

Standardization Development of Catering Services In the Republic Senate of Colombia

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Summary

The Senate of the Republic of Colombia offers legislative spaces for public servants to debate and make the inherent political decisions of the moment; in addition, it allows catering services to be provided by third parties, where the supply of prepared food is provided to those who are exercising their executive work. The execution of this activity has caused that within the facilities of the Institution reprocesses are generated in the Goods Division and Services of the Entity. The analysis method applied was based on engineering tools focused on the elimination of procedures that do not represent value, through the analysis and evaluation of the tasks of greatest influence, resulting in the development of documentation, definition of measurement and control indicators, determination of the structuring of times and analysis of the environmental impact of the process. The application of these methodologies will allow greater control over its execution and the final disposal of waste that is reflected in the environmental policies of the institution.

Keywords: Standardize, Catering, Indicators, Documentation, Measurement and Control.

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I. INTRODUCCIÓN

Problem definition

For the institutions that operate today, it's very important to document all of their processes. Standardization activities are fundamental to assure the businesses success [1]. Industrial engineering provides all the tools to efficiently characterize this success. The innovation, processes and time design, are the tools that generate efficiency, effectiveness, productivity and cost reduction [2]. Also, engineering focuses on optimizing the use of resources, and seeks better waste management practices into the activities carried out. The efficient waste management in a company helps with the improvement of costs and leads to internal and external sustainability. As Carolina Montes Cortés (2016) proposed, the study of environmental problems derived from economic and social development should include the waste generation analysis, as one of the most important causes of affectation of human health and environmental degradation [3].

The documented information is the substantial form of the organization's activities and the internal quality management system, as it supports internal and external communication, provides systematization of processes and determines the path of action. In addition, it helps employees understand their role within the company, characterize areas, reduce variability, establish a coherent basis for periodic evaluation and facilitate the process audit [4]. Insofar as that supported information is available, it is possible to generate changes oriented to the procedures purposes, which do not interfere with the evolution of these but provide improvement actions for their own development and potentiation.

The management's generation of indicators by process determines measurement and control of sector execution components in a company, providing data contributes to decision-making and verification of the efficiency of the mechanisms used within the activities. The enhancement of processes is related to the possibility of anticipating the occurrence of difficulties, identifying more accurately the opportunities of improvement [5].

The Senate of the Republic, representing the Colombian people, exercises constitutional and legal functions to promote the common good and the development of society [6]. The Senate administration allowed the investigation team to access all the relevant information to carry out the current document. Thanks to this it was possible to identify that the providers of this service carry out activities oriented to particular interests which are affected by certain unplanned procedures. As a result of the above, disorders are presented in its execution.

This improvement opportunity will contribute to the operation of the seven headquarters the Senate of the Republic has located in the center of the city of Bogotá, where all the administrative areas that make them up are established. For the realization of the project the Division of Goods and Services gave the best support and helped with the identification of opportunities to innovate the catering system.

One of the methodologies to define and identify internal problems is the construction of a problem tree [7], which allows visualization in cause and effect format. This tool contributes to the characterization of the problem and decision-making to mitigate or solve the causes associated with it.

The following describes a series of causes and consequences identified for the opportunity for improvement found in the Senate using the described methodology:

