part of its hierarchy, the organization is composed of a total of 180 technical committees covering diverse topics, again quoting Burckhardt et al. (2016):

Since its first publication, it has been under revisions that have resulted in several updates for the standard. The latest revision corresponds to ISO 9001:2015, which has been culminated with the publication of the standard on September 23, 2015. (p. 9)

Similarly, this standard brings together specialists from around the world intending to establish an optimal approach to various interrelated activities. In addition, this long-established organization has facilitated commercial exchange and collaboration with companies by focusing on simplifying, guaranteeing, and improving the quality of life. There are a total of 25290 international standards, 170 members, and 830 technical committees and subcommittees in charge of standard development (Organization for Standardization, n/d).

There are several ISO certifications with different objectives, including 14001 (Environmental Management System), 22000 (Food Safety), 27001 (Information Security Management System), and 9001 (Quality Management System). The structure of the ISO 9000 family is broad and is divided into the following categories according to its latest update. First, there is the International Standard ISO 9000: Quality Management Systems - Fundamentals and Vocabulary, secondly, the International Standard ISO 9001: Quality Management Systems - Requirements, thirdly, the International Standard ISO 9004: Quality

Management Systems - Guidelines for Performance Improvement and, finally, the International Standard ISO 19011: Guidelines for the audit of management systems. Each of these is considered as a guide to complement good quality management because they provide concepts, guidelines, and directives that make this process understandable.

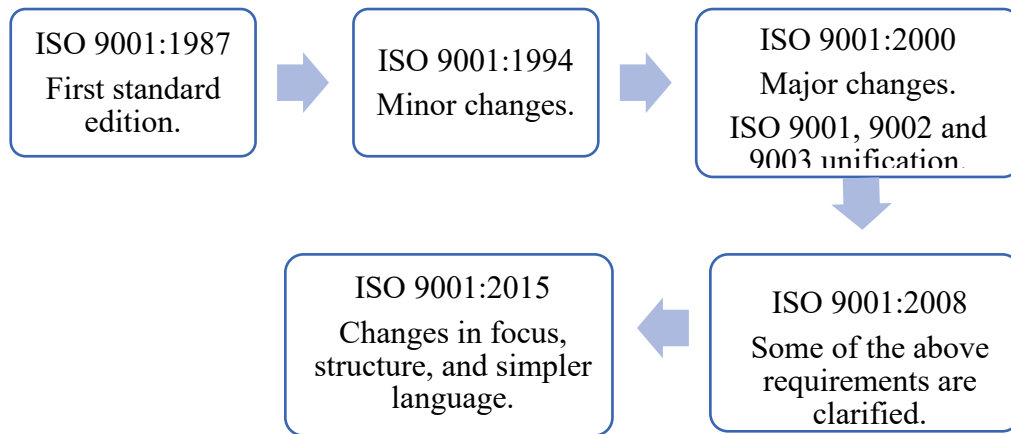
It is relevant to mention that the standards mentioned above have undergone constant changes to improve them and adapt them to the new needs that have been created due to the evolution of technology and human beings. Quoting Grijalvo et al. (2002), "Shortly these complex systems will be the only systems capable of offering products and services to different groups of customers in a way that is appropriate to their needs" (p.10). From earlier times to the present day, there has been a search for quality management that is suitable for companies in an effective manner and International Standards have evolved in a continuous way adapting to the needs.

In this case, the standard that will be applied is ISO 9001, which specifically helps to solve this type of problems related to non-compliance with requirements, increased costs, decreased productivity, and loss of competitiveness, among other aspects related to the organization of the company because it suggests a comprehensive scheme of how to promote continuous improvement in any type of company.

As Burckhardt et al. (2016) point out, the International Organization for Standardization took place long before the need to adopt a global tariff arose, and that is where the problem and concern arose creating research to reach the ISO 9001 standard. The trajectory of the ISO 9001 standard is divided into five different editions since 1987 when the first edition was created. For more clarity, it can be evidenced through figure 2.

Figure 2

Evolution of the ISO 9001 Standard



Note: Adapted from Strategy and Development of an ISO 9001:2015 Implementation Guide.

Currently, there is a much more comprehensive version, with a simpler structure and language that helps to understand more easily the way ISO 9001 works, its publication was completed on September 23, 2015. Medici (2020) in his article, concluded that:

The ISO 9001:2015 standard proposes a model that seeks to achieve greater impact and results for customers and other stakeholders. The context of the organization becomes relevant for the design and implementation of the quality management system (p. 12).

It should be emphasized that in the last modifications, this ISO is more compatible with the service than the production. Therefore, its application is essential in this situation. In the same line, the aim is to analyze what the needs are and, through this, to identify the weaknesses and difficulties faced by the company until they prevent it from achieving its objectives. Likewise, customer satisfaction is sought and, in turn, to meet their present and future expectations, which can be identified through this management system if it is implemented. That is why we have selected an international standard that can be applied to any courier company, such as ISO 9001, which is specifically based on continuous improvement to solve the problems that companies go through and offers several benefits to obtain adequate management of the business. There are two authors, Agudelo and Escobar

(2007) who emphasize that the conditions today are stronger than the previous ones, and to survive in the long term, companies must adapt to these new circumstances that are presented daily that is why there is a great need to manage companies with quality. An interesting point is that not only the conditions of supply and demand have changed, but also the concept of quality in companies, both in services and products.

Currently, there are articles where the help of these implementations is evidenced, as stated by Zamora (2023) in his work "*Process management model in the commercial area of the automotive business company Neohyundai Inc.*". Currently, organizations have the priority to focus on management models such as process management which are based on horizontal structures, which improve the speed of obtaining information as well as better business management. Similarly, it states that implementing this management system within a company will not eliminate the structure of how it has remained the same, on the contrary, what this system seeks in itself is that it is aimed at a result that generates several benefits.

In previous studies that have been based on a continuous quality and productivity management model, it can be identified that they were carried out to add value for a third party through this transformation and they see it as a new way of organization and business administration that adapts to various quality assurance systems to make the company more competitive. Likewise, this process allows to have a more extensive vision because it is more adapted to customers or consumers who are in search of quality services (Cedillo, 2013).

CHAPTER 2

2. SITUATIONAL ANALYSIS

This chapter will address issues that support and facilitate the understanding of how a courier company in the city of Cuenca-Ecuador works. It will begin with a brief contextualization of the subject, and then deepen into the following aspects based on the company: SWOT, Process Map, Process Interaction Matrix, and Porter's Value Chain. It is expected that this chapter will contribute to a broader interpretation of the business panorama.

2.1. Business model

Since the analysis will be based on a courier company, it is essential to take into consideration the meaning of the term "courier". Pino et al., (2009) define courier as:

A company dedicated to the import and export of merchandise such as packages and documents around the world, courier companies offer additional services such as customs clearance of goods, product packaging, shipment insurance, and computer assistants that allow the customer to track and control the transportation of the merchandise. (p. 2).

The concept of the term courier is evolving significantly over time, every time there are new ways to interpret the meaning of what a courier implies because it has been driven by technological innovations, new requirements, or demands from the markets.

2.2. Stakeholders

The translated International Standard ISO (2015) document defines stakeholders as individuals or entities that may be impacted, influenced, or perceived as such due to a decision or action. In the following table, the stakeholders in a Courier company will be described.

Table 1
Division of existing stakeholders in a Courier company.

Stakeholders	Brief description of stakeholders and the type of relation
Clients	people or organizations that use the services to send or receive packages.
Users-Agents	Individuals who, using a commercial license, can serve customers by using the software to produce shipping labels.
Workers	Includes office, operational, customer service, and any other employee who contributes to daily operations.
Shareholders/Partners	Those who have a financial investment in the company.
Retailers	Provide the necessary inputs such as vehicles, fuel, office supplies, and software.
Financiers	Financial institutions or lenders that provide capital or funding for corporate operations and growth.
State control agencies	They supervise and control the fulfillment of the laws and regulations applicable to the company.
Logistic operators	Regulated by the Superintendence of companies, they offer the transport or shipment of packages

2.3 SWOT analysis

Regarding the definition of SWOT analysis, Ponce (2007) states that "These acronyms come from the acronym SWOT (strengths, weaknesses, opportunities, threats)" (p. 3). The essence of this tool lies in its evaluation capacity that allows one to analyze the current state of the company, to understand its performance, and to examine in depth the factors mentioned above in comparison with other companies. From these, a clearer understanding of the overall capabilities of the organization can be obtained.

