METHODOLOGY FOR THE ANALYSIS OF THE VALUE CHAIN IN SERVUCCION SYSTEMS: CASE INDUSTRY OF HOSPITALITY

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Abstract

Speaking of the hospitality industry, means focusing on service systems that offer accommodation, food and beverages among others related to tourism and that are normally part of the tourism product of a region such as Cartagena (Col), where they have a great contribution in the gross domestic product, but they present some instability in terms of productivity, and profitability refers to the behavior of their market is seasonal, which means that not all the time they are receiving tourists, but that this occurs at specific times within the year, which puts their survival at risk, thus creating the need to diversify services to have sufficient income in such a way that job stability and the necessary resources are guaranteed. Quality operation.

From the above it is necessary to have schemes (value chain) of servucción that generate optimal results of productivity and profitability that contribute to the enterprise sustainability, reason why in this work the researchers propose a methodology to achieve this objective integrating the analysis of the value chain and lean thinking in the systems of servucción.

Keywords

Productivity, Profitability, Analysis of the Value Chain, Servucción.

1. Introduction.

The current hotel industry is the result of the social and cultural evolution of many centuries, influenced by the political, economic and technological changes of society. The development of means of transport and communications, from the second half of the twentieth century, caused the uninterrupted increase of international tourist flows and a growth in hotel demand worldwide, currently manifested by a saturated offer, diverse and complex of the lodging industry.
Since its inception, man to survive had to move from one place to another for the exchange and the search for new horizons. What highlighted the need to sleep outside their place of residence, with what was generated the opportunity to create accommodation services, which were evolving from caves, tents and medieval inns, to what we now know as hotels and resorts of the modern era. As an economic sector, the hospitality industry has progressed in its beginnings to constitute an individual and family modality, until becoming business, with the introduction of diversity of services that complement and improve the guest experience, incorporating technological advances according to the eras and purposes of travel in the different stages of tourism development (D’Meza Perez, Zaldivar Puig, & Martin Fernandez, 2016).

It’s indisputable that hotels are one of the most important elements of the hospitality and tourism industry of a country. A country can have in its territory the maximum number of tourist attractions of the most diverse classes, but without good and comfortable hotels it is not possible to increase its tourism. Along with the amusements and outdoor attractions, tourists demand facilities under cover of acceptable level (Norval, 2004).

1.1. The hospitality industry in the world.

Tourism is a social, cultural and economic phenomenon that involves the displacement of people to countries or places outside their usual environment for personal, professional or business purposes, for a consecutive period of less than one year and a minimum of 24 hours. The tourism value chain is defined as the set of interrelated economic activities linked to a tourism event. He adds that the tourist product results from the interaction with the consumer, who must be imported into the production arena, that is, to the destination to enjoy it. (Oddone & Alarcon, Fortalecimiento de la cadena de turismo de Antigua Guatemala y de los municipios rurales del Departamento de Sacatepequez, 2016).

According to the WTO, tourism generated US $ 1.4 billion in 2013, a contribution of 9% of the world's gross domestic product (GDP) through its direct, indirect and induced effects, and 29% of exports from the region services. Tourism is one of the fastest growing economic activities on an international scale; mobilized 1.087 million people in 2013, a figure that, according to estimates, would rise to 1,800 million in 2030, with an annual growth rate of 4.4% for emerging destinations and 2.2% for the most advanced economies. 52% of tourists travel for leisure and 53% arrive at their destination by plane, compared to 47% who travel by surface transport, mainly by road (40%) (Oddone & Alarcon, Fortalecimiento de la cadena de turismo de Antigua Guatemala y de los municipios rurales del Departamento de Sacatepequez, 2016).

1.2. The hospitality industry in Colombia.

Tourism has been growing substantially, becoming the third exporting and collecting currency activity in Colombia. In general terms, exports of services have had a significant increase during the period 2009 - 2012, reaching USD 5,266 million. On average they have had a growth of 7.82%, and it was in 2011 when they grew the most with a variation of 9.23%. In that year, the exports of this sector reached USD4.857 million (MINCIT, 2013).

Cotelco figures indicate that only in the first semester the opening of new hotels generated an additional offer of 1,690 rooms and an investment figure close to $ 173,526 million. To this is added a perspective that does not look bad: the Hotel Information System of Cotelco has registered that between 2017 and 2019 will be built 81 new hotels that will provide 11,786 more rooms. By 2018, Hilton plans to open a Hampton by Hilton in Cucuta, a Hilton Garden in Santa Marta and the Hilton Bogotá Corferias. This hotel, owned by Pactia real estate fund, seeks to complement the offer in a sector recognized by corporate tourism, as it is part of the Agora complex, of fairs, conventions and exhibitions, recently inaugurated by Corferias and the Chamber of Commerce of Bogotá. Hyatt is another of the chains in motion. After inaugurating a year ago in Cartagena its Hyatt Regency, whose owner is Ospinas, plans to open a Grand Hyatt in Bogota at the beginning of next year and a Hyatt Place, also in the capital of the country. Philippe Frey, manager of the Grand Hyatt that is built in the Sarmiento Angulo citadel, explains that it will have 373 rooms and 50 of them will be suits and will generate 400 jobs. In this hotel the investment was in charge of the group Sarmiento Angulo and is close to US $ 300 million (Dinero, 2017).
2. Methodology.