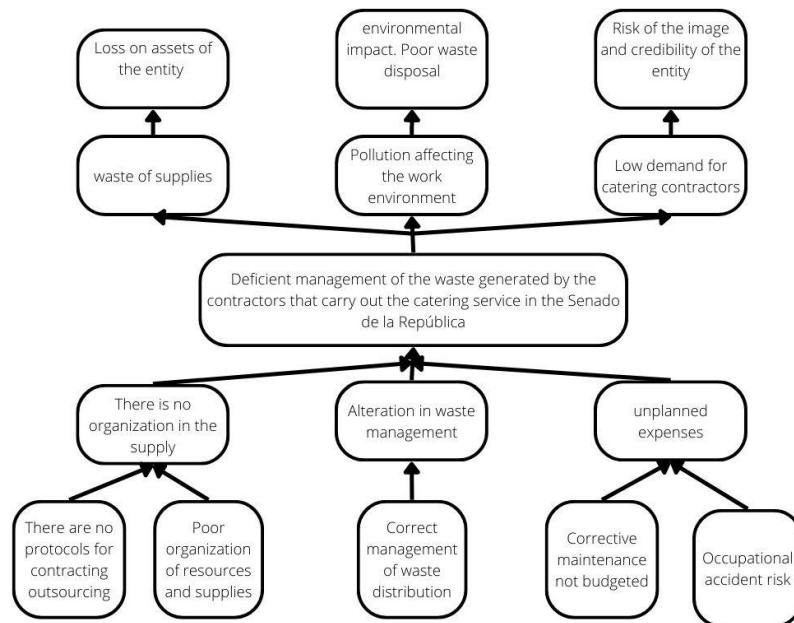


Figure 1. Problem tree

In figure 1, are shown some of the causes identified in the collection of data processes that generate problems in the catering service. These are the input for the first phase of the investigation, where it is aimed to reduce the impacts generated by catering, and determine environmental policies for the collection of multiple waste

II. THEORETICAL FRAMEWORK

2.1 Standardization Theory:

Standardization as a tool for competitiveness: According to what is described by the author of this thesis, it exposes standardization as a form of ancient culture that can be interpreted to the order or regulation of work methods which are established through processes. Its development as a strategy happened during the industrial age of the nineteenth century when productive sectors began to adapt rules of common use to change the pre-established anarchies in the incipient industrial economy [8].

What would happen if the standardization of the processes is not established?

According to this proposition, the author describes the standardization of processes as an important activity in a company specially focused on the service and establishes that if there was no quality control it might cause shortcomings of factors and variables that intervene in the process. The author also determined a list where he explains these opportunities for improvement from the standardization as follows:

- I. There would not be proper controls to assess timing within the processes.
- II. There would be no means of establishing productivity parameters and performance indicators.
- III. Nor can a follow-up be determined that permits to follow the traceability of each process to detect failures and correct them immediately (reprocess control).
- IV. No process would be defined as key and critical within the operations, which allow the company to increase its levels of competitiveness (generation of bottlenecks).
- V. It would never be possible to create an analysis of times and movements of the processes that generate or allow corrections or increases in the productivity of said company.
- VI. Possibly the processes and procedures that determine the quality of the activities that are carried out (reduction of learning curve times and definition of quality standards) would never be documented [9]

2.2 Management indicators theory and their practical application

According to this study, the author performs an analysis of the theory of indicators in which he takes as an example a company, explaining that this internal process must be based on administrative systems and measurement of strategies and capacities. Metrics should not only be used just as tools, but their general purposes should be to define the organizational strategy. [10]



Figure 2. Management Indicators

2.3. Times and Movements

Study of times and movements in the activities allows to improve processes. Focused on the thesis of the author, he defines the study of times and movements as a technical approach to improve the productivity and efficiency within an organization. Taking as a case of study, the company Kaia Borda, in which through this study it carries out a follow-up in the plant in order to be able to improve the processes in time and improve the welfare of the human factor. Therefore, it is expected to economize the effort of the staff for the reduction of fatigue, create ergonomic working conditions and optimize the use of materials, machines and resources. [11]

III. MATERIALS AND METHODS

3.1 Study Area:

The city of Bogotá is located in Colombia's central area of the country. The study area is in the locality of Candelaria. In figure 3 the 7 seats of the Senate that are part of the study:



Figure 3. Evidence from the seven seats of the Senate

3.2. Methodology

Through mixed applied research, the catering study was carried out to review and propose indicators, documents and protocols that would establish security in each event at the Senate through external organizations that will provide the service meeting or exceeding the expectations and requirements desired by the public entity. This research includes qualitative and quantitative variables that were identified through different data collection mechanisms such as: observation, interpretation, identification and analysis. [12] The data collected for the construction of the project correspond to the period from August 2019 to February 2020 (study period). After that time the information was obtained through tools for data analysis such as the SWOT Matrix, survey of employees and contractors, etc.

Figure 4 presents the specific objectives set for the development of research

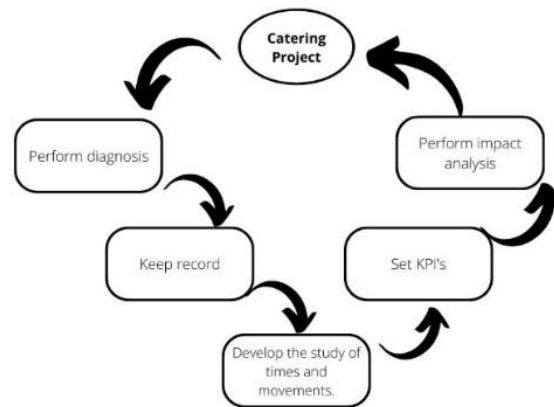


Figure 4. Process diagram

IV. PROJECT DEVELOPMENT

In the project preparation, the specific objectives presented above and the variables that allowed to identify the opportunities for improvement, the analysis and the proposal allows optimizing and being effective in the provision of the catering service carried out by entities external to the Senate of the Republic were established. Next, the step by step of each objective and the stages of the 5 items to be worked on are explained.