It is important to note that some factors have more influence than others, therefore, a balance between all of them is not always achieved. Once you have a clearer idea of the analysis performed, you can take advantage of the strengths, mitigate the weaknesses, and protect yourself from threats, all of which are crucial functions within a planning process (García & Cano, n/d).

Considering the above, a SWOT analysis was carried out as a support tool to analyze the organizational situation, taking into account the social, cultural, and environmental context, the economic situation, and the internal and technological resources existing in the courier under analysis.

2.3.1. Strengths:

- Broad geographic coverage.
- Agile customer service.
- Wide range of services.
- Recurring costumers.

2.3.2. Opportunities:

- High migration due to current socio-economic problems.
- Growing demand for courier services nationwide.
- Growing demand for e-commerce purchases.
- Free trade agreements become attractive, working with other locations.
- Technological and software innovation.

2.3.3. Weaknesses

- Dependency on transportation infrastructure.
- High operating costs.
- Insufficient human resources.
- Lack of employee training and development.
- Problems with warehousing, inventory management, and parcel management.

2.3.4. Threats

- Government regulations: Businesses may be adversely affected by government regulations, such as import/export restrictions or import taxes.
- Economic uncertainty, such as a recession, can reduce demand for services and decrease revenues.

- National socioeconomic context generates uncertainty in the population resulting in lower sales. It also generates doubts at the time of investing in infrastructure or continuous improvement on the part of shareholders.
- Changes in fuel costs.
- Technological dependence.
- Changes in consumption behavior.

Within this analysis, strengths and weaknesses correspond to internal factors, while opportunities and threats correspond to external factors.

2.4. CAME analysis

After considering the SWOT analysis previously performed, the CAME analysis will be applied, which focuses on correcting the company's weaknesses, facing the various threats identified, maintaining the strengths, and, lastly, exploring the opportunities. Within this analysis, several strategies can be defined that contribute to achieving sustainable growth and a solid competitive position in the market (Torres, 2019).

2.4.1. Correcting weaknesses:

- What can be improved concerning weaknesses focuses mainly on increasing the training and information provided to employees. This will enable them to become more knowledgeable about procedures and responsibilities within the company, especially in the courier sector, which is constantly evolving and adapting to new technologies. Also, to improve the organization and management of storage and inventory, which will require a more systematic approach to careful attention to the internal processes they carry out as a company.

2.4.2. Addressing the threats:

- Since external threats are unavoidable and beyond the company's direct control, it is difficult to predict with certainty how they will affect its future operations. However, the company must face certain risks, such as changes in consumer behavior, political or social instability in the country, and occasional fluctuations in operating costs.

These factors can vary, both for better and for worse, creating constant uncertainty in the business environment.

2.4.3. Maintain strengths:

- Maintaining speed in the service offered is significant since this feature ensures that customers continue to use the wide variety of services provided by the Courier company. In addition, having extensive geographical coverage facilitates the connection between families separated by distance who are abroad, thus eliminating geographical barriers that could hinder their communication and closeness.

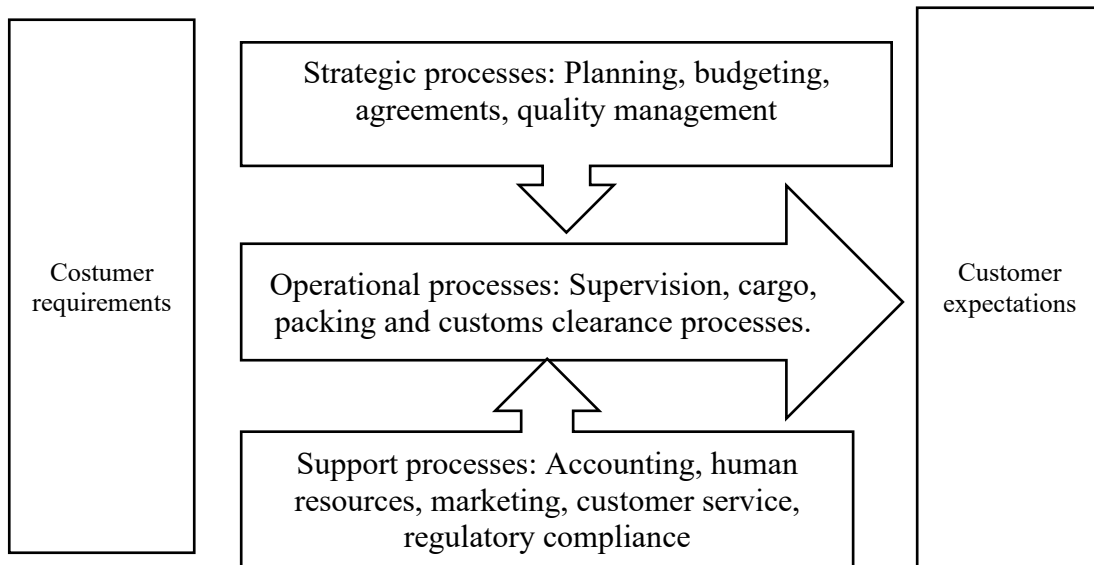
2.4.4. Explore opportunities:

- Take advantage of the high migration that is occurring in the country and the demand from customers who want to send packages from Ecuador to the United States or from the United States to Ecuador; even buy through websites products that are not easily found locally or sell them at a higher price. Through these opportunities, create a platform that facilitates each of the services offered by the Courier anywhere available to customers.
- Promote the services through social media advertising or marketing plans.

2.5. Process map

Within the situational analysis of the company, the elaboration of a process map is considerable to accurately identify the activities carried out by this organization. This approach is specifically used to understand the sequence of operations and their contribution to the value added by the company, as well as to detect areas for improvement. Through this tool, processes are categorized into strategic, operational, and support processes. The ultimate goal of a process map is to simplify the supervision of the fundamental elements that require continuous improvement and to identify their main activities (Pico, 2006).

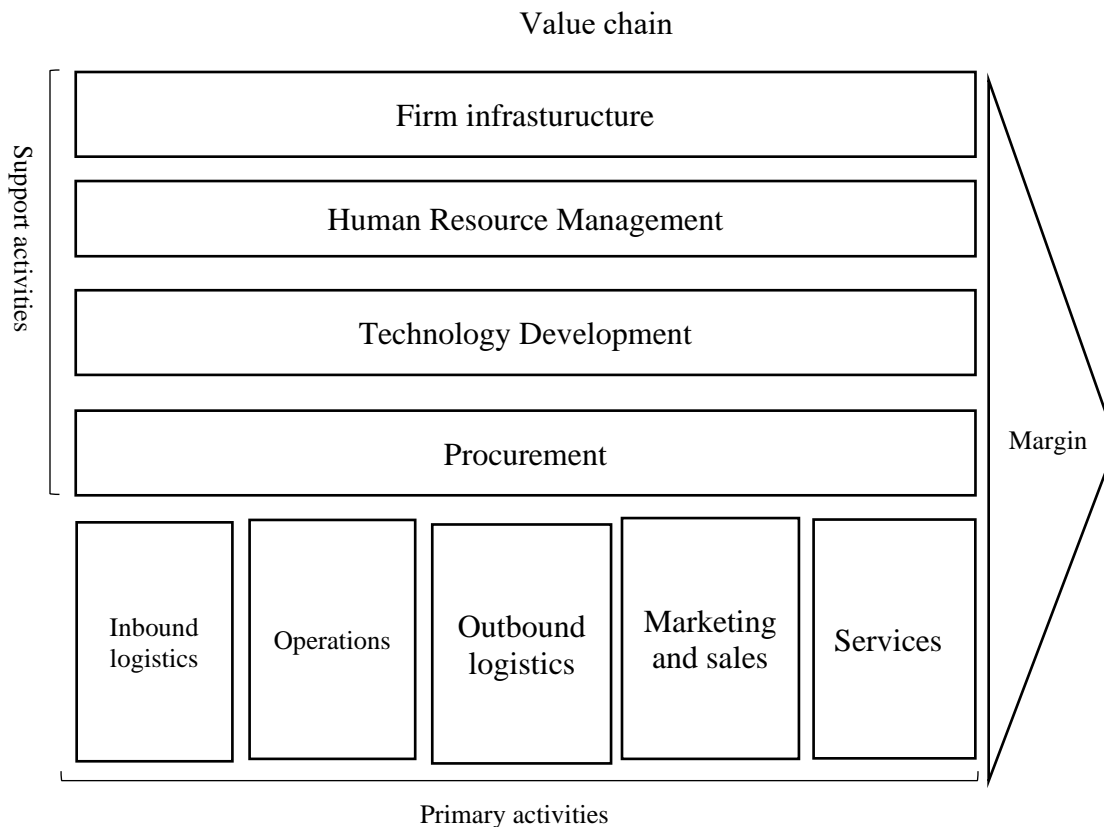
Figure 3
Process map based on a courier company



