ANALYSIS OF BUSINESS PROCESSES FOR THE DETECTION OF IMPROVEMENTS

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BACHELOR'S DEGREE IN BUSINESS ADMINISTRATION AE1049 - FINAL DEGREE PROJECT

COURSE 2022-23

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Introduction

A process is defined as a sequence of interrelated activities or steps that are carried out systematically to achieve a specific objective. The activities that comprise it are transformed from inputs into outputs (Chase and Jacobs, 2010).

The representation of a process refers to its graphic visualization, with the objective of understanding and communicating in a clear and structured way how the different stages of the process are carried out. Normally, a process is made up of inputs, activities and results or outputs, following a sequence of activities and the decisions taken at each step (Chase and Jacobs, 2010).

The activities are made up of tasks controlled by means of indicators, which will correspond to the defined objectives of the process and it will be the role of the process owner to assume the control responsibilities (García, 2013).

However, it is very important to keep in mind the basic principles that must be respected in its definition and execution in order to achieve its effectiveness (García, 2013):

-A process must be designed taking into account the needs and expectations of the customer or end user (internal or external).

-A process is aligned and works together to achieve process objectives.

-A process has a single responsible person

-Their activities may involve different people or departments.

-The process activities must be organized in a logical sequence, so that each activity is performed at the right time and in the right order. This ensures the continuity and fluidity of the process.

In companies, a layer of processes is defined in accordance with the objectives pursued by each one, and which bring together the main activities so that the products or services are provided and rendered according to the business requirements.

This process layer is generally used by the traditional organization, ensuring that these essential activities are executed as defined, which are led by an operational management.

1. Justification

From a formal point of view, and following Hernández (2014), it is necessary to justify a research by explaining the reasons why it should be carried out. In this sense, this author establishes some criteria that allow evaluating the potential of a research: "convenience, social relevance, practical implications, theoretical value and methodological usefulness".

The criterion of convenience is based on the answer to questions such as: "How convenient is the research, that is, what is it for?" (Hernández, 2014).

In the present case, it would be associated with the perspective how the topic is approached, which would be from the perspective of the people who manage operations in companies, taking into consideration that these people must review the different processes carried out by the organizations, as well as obtain new knowledge that will allow them to make the right decisions. This will also imply reviewing the existing theories in this field of study, which may be useful for the management of operations in companies (González-Varona, et al. 2020).

Social relevance, on the other hand, is analyzed with the answers to questions such as: "What is its transcendence for society, who will benefit from the results of the research, in what way? In short, what is its social scope or projection?" (Hernández, 2014).

In this case, it is a research with great social relevance, since it works in a greater understanding of the ways of improvements in organizational processes that could help in modern management, which plays a fundamental role in the proper functioning of companies, as a pillar of the productive activities necessary for life; certainly, today's society has evolved in the knowledge of increasingly sophisticated processes, which have impacted on the mechanisms of operations management.

The practical implications of this research are derived from the answers to questions, such as, "Will it help solve any real problems, does it have far-reaching implications for a wide range of practical problems" (Hernandez, 2014).

Indeed, the study has a great potential to generate solutions to problems related to the detection and implementation of improvements in business processes and their implications for management.

operations are a powerful tool to enhance the processes of an organization, with a great number of advantages, even from a financial point of view, it is also important to emphasize that the implementation of improvements must be optimal to achieve the desired effects. An incorrect handling of process analysis in operations management could mean, in practice, inefficient or even undesired results.

As for the theoretical value of the research, it is important to point out the number of options that emerge from this research, since it is a topic of great interest and has many opinions; the step-by-step analysis of the processes in operations management represents a valuable contribution to a topic from which an important source of knowledge and learning can be obtained for those who consult it.

Finally, this research is also justified from the methodological point of view, as it suggests studying a population group such as those who manage operations in companies, for the convenience of having organizations that can make use of improvements in an optimal way, ensuring that their use generates value in each of the processes that benefit and are enhanced by them (Hernández, 2014).

2. Research objectives

2.1. Overall objective

- Analyze a business process step by step to detect problems and make proposals for improvement.

2.2. Specific objectives

- Describe the importance of operations management

- Evaluate an organizational process in accordance with the methodology foreseen in operations management
- Define improvement possibilities in the analyzed process.

In this paper, first of all, a general description of the business processes, as well as the input and output flows according to the activities that make it up, is made, to then delve into the functions and decisions to be carried out by the operations management.

Then, a critical analysis of the processes of a specific company will be carried out, in order to detect improvement possibilities.

This document is structured as follows:

First, the introduction is presented, which shows the scope of the work taking into account the objectives.

The second section contains the justification of the research, followed in the third section by the establishment of the general and specific objectives.

The fourth section develops the theoretical, conceptual and documentary framework on which the study is based.

The fifth section describes the work methodology used.

The sixth section summarizes the set of conclusive considerations, and finally, the references worked on throughout the study are presented.

3. Theoretical framework

3.1. Operations management

3.1.1. Definition and importance

The traditional administrative function is defined according to the following components: foresight, organization, direction, coordination and control (Fayol, 1961). The central and essential component of the administrative functions is management, to which the others must be subordinated, since complicated techniques are of no use without good execution, which in turn depends on good management (Mercado, 2002).

This author also defines that the phases of management involve: delegation, authority, communication and supervision (Mercado, 2002), considering in this last phase, the correct planning of operations, which requires the formulation of the necessary operational foundations to guide the optimal path to be followed by the company, focused on management programs, evaluation of amounts and allocation of budgets (Kaplan and Norton, 2008).

Process management refers to the identification, analysis and improvement of processes in an organization to maximize the efficiency and quality of the results produced. In this sense, under the theoretical framework of operations management, it is essential for organizations, with special mention of the following points (Garcia, 2013):

1. Maximizing efficiency: Operations management is responsible for designing and managing production processes, which maximizes efficiency and reduces costs. By optimizing processes, production times can be reduced and the quality of the final product or service can be improved.
2. Quality improvement: Operations management is also responsible for ensuring the quality of the company's products and services. By implementing quality control systems and rigorous testing, errors can be detected and corrected before they reach the customer.
3. Increased productivity: Operations management is responsible for identifying and eliminating bottlenecks in the production processes, thereby increasing productivity and improving the company's ability to meet market demand.

4. Cost reduction: Operations management works closely with finance and purchasing to identify opportunities for cost reduction. By optimizing production processes, production costs can be reduced and the company's profitability increased.
5. Improving responsiveness: Operations management is also responsible for ensuring that the company has the ability to respond quickly to changes in the marketplace. By designing flexible processes and adopting innovative technologies, the company's ability to adapt to customer needs and market conditions can be improved.

In short, operations management is critical to ensuring that companies are efficient, effective and competitive. By improving efficiency, quality, productivity and responsiveness, operations management helps companies achieve their goals and meet customer needs.

A company's operational strategy refers to the set of decisions and actions taken to efficiently manage the organization's daily operations and activities in order to achieve the established strategic objectives. This strategy focuses on key operational aspects, such as production, logistics, supply chain, quality and efficiency.

According to Schroeder's (1996) operations model, also known as the four-dimensional operations model, created as a way to understand and improve business operations, the following steps should be followed to design the strategy:

Definition of operational objectives in line with the company's mission: the mission is defined as the fundamental purpose of a company, its raison d'être, while the operational objectives refer to the specific objectives to be achieved at the operational level.

Strategic decisions: are those that have a significant impact on the long-term direction and success of an organization. These decisions are related to the strategic direction of the organization and its positioning in the market. Some common strategic decisions include target market selection, choice of value proposition, product or service diversification, geographic expansion, among others.