- **Diagnose:** The tools that are proposed are in the first instance a survey that was applied in person and virtually (Google Forms), with which it was possible to establish a tabulation and technical sheet of the same; later, with the open questions, different parameters were established to articulate the SWOT tool and its complementary (IFE, EFE, SPACE and CROSSED SWOT) in order to understand the opportunities, threats, weaknesses and strengths that the process has within the institution.
- **Document:** Through this objective, a format was made in which the parameters and documentation to be prepared were established to determine a competent way to evaluate the catering service by internal and external entities, the entire documentary structure is generated.
- **Study of times:** In this objective the analysis of the audit procedures and provision of the catering service was carried out where its purpose was to find an operational route with a time taking by experts who were dedicated to this service in order to achieve an optimal vision of the process and a competent way to evaluate the activities carried out by the catering, not only from the Senate, but taking into account external companies to deliver quality and safety assistance through GPM [13] and obtaining greater accuracy in the time carried out by each activity of an event trying to reduce unnecessary activities in the productive cycle. The importance of monitoring the process in each internal or external event is highlighted to measure and evaluate the efficiency with which it is carried out
- **Indicators:** The percentage of companies that comply with the total documentation vs those that fail to achieve the established quality standards to be measured. A checklist will be made to measure the percentage of compliance of the company that wishes to perform the catering. That company that complies with the documentation will be understood as "Authorized Company" and the one that does not "Company that Defaults" [14]

NAME:	Catering executed vs Catering requested		
OBJECTIVE:	Measure compliance with the documentation requested and delivered by third parties, so that compliance with the catering protocols in the entity is increased		
INDICATOR FORMULA:	UNIT OF MEASUREMENT	NAME OF THE VARIABLES	SOURCE OF INFORMATION
(FC/FT) x 100	PERCENTAGE	FC: Documentation Completed TF: full documentation	Documentation completed in the process

Table 1. Outline of management indicators

Environmental impact assessment: The matrix presented describes the purpose of the catering standardization project in the Senate of the Republic, which is the mitigation and reduction of the environmental impact generated by the waste from the process. Related activities are categorized in the matrix for component

fulfillment according to the following:

1.Information for the correct management, selection and disposal of waste Action: Training and control of the waste generated.

2.Compliance with work organization methods necessary for improvement

Action: Planning, adaptation and training on space for the disposal, selection and transport of waste [15] Action: Verification of the completion of process formats.

	Narrative Summary	Indicators	Means of Verification	Assumptions
End	<ul style="list-style-type: none"> - Environmental impact - Waste generation - Impact on the biosecurity of workers and attendees of events held in the Senate 	<ul style="list-style-type: none"> - 100% use and compliance with biosafety protocols of verifiers, assistants and process executors - 80% improvement in compliance with waste generation and disposal for the process - 100% in staff training 	<ul style="list-style-type: none"> - Documentary control of process formats and records - Environmental Impact Study executed after the implementation of the project - Financial validation of the impact of the project 	<ul style="list-style-type: none"> - Eradicate rework - Improve the training, collection, separation and disposal of waste generated in the process - Good use and compliance with environmental practice manuals
Purpose	<ul style="list-style-type: none"> - Standardization of catering in the Senate of the Republic 	<ul style="list-style-type: none"> - 95% improvement in process compliance 	<ul style="list-style-type: none"> - Identification and verification of the improvement of the treatment, selection and use of the waste generated in the process 	<ul style="list-style-type: none"> - Compliance with improvements made by and for the entity

Table 2. Environmental impact matrix

V. Results

In this section, the results obtained will be identified under the methodology of standardization of processes, verifying in the first instance the results of the preliminary diagnosis of the process, identification of the documentation generated, the proposed indicators for the measurement and control, the study of times and the analysis of environmental impact that was carried out for the process in the Senate.