The development of this work focused on the development of a descriptive methodology, supported in the application of a business diagnosis based on the strong and sustainable business model (Union temporal Universidad Jorge tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013) (see figure 1):

![Figure 1: Strong and Sustainable Company Model.](image)

Methodology that served to identify the gaps between the company under study and the local context, considered by this as its target market (Hotel Sector of the city of Cartagena de Indias - Colombia), once the business diagnosis was applied and the need identified In order to adequately allocate its resources to its processes, a specific diagnosis was applied, which was based on the application or analysis of the problem tree, in which, from a central problem, causes that generate it and the effects are identified that these causes can generate in the business operation (see figure 2).
Once the specific diagnosis was developed, under an exploratory approach, tools were identified and described that would serve the company studied to implement lean thinking in the processes involved and considered critical in the context of the manufacturing of services under study.

3. Results.


The business diagnosis consisted in verifying the current status of the company under study, around 5 attributes defined by the strong and sustainable business model and derived from the project strengthening the Colombian business fabric which was designed by the Union's work team Temporary, with the support of Ecopetrol, Confecámaras, and the Chambers of Commerce. The firm Caso Consultores, expert in business issues developed and validated the instruments that make up this tool (Union Temporal Universidad Jorge Tadeo Lozano, 2013).

For the construction of this methodology, the attributes (5 in total) that a Strong and Sustainable company should have were defined, as well as the characteristics (29 in total) and the variables that make them up (172 in total). This process took as theoretical and methodological references: the document Approach to a methodology for the identification of components that create conditions for durability in Colombian companies (written by a group of researchers from the Universidad del Rosario in Bogotá, headed by Dr. Luis Fernando Restrepo Puerta), the Excellence Model for the Competitiveness of the Quality Corporation and more than one hundred academic and business texts. With this + -conceptual basis were identified the variables that can have an organization and the level of causality between them and their relationships was analyzed, for this the Matrix Vester was used as a tool (see figure 3), an analysis tool that allows an assessment of the influence and dependence on the variables that make up the business system (Union Temporal Universidad Jorge Tadeo Lozano, 2013).
The behavior of the variables was compared with the behavior of 11 variables studied in the target market (which corresponds to the one that the company is currently located, as in the one that expects to be consolidated in a period of 3 years), the application of this Methodology resulted in the following radar chart:

Figure 4: Results Business diagnosis

As can be seen in Figure 4 and in accordance with the characteristics of the national and Cartagena hotel sector, the work team evidenced a highly dynamic local and national industry, which is constantly evolving as a result of the entry of large hotel chains both nationally, as at a local level, and boutique hotels, which have a state-of-the-art physical and technological infrastructure, as well as a diversity of services such as food and drinks, recreation, laundry, event organization, comfortable environments that guarantee an incomparable experience, as well as, a staff in quantity and with the necessary and sufficient skills to satisfy the needs of both local, national and foreign tourists of the highest demands, compared to an organization that shows more than 30 years of existence, positioned to local level, which is evidenced by the social groups of interest, shows a physical and technological infrastructure, services such as food and beverages, recreation and laundry according to its current market, but which nevertheless presents great opportunities for improvement, around its personnel, its ability to generate value, generation of a true competitive advantage that differentiates it competitively speaking and in terms of its corporate social responsibility (Union Temporal Universidad Jorge Tadeo Lozano, 2013).

In consensus with the board of directors of the entity and based on business diagnosis is determined as a major improvement opportunity to make use of a methodology that allows them to properly manage their resources in order to strengthen their work and improve the existing gaps between their current market and its projected market and described above.

3.2. Specific Diagnosis.

As noted in the methodology aspect once the business diagnosis was developed and the opportunities for improvement were prioritized, a specific diagnosis was applied, making an analysis based on the problem tree, the Ishikawa diagram tool, the 5’s and the 5W - 2H (see figure 5) and supported by experience and knowledge in the theme of hospitality on the part of the organization’s board.
Derived from the analysis, the research team identified and prioritized the following opportunities for improvement, divided into causes and consequences derived from it.

Within the identified causes we have (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013):