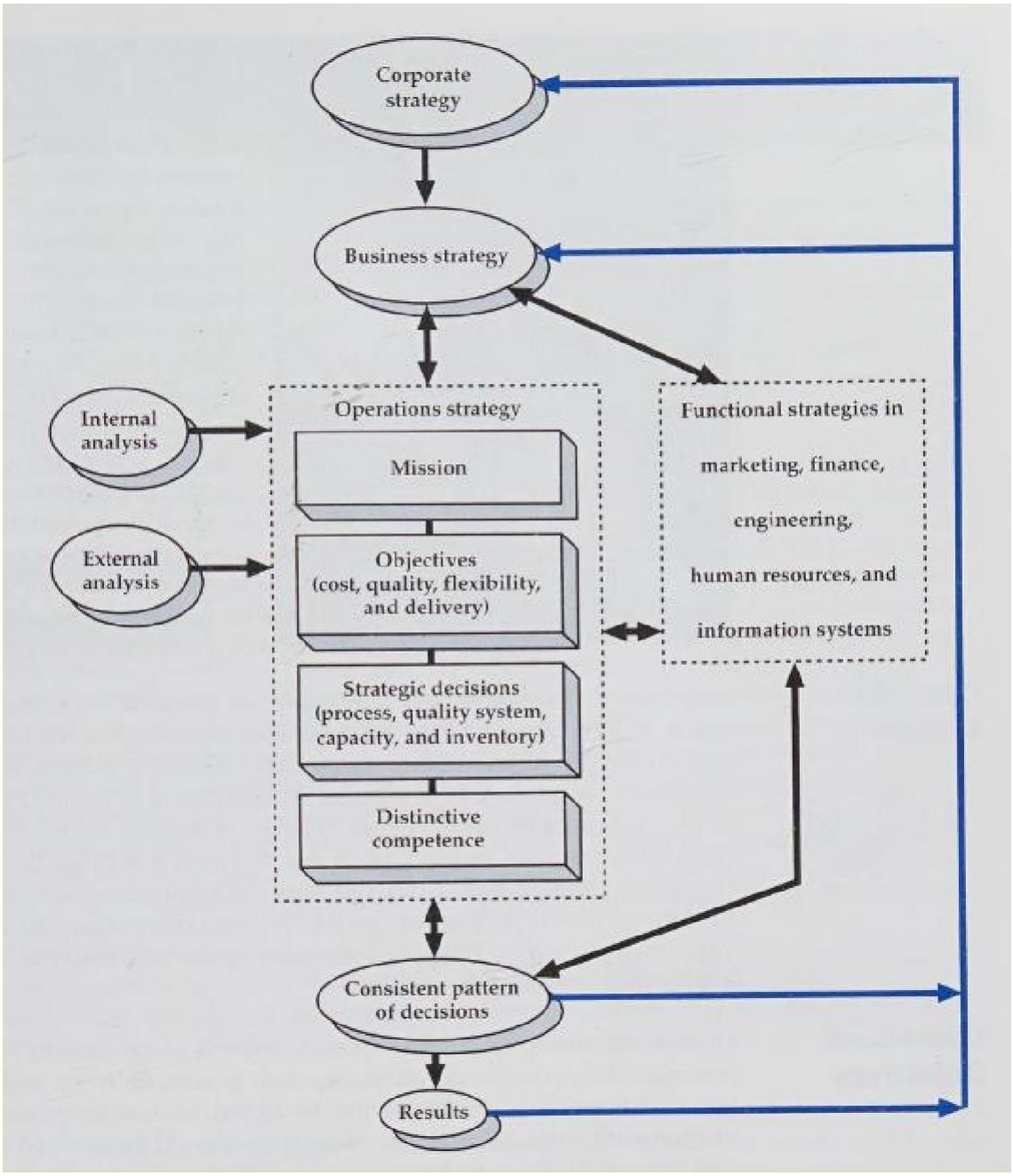
Distinctive competencies are the unique capabilities and resources of an organization that give it a competitive advantage in the marketplace. These competencies can be skills, knowledge, technology, processes or any other element that differentiates the organization from its competitors and contributes to its success. Distinctive competencies are essential to create value for customers and achieve a unique position in the marketplace.

This model is also based on four key dimensions that influence an organization's operational performance, which are described below (Schroeder. 1996):

- Quality: This dimension refers to excellence in the production of goods and services. It focuses on the satisfaction of customer needs and expectations, the reduction of defects and errors, and the continuous improvement of processes and products.
- Speed: The speed dimension is related to efficiency and agility in the execution of operations. It involves the optimization of workflows, the reduction of waiting times and the capacity to respond quickly to market demands.
- Dependability: refers to the ability to meet commitments and promises made to customers. It includes reliability in the delivery of products and services within the agreed time, as well as the ability to handle unforeseen situations and maintain operational continuity.
- Flexibility: The flexibility dimension relates to the ability to adapt and respond to changes in the business environment. It includes the ability to customize products and services according to customers' needs, as well as the ability to quickly adjust operational processes in response to changing market demands.

These four dimensions are interrelated and are considered fundamental to achieving a sustainable competitive advantage in business operations. The Schroeder operations model provides a framework for assessing and seeking improvement in an organization's operational performance, identifying areas for improvement in each dimension and seeking a balance among them.

Figure 1 Key dimensions according to Schroeder



3.1.2. Notion of the processes and their main characteristics

As mentioned above, following Chase and Jacobs (2010), a process is defined as a set of activities, which are mutually related or interacting, which transform resource input elements, the application of a set of activities and the production of an output or result.

These activities are performed to achieve a specific objective, which defines processes of different types, such as production processes, administrative processes, customer service processes, among others. They can also be manual or automated and can be represented graphically through flow charts or process diagrams.

In companies, a layer of processes is defined in accordance with the purpose of each one, and they bring together the main activities so that the products or services are provided and rendered according to the business requirements. This process layer is used by the traditional organization, ensuring that these essential activities are executed as defined, which are led by an operational management. To facilitate the work of the management, it is necessary to implement a set of tools to support the execution of these processes (Garcia, 2013).

3.1.3. Representation of processes

3.1.3.1. Flow diagrams

Flowcharts are a visual tool used to represent processes or procedures by means of symbols and lines that connect the different elements that make up the process. These diagrams are very useful for analyzing and optimizing processes, identifying problems and solving them efficiently (Kendall et al, 2013).

Likewise, they are useful in programming and problem solving to graphically represent the flow of information or processes, taking into account that they are a visual way to show how a program or process is developed and how data is manipulated (Elizondo, 2016).

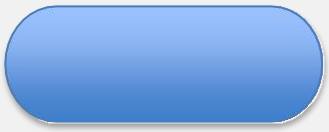
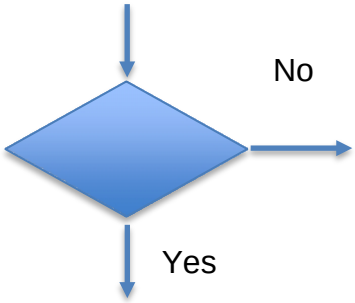
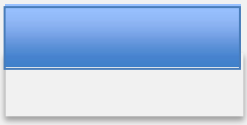
Flowcharts are composed of a series of graphical shapes, each with a specific meaning, which are connected by lines to indicate the direction of flow. They are also a useful tool for understanding the logic behind a program or process before writing code or implementing it in real life.

Some of the most common forms in flowcharts are (Elizondo, 2016):

- Start/End: represents the start or end of the program or process.
- Action: represents an operation or task that is performed.
- Decision: represents a choice to be made, such as a yes/no question.
- Input/Output: represents data input or output.

- Connector: used to connect parts of the diagram that have been separated for some reason.

Figure 2 Flowchart symbology

Name	Symbol	Rules of use
START and END		The word start or the word end is placed inside the symbol. It serves to clearly mark the beginning or end of the process.
Decision		An expression of understanding is placed within the symbol The arrows indicate the direction of flow It means that the decision has only one input and two inputs. outlets If the logical expression is true, the output is by the Yes side When the logical expression is false, the output is on the No side.
Process		An assignment sentence is generally placed inside the rectangle, which means that the following must be done

		make an action equal to the
		result of an algebraic expression, which includes variables, constants and arithmetic operators. The process must have a single input and a single output.
Direction of flow		Arrows can only be vertical and horizontal. Signal the direction of flow Signal the direction of flow All lines must be connected to a symbol.

Source: Elizondo (2016).

Flowcharts are used to plan and design programs, identify problems in a process and find solutions, document processes and communicate ideas, generally following the steps below:

- Preparation: represents the organization of data prior to use.
- Documentation: represents the creation or use of key documents related to the process.
- Storage: represents the storage of data identified as relevant.
- Loop: represents a cycle or repetition of an action or process.

- Conditional: represents a test or verification of a condition.
- Subroutine: represents the execution of a subroutine or function.

- Arrows: used to connect the different symbols and show the direction of flow.

These symbols are used in different combinations to represent the flow of information and processes in flowcharts. It is important to know the symbols and what they represent in order to create and understand flowcharts, among which are.

3.1.3.2. Process Flow Diagrams

Process flow diagrams are used to visually represent the steps involved in a process or system, which are performed following a sequence. It can also be defined as a process associated with time management in each activity.

According to Elizondo (2016), it would comprise the following steps:

- Definition of activities: identifies the specific activities of the process to be performed.
- Establishment of the sequence of activities: identifies and documents the dependencies between the activities of the process.
- Activity resource estimation: estimates the type and quantities of resources required to perform each activity in the process.
- Estimate the duration of activities: estimate the number of work periods that will be required to complete each activity in the process.
- Process development: analyzes the sequences of activities, duration of activities, resource requirements and schedule constraints to create the process.
- Process control: controls process changes.
- These diagrams are useful tools for analyzing and improving processes, and there are several analysis criteria that can be used to evaluate the effectiveness and efficiency of the process represented in the flowchart.