5.1 Diagnosis:

5.1.1 Survey:

For the collection of information, a survey was carried out where the opinion of the officials of the entity was taken into account. For the execution of this, a population sampling (evidence in "sampling") was created by means of a statistical tool, taking into account the current population of the Senate of the Republic (officials, contractors and UTL) where the necessary parameters for the elaboration of the tool were collected, obtaining the number of people required for the data collection and the level of risk of the knowledge that is needed and the taking of samples (see table 3).

Sampling Data	
Confidence level	95%
sampling error	10%
success ratio	0,5
Failure Ratio	0,5
Population	1296
standard deviation	1,64485363
Sample	65

Table 3. Sampling data

Through the survey tabulator, the verification and organization of the collected data is carried out, in this case the analysis was divided by gender and had two types of responses (open and closed). In the case of the closed answers, six questions were asked where the objective was to collect solid bases to evidence through the tool the shortcomings presented by the catering. This information was organized as a percentage taking into account the answers YES or NO (see table 4).

Based on the information collected, we proceeded to analyze the open responses (see table 5) where the objective was to take into account the perception of each official of the entity in the areas already mentioned and also identify what opportunity for improvement they identified as necessary [16]

Do you consider that the food supply in the Senate of the Republic is following adequate		
ANSWERS	PEOPLE	PERCENTAGE
YES	39	60%
NO	26	40%
TOTAL	65	100%

Table 4. Closed response

Why? Question 1		
ANSWERS	PEOPLE	PERCENTAGE
There are pre-established procedures	41	63%
No protocols shown	15	23%
Quality in the food they supply	4	6%
not responding	5	8%
Total	65	100%

Table 5. Open response

Table 5 made a comparison of responses and was reorganized under the type of conclusion as established by the known shortcomings of catering; Likewise, the data was organized by percentage and the option "Does not respond" was taken into account since some officials selected this or did not answer.

5.1.2 SWOT Tool

For the realization of the SWOT matrix, the results obtained in the tabulation of the survey were taken into account, where they were divided into two factors: the internal environment and the external environment. Positive and negative prospects for catering were found. The objective of the SWOT is to organize a matrix based on factors as a key point to categorize information and publicize its aspects through the acronym Strengths, Weaknesses, Opportunities and Threats (SWOT). Figure 6 shows the SWOT generated for the process [17]

INTERNAL FACTOR		EXTERNAL FACTOR	
Strengths 1. There is confidence in the entity to carry out improvement processes 2. Environmental education has been receptive by workers 3. Officials are aware of the weaknesses in catering 4. The cleaning staff knows the ecological measures of waste separation 5. Officials are willing to adopt changes to benefit the entity		Opportunities 1. Improvement in the quality of service provided by providers 2. Greater satisfaction in those who receive the catering 3. Reduce expenses for unplanned situations 4. Mitigation of the risk of incurring penalties or fines 5. Standardization of a process based on the PHVA cycle	POSITIVE
Weaknesses 1. Waste from ordinary activities and catering increase the level of surplus generated by the entity 2. There is no established protocol for the provision of catering by third parties 3. Some officials acknowledge not being fully aware of the environmental policies provided by the entity 4. There is no good documentation to know the providers of the catering service 5. Officials are willing to adopt changes to benefit the entity		Threats 1. Fines by INVIMA 2. Sanctions by the Ministry of Health 3. Increased risk due to lack of protocols 4. Public disparagement of the entity 5. Greater impact on the ecological footprint	NEGATIVE

Figure 5. SWOT of catering in the Senate of the Republic

Thanks to the SWOT matrix, truthful information is presented, which in the second instance is divided into two matrices: external environment and internal environment (EFE AND IFE). In these matrices, each aspect was evaluated by means of weights, the ratings being as follows (1: very low risk 2: low risk 3: medium risk and 4: high risk). It is understood that if the result factor is greater than 2.5 the project is viable. Table 6 presents the result for the EFE matrix and Table 7 presents the IFE matrix

Table 6. External Factors Evaluation Matrix (EFE)