2.6. Porter´s value chain

Riquelme (2020) describes the value chain as "a theoretical model that graphs and describes the activities of an organization to generate value for the end customer and the company itself" (p. 1), given that there are various types of value chains, in this context, Porter's value chain is used, which details the activities that a company carries out to support its services. These activities are subdivided into support activities and primary activities. The same author indicates that the set of support activities includes the company's infrastructure, human resource management, technological development, and provisioning. On the other hand, primary activities include internal logistics, operations, external logistics, marketing, and services.

Figure 4
Porter's value chain based on a Courier company



Support activities include the company's infrastructure, which is defined according to its constitution. The company has undergone a remarkable evolution and currently offers a wider range of services both in Ecuador and the United States, in addition to having expanded the coverage of such services. It currently has a presence in more than 15 provinces nationwide, with its own offices in the main cities, as well as partnerships with authorized agents and companies related to the postal sector. Secondly, there is human resources management, which is fundamental for the development and efficient operation of the organization; here the company establishes job competency requirements, evaluates the level of risk exposure, determines the professional requirements of the job, establishes measures for existing personnel, creates a personnel selection and hiring process, communicates functions and responsibilities, detects training needs, among other key activities that are part of this process. In terms of technological development, the company has computers for staff,

its software package that performs reports, analysis, information records, package tracking, and process automation, which makes it more agile and secure, and even applications for both customers and the office that allow quick and direct communication, such as Mail Chimp, WhatsApp, Slack, Datasur, etc. In terms of procurement, the organization is divided into the following key activities: contact with the customer, request for quotation, review of requirements, preparation and sending of the quotation, changes and modifications to the quotation, and finally, firm order.

Within the primary activities, the company's internal-external logistics are divided into cargo collection, cargo weighing and classification, cargo preparation for export, export documentation, ground transportation to Guayaquil airport, shipment, and final export. This section is related to the operations and services offered by the company. In terms of marketing, the company has already defined its audience through the following stages: market research, market segmentation, target market selection, and positioning. The right way to manage and reach other people is through advertising or other ways to promote the company.

2.7. Process interaction matrix

A Process Interaction Matrix is a tool that serves to detail which are the most relevant connections that integrally link the processes. The connection of these processes enables the creation of a reasonable cycle for a good implementation of the Quality Management System in the provision of services (UNACH, 2024).

Table 2

Process interaction matrix based on a Courier company.

	Planning	Budget elaboration	Agreements	Quality management	Monitoring processes	Cargo	Packaging	Customs clearance	Accounting	Human resources	Marketing	Customer service	Regulatory compliance
Planning													
Budget elaboration	Prediction of company expenses and revenues, allocation of resources.												
Agreements				Improve customer experiences and economic openness									
Quality management												Customer service is key to good quality management	

Monitoring processes					
Cargo			Supervise that the packaging is correct to take it to its destination.	Check that the unloading processes in the destination country are in order.	
Packaging					
Customs clearance					
Accounting	Through the company's accounting, income and expenses are recorded.				
Human resources					
Marketing					Knowledge of the services offered and their prices.
Customer service		Satisfy customer needs through continuous improvement			
Regulatory compliance					

2.8. Summary of ISO 9001 requirements

The following tables detail the requirements of ISO 9001, 2015 version.

Table three evaluates the requirements related to section four of ISO 9001, Context of the organization.

Table 3

ISO 9001:2015 requirements section 4, Organizational Context.

Requirement: 4.1 The organization should identify the external and internal issues that are relevant to its purpose and strategic direction and that affect its ability to achieve the intended results of its quality management system.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 4.2 The organization shall monitor and review information on these stakeholders and their relevant requirements, taking into account a and b above.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 4.3 The organization shall determine the boundaries and applicability of the quality management system to establish its scope, taking into account a, b, and c.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 4.4.1 The organization shall establish, implement, maintain, and continually improve a quality management system, including the necessary processes and their interactions, following the requirements of this International Standard. Take into account a, b, c, d, e, f, g and h.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 4.4.2 To the extent necessary, the organization shall: a) maintain documented information to support the operation of its processes; b) maintain documented information to provide confidence that processes are being performed as planned.		
Complies/Does not comply/Partially complies	Evidence	Observations

The following table number four explains what the requirements of ISO 9001 section 5, Leadership and Commitment, are.

Table 4
ISO 9001:2015 requirements section 5, Leadership.

Requirement: 5.1.1 Top management shall demonstrate leadership and commitment concerning the quality management system taking into account a, b, c, d, e, f, g, h, i, and j.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 5.1.2 Top management should demonstrate leadership and commitment to customer focus by ensuring that a, b and c are met.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 5.2.1 Top management shall establish, implement, and maintain an appropriate quality policy, provide quality objectives, and include a commitment to meeting requirements and continual improvement of the quality management system.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 5.2.2 The quality policy must: be available and applied within the organization.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 5.3 Top management shall ensure that responsibilities and authorities for the relevant roles are assigned, communicated, and understood throughout the organization, taking into account a, b, c, d, and e.		
Complies/Does not comply/Partially complies	Evidence	Observations

Table 5 evaluates the requirements of section 6 of ISO 9001, planning.

Table 5
Requirements of the ISO 9001:2015 Standard section 6, Planning.

Requirement: 6.1.1 In planning the quality management system, the organization shall consider the issues referred to in 4.1 and the requirements referred to in 4.2, and determine the risks and opportunities that need to be addressed for a, b, c, and d.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 6.1.2 The organization should plan actions to address these risks and opportunities to evaluate the effectiveness of these actions.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 6.2.1 The organization shall establish quality objectives for the relevant functions, and levels and processes required for the quality management system. The quality objectives shall be focused on a, b, c, d, e, f, and g.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 6.3 When the organization determines the need for changes to the quality management system, these changes shall be carried out in a planned manner. Consider a, b, c, and d.		
Complies/Does not comply/Partially complies	Evidence	Observations

In table 6, items in section seven, support, are evaluated.

Table 6
ISO 9001:2015 requirements section 7, Support.

Requirement: 7.1.1 The organization shall determine and provide the necessary resources for the establishment, implementation, maintenance, and continual improvement of the quality management system. Consider a and b.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.2 The organization shall determine and provide the people necessary for the effective implementation of its quality management system and for the operation and control of its processes.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.3 The organization must determine, provide, and maintain the infrastructure necessary for the operation of its processes and achieve conformity of products and services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.4 The organization shall determine, provide, and maintain the environment necessary for the operation of its processes and to achieve conformity of products and services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.5.1 La organización debe determinar y proporcionar los recursos necesarios para asegurarse de la validez y fiabilidad de los resultados cuando se realice el seguimiento o la medición para verificar la conformidad de los productos y servicios con los requisitos.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.5.2 The organization shall determine and provide the necessary resources to ensure the validity and reliability of results when monitoring or measuring to verify the conformity of products and services to requirements.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.1.6 The organization must determine the knowledge necessary for the operation of its processes and to achieve conformity of products and services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.2 The organization must determine the necessary competence, ensure that people are competent, evaluate actions and their effectiveness, and retain information.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.3 The organization shall ensure that persons performing work under the organization's control are made aware of the above four literals.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.4 The organization shall determine the internal and external communications relevant to the quality management system, including what, when, to whom, how, and by whom it communicates.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.5.1 The organization's quality management system shall include the documented information required by this International Standard and documented information that the organization determines to be necessary for the effectiveness of the quality management system.		

Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.5.2 When creating and updating documented information, the organization should ensure that the following are appropriate: identification, description, format, and revision.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.5.3.1 Documented information required by the quality management system and by this International Standard must be controlled to ensure that it is protected and available.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 7.5.3.2 For the control of documented information, the organization should address the following activities, as appropriate: distribution, storage, change control and retention.		
Complies/Does not comply/Partially complies	Evidence	Observations

The following table number seven establishes which are the requirements of the ISO 9001 standard, section number eight, operation.

Table 7
ISO 9001:2015 requirements section 8, Operation.

Requirement: 8.1 The organization shall plan, implement, and control the processes necessary to meet the requirements for the provision of products and services, and to implement the actions determined by the aforementioned paragraphs.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.2.1 Communication with customers should include respective information about services, dealing with queries, obtaining customer feedback, and establishing specific requirements.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.2.2 When determining the requirements for the products and services to be offered to customers, the organization must ensure that they include any legal requirements and comply with statements about the products and services it offers.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.2.3.1 The organization shall ensure that it can meet the requirements for the products and services to be offered to customers. The organization should conduct a review before committing to supply products and services to a customer.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.2.3.2 The organization shall keep documented information on the results of the review and any new requirements for products and services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.2.4 The organization shall ensure that, when requirements for products and services change, the relevant documented information is modified, and that the relevant persons are made aware of the modified requirements.		
Complies/Does not comply/Partially complies	Evidence	Observations

Requirement: 8.3.1 The organization shall establish, implement, and maintain a design and development process that is adequate to ensure the subsequent provision of products and services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.3.2 The organization should consider: the nature of the activities, the stages of the process, responsibilities, needs, requirements, levels of control, and the necessary documented information.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.3.3 The organization should determine the essential requirements for the specific types of products and services to be designed and developed, considering the five literals.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:8.3.4 The organization should apply controls to the design and development process to ensure that: results are defined, reviews, verification, and validation activities are performed, and necessary information is retained.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.3.5 The organization shall ensure that the design and development outputs meet requirements, are appropriate and specify the characteristics of the products or services.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.3.6 The organization shall identify, review, and control changes made during the design and development of products and services, or subsequently to the extent necessary to ensure that there is no adverse impact on conformity to requirements.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:8.4.1 The organization shall ensure that the processes, products, and services supplied externally conform to the requirements and shall determine the controls to be applied to the processes, products, and services supplied externally, taking into account a, b, and c.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.4.2 The organization shall ensure that externally supplied processes, products, and services do not adversely affect the organization's ability to consistently deliver compliant products and services to its customers.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:8.4.3 The organization must ensure the adequacy of the requirements before communicating them to the external supplier, taking into account the points mentioned in the requirement.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:8.5.1 The organization must implement the production and provision of the service under controlled conditions.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 8.5.2 The organization shall use appropriate means to identify outputs, where necessary, to ensure conformity of products and services and to identify and control the status of outputs.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:8.5.3 The organization shall take care of property belonging to customers or external suppliers while it is under the organization's control or being used by the organization. Likewise, it shall identify, verify, protect,		

and safeguard the property of customers or external suppliers supplied for use or incorporation into products and services.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.5.4 The organization shall preserve outputs during production and service delivery to the extent necessary to ensure conformity to requirements.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.5.5 The organization must meet the requirements for post-delivery activities associated with products and services.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.5.6 The organization shall review, control, and maintain changes to production or service delivery to the extent necessary to ensure continued conformity to requirements.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.6 The organization shall implement planned arrangements, at appropriate stages, to verify that product and service requirements are met.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.7.1 The organization shall ensure that outputs that do not conform to its requirements are identified and controlled to prevent their unintended use or delivery.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 8.7.2 The organization shall maintain documented information that describes the nonconformity, the actions taken, the concessions obtained, and identifies the authority deciding the action concerning the nonconformity.

Complies/Does not comply/Partially complies	Evidence	Observations
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Through the following table number eight, the requirements of the ISO 9001 Standard section number nine, performance evaluation, are evaluated.

Table 8
ISO 9001:2015 requirements section 9, Performance assessment.

Requirement: 9.1.1 The organization shall determine the four postulates, evaluate the performance and effectiveness of the quality management system, and keep appropriate documented information as evidence of the results.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 9.1.2 The organization should track customers' perceptions of the extent to which their needs and expectations are being met. It should determine the methods for obtaining, tracking, and reviewing this information.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 9.1.3 The organization should analyze and evaluate appropriate data and information arising from monitoring and measurement.

Complies/Does not comply/Partially complies	Evidence	Observations
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Requirement: 9.2.1 The organization shall carry out internal audits at planned intervals to provide information on whether the quality management system complies with the above-mentioned paragraphs.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 9.2.2 The organization shall take into consideration the importance of the processes involved, the changes affecting the organization, and the results of previous audits as shown in the standard's paragraphs.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement:9.3.1 Top management shall review the organization's quality management system at planned intervals to ensure its continuing suitability, adequacy, effectiveness, and alignment with the organization's strategic direction.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 9.3.2 The management review should be planned and carried out including considerations taking into account the considerations of the paragraphs of the standard.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 9.3.3 The organization shall retain documented information as evidence of the results of management reviews.		
Complies/Does not comply/Partially complies	Evidence	Observations

Table nine, the last table of requirements, evaluates the aspects of section ten, improvement.

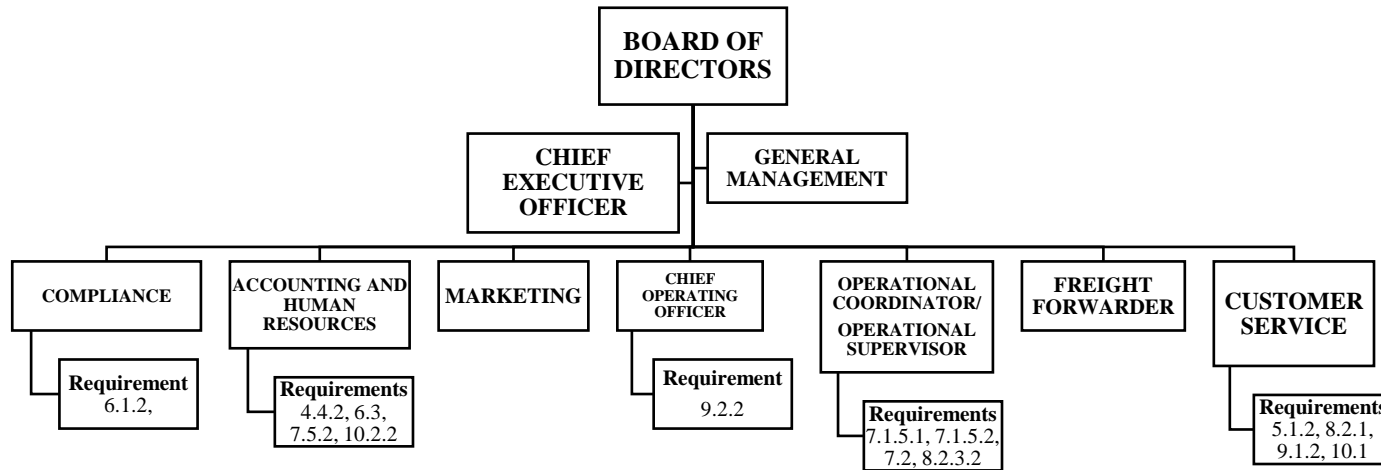
Table 9
ISO 9001:2015 requirements section 10, Improvement.