In addition, the following criteria should be considered for analysis (Chase and Jacobs, 2010; Kastorin, 2010):

- Efficiency: Refers to the relationship between the resources used and the results obtained. An efficient flowchart should indicate an effective use of resources and a waste-free process.
- Effectiveness: Refers to the ability of the process to meet the objectives and requirements of the customer or user. An effective flowchart should show a process that meets the needs of the customer or user.
- Quality control: Refers to the ability of the process to produce high quality results and meet established quality standards. A process flow diagram should indicate a process that has adequate and effective quality controls.
- Productivity: Refers to the amount of output that is generated in relation to the resources used. A production flow chart should show a process that is capable of producing a large amount of output in a reasonable amount of time.
- Cycle time: Refers to the time it takes for the process to complete. A process flow diagram should indicate a process that is completed in a reasonable time and meets customer or user requirements.
- Cost reduction: Refers to the ability of the process to reduce production costs. A process flow diagram should show a process that uses resources efficiently and is able to reduce production costs.
- Identifying opportunities for improvement: A process flow diagram can also be used to identify opportunities for process improvement. By analyzing the diagram, areas can be identified where efficiency, effectiveness, quality control, productivity, cycle time or cost reduction can be improved.

Once the theoretical bases that support this study have been reviewed, we will proceed to the selection and subsequent analysis of a process of the company Capacitación Empresarial, S.A., starting with its services offered, mission, vision, organizational structure, as well as the application of its operational strategy model. The selected process will be the management of incident service levels.

4. Analysis

An adequate analysis for decision making in operations management must establish certain qualities that an administrative system must satisfy and propose a set of dimensions that allow the system's behavior to be observed by means of numerical indicators, establishing that performance will be determined in each case according to the circumstances.

According to Garcia (2013), process management control analysis, used in operations management, will be measured by indicators of:

Effectiveness. Effectiveness refers to the ability to achieve the desired results effectively and meet the established objectives. It implies achieving the expected results with the appropriate quality, on time and at the lowest possible cost. In other words, effectiveness is the ability to define the premises of the administrative action according to the conditions of the environment.

Effectiveness measurement in operations management refers to assessing the extent to which the objectives and goals established in an organization's operational processes are being achieved, as well as to determine whether the results obtained are as expected and, if not, to take the necessary measures to improve them.

To this end, following Huertas and Domínguez (2015) it can be considered to measure effectiveness in operations management, according to criteria such as:

- Achievement of objectives: The extent to which the objectives established for the operational processes are being achieved is evaluated. This involves comparing actual results with expected results and calculating the percentage of compliance.
- Key Performance Indicators (KPIs): Specific and measurable indicators are used to evaluate the performance of operational processes. These indicators may include metrics related to productivity, quality, costs, deadlines, among other aspects relevant to the organization.
- Variance analysis: A comparative analysis is performed between actual results and expected results, identifying and analyzing significant deviations. This makes it possible to detect the areas where deviations are occurring and to take corrective measures to improve efficiency.
- Evaluation of compliance with standards: Checks whether operational processes are being carried out in accordance with established standards. This may include

compliance with quality standards, operating procedures, internal policies, legal regulations, among others.

- Customer feedback: The opinion and satisfaction of customers with respect to the products or services delivered by the operating processes is gathered. This can be done through surveys, interviews, reviews of comments and complaints, among other methods.
- Evaluation of continuous improvement: The capacity of operational processes to achieve continuous improvement in terms of efficiency, quality, innovation, customer satisfaction, among other aspects, is measured. This involves establishing improvement indicators and carrying out periodic evaluations.

It is important to note that effectiveness measurement must be aligned with the organization's strategic objectives and consistent with its vision and values. In addition, appropriate data collection, analysis and reporting systems must be in place to facilitate the measurement and monitoring of effectiveness in operations management.

Effectiveness. Refers to the ability to achieve the desired results or attain the established objectives. It is the extent to which an action, process or strategy produces the expected results and fulfills its purpose.

Effectiveness measurement in operations management refers to assessing the extent to which operational processes are achieving the desired results and contributing to the achievement of the organization's strategic objectives. Effectiveness focuses on assessing the value generated by operational processes and their ability to satisfy the needs of customers and other stakeholders.

Effectiveness and efficiency are closely related, but have subtle differences:

Effectiveness: Refers to the ability to achieve planned results and meet established objectives. Effectiveness focuses on doing things the right way, meeting established standards and goals. For example, if the objective of a process is to produce 100 units per day and 100 units are produced, the process is considered to be effective.

Effectiveness: Refers to the ability to achieve the desired results and generate value for the organization and its stakeholders. Effectiveness focuses on doing the right things, i.e., on the ability of processes to generate results that are

relevant and meaningful to the organization and its customers. For example, if a process manages to produce 100 units, but there is no demand for those units in the market, then the process is not effective (Isaza, 2018).

In short, efficiency focuses on meeting established objectives, while effectiveness focuses on achieving valuable and relevant results. Both concepts are important in operations management, as it seeks both efficiency in the execution of processes and the generation of value for the organization, although effectiveness involves more than simply performing activities or completing tasks; it focuses on achieving the right results in an optimal way. It is not just about doing things right, but about doing the right things to achieve the desired objectives.

Measuring effectiveness in operations management involves using key performance indicators (KPIs) that evaluate the value generated by operational processes, such as customer satisfaction, profitability, product or service quality, innovation, efficiency in the use of resources, among others. These indicators provide information for decision making and continuous improvement of operational processes, with the objective of maximizing effectiveness and added value.

Quality. Quality encompasses two aspects, one linked to efficiency and the other to effectiveness. The first is related to the ability to achieve the standards and requirements established to meet the proposed objectives. To be effective, it is necessary to ensure that products, services or processes meet high quality standards, so that they are capable of satisfying the needs and expectations of customers or users. With the latter, quality becomes a key factor in achieving effectiveness, as it implies ensuring that products or services are of high quality and are aligned with the established requirements and specifications, measured in terms of the number of satisfied customers, considering quality from an internal approach.

Quality measurement in operations management is essential to ensure that products or services meet established standards and requirements, and to satisfy customer needs and expectations.

According to Huertas and Domínguez (2015), some of the common ways of measuring quality in operations management would be:

- Defect or error rates: This measures the number of defects or errors in the products or services delivered by the operational processes. This may include metrics such as the number of defective units per batch, the defect rate per time period, or the percentage of errors in service processes.
- Rework or rework rates: This measures the amount of additional work required to correct defects or errors in products or services. This may include metrics such as time spent on rework, percentage of rework over total production, or costs associated with rework.
- Customer satisfaction indexes: The degree of customer satisfaction with respect to the products or services delivered is evaluated. This can be done through satisfaction surveys, customer feedback, or customer loyalty and retention measurements.
- Standards compliance rates: Checks whether operational processes comply with established quality standards. This may include metrics such as compliance with ISO standards, compliance with regulatory requirements, or compliance with the organization's internal standards.
- Delivery time and lead time indices: Timeliness of delivery of products or services is measured. This may include metrics such as percentage of on-time deliveries, average delivery time, or compliance with deadlines agreed with customers.
- Efficiency and productivity indices: Efficiency in the execution of operational processes is evaluated. This may include metrics such as production throughput, resource utilization, or process cycle time.

Economy. It is understood as the organization's ability to eliminate the waste of resources, helping to make efficient decisions in terms of resource allocation. This involves evaluating and optimizing the use of available resources, such as capital, labor, raw materials and technology, in order to maximize production and minimize costs, which will have an impact on productivity improvement.

The measurement of economics in operations management focuses on evaluating the efficiency and economic performance of an organization's operational processes. The goal is to maximize the utilization of available resources and minimize the costs associated with producing goods or services. Some of the common ways of measuring economics in operations management (Chase and Jacobs, 2010):

- Cost per unit produced: This measures the total cost of production divided by the number of units produced. This provides a measure of economic efficiency by evaluating the relationship between resources used and output generated.
- Productivity indices: This measures the amount of output generated in relation to the resources used. This may include metrics such as output per labor hour, output per unit of capital invested, or output per kilogram of raw material used.
- Efficiency in the use of resources: This evaluates the effective use of available resources, such as labor, equipment, machinery or materials. This involves measuring the use of resources in relation to their capacity or availability, and seeking ways to optimize their use.
- Waste or shrinkage rates: The amount of waste or shrinkage generated during the production process is measured. This may include metrics such as percentage of material waste, percentage of rework or rework, or percentage of non-conforming products.
- Inventory costs: The cost associated with storing and holding inventory is measured. This includes costs such as the cost of storage, the opportunity cost of holding inventory, or the cost of obsolescence.
- Value-added analysis: The value added through operational processes is evaluated. This involves identifying and measuring the activities that really add value to products or services, and looking for ways to eliminate or reduce activities that do not add value.