External Factors Evaluation Matrix (EFE)				
KEY EXTERNAL FACTORS		WEIGHTING IMPORTANCE	CLASSIFICATION EVALUATION	VALOR
Opportunities				
1.	Improvement in the quality of service provided by providers	15%	4	0,60
2.	Greater satisfaction in those who receive the catering	10%	3	0,30
3.	Reduce expenses for unplanned situations	15%	4	0,60
4.	Mitigation of the risk of sanctions or fines	14%	3	0,42
5.	Standardization of a process based on the PHVA cycle	10%	2	0,20
Threats				
1.	Fines by INVIMA	8%	4	0,32
2.	Sanctions by the Ministry of Health	10%	4	0,40
3.	increased risk due to lack of protocols	6%	3	0,18
4.	Public disparagement of the entity	6%	1	0,06
5.	Greater impact on the ecological footprint	6%	3	0,18
Total				3,26
				Positive Balance

Table 6. External Factors Evaluation Matrix (EFE)

Taking into account the qualifications and weights used and accepted, it is understood that the project despite having enough opportunities and a possibility of handling a 64% importance in the weighting, even the threats provide a greater impact, which obviously threatens the execution of the catering and its potential development in the entity. The result of 3.26 refers to the sum of the weights that were obtained according to the grades given for each item. The value is greater than 2.5 because the process has serious shortcomings and is seen in the readiness for immediate intervention.

Matriz de Evaluación de Factores Internos (EFI)				
KEY INTERNAL FACTORS		WEIGHTING IMPORTANCE	CLASSIFICATION EVALUATION	VALOR
Strengths				
1.	1. There is confidence in the entity to carry out improvement processes	7%	4	0,28
2.	2. Environmental education has been receptive by workers	6%	4	0,24
3.	3. Officials are aware of the weaknesses in catering	6%	4	0,24
4.	4. The cleaning staff knows the ecological measures of waste separation	4%	1	0,04
5.	5. Officials are willing to adopt changes to benefit the entity	5%	2	0,10
Weaknesses				
1.	1. Waste from ordinary activities and catering increase the level of surplus generated by the entity	15%	4	0,60
2.	2. There is no established protocol for the provision of catering by third parties	13%	3	0,39
3.	3. Some officials acknowledge not being fully aware of the environmental policies provided by the entity	15%	4	0,60
4.	4. There is no good documentation to know the providers of the catering service	14%	2	0,28
5.	5. Officials are willing to adopt changes to benefit the entity	15%	1	0,15
Total				2,92
				Positive Balance

Table 7. Internal Factors Assessment Matrix (IFE)

This weighting highlights a higher percentage of process weaknesses, with a significant percentage of 72% of the total evaluation; by obtaining a value greater than 2.5 you have a performance with effective potential for standardization. The result of the analysis yields a total of 2.92 which means that according to the methodology of the IFE matrix, an intervention in the process is required in order to feedback and mitigate weaknesses and be able to make a greater contribution to its strengths.

Cross SWOT allows the intersection of strengths and opportunities, strengths and threats, weaknesses vs opportunities and weaknesses vs threats; intervention objectives are proposed that allow to take into account all the SWOT points and thus, verify that the items described are in accordance with each other so as not to present random solutions but based on an objective diagnosis. Although, when expressed for example F1, reference is made to fortress 1; and if you see F1, O1; this means that the proposed solution encompasses strength 1 and opportunity 1. Table 8 shows the matrix resulting from the crossing of this methodology.

CROSS SWOT		Opportunities		Threats		
		1. Improvement in the quality of service provided by providers 2. Greater satisfaction in those who receive the catering 3. Reduce expenses for unplanned situations 4. Mitigation of the risk of sanctions or fines 5. Standardization of a process based on the PHVA cycle		1. Fines by INVIMA 2. Sanctions by the Ministry of Health 3. Increased risk due to lack of protocols 4. Public disparagement of the entity 5. Greater impact on the ecological footprint		
Strengths	1. There is confidence in the entity to carry out improvement processes	S1, S2, S3, O1, O3, O5	The adoption of new protocols will enable the participation of officials to improve the catering service	S3, S4, S5, T1, T2, T3	Weaknesses in catering raise the risk of obtaining unexpected results at the time of the operation due to lack of protocols	
	2. Environmental education has been receptive by workers					
	3. Officials are aware of the weaknesses in catering		If the cleaning staff manages best environmental practices for waste, sanctions will be prevented		S1, S2, S4, T1, T5	With the collaboration of officials, the entity's ecological impact will be reduced
	4. The cleaning staff knows the ecological measures of waste separation					
	5. Officials are willing to adopt changes to benefit the entity					
Weaknesses	1. Waste from ordinary activities and catering increase the level of surplus generated by the entity	W1, W2, W4, W5, O1, O3, O4, O5	The implementation of the respective documentation for the catering reduces the risk of being sanctioned or fined for improperly handling the process	W1, W3, W4, W5, T2, T3	The Ministry of Health can intervene in the institution for putting people's lives at risk thanks to the catering provided	
	2. There is no established protocol for the provision of catering by third parties					
	3. Some officials acknowledge not being fully aware of the environmental policies provided by the entity		The PHVA cycle proposes the use of vectors until their final disposal		W1, W2, T4, T5	Poor waste management negatively impacts the ecological footprint provided by the entity
	4. There is no good documentation to know the providers of the catering service					
	5. It is evident that the third parties that use the adaptations do not comply with the waste separation protocols					