Requirement: 10.1 The organization shall identify and select opportunities for improvement and implement any necessary actions to meet customer requirements and increase customer satisfaction.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 10.2.1 When a nonconformity occurs, including any arising from complaints, the organization shall take into account the points mentioned in the standard.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 10.2.2 The organization shall keep documented information taken as evidence. Literals a and b.		
Complies/Does not comply/Partially complies	Evidence	Observations
Requirement: 10.3 The organization shall continually improve the suitability, adequacy, and effectiveness of the quality management system.		
Complies/Does not comply/Partially complies	Evidence	Observations

In Figure 5, a flow chart illustrates the general organization of a Courier company, describing its structure along with the areas in which the requirements of the various sections of ISO 9001:2015 should be applied.

Figure 5

Flowchart of a courier company



A courier company is generally divided into the following areas: board of directors, chief executive officer, general management, compliance, accounting and human resources, accounting and human resources, marketing, chief operating officer, operational coordinator/operational supervisor, freight forwarder and customer service.

In the first area, compliance, requirement 6.1.2 of ISO 9001 version 2015 must be taken into account. This requirement states that the organization must plan actions to address risks and evaluate the effectiveness of these actions. Therefore, the compliance area is responsible for ensuring that these improvement actions are met. In the second area, accounting and human resources, requirements 4.4.2, 6.3, 7.5.2 and 10.2.2 of the same standard must be met. Requirement 4.4.2 states that the organization must maintain documented information to support the operation of its processes and retain such information to ensure that processes are performed as planned. Requirement 6.3 states that any changes to quality management shall be carried out in a planned manner. Requirement 7.5.2 states that, when updating documented information, the organization shall ensure that it is appropriate. Finally, requirement 10.2.2 states that the organization shall retain documented information as evidence. Through these requirements, the accounting and human resources area must specifically take care of the organization's documentation and manage it in the best way to ensure compliance with the established requirements.

On the other hand, the head of operations should be responsible for requirement 9.2.2, which states that the organization should take into consideration the importance of processes or changes affecting the organization and the results of previous audits. The head of operations generally monitors these actions on a daily basis and identifies areas for improvement within the company. In contrast, operational coordinator and operational supervisor are attributed to requirements 7.1.5.1, 7.1.5.2, 7.2 and 8.2.3.2. The first requirement states that the organization shall determine and provide the necessary resources to ensure the reliability of results to verify conformity of products and services to requirements. The second requirement states that the organization shall determine the validity of previous measurement results. The third requirement determines the necessary competence, ensure that people are competent and evaluate actions, and finally, the last requirement states that the organization must document information, results and any new requirements for upcoming products or services. A supervisor and operational coordinator is in charge of supervising, as the name says, the personnel, the results of the organization, the services, among others that help the company to be viable.

In customer service area, requirements 5.1.2, 8.2.1, 9.1.2 and 10.1 of ISO 9001 must be met. The first requirement states that a customer-focused commitment must be demonstrated. The second requirement states that communication with customers must include clear information about the products and services offered, in addition to complying with statements about what is promised. The third requirement states that customer perceptions must be monitored to assess the extent to which their needs and expectations are being met. The last requirement states that the organization must identify and select opportunities for improvement, meet customer requirements and increase customer satisfaction. Customer service is fundamental within an organization, as it is responsible for meeting customer expectations, ensuring customer satisfaction and maintaining the quality of the service offered. Therefore, the listed requirements are essential to ensure a positive customer experience. Implementing these requirements not only improves the relationship with customers, but also contributes to the success and sustainability of Courier companies.

CHAPTER 3

3. IMPROVEMENT ACTION PROCESS

The following chapter will address the fundamental concept of the continuous improvement cycle, also known as PDCA. It will explore in detail how this cyclical process can benefit companies in the Courier sector, offering an implementation guide. In addition, a methodology will be presented that will serve as support to propose improvement actions that these companies can apply, accompanied by a guide for their execution. This comprehensive analysis aims to provide a clear and practical vision of how to carry out significant improvements in the operations and services of a courier company, to optimize its performance and meet the changing needs of the market.

3.1. PDCA continuous improvement cycle and its application (14)

The continuous improvement cycle, also known as PDCA (Plan, Do, Check, Act), within a quality management system, is in constant motion and full force. It applies to all processes and emerges as an invaluable tool for organizations seeking excellence in quality management. This approach is closely linked to the planning, execution, monitoring, and constant improvement of the products and processes associated with the system to be implemented (García et al., 2003). It is worth noting that these fundamentals have remained unchanged over time, highlighting its continued importance in different areas through current challenges and practical examples; it has evolved to adapt to contemporary business environments providing a solid methodological framework to achieve excellence in both processes and results (Alvarez et al., 2023).

In the same way, it is stated that the PDCA cycle can be described by its acronym as follows: The first acronym refers to the planning stage, where the objectives of both the system and its processes are defined, as well as allocating the resources required to produce and deliver results that meet customer requirements and company policies. The next acronym refers to the doing stage, where what is planned must be into operation. On the other hand, the third acronym refers to the verification stage, where the measurement of processes,

products, and services must be supervised, and the results obtained must be communicated. The last acronym refers to the act, where measures must be implemented to increase performance if required (Salazar et al., 2020).

Within the framework of ISO 9001:2015, the PDCA cycle finds application within its structure employing the following table:

Table 10
Structure of the standard and application of PDCA

PDCA Cycle	Structure of the ISO 9001 Standard
Plan	Planification
Do	Support
Check	Operation
Act	Improvement

Note: Adapted from Diagnosis of the application of the PHVA cycle according to ISO 9001:2015 by Salazar et al., 2020. Digital Publisher. (<https://doi.org/10.33386/593dp.2020.6-1.440>).

3.2. Improvement actions in ISO 9001

Improvement actions in the ISO 9001 standard are elementary for the correct functioning of the system and, in turn, to guarantee its constant improvement. It is important to understand the nature of this process and what it entails, bearing in mind that it is implemented on specific issues and for reasons determined by the standard. Given its importance, it is relevant to examine how to properly carry out and document these actions (European School, 2020). Having already a clearer analysis of the company employing the tools used in the previous chapter, improvement actions can be proposed to solve the company's shortcomings and problems.

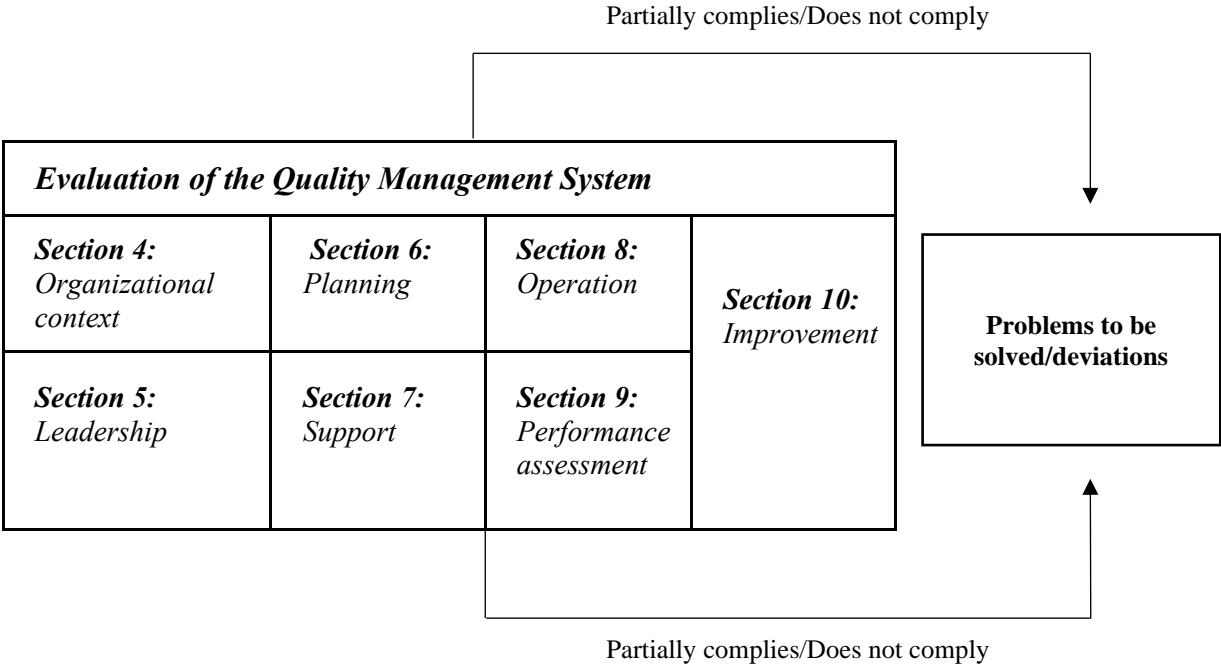
As part of the background, the Quality Management System is used to eliminate deficiencies, as well as for the implementation of necessary corrective measures. Similarly, within this system, the following terms are used: Nonconformity, Requirement, Corrective Action, Correction, Preventive Action, and Corrective Action Plan, among other terms found in the section of Quality Management Systems-Fundamentals and vocabulary belonging to the ISO 9000:2015 standard (Aneiros, 2020).