Improvement. Refers to the continuous process of improving and developing the skills, knowledge and competencies necessary to effectively and efficiently manage an organization. It involves acquiring new skills, updating existing knowledge and improving the ability to make strategic and operational decisions in pursuit of excellence.

Applied to operations management, it involves constantly seeking to improve and optimize an organization's operational processes. It focuses on identifying areas of opportunity, implementing changes and adopting best practices to achieve more efficient and effective operations management.

Some common strategies and approaches used for operations management improvement, following Isaza (2018):

- Continuous improvement: It is an approach based on the constant search for incremental improvements in operational processes. It uses tools and methodologies such as the PDCA cycle (Plan, Do, Check, Act) or the Kaizen approach, which promote the identification of problems, the generation of ideas and the implementation of solutions.
- Supply chain optimization: The aim is to improve efficiency and coordination at all stages of the supply chain, from the acquisition of raw materials to the delivery of the final product to the customer. This involves efficient inventory management, collaboration with suppliers and customers, and the implementation of technologies such as electronic data interchange (EDI) or enterprise resource planning (ERP).
- Quality management: Focuses on guaranteeing the quality of the products or services delivered through the implementation of quality standards, process control, personnel training and customer feedback. Tools such as statistical process control (SPC) or total quality management (TQM) are used.
- Automation and technology: The aim is to use automated technologies and systems to improve the efficiency and accuracy of operational processes. This may include the implementation of enterprise resource planning (ERP) systems, the automation of repetitive tasks, the use of sensors and connected devices (IoT), or the application of data analytics for decision making.
- Project management: Project management is used to plan, execute and control improvement projects in operations. This involves defining clear objectives, allocating resources, managing time and monitoring key performance indicators (KPIs).
- Talent management and skills development: Focuses on the training and development of personnel involved in operations. This may include training programs, mentoring, incentives and recognition, and the promotion of a culture of continuous learning.

4.1. Presentation of the company to be analyzed

The company Capacitación Digital Empresarial, S.A. (name different from the real one for confidentiality purposes), was founded 7 years ago by a team of entrepreneurs with experience in the field of education and training. Their goal was to provide comprehensive training solutions and pedagogical resources tailored to the needs of companies, in order to improve the skills and knowledge of their employees.

The idea of creating the company arose from the growing demand for training and development in the business environment, where companies recognized the importance of investing in the training of their personnel to remain competitive in an ever-changing market.

In its early years, Capacitación Empresarial S.A. focused on establishing strategic alliances with different organizations and consultants specialized in specific training areas, which allowed them to offer a wide range of quality training programs and pedagogical resources.

The company stood out for its personalized and tailored approach to each client's needs. They strove to thoroughly understand the challenges and objectives of the companies they served, which enabled them to design customized training programs and offer practical and effective solutions.

Over the years, Capacitación Empresarial S.A. has established itself as a benchmark in the business training sector. Its reputation has grown thanks to the quality of its programs, its commitment to excellence and the satisfaction of its clients.

During this period, the company continued to innovate and adapt to technological advances and new trends in education and training. They incorporated digital tools and platforms to offer online courses, gamification and interactive resources that complemented their face-to-face training offerings.

Today, with 7 years of experience, Capacitación Empresarial S.A. has become a reliable partner for numerous companies seeking to improve the skills of their employees and promote continuous learning in their organizations. Its commitment to quality, innovation and constant adaptation has allowed them to consolidate in the market and continue to grow in their goal of contributing to the development and success of companies through training, providing comprehensive solutions to streamline the education and training plans of its customers.

The company's value proposition is the cost and quality optimization of the training provided by the organization to its collaborators. All programs include pedagogical strategies, interactive and entertaining contents, effective evaluation methods and technological resources, adjusted to the needs and reality of each sector.

4.1.1. Services offered

The provision of service involves:

Virtual courses

E-learning platforms are oriented to facilitate the distance training experience, both at corporate and educational levels. The company has the infrastructure, knowledge and the right technology to support the training, and to achieve the objectives of the clients.

E-learning platforms are designed to allow the creation of virtual classrooms, in these classrooms interaction between tutors and students, and among students themselves is generated: as well as the performance of evaluations, file exchange, participation in spaces such as forums, chats, and a wide range of additional tools.

Specifically, the service provided is described as virtual education (e-learning), which has the following characteristics:

a) It refers to the development of training programs that have cyberspace as a teaching and learning scenario;
b) It is not necessary for the body, time and space to come together in order to establish a dialogue encounter or learning experience; that is, it is not necessary for a face-to-face encounter between the teacher and the student in order to establish an interpersonal relationship of an educational nature.

Corporate image and web design

The company develops websites with the latest technological trends, adaptable to different devices, providing our customers with an excellent user experience.

We use high quality CMS to manage the design and layout of the website, facilitating its administration and security by performing automatic backups.

IT Infrastructure

It is defined as the set of hardware, software, networks, facilities, etc. (including all information technology related equipment) used to develop, test, deliver, monitor, control and support IT services.

The company provides adequate maintenance to the physical plant of its clients, guaranteeing the extension of the useful life of the servers, thus avoiding the weakening that leads to network failures.

Differentials

-Among the competitors identified, it was observed that, although they offer information technology solutions, they do not have a clear focus on the education sector.

-In competitors, there is a certain disorder in the target audience information.

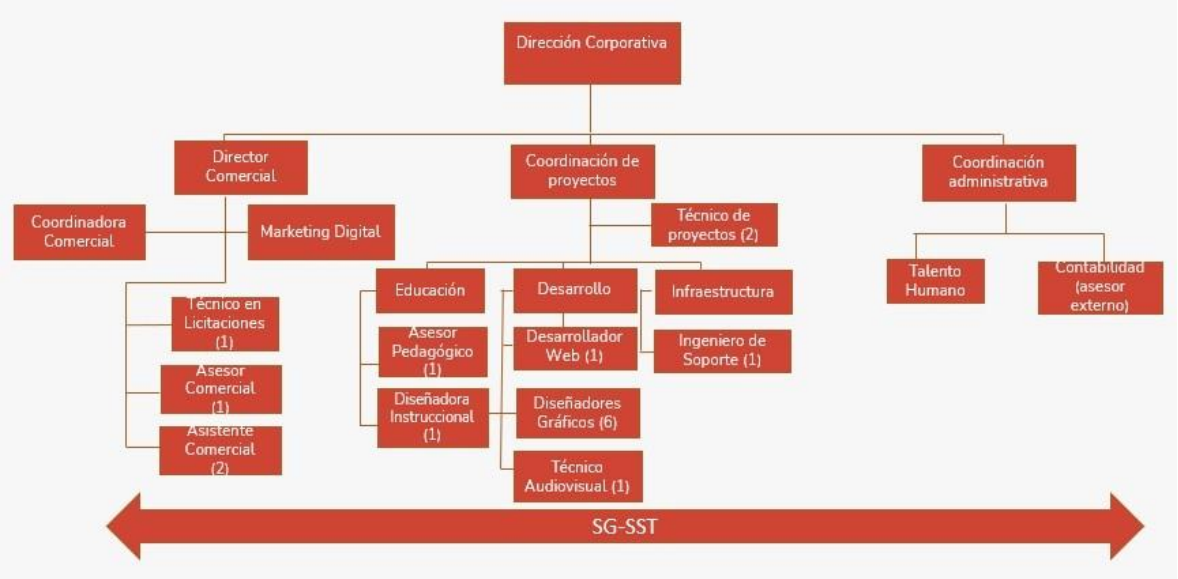
-The services are oriented to prestigious educational entities.

In order to explain the processes that are managed in the company, the job positions involved and the associated organization chart are detailed below.

4.1.2. Organizational chart and description of positions and duties

In order to explain the processes that are managed in the company, the job positions involved and the associated organization chart are detailed below.

Figure 3 Organizational chart of the analyzed company 3



Source: Capacitación Empresarial, S.A.

The organizational chart positions, functions and qualifications, in accordance with the company's Positions and Functions Manual, are detailed below:

Corporate Director:

Duties: Responsible for the strategic direction and overall leadership of the company. Oversees all areas and departments, ensuring effective implementation of corporate policies and objectives. Makes strategic decisions, sets goals and oversees the overall performance of the organization.

Qualifications: Strong managerial experience, leadership skills, strategic vision, business decision making ability, broad industry knowledge, communication and negotiation skills are required.