Table 8. Cross SWOT

The SPACE matrix is a tool that provides different evaluation parameters, such as environmental stability, industry strength, competitive advantage and financial strength; the objective is to graph in different quadrants the exact place where the catering is currently located. The quadrants mentioned are defensive, competitive, conservative and aggressive; the location of each of them gives a result to the evaluation carried out. It is taken into account that the Senate, not being an entity that wants to compete with another to improve profitability or profit, many of the competitive economic points will be null, because it seeks to reduce the investment costs of the process.

According to the trafficking methodology, the coordinates (-1.57, -4) are obtained, which places the process in the defensive quadrant, this means that "the organization must focus on reducing internal weaknesses and avoiding external threats" and agrees with the reality of the process presented at the time of the evaluation of the initial catering.

5.2. Process documentation

For this phase and taking into account the data obtained in the visits made to the Senate of the Republic in its seven headquarters, and with the analysis developed in the diagnosis, the characterization is made, where the activities are found in the SIPOC type diagram, identifying the inputs and outputs; then the risks were established in a matrix providing all the inherent guidelines and control points that must be taken into account for the execution of the catering process in the entity.

Subsequently, two procedures, four instructions, eleven new formats were carried out and five existing formats of the internal document management of the Senate were adapted and two manuals were adapted.

The process was documented in two phases, where the first refers to how the contractors must execute the service in the entity, the internal biosecurity protocols, the standards that must be met by the third parties that supply the catering; and how waste should be disposed of and practices to preserve and conserve the internal and external environment of the Senate.

The second phase has the function of improving the process, which explains the necessary competencies that the audit team must have, how the process should be audited, the place where the findings should be recorded as well as how to follow up on the improvement actions proposed to the entity; in addition to including the environmental management plan of the process in accordance with what the document management of the Senate has structured.

5.3. Verification and control indicators

Five indicators are proposed to guarantee the effectiveness and efficiency of the process; taking into account the performance of internal management, the non-conformities generated, the quality of the service, the environmental impact and the real control. They are determined as follows:

1.Executed Catering vs Requested Catering: It allows to measure the degree of compliance in the documentation that is requested from the companies that execute the catering in the Senate. The percentage of companies that comply with the total documentation and those that fail to achieve the established quality standards will be measured.

2.non-conformities generated to the process: Measure the control of the catering process by the delegates of the Goods and Services Division. It allows to determine the cost of each unplanned event in the operation; this helps to give feedback of the process and always seek continuous improvement of it.

3.Quality of catering: Determine the quality of the catering process in the entity, through the application of a satisfaction survey to the people who are supplied with this instrument. It is used to generate a formal communication channel and at the same time as an evaluation of the process. The quantification of the surveys is used to measure and control the degree of satisfaction of people with the catering provided in the Senate.

4.Generation of catering waste: Measure compliance with the good final disposal of waste generated in catering. With this indicator, the variation in total solid waste can be measured in order to determine the relevant controls when there are increases or decreases.

5.Catering control: Determine the number of people involved in the control of the process. This indicator makes visible the real control of the officials that the institution is having.

The resume is formulated for each indicator, where the following elements are highlighted: The objective, the calculation formula of the indicator, the periodicity of the measurement, the range of acceptance of measurement and the improvement analyses. Figure 7 shows one of these resumes.