The authors Alvarez et al., (2023) make it known that "for the plans to give the best results, all members of the company must work together and keep them constantly motivated to avoid the inertia of old practices" (p. 11), contributing to establish within the company a solid working environment which guarantees that the improvement actions generate the desired results consistently and sustainably.

3.3. Improvement cycle proposal

According to the improvement actions that need to be implemented in case you want to apply the ISO 9001 version 2015 standard, the following improvement cycle proposal should be taken into consideration so that no deviations occur that are found through the evaluation of the model indicated above of each section; or that are in non-conformity with either the standard or the management system.

Figure 6
Evaluation of the Quality Management System based on the sections of ISO 9001:2015.

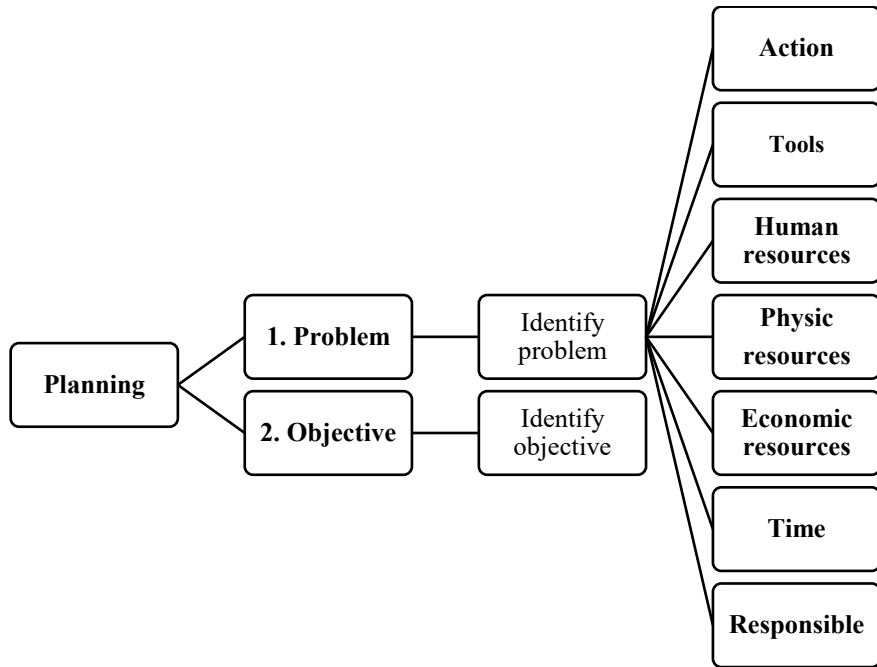


Based on Figure 5, where the problems to be solved are identified, the following improvement action is proposed, which consists of four stages divided into planning, doing,

checking, and acting. In the first stage, a problem is identified and the deviations are evaluated in comparison with the previously identified points.

Figure 7

Planning stage



Based on Figure 6, in the planning stage, a problem arises from the lack of documentation and defined processes within the organization. As an objective, the need to complete the documentation processes for the relevant areas is established. Based on these elements, other actions are triggered, such as a diagnosis of the company's current situation. Tools comprising a set of techniques or instruments will be used, and the implementation of an Electronic Document Management System (EDMS) has been defined. In addition, human resources are included, represented by people specialized in the subject, such as an analyst designated for the task. On the other hand, physical resources refer to the necessary equipment or materials, such as folders, computers, files and printers. Economic resources refer to the budget allocated to the problem, in this case, one thousand dollars. Regarding time, a twelve-month execution period is established. Finally, the responsibility falls on designated persons to ensure compliance with the activities, such as the community manager and the general manager of the company.

In the action stage, the actions proposed above must be taken into account as well as determining how it should be done, how it should be carried out and the purpose of this action within the organization.

Figure 8
Do stage

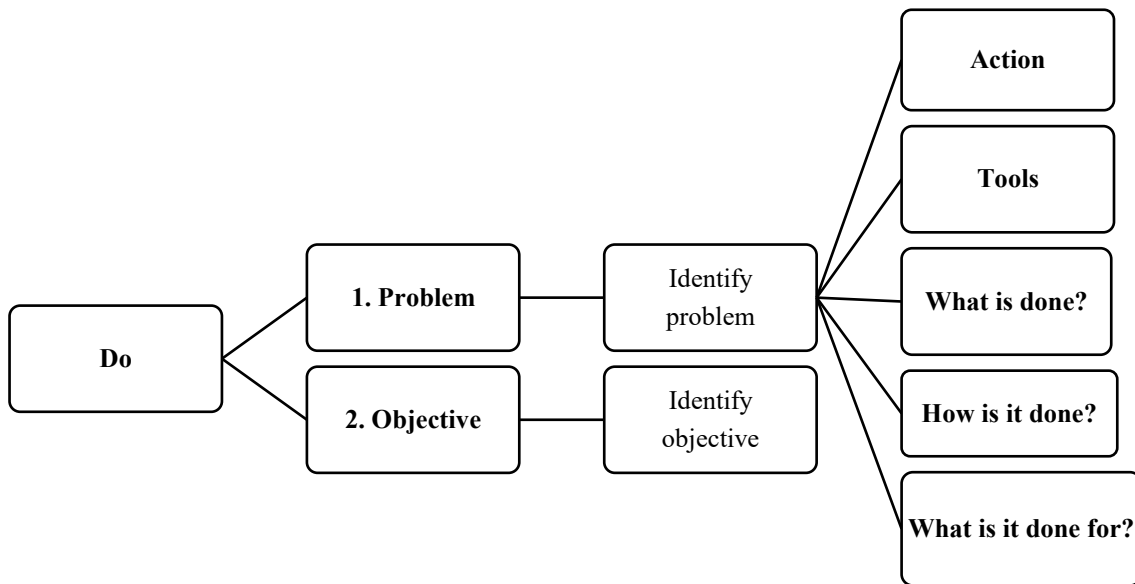
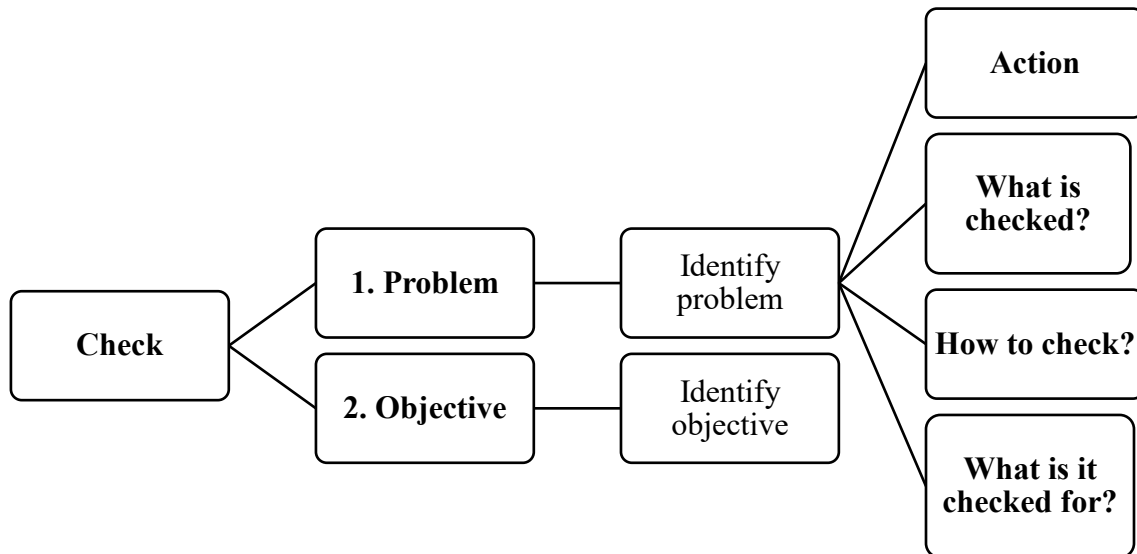


Figure 7 shows a similar approach with the identification of a problem, objective, action and tools, which were previously addressed in Figure 6. This stage corresponds to the doing phase, where the questions: "What is done? In response to the first question, an appropriate procedure was established to complete the missing documentation and define processes in various areas of the company. The second question was addressed through the use of specific resources and a thorough analysis of the company. Finally, the last question was answered with the objective of having access to the necessary information and improving quality, among other benefits.