Commercial Director:

Functions: Responsible for directing and coordinating the company's sales activities. Develops sales strategies, establishes sales objectives, oversees customer management, identifies market opportunities and establishes business relationships with key customers. He also supervises the sales team and establishes sales policies.

Qualifications: Sales management experience, sales skills, sales skills, ability to lead teams, market and product knowledge, negotiation skills and ability to establish strong business relationships are required.

Project Coordinator:

Functions: Responsible for the planning, coordination and execution of specific company projects. He oversees the development of projects, assigns tasks to team members, sets milestones and deadlines, monitors progress and resolves problems. He is also responsible for managing the necessary resources and ensuring the successful delivery of projects.

Qualifications: Project management experience, organizational and planning skills, ability to work in a team environment, knowledge of project management methodologies, communication skills and ability to make effective decisions are required.

Administrative Coordinator:

Functions: Responsible for coordinating the administrative and support activities of the company. Oversees administrative tasks such as document management, accounting, personnel management and daily operations. He is also responsible for ensuring compliance with administrative and legal procedures.

Qualifications: Administrative experience, knowledge of administrative management, organizational skills, problem solving skills, knowledge of administrative management tools and software, and communication skills are required.

The IT incident management process, one of the fundamental processes of the help desk, will be analyzed.

4.1.3. Operations strategy model applied to the company

Following Schroeder's (1996) operations model discussed above, each of the elements will be applied to the company:

Mission

To be the best option for our clients in the generation of value.

Vision

To be in 7 years one of the leading companies in technological solutions at national level.

Operational objectives

According to the general manager of Capacitación Empresarial, S.A., the strategic objectives are as follows:

Increase student participation and retention: Set as a goal to increase learner participation in virtual training programs and improve retention rates. This can be achieved through strategies such as designing engaging content, implementing interactive tools and personalizing learning.

Improve the quality of training programs: Constantly seek to improve the quality of virtual business training programs, ensuring that the content is relevant, up-to-date and of a high standard. This may involve regularly reviewing and updating training materials, incorporating subject matter experts and implementing effective evaluation methods.

Optimize the virtual training platform: Set as a goal the continuous improvement of the virtual training platform to provide an efficient and engaging learning experience. This may include optimizing the user interface, implementing online collaboration tools, and developing functionalities that facilitate access and tracking of learner progress.

Increase customer satisfaction: Focus on customer satisfaction as a key objective, ensuring that virtual training programs meet customer expectations and needs. This can be achieved through regular collection of customer feedback, implementation of improvements based on their suggestions, and establishment of quality and customer service standards.

Expand reach and market presence: Aim to expand the company's reach and increase its presence in the virtual business training market. This may involve identifying and pursuing new opportunities to collaborate with companies, developing strategic alliances and implementing effective digital marketing strategies.

Improve operational efficiency: Constantly seek to improve operational efficiency in the delivery of virtual training programs. This may include optimizing internal processes, automating repetitive tasks, efficiently managing resources and implementing technologies that streamline operations.

Strategic decisions

The company is also considering the following possibilities as part of its strategy:

Make a strategic decision to focus on specific markets, such as particular industries or business segments. For example, the company might decide to target technology companies or growing startups that require digital skills training.

Establish strategic partnerships with other companies, academic institutions or subject matter experts. These alliances can enable the company to expand its training offerings, access new audiences and strengthen its reputation and credibility in the marketplace.

Decide to expand the company's presence in new geographic markets. This could involve opening offices or creating partnerships in different regions or countries to serve a wider and more diverse audience.

Make the decision to diversify the services offered beyond virtual business training. For example, the company could begin to offer consulting services, custom content development or advice on online learning strategies.

Adopt new virtual learning technologies and tools to enhance the learner experience and stay ahead of the market. This could include implementing virtual reality, gamification or artificial intelligence in training programs.

Make strategic decisions regarding the promotion of the company and building its brand. This could include developing a digital marketing strategy, participating in relevant industry events and creating quality content to generate awareness and attract potential customers.

Distinctive competencies

The differential elements of Capacitación Empresarial, S.A., would be the following:

Ability to deliver highly customized training content tailored to the specific needs and characteristics of each client. This includes the development of learning materials to suit different industries, skill levels and job roles.

A thorough understanding and experience in the use of e-learning technologies. This may include proficiency in online learning platforms, virtual collaboration tools, learning management systems and interactive multimedia resources.

The ability to create highly interactive and participatory virtual learning experiences. This involves the use of tools and techniques that encourage student participation, such as discussion forums, live chat sessions, group activities and personalized feedback.

The company can rely on a wide network of experts and professionals in different fields and business disciplines. These experts can provide specialized knowledge and relevant perspectives to training programs.

The ability to measure and evaluate the impact of virtual training programs on business performance. This involves the use of effective metrics and evaluation tools to measure the return on investment (ROI) of training and demonstrate its value to organizations.

The company can be noted for its innovative approach to the application of teaching methodologies and pedagogy in the virtual environment. This may include the use of game-based learning techniques, microlearning, simulations and other effective pedagogical approaches.

4.1.3.1. Internal analysis

To carry out the internal analysis, the SWOT matrix will be used, requiring first the identification of the company's strengths and weaknesses, answering the following questions as a guide:

In the case of strengths:

- What are the advantages of the company?
- What low-cost or one-time resources do you have access to?
- What do people perceive the market as a strength?
- What are the elements that make it easier to obtain a sale?

For weaknesses:

- What could be improved?
- What should be avoided?

- What might consumers perceive as a weakness?
- What factors reduce the company's sales or success?

For Opportunities:

- What market trends could benefit?
- What technology changes are occurring in the market?
- What legal and/or policy changes are occurring?
- What changes in social and lifestyle patterns are occurring?

In the case of threats:

- What obstacles could the company face?
- Are product requirements changing?
- Can some situations in the environment seriously affect the company?

Having performed this analysis, the results are shown below:

Figure 4 SWOT analysis

Strengths	**Weaknesses**
Experience Customer loyalty Brand recognition	In sales processes in recent years Products products have lost positioning
Opportunities	**Threats**
Adaptation to changes in the market Alliances with other competitors	Entry of many new competitors Changes in market conditions

Source: Own elaboration

As can be seen, as part of our strengths, we have extensive experience in the business training industry, with a highly qualified faculty specialized in various business areas, as well as a variety of training programs tailored to the needs of different companies. The

strong network of contacts and strategic alliances with companies and organizations, as well as the use of advanced technology to offer online and distance training, have achieved customer loyalty and brand recognition.

Opportunities include adapting to changes in the market, taking into account the growing demand for business training due to the constant evolution of the business environment, the expansion of the market in geographic regions not currently served, and the increase in business awareness of the importance of personnel training and development. In addition, collaboration with educational institutions and government agencies for joint programs is considered an opportunity.

The entry of many new competitors and changes in market conditions can be considered threats, especially changes in government regulations and policies that may affect the industry, the risk of obsolescence of training programs if they are not kept up to date, as well as possible economic fluctuations that may affect companies' training budgets.

4.1.3.2. External analysis

The methodology to be used to review the general environment will be the PESTEL analysis, for its initials "Political, Economic, Social, Technological, Ecological and Legal", a tool that allows analyzing the external factors that may affect a business (De la Peña, 2005).

Political factors

This section analyzes whether the policies of the country where the company operates are characterized by a stable government and in compliance with international agreements. In this sense, the Spanish State is qualified as stable and suitable for the operation of Capacitación Empresarial, S.A.

Economic factors

At this point, the general economic situation and income level of consumers in the country where the company operates and the main market trends are analyzed.

Although the Spanish economy recorded a sharp decline in 2020 due to the COVID pandemic, its recovery was positive in 2021 and 2022, even higher than other countries, as projected by the IMF, considering the proper management of the health crisis and the implementation of the vaccination plan. Now, the Spanish economy has been recovering, estimating a 1.5% increase in economic growth for 2023, a situation that will improve by +2% in 2024. In the same favorable trend is the Eurozone, which, even with the impact of the situation between Russia and Ukraine, will be able to grow by 0.8% in 2023 and by +1.4% in 2024 (IMF, 2023).

Social factors:

The PESTEL analysis includes an assessment of changes in customer consumption habits and preferences, trends and demand for training. In this regard, it is important to mention that with the COVID-19 pandemic, distance, virtual or remote education was an alternative for users to continue their studies given the social distance required. This situation accentuated the trends that had been occurring so far in virtual education.

Technological factors:

Understood as the impact of technological advances, both on the Internet, the use of mobile applications and social networks.

In Spain, Internet service penetration is over 100 percent, while the proportion for smartphones is 90 percent. Likewise, Internet access via fixed and/or mobile broadband reaches 95.3 percent, while 82.1 percent of households have broadband access via fixed modality (fiber optic or cable network, ADSL).