INDICADORES DE PROCESO SENADO DE LA REPÚBLICA			
MACROPROCESO:	Área administrativa		
PROCESO:	Catering		
NOMBRE:	Catering ejecutado vs Catering solicitado		
OBJETIVO:	Medir el cumplimiento de la documentación solicitada y entregada por los terceros, para que se aumente el cumplimiento de los protocolos del catering en la entidad		
FÓRMULA DEL INDICADOR	UNIDAD DE MEDIDA	NOMBRE DE LAS VARIABLES	FUENTE DE INFORMACIÓN
(FC/FT) x 100	Porcentaje	FC: Documentación Completada FT: Documentación total	Documentación diligenciada en el proceso
PERIODICIDAD DE MEDICIÓN	Semanal		Semanal
	Mensual	x	Mensual
	Trimestral		Trimestral
	Semestral		Semestral
	Anual		Anual
PARTES INTERESADAS			
ENTIDADES DE VIGILANCIA Y CONTROL <input type="checkbox"/>		INSTITUCIONAL <input checked="" type="checkbox"/>	
TIPO DE INDICADOR	EFICIENCIA	x	PLAN ESTRATÉGICO INSTITUCIONAL
	EFICACIA		PLAN ANUAL DE GESTIÓN
	EFFECTIVIDAD		SISTEMA INTEGRAL DE GESTIÓN
META	80<=META<=100		
RANGO	SOBRESALIENTE	80<=META<=100	ACEPTABLE
			70<=META<80
			DEFICIENTE
			META<70

Figure 6. Process Indicator Resume

The indicators are executed during and after applying the protocols provided in the documentation of the catering process; these argue and provide information that supports decision-making, and allows to achieve a much deeper knowledge of the procedures and their relationship with those responsible [11] with these, the quality of the internal components of the entity can be contributed and sustained.

5.4. Time of study

The time of study was carried out by means of 3 experts who work in the food area in catering companies. Through the collection of information, the procedure was divided into the following stages:

1. Select: The appropriate selection of activities to be evaluated was made, which were taken into account by the procedures proposed for the Senate of the Republic
2. Collect: All the necessary information was collected to carry out the method and the information of each company and the times of each activity were obtained
3. Inspect: The verification of whether the most efficient and optimal activity was used for the process was carried out
4. Quantify: The times of the experts were collected in the database and the time of the 3 companies analyzed was averaged
5. Conclude: The average time of each activity is determined and the ASME diagram is made to achieve an optimal vision of the evaluated process

Through this study, a competent way of evaluating the activities carried out by the catering service is determined and the average times of completion of the process are proposed.

The time study was carried out with the 2 catering procedures, in the case of the audit a time of 33 min was obtained and the following findings were achieved: Reduction of process execution time, lower cost in inputs and human factor. In the case of the catering procedure, an optimal way to carry out and plan the activities is determined, reducing the planning time to 1 hour and 46 min.

	Narrative Summary	Indicators	Means of Verification	Assumptions
End	<ul style="list-style-type: none"> - Environmental impact - Waste generation - Impact on the biosecurity of workers and attendees of events held in the Senate 	<ul style="list-style-type: none"> - 100% use and compliance with biosafety protocols of verifiers, assistants and process executors - 80% improvement in compliance with waste generation and disposal for the process - 100% in staff training 	<ul style="list-style-type: none"> - Documentary control of process formats and records - Environmental Impact Study executed after the implementation of the project - Financial validation of the impact of the project 	<ul style="list-style-type: none"> - Eradicate rework - Improve the training, collection, separation and disposal of waste generated in the process - Good use and compliance with environmental practice manuals
Purpose	<ul style="list-style-type: none"> - Standardization of catering in the Senate of the Republic 	<ul style="list-style-type: none"> - 95% improvement in process compliance 	<ul style="list-style-type: none"> - Identification and verification of the improvement of the 	<ul style="list-style-type: none"> - Compliance with improvements made by and for the