The verification stage demonstrates the impact and benefit that this improvement action plan has had. Once it is verified that these actions are working, they should be applied permanently within the companies that wish to do so.

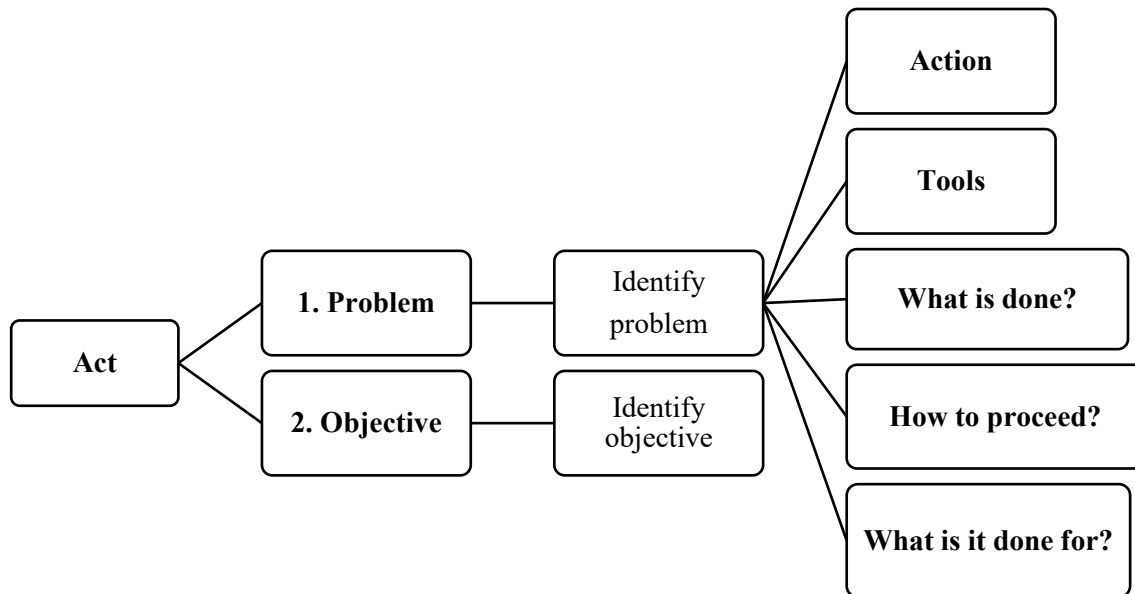
Figure 9
Check stage



This stage corresponds to the check phase, where the questions "What is checked?", "How to check?" and "What is it checked for?" are answered. With regard to the first question, it was checked that the company has the documentation in order and that the processes to be carried out are well defined. Regarding the second question, a verification was carried out through audits every three weeks. Regarding the last question, it is checked for the purpose of keeping in order the important documents that might be needed in the future, allowing the company to have clarity about its situation and anticipate possible problems.

Finally, in the action stage, the actions proposed above must be taken into account, as well as determining how it should be done, how it should be carried out and the purpose of this action within the organization.

Figure 10
Action stage



In the last stage which is action, a similar approach is presented with the identification of a problem, objective, action and tools, which were previously addressed in Figure 6. However, the difference in this stage is that it answers questions such as "What is done?", "How to proceed?" and "What is it done for?" In addressing these questions, first, the situation of the company was reviewed by assigning an analyst and detecting possible deficiencies, making use of available physical and technological resources. In response to the second question, we proceeded to verify the integrity of the documentation and maintained the same processes for the next document review. Finally, in relation to the last question, it was carried out to ensure that the activities are being carried out in order according to the established objectives.

Figures 6, 7, 8 and 9 have been made with the objective of having a clear knowledge of the activities that can be implemented to be able to take a viable improvement action, as well as to identify the main problems of the companies and to be able to implement a Quality Management System that guarantees the correction of the "Partially Complies" or "Does Not Comply"; thus optimizing the processes and continuously improving the organizational performance.

Another topic to take into consideration within this improvement cycle proposal is the KPIs (Key Performance Indicators) which serve as tools used to evaluate whether a project or an organization is in line with its objectives. Similarly, this will provide essential information to understand the direction of the company and clarify the key aspects of performance. This will make it possible to identify the areas in which the best progress is being made and those that require more attention due to the deficiencies presented (Ortiz & Pardo, 2021). Taking the idea of the same authors Ortiz & Pardo (2021), they state that "the KPIs manage to compare how a process is in real time and its compliance with respect to the objectives set for it and constitute the tangible evidence for subsequent communication, socialization and decision making in the areas" (p. 14).

From a pilot application carried out in a Courier company located in the city of Cuenca-Ecuador, the main problems that were noticed are that Courier companies generally have deficiencies in areas such as customer service, logistics, operating costs and personnel. As preliminary recommendations and within what could be applied in the improvement cycle, the following is developed in these areas.

Mainly, it is proposed that the Courier company should focus on customer service, here effective customer service policies and practices can be implemented, which can be carried through a specific time frame focusing on communication with customers and the company through the website they own, social networks or emails; an active and transparent communication with customers solves any problems efficiently, taking into account direct feedback on the experience provided by customers. With the implementation of this proposal, it is expected to significantly improve customer satisfaction and reduce the number of complaints in the coming years.

Next, logistics within a Courier company is vital as this is what contributes significantly to the experience. A viable option is to consider increasing the number of agents at the national level, as they are also considered stakeholders. To obtain this benefit, a geographic distribution analysis can be performed to identify specific patterns and opportunities in different areas, which will provide crucial information on the success and effectiveness of the selection and approval process for even new authorized agents and help grow the

distribution network. In addition, logistics issues could also be addressed to increase cargo processing capacity.

On the issue of operating costs, being part of the organization's profitability, a set of measures is proposed to improve operating efficiency and reduce the company's costs, focusing specifically on inventory management. This includes issues such as regular tracking and recording of operating costs associated with inventory management, as well as the implementation of periodic audits to evaluate the efficiency and quality of services provided by suppliers in order to improve the company's overall operating efficiency and ensure more cost-effective inventory management.

Lastly, the personnel fully comply with the objectives and activities that the company needs to operate, which is why it is considered a substantial issue. As a proposal, a staff training and development program can be implemented, with a particular focus on quality, in order to improve the skills and knowledge of employees to meet the quality standards established by ISO 9001. At the end of the program, there is a clearer vision in conjunction with direct feedback from employees, ensuring the effectiveness and relevance of the program in meeting organizational objectives and continuous performance improvement.

CONCLUSIONS

Research carried out in conjunction with the tools used have shown that the quality management system emerges as a topic of vital importance for companies on a global scale, as it has demonstrated its efficiency and effectiveness through a series of benefits. These include the proper administrative organization of companies, the guarantee of customer satisfaction, among other aspects that contribute to the continuous improvement of companies. In this context, ISO standards have played a crucial role in establishing international standards, such as ISO 9001, a globally recognized standard that seeks to ensure the confidence and satisfaction of both customers and stakeholders.