According to a study of Social Networks in Spain, there are about 26 million users in the groups between 16-65 years old, the favorites being WhatsApp, Facebook, Instagram and YouTube. These aspects would have a positive impact for a company like Capacitación Empresarial, S.A.

Legal factors:

This section identifies compliance with rules and regulations, which, for the activity of Capacitación Empresarial, S.A. would be related to (ciencia.gob.es):

- Data protection and privacy rules, information security, current regulations in the field of personal data protection consists of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (RGPD) and the Organic Law 3/2018 of December 5, 2018, on Personal Data Protection and Guarantee of Digital Rights (LOPD).
- Intellectual property and copyright: Consolidated text of the Intellectual Property Law, approved by Royal Legislative Decree 1/1996, of April 12, 1996.

4.1.4. Process selected for analysis

The IT service level process is a methodology used to establish, monitor and improve the level of service provided to users.

An IT incident refers to any unplanned or unwanted event that disrupts or adversely affects the normal operation of an organization's systems, services or technology infrastructure.

4.1.4.1. *Incident management tools*

Level 1: Service Desk Staff (support 1)

Level 2: Service Desk Staff (Platform Administrator-Support 2). Level 3:

Specialized Staff - Domain, H and S.

ANS: Corresponds to the sum of level 1, 2 and 3 times. QRF:

Complaints, claims and compliments.

Note: The established times are for response, not resolution.

Response time, resolution time and service model are managed.

IT incident management involves the timely and efficient detection, recording, evaluation, follow-up and resolution of IT incidents.

The scope of incident management begins with a user reporting a problem and ends with a service desk team member resolving that problem.

Incident management practices are handled by the IT service desk or help desk team.

Service desks are usually the only point of contact for users to report problems to IT management teams. According to the client, a requirement form is established, which the user must fill out and send to the email to make the ticket generation and assignment process more effective.

4.1.4.2. The stages in incident management

With a proper incident management, collecting information about incidents is easier and more functional, for this reason it is important that the information received from the user is complete, indicating course, unit, failure and screenshot where the situation occurs.

The response to an IT incident generally follows a structured process, which may include identifying and classifying the incident, assigning priorities, allocating resources for resolution, communicating with those affected, and implementing corrective actions. The main objective of IT incident management is to restore the affected services and systems to their normal operational state as quickly as possible, thus minimizing the impact on the organization and its users.

4.1.4.3. How are IT incidents classified?

Incidents in an IT environment can be categorized in various ways, depending on the criteria used. This categorization of IT incidents helps to identify and assign incidents to the appropriate technician, which saves time and effort. Some of the most common classifications would be according to severity, they can be critical incidents, which are those that have a significant impact on the operation of the business and require immediate attention; major incidents, which are those that affect the normal operation of systems or services, but do not have a critical impact and minor incidents, those that have a minimal impact on the operation and can be resolved quickly and easily.

Major incidents are generally those that affect business-critical services (affect the entire organization) and need immediate resolution. Minor incidents generally affect a single user or department, and may already have a documented resolution.

Attention to classified incidents shall be as follows:

a. Superior or critical: when the entire virtual school platform is affected, the provider's attention to these incidents should not exceed one (1) hour.

during 24 hours a day, once the incident has been reported through the channels provided by the supplier, during the execution of the courses; in the other periods it will be only on demand.

b. High: when an entire course is affected in the virtual school platform, the attention of the supplier to these incidents should not exceed two (2) hours during 24 hours a day, once the incident has been reported in the channels provided by the supplier, during the execution of the courses; in other periods it will be only on demand.

c. Medium: when one or more groups are affected on the virtual school platform, the provider's attention to these incidents should not exceed four
(4) hours during the 8 working hours of the day once the incident has been reported in the channels provided by the supplier, during the execution of the courses; in the other periods it will be only on demand.

d. Dismissal: when one or more participants are affected in the platform and/or functional or technical queries of the virtual school, the attention by the provider to incidents should not exceed eight (8) hours during the 8 working hours of the day, once the incident is reported in the channels provided by the provider, the above during the execution of the courses; in the other periods it will be only on demand.

Climbing

Table 1 Levels of service and types of escalations

Level	Cargo	Name
Level 1	Help Desk	Support 1
Level 2	Help Desk	Support 2

Level 3	Help Desk	Support 3 - technical specialist

Note: Scaling allocation is subject to change and update by the company.

Source: Capacitación Empresarial, S.A.

Table 2 Attention times for escalations (Business Hours)

Level	**Incidents**				**Requests**			**QRF**	**Problem**
Priority	**Download**	**Media**	**High**	**Critique**	**Download**	**Media**	**High**		
Level 1	8	4	2	1	8	6	4	4	4
Level 2	8	4	2	1	16	8	4	4	1 week
Level 3	N/A	N/A	N/A	2	16	8	4	4	1 week
ANS Customer	16	8	4	4	40	22	16	16	2 weeks 4 hours

Source: Capacitación Empresarial, S.A.

Note:

Level 1: Service Desk Staff (support 1)

Level 2: Service Desk Staff (Platform Administrator-Support 2). Level 3:

Specialized Staff - Domain, H and S.

ANS: Corresponds to the sum of level 1, 2 and 3 times. QRF:

Complaints, claims and compliments.

Note: The established times are for response, not resolution.

4.1.4.4. Continuity and availability

The company will provide the service desk service and incident or solution support 7x24 for critical incidents and 5x8 for minor incidents defined in the service agreements, according to the classification, plan and support scheme.

4.1.4.5. Life cycle or continuous improvement

In order to guarantee the continuous improvement of the service, the incident management process, which is summarized below, must be complied with:

Figure 5 Representation of the incident management process

1. Incident Record

- An incident can be logged via phone calls, emails, WhatsApp, web forms posted on the self-service portal or via live chat messages

2. Categorization of the incident

- Incidents can be classified and subcategorized according to IT or business area. where the incident causes a disruption, such as network, hardware, etc.

3. Prioritization of the incident

- The priority of an incident can be determined based on its impact and urgency using the priority matrix. The impact of an incident denotes the degree of damage the problem will cause to the user or company. The urgency of an incident indicates the time within which the incident must be resolved. Depending on the priority, incidents can be classified as: -Critical -High -Medium -Low.

4. Routing and incident assignment

- Once the incident is classified and prioritized, it is automatically assigned to a technician with the relevant expertise.

5. Task creation and management

- Depending on the complexity of the incident, it can be broken down into sub-activities or tasks. Typically, tasks are created when the contribution of multiple technicians from various departments is required to resolve the incident.

6. Management and ANS escalation

- While the incident is being processed, the technician must ensure that the time indicated for resolving the incident is not violated. In cases where the level of attention time is about to be or has already been violated, the incident can be escalated functionally or hierarchically to ensure that it is resolved as soon as possible.

7. Resolution of the incident

- An incident is considered resolved when the technician has found a solution. temporary or a permanent solution to the problem

8. Incident Closure

- An incident can be closed once the problem is resolved and the user accepts the resolution and is satisfied with it.

Source: Capacitación Empresarial, S. A. (2021).

These processes may be simple or complex depending on the type of incident; they may also include several workflows and tasks in addition to the basic process described above.

It is important to mention that the company did not have a Flow chart for this process; it was handled according to the previous figure. In this sense, the proposal implies the Flow chart presented, in accordance with the Incident Management Manual.

5. Results and proposals for improvement

Having carried out a review of the process and the corresponding flow chart, the following problems were detected o Problem detected:

Detected problem 1 - Non-existent feedback flow:

It would be important to have a feedback line that connects the level of service level management to the receipt of the service request. This would allow service level results and metrics to be used to improve the receipt and evaluation of service requests.

Problem 2 - Prioritization of requests:

After the request evaluation, it would be important to add a prioritization activity to determine the priority of incoming requests. This will help to allocate resources efficiently and meet established service level agreements.

Detected problem 3 - Communication of the service level:

There is no activity that is responsible for regularly communicating service level results to users and clients and that allows for clear and transparent communication and provides the opportunity to make adjustments if necessary.

Problem identified 4 - Change management process:

If a change in IT services were to occur, it would not be possible to manage it in a controlled manner, minimizing the impact on users and customers, therefore, it would be important to add a section dedicated to change management, which includes the identification, evaluation and planning of changes in IT services.

Problem identified 5 - Service level review and improvement - quality management:

Add a specific activity to perform periodic service level reviews, evaluating established service agreements, metrics and KPIs. This will allow you to identify areas for improvement and take corrective actions to optimize service level performance.