			treatment, selection and use of the waste generated in the process	entity
Components	<ul style="list-style-type: none"> - Information for the correct handling, selection and disposal of waste - Compliance with work organization methods necessary for improvement - Verification of the correct fulfillment of the tasks dedicated to the subcontractors that supply the catering - Control of the correct selection, disposal and temporary storage of waste generated in the process 	<ul style="list-style-type: none"> - 100% use, disclosure and verification of organizational procedures - 100% training levels - 100% use of public procedures - 100% implementation of the environmental waste generation indicator 	<ul style="list-style-type: none"> - Report of results of the leader of the catering process in the Senate - Format of control and verification of instructions, protocols and environmental manuals of the institution - Forms completed by third party subcontractors - Feedback from district toilet services 	<ul style="list-style-type: none"> - Assertive communication between workers and project stakeholders - Mitigation programs for risk and existing hazards to the environment
Activities	<ul style="list-style-type: none"> - Training and control of the waste generated - Planning, adaptation and training on space for the disposal, selection and transport of waste - Verification of the completion of process formats - Control of the use of the delimited areas for catering waste - Monitoring of process waste management and treatment protocols - Delimitation of times for storage and transport of waste 	<ul style="list-style-type: none"> - Budget 	<ul style="list-style-type: none"> - Process formats that impact the process environment - Verification of waste disposal areas - Auditing and auditing of the completion of the process formats 	<ul style="list-style-type: none"> - Demarcation and disposal of waste collection, separation and temporary storage areas - Control of formats used for the care of the environment of the project and the Senate - Disclosure of information inherent in the care and preservation of the environment

Table 9. Environmental impact analysis

The matrix presented describes the purpose of the catering standardization project in the Senate of the Republic, where the purpose is defined as the mitigation and reduction of the environmental impact generated by the waste of the catering process. Related activities are categorized for component compliance according to the following:

Information for the correct management, selection and disposal of waste:

-Training and control of the waste generated

Compliance with work organization methods necessary for improvement:

-Planning, adaptation and training on the space for the disposal, selection and transport of waste
 -Verification of the completion of process formats

Verification of the correct fulfillment of the tasks dedicated to the subcontractors that supply the catering:

-Control of the use of the delimited areas for catering waste
 -Monitoring of the protocols of management and treatment of the waste of the process

Control of the correct selection, disposal and temporary storage of waste generated in the process:

-Delimitation of times for storage and transport of waste

The Environmental Impact Assessment is having an exponential relevance in the execution of projects, in order to determine the results, effects and impacts; in addition, its implementation is essential to make data-driven

decisions in order to improve quality, relevance and equity. It is possible to provide information to the project managers, as well as to the evaluating entity of the process

VI. DISCUSSION

The standardization of processes directly affects the generation of guidance documents that indicate how the activities of an organization should be executed; recording their inputs and outputs, in order to have a more general understanding of the mission and objective of the process in question.

In Latin America, different standardization processes have been developed in public, regulatory, chemical, construction, hospital, consumables and other entities that are measurable and quantifiable; one of these was carried out by the graduate in gastronomic management Freddy Manuel Paguay Pallo in Riobamba, Ecuador; which was entitled "Standardization of service and customer service processes for the school bar of the Isabel de Godín educational unit" [20], in this, the necessary documentation for the supply of food within the aforementioned public education was designed, using some of the tools that were used for the present work.

This study had the following focus:

1. Apply the observation guide, which will help to note the characteristics of the place
2. Apply the survey to employees
3. Data collection, tabulation and processing
4. Data analysis and interpretation
5. Develop the procedures manual

Through the methodology used in the Isabel de Godín educational unit, it was possible to determine the focus of the initial problem, providing security and confidence of the diagnostic tools used; In addition, it is possible to carry out the pertinent documentation that argues the standardization of the service and customer service process for the supply of food in said establishment; however, the standardization approach is limited by carrying out documentation and not glimpsing more fundamental aspects that are intrinsic in the process such as risks or the formulation of indicators that allow measuring and diagnosing the efficiency of the project.

As an added value and contribution in the methodology used for standardization, with respect to the project referenced above, quantitative, and qualitative diagnostic tools are proposed; in addition to formulation of times by procedure; analysis of management indicators; formulation of the environmental impact and some other quantitative ones that will allow to verify more components for the process

VII. CONCLUSIONS

The diagnosis of a process by means of mixed tools (quantitative and qualitative) allows to identify a broader and more accurate picture of the reality of the activities of an internal process. The SWOT tool and its variants provide more precise and accurate information about the real state of an entity in question and analysis

Documenting and characterizing processes allows activities to be planned and executed according to expected inputs and outputs, which will generate more trust and internal control of the processes that have these tools within their becoming, an organic process is achieved since work is done in the 7 headquarters of the institution

By standardizing a process executed by third parties within the facilities of the Senate of the Republic, there will be formality and traceability of the same and its executors within the internal control of the institution. This measure will provide greater planning, control and verification of activities that at the time did not have internal regulation

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