Among the tools used to study the environment, there are some such as SWOT analysis, CAME analysis, Process Map, Porter's Value Chain and a Process Interaction Matrix to verify the different situations that occur within these organizations as well as their forecasts, giving a clearer focus on what should be taken into account when reviewing the requirements of the ISO 9001 Standard. With this model at hand, it is also possible to verify the requirements that the organization must meet in order to implement a Quality Management System. This will help to improve the current situation of the companies, demonstrating that the improvement process is feasible and can be applied across the board. Therefore, this approach is effective for companies that are seeking to achieve total quality.

It is important to note that the implementation of ISO 9001 is not a prerequisite to achieve improvements within companies. However, this standard can be used as a guide to improve certain aspects without the need to carry out the complete certification process. The review also demonstrated that ISO 9001 is applicable to any business model, not just the Courier sector. Likewise, the improvement action process proposed presents viable results that help a company to improve the quality of its services using what has been done as a basis for guidance. By means of the same, it is possible to supervise extremely important issues within the organization as well as the stages that must be in conjunction with it, which are planning, action, action and verification; carrying out an improvement action that is both effective and efficient and that also complies with all the required regulations.

RECOMMENDATIONS

It is recommended to take into account which are the requirements requested by the ISO 9001:2015 standard in the tables made in chapter two, because these requests the necessary documentation to be able to implement this quality management model that will serve as support for the control and monitoring of the company. In addition, it is recommended that companies consider the improvement action process described in chapter three, since it helps companies to have a good working environment, in cooperation with the tools used that will lead to a significant increase in customer and employee satisfaction. This, in turn, brings higher productivity and reduces the imperfections of the companies, which is the main objective.

REFERENCES

- Agudelo, L., & Escobar, J. (2007). *Process Management* (4th ed., Vol. 1). INCOTEC.
- Alvarez, P., Arce, D., Maldonado, J., Gonzales, M., Armijos, A., Arteaga, M., & Guerrero, P. (2023). *Lean Manufacturing Tools for Operations Management Based on the PDCA Cycle*. <https://doi.org/https://doi.org/10.46254/IN03.202300>
- Aneiros, A. (2020). *Control and Treatment of Non-Conformities. Corrective Actions*.
- Bravo, J. (2009). *Process Management (With Social Responsibility)* (Vol. 1). Editorial Evolución S.A.
- Burckhardt, V., Gisbert, V., & Pérez, A. (2016). *Strategy and Development of a Guide for Implementing the ISO 9001:2015 Standard* (First edition, Vol. 1). Editorial Área de Innovación y Desarrollo, S.L.
<https://doi.org/http://dx.doi.org/10.17993/EcoOrgyCS0.2016.15>
- Coronel, J. I. (2013). *Development of a Process Management Model Focused on Continuous Improvement of Quality and Productivity at “Galerías Karolina” Company* [Universidad del Azuay]. <http://dspace.uazuay.edu.ec/handle/datos/2206>
- European School. (2020). *Implement Corrective Actions in ISO 9001*.
<https://www.escuelaeuropeaexcelencia.com/2020/07/implementar-acciones-correctivas-en-iso-9001/>
- Gadea, A. (2005). *Factors that Facilitate the Success and Continuity of Improvement Teams in Industrial Companies* [Universitat Politècnica de Catalunya].
<https://www.tdx.cat/bitstream/handle/10803/6517/01Arg01de01.pdf>
- García, M., Quispe, C., & Ráez, L. (2003, August). *Continuous Quality Improvement in Processes*. 90–90.
<https://revistasinvestigacion.unmsm.edu.pe/index.php/idata/article/view/5992/5187>
- García, T., & Cano, M. (n.d.). *SWOT: A Technique for Problem Analysis in the Context of Organizational Planning*.
- Gonzales, A., Leal, L., Martínez, D., & Morales, D. (2019). *Tools for Process Management*. XV, 5–9. <https://www.redalyc.org/articulo.oa?>
- Grijalvo, M., Martin-Romo, C., & Prida, B. (2002). *Process Management and the New ISO 9000 Standards* (Version 2000).

https://adingores.sserver.es/congresos/web/uploads/cio/cio2002/calidad_medioambiente_riesgoslaborales_mantenimiento/C004.pdf

- Junta de Castilla y León. (2004). *Working with Processes: A Guide for Process Management*.
- Mallar, M. Á. (2010, January). *Process Management: An Efficient Management Approach*. 7, 3–3.
http://www.fce.unam.edu.ar/revistacientifica/index.php?option=com_content&view=article&id=184&Itemid=51
- Medici, L. (2020). *ISO 9000: Evolution Towards Total Quality*. *Publications in Science and Technology*, 14, 12–13. <https://doi.org/10.13140/RG.2.2.27619.48162>
- Montesinos, S., Vázquez, C., Maya, I., & Gracida, E. (2020). *Continuous Improvement in a Company in Mexico: Study from the Deming Cycle*. 3–3.
<https://www.redalyc.org/articulo.oa?id=29065286036>
- International Standard ISO. (2015). *ISO 9000:2015 (Official Translation)*. www.iso.org
- International Organization for Standardization. (n.d.). *ISO: Global Standards for Reliable Goods and Services*. Retrieved March 19, 2024, from <https://www.iso.org/es/sobre>
- Ortiz, V., & Pardo, H. (2021). *Importance and Advantages of KPIs (Key Performance Indicators) in Projects*. Universidad Pontificia Bolivariana.
- Pérez, J. (2004). *Process Management: How to Use ISO 9001:2000 to Improve Organizational Management (Vol. 1)*. ESIC Editorial.
- Pico, G. (2006, December). *The Process Map: A Fundamental Element of a Quality Management System for Service Companies in Venezuela*. XII(2), 291–309.
<http://www.redalyc.org/articulo.oa?id=36412216>
- Pino, I., Ruíz, M. F., Bohorquez, M., & Soriano, F. (2009). “Analysis of the Courier Sector and the Effect on Cash Flows by Tax Class”.
- Ponce, H. (2007). *SWOT Matrix: An Alternative for Diagnosing and Determining Intervention Strategies in Organizations (Vol. 12)*.
- Proaño, D., Gisbert, V., & Pérez, E. (2017). *METHODOLOGY FOR DEVELOPING A CONTINUOUS IMPROVEMENT PLAN*. *3C Empresa: Research and Critical Thinking*, 6(5), 50–56. <https://doi.org/10.17993/3cemp.2017.especial.50-56>

- Rey, S., Garivay, F. D. M., Jacha, J., & Malpartida, J. (2022). Industry 4.0 and Business Quality Management. *Revista Venezolana de Gerencia*, 27(97), 289–298.
<https://doi.org/10.52080/rvgluz.27.97.20>
- Riquelme, M. (2020). Michael Porter's Value Chain: What Is It and What Is Its Importance?
https://gc.scalahed.com/recursos/files/r161r/w24520w/Cadena_de_valor_de_michael_porter.pdf
- Romero, K. (2019, February). Benefits of an Adequate Quality Management System in a Company. 2–2. <https://asq.org/quality-resources/quality-glossary>
- Salazar, J., Mora, N., Romero, W., & Ollague, J. (2020). Diagnosis of the Application of the PDCA Cycle According to ISO 9001:2015 in INCARPALM Company. 593 *Digital Publisher CEIT*, 5(6–1), 459–472. <https://doi.org/10.33386/593dp.2020.6-1.440>
- Torres, M. (2019). CAME Analysis. UDG Virtual.
- Udaondo, M. (1992). *Quality Management (Vol. 1)*. Díaz de Santos.
https://books.google.com/books/about/Gesti%C3%B3n_de_calidad.html?hl=es&id=hoRIEGdLGxIC
- UNACH. (2024). QMS - Interrelation Matrix - Quality Management System.
https://sgc.unach.edu.ec/sgc_interrelacion/
- Universidad EAFIT. (n.d.). ISO STANDARDS AND THEIR COVERAGE. *Revista Panorama Contable Contaduría Pública*.
- Zamora, C. (2023). Process Management Model in the Commercial Area of the Automotive Business Neohyundai S.A. [Universidad del Azuay].
<http://dspace.uazuay.edu.ec/handle/datos/12938>