According to a review of service quality management issues by area, the following aspects were also found:

Administrative area:

- Technical evidence by position, there is evidence, but not documented.
- Elaboration of performance evaluations, there is a format, but they are not carried out on a regular basis.
- There could be process improvements, but they are not documented or identified.

Project area

- Quality indicators on support issues are being worked on as of this year.
- There is only the control format
- Satisfaction survey forms, validating content quality
- Improvement actions to deal with the recurring situation of more constant incidents (password resets).
- They have documentation in case of incidents, it is being fulfilled by projects, and even by virtual courses.
- The main quality issue would be in support, incident generated, incident solved, as soon as possible.
- There have been extreme situations that have been solved satisfactorily, without affecting the operation of the project.

Production area

- Quality can be measured by levels, it starts with the designer, from the moment it is received, there are quality controls performed by people already on the platform and the quality obtained by the user.
- The quality of the content, related to the authors should be escalated to the author to validate them, if it is indicated that the information is not correct, it is validated and the user is responded to.
- The quality of the design as such, the graphic element, there is a quality that the designer must control and that is that when he builds, he must have graphic guidelines and must make sure that it works.
- Then, when the designers deliver the module, there is a quality validation performed by the services team and what they do is to validate that the module works, that it has the content that the teacher sent, that it is included in the content. This quality control is very strong, because it is of the content as such and it is adjusted as required.

- Then the behavior of the module is validated on the platform, ensuring that it records the progress, that the whole module is created, that, in theory, it should not encounter so many errors, considering all the previous quality controls.
- Finally, that of the user when he/she informs us of any error, or satisfaction with the contents, whether they are educational or not, associated with the user experience. This would be a subsequent control.

The service level process should be represented in a process diagram, as suggested in Figure 5 below.

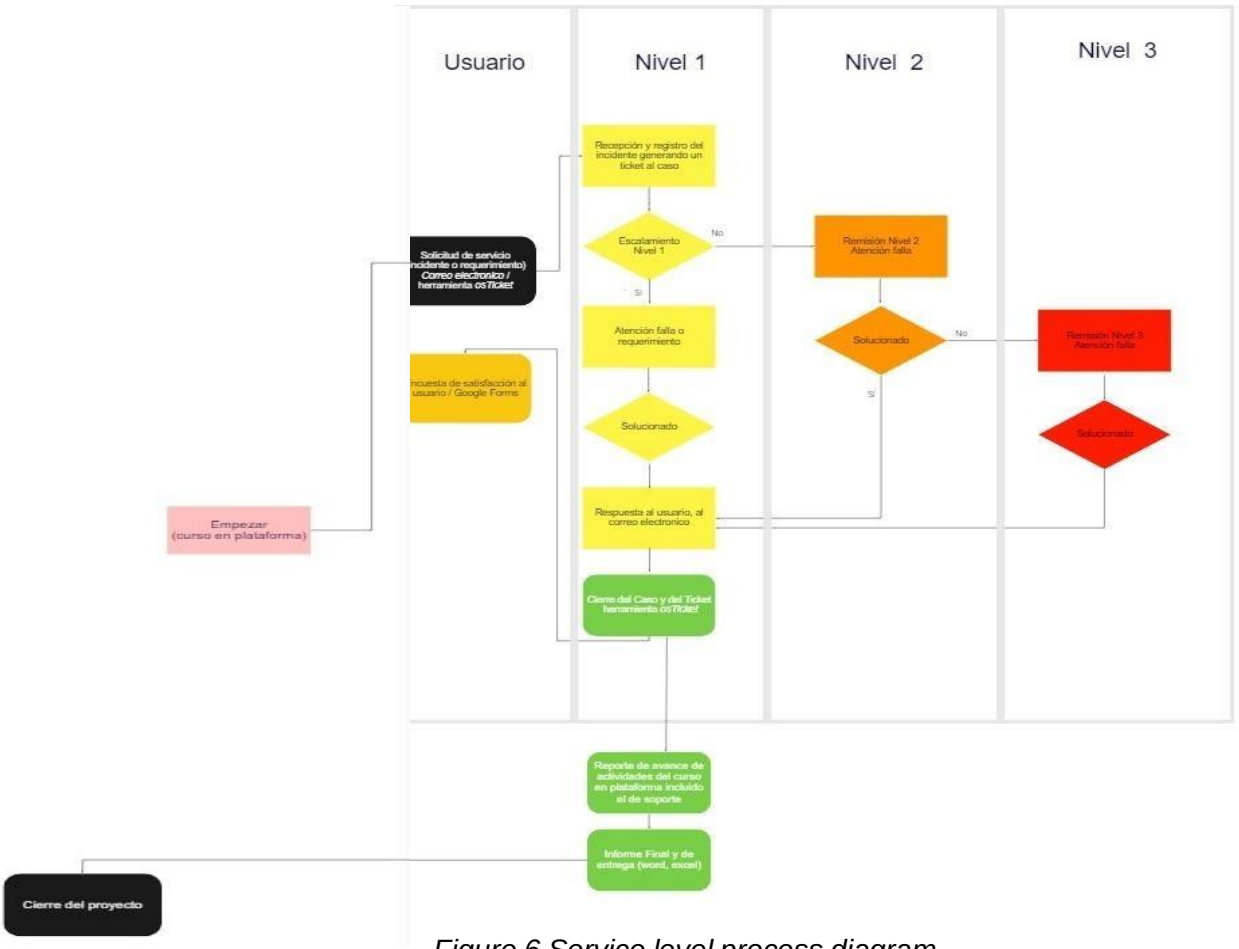
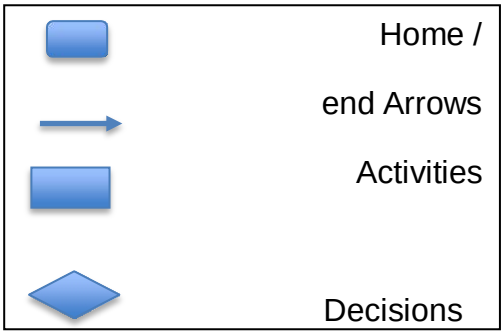


Figure 6 Service level process diagram

Source: Own elaboration based on information provided by Capacitación Empresarial, S.A.



The meaning of the symbology used in the proposed flowchart is described below:

Start/End: Indicates the start and end of the process.

Arrows: Represent the workflow and direction of the process. Rectangles:

Represent activities or actions to be performed within the process.

Diamonds: Represent decisions or decision making points within the process. A question with "yes" or "no" answers is used to determine the direction of flow.

Connector lines: They connect the different symbols and show the sequence and logical flow of the process.

Likewise, it must be supported by IT service management tools such as ITIL (Information Technology Infrastructure Library), which provides a framework of best practices for IT service management, the **following** ITIL-supported Service Level Process **Improvement Proposals** are presented:

Proposed improvement 1 - Assign roles and responsibilities for each level, as shown below:

Table 3 Roles and Responsibilities of the IT Incident Management Process

ROLES	RESPONSIBILITIES
User or applicant It is the person who experiences an interruption in service and issues an incident case to initiate the incident management and ticket generation process.	-Contact the service desk to submit a new incident request. -Follow up on an existing application. -Clearly communicate all required information to the technicians. -Recognize service restoration and ticket completion. -Respond to follow-up surveys after ticket resolution by completing the feedback loop.
Service table **Level 1:** This is the first point of contact for requesters wishing to submit a request or incident ticket. The level 1 service desk generally consists of technicians who have a working knowledge of the most common problems that can occur in an IT environment, including password resets, Wi-Fi problems, or basic course and information management. pa ssword resets, Wi-Fi problems, or basic course and	• Provide first level support (5x8) to support and collaborate with user administrators in the operation of the LMS platform, incident management and progress of incidents through a help desk system with web console, -Record all incoming incident requests with appropriate parameters such as category, urgency and priority. -Assign tickets to technicians. -Analyze and resolve an incident to restore service. -Escalate unresolved incidents to the Level 2 service desk. -Gather all required information from applicants and send them periodic updates on the status of their application.

information management.	
	-Act as a point of contact for applicants and, if necessary, coordinate between the Level 2 support desk and applicants. -Verify the resolution with the end user and gather feedback.
Service table **Level 2**	-To carry out the diagnosis of incidents. -Document the steps taken to resolve the incident and submit the knowledge base articles.

This service desk is staffed by technicians with advanced incident management skills. They usually receive escalated requests from Level 1.	-Identify when an incident is a problem and convert the incident ticket to a problem ticket. -If the incident is resolved, confirm resolution with the end user. -If the incident is not resolved, escalate to the Level 3 service desk. -If not resolved, escalate the incident to the IT problem management team to identify the underlying problem. or external suppliers, as appropriate. -Provide subject matter expertise.
Service table **Level 3 (and above)** This level is generally composed of technical specialists who have advanced knowledge of particular domains in the IT infrastructure. For example, hardware maintenance technicians and server support is	
specialize in very specific fields.	

Incident Manager This stakeholder plays a key role in the incident management process by monitoring how effective the process is, recommending improvements, and ensuring that due process is followed, among other responsibilities.	•Serve as point of contact for all major incidents. -Plan and facilitate all activities involved in the incident management process. -Ensure that the correct process is followed for all tickets and correct any deviations. -Coordinate and communicate with the process owner. -Ensure that SLAs are met. -Identify incidents to be reviewed and perform the review.
Process owner This stakeholder owns the process for managing incidents. It also analyzes, modifies and improves the process to ensure that it best serves the organization's interest.	-Assume responsibility for the overall incident management process. -Define key performance indicators (KPIs) and align them with critical success factors (CSFs). -Review KPIs and ensure they meet business objectives and CSFs. -Design, document, review and improve processes. -Establish continuous service improvement (CSI) in which procedures, policies, roles, technology and other aspects of the incident management process are reviewed and improved. -Stay informed of industry best practices and incorporate them into the incident management process.

Improvement proposal 2 - Review and update of the SLA:

- Conduct a comprehensive review of existing service level agreements (SLAs) to identify potential gaps or areas for improvement.
- Assess whether current SLAs align with the needs and expectations of IT users and customers.
- Collaborate with business teams and users to review and update existing SLAs.
- Ensure that SLAs are measurable, achievable and aligned with the organization's strategic objectives.

Improvement proposal 3 - Implementation of monitoring and management tools:

It is proposed to evaluate and select appropriate IT service monitoring and management tools for Capacitación Empresarial, S.A.'s service level process, such as ticket management systems, which use a ticket tracking tool to receive and manage customer service requests and will facilitate resource allocation, tracking response times and problem resolution in an efficient manner.

Performance monitoring tools can be used to monitor the performance of training services, such as response time, customer satisfaction and compliance with service level agreements (SLAs). These tools can include online survey systems, data analysis and customized dashboards.

Project management software could also be proposed as a management tool for planning, organizing and tracking training projects, which will help ensure that deadlines are met, adequate resources are allocated, and tasks and deliverables are effectively tracked.

Improvement Proposal 4 - Improve communication and collaboration:

Although online communication and collaboration tools are used, such as instant messaging platforms, videoconferencing and document sharing tools, communication between the training team, clients and participants is often not fluid or in real time. In this sense, it is suggested:

- Establish clear and efficient communication channels with IT users and customers.

- Encourage regular two-way communication to obtain feedback on services and user needs.

Improvement proposal 5 - Implementation of a problem management process:

- Establish a formal problem management process to identify and resolve issues affecting service levels.
- Define clear responsibilities and priority scales for problem resolution in a timely manner.

Proposal for improvement 6 - Staff training and development:

- Provide ongoing training and development to IT staff on IT service management best practices according to ITIL.
- Ensure that staff have the necessary skills and knowledge to comply with the SLAs and provide an excellent level of service.

By investing in the growth and strengthening of the team's skills and knowledge, organizations can improve their operational performance, optimize processes and promote a culture of continuous improvement. According to Salgado and Calderón (2014), this improvement could contribute as follows:

- Updating knowledge: As technological advances and best practices evolve, it is essential for operations management personnel to stay current on the latest trends and methodologies. Ongoing training enables the team to acquire new knowledge and approaches, which facilitates the implementation of operational process improvements.
- Technical skills development: Operations management involves a variety of technical skills, such as inventory management, production planning, supply chain management, and quality control. Through specialized training programs, staff can improve their technical skills and apply more efficient and effective methods in operations management.
- Fostering leadership skills: Continuous improvement in operations management requires skilled and effective leaders. Staff training and development provides opportunities to foster leadership skills such as decision making, change management, problem solving and effective communication. These skills enable leaders to drive and facilitate continuous improvement at all levels of the organization.

- Establishment of a continuous learning environment: Staff training and development creates a continuous learning environment, where employees are motivated to constantly seek ways to improve and learn. This promotes a culture of continuous improvement, where employees feel empowered to identify and propose improvements in operational processes.
- Implementation of improvement projects: Staff training and development can also include participation in specific improvement projects. These projects allow employees to apply their newly acquired skills and knowledge in practice, identify opportunities for improvement and collaborate in implementing efficient solutions.

Improvement Proposal #7 - Monitoring and continuous improvement:

- Establish relevant metrics and KPIs to evaluate the performance of the service level process.
- Conduct periodic reviews to identify areas for improvement and take corrective and preventive actions.

Improvement Proposal #8 - Collaboration with external suppliers:

- Establish a collaborative relationship with external IT service providers to ensure the delivery of quality services.
- Establish clear service level agreements with suppliers and regularly monitor compliance.

Improvement Proposal #9 - Audit and compliance:

- Conduct periodic audits of the service level process to ensure compliance with defined standards and practices, for which it is important:
    - Define, plan, establish, implement and maintain an audit program(s), including frequency, methods, responsibilities, planning and reporting requirements, which should take into consideration the importance of the processes involved, changes affecting the organization and the results of previous audits.
    - Conducting internal audits in accordance with the organization's own requirements, but not planning them or preparing the respective reports.
    - Retain documented information as evidence of implementation of the audit program and audit results.

- Ensure compliance with regulations and legal requirements related to IT services.

This ITIL-based service level process improvement proposal aims to optimize IT service delivery, improve user and customer satisfaction, and ensure alignment with strategic objectives.

6. Conclusions

A process is defined as a set of mutually related or interacting activities that transform inputs into outputs. Every process must be represented by a flow chart and its performance must be measurable. Normally, a process is made up of inputs, activities and results or outputs.

Flowcharts are a visual tool used to represent processes or procedures by means of symbols and lines that connect the different elements that make up the process. These diagrams are very useful for analyzing and optimizing processes, identifying problems and solving them efficiently. They are also useful in programming and problem solving to graphically represent the flow of information or processes, taking into account that they are a visual way to show how a program or process is developed and how data is manipulated.

An adequate analysis for decision making in operations management must establish certain qualities that an administrative system must satisfy and propose a set of dimensions that allow the system's behavior to be observed by means of numerical indicators, establishing that performance will be determined in each case according to the circumstances.

The general objective was to analyze a business process step by step to detect problems and make proposals for improvements. The specific objectives were to describe the importance of operations management, evaluate an organizational process in accordance with the methodology used in operations management and define possibilities for improvements in the process analyzed.

From the analysis and results obtained, it can be considered that the objectives were met, since a process of the company Capacitación Empresarial SA was analyzed, a company dedicated to providing training solutions and pedagogical resources for companies with

7 years of creation, which has managed to establish itself in the market and position itself as a reliable provider in the field of business training.

The company has a solid organizational structure, with positions such as Corporate Director, Commercial Director, Project Coordinator and Administrative Coordinator, each with specific functions and qualifications necessary to perform their roles effectively.

The selected process was the service level process, which, although the company has sought to implement under an ITIL-based approach to ensure quality and efficiency in the delivery of the services offered, it was analyzed and suggested as a proposal for improvement, to optimize this process, incorporating quality control to ensure compliance with established standards and meet the needs of customers.

This quality policy would establish its commitment to excellence in service delivery and customer satisfaction. This policy would be based on continuous improvement, staff training and proper resource management.

An IT incident was defined as any disruption to an organization's IT services that affects anything from a single user to the entire enterprise. Simply put, an incident is an interruption that inhibits business continuity (virtual course in development).

It was proposed that the company should provide the service desk and incident support or solutions 7x24 for critical incidents and 5x8 for minor incidents defined in the service agreements, in accordance with the classification, plan and support scheme. An incident management process was also proposed to ensure continuous improvement of the service.

Although the IT incident management process showed a good organization in the proposed levels, escalations by levels and response times, the analysis suggested assigning roles and their responsibilities for each level of user care, as a continuous improvement of the service, the incident management process must be complied with, as well as the design of a flow chart, to visually represent the steps involved in the process, which must be performed following a logical sequence.

In summary, Capacitación Empresarial SA is a growing company focused on providing quality training solutions and educational resources for companies.

By focusing on continuous improvement, implementation of quality standards and attention to the needs of its customers, it would allow it to remain competitive in the market and provide a valuable service to its customers.

As part of the recommendations that could be proposed for future studies, it could be suggested to carry out a more comprehensive evaluation with other processes carried out by the company, which could not be included in the present analysis, considering information limitations, as well as the design of a comprehensive management control system, with the definition of management indicators appropriate to the company's activity, from the beginning of the contact with the client.

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