- The planning of resources is crucial to improve the efficiency of the company's operations, shorten the delivery time to customers and reduce inventory levels, waste and repetition of work. An inadequate allocation of resources will affect the results expected by the company. In this planning, an adequate financial planning must be taken into account, which allows executing resources for the development of activities with the articulation of existing assets and those necessary to obtain the expected results. Research and development resources must be directed to be at the forefront of the market (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The company can not to make a mistake in the assignment of the work team to the mission activities, since it would compromise the quality of the operation, in this way it is important to have defined and aligned to the strategy the organizational structure that allows to identify the strategic assets and the defined team to the missionary activities, because these are the ones called to execute the economic activity of the company. Therefore, it is important to measure how much the company takes the level of education and experience of the work team and makes available the use of strategic assets (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- This team requires a high degree of identity with the mission and objectives of the company, since it has a very high influence due to its degree of experience, which must be decisive in acting with rectitude, honesty and integrity. The company must seek a change of culture, create a customer-oriented attitude, with rapid adaptation to changes that allow it to abandon the old structures or methods of doing things (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The purpose of distributing resources will always be to obtain the maximum possible productivity from a combination of assets (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The assignment of resources aims to solve what employment will be given to the different factors of production and what amounts of them will be used in the different activities (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).
The company needs to be able to efficiently and effectively measure its processes and results that guide it to develop the tools that enable effective reduction of costs, production improvement, customer satisfaction, defect reduction and cycle time and development of new products and services. Similarly, develop the ability to stipulate clear and effective rules of the game with metrics to identify their compliance. Processes must have simple metrics and must be compared against a specification (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

Within the effects were identified:

- Clearly identify the adequacy that is made of resources to the missionary activities of the organization will clearly identify the actions to be developed to ensure the operation with minimum resources that guide the company to sustained success with criteria of productivity, competitiveness and sustainability (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The purpose of distributing the resources will always be to obtain the maximum possible productivity from a combination of assets. Produce the Most quantity of goods and / or services with the Minimum of resources (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The assignment of resources aims to solve what employment will be given to the different factors of production and what amounts of them will be used in the different activities (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

- The effect that will be obtained will be given by the new business possibilities, products or services, a distribution of resources in a more balanced way and attending missionary activities, with efficient processes that lead the company to its maximum productivity (Union Temporal Universidad Jorge Tadeo Lozano, Ecopetrol, Comfecamaras, Asocajas, 2013).

Derived from the specific diagnosis, it establishes the need to implement a methodology that allows the company to define its processes in an appropriate manner, manage them based on clear objectives and goals and be able to determine and allocate efficiently and effectively human resources, financial, technological and infrastructure, among others necessary to make an offer of competitive value in a context marked by the globalization of the sector, which has meant the entry into the hotel sector of companies with very high service capacity, which puts at risk the sustainability and survival of the context under study.

Therefore, the following problematic question is posed: How to contribute with the improvement of the offer of value from the productive point of view to Hotel Playa Club, in the city from Cartagena de Indias Colombia?

### 3.3. Analysis of the value chain in service systems.

The best way to understand the value offered by a system of servucción, as it is the case of the hotel, is through the analysis of the value chain; in which, regardless of what type of commercial activity the organization is dedicated to, it is capable of generating customer satisfaction through the value received in the service. A value chain comprises the entire range of activities that are required to carry a product or service from its conception, through the different phases of production (which involve a combination of physical transformation and input of various production services) final consumer and the final disposal after use. The number of links in each value chain varies according to the type of industry (Oddone & Padilla Perez, El escalamiento en las cadenas de valor a través de servicios profesionales y de soporte, 2014).

#### 3.3.1. Lean thinking.

Lean thinking is a process based on the improvement of added value in products and services through the reduction of waste or dumb. The term "lean", introduced by Womack in the early eighties during one of his visits to the Japanese automaker Toyota, became the universally recognized term to refer both to the increase in value and decrease of waste. When we talk about added value, we focus on every aspect of the product or service that makes it interesting for
customers and these in turn are willing to pay for it. Waste, refers to all those aspects that do not add value to the eyes of the customer, in other words, everything for which the client is not willing to pay more and that for the company represent an unnecessary cost and therefore impact both in its productivity and in its profitability. Examples of value added for manufactured goods include features considered valuable by customers, such as shorter delivery times or smaller and convenient batch sizes. Conversely, activities such as the maintenance of excessive inventories, unnecessary transportation, waiting times or reprocessing are considered wasteful. In the area of services, you can commonly find sources of waste such as: long waiting times for customers, reprocessing of applications, incorrect automatic charges, excessive paperwork (Quesada Pineda, Buehlmann, & Arias, 2012).

In general, there are seven types of waste present in the processes (Ballesteros Silva, 2008):

- **Overproduction**: They must not be produced unless there is a production order. The product should only be processed when the consumer requires it. This can reduce the inventory of materials and their respective costs.
- **Wait**: Operators should be prevented from waiting by watching machines or waiting for the delivery of resources such as tools, materials or parts. It is acceptable that sometimes the machine waits for the worker but not the other way around.
- **Unnecessary transport**: all unnecessary routes during the production process must be minimized or eliminated.
- **Overprocessing or incorrect processing**: you must have clarity in knowing very well the working methods and the requirements of the clients to avoid unnecessary processes, which are responsible for the increases in production costs.
- **Inventories**: We all know that the excess inventory of raw materials, products in process and finished products cause long delivery times, high risk of obsolescence of products, deterioration of items, high transportation costs, storage and delays. This situation allows the inventory to hide problems such as uneven production, deliveries at the wrong time by suppliers, defects, idle equipment times and long preparation times, without ignoring the need for personnel to take care of it, control it and deliver it when necessary.
- **Unnecessary movements**: whatever the movement made by the staff during their activities, such as observing, searching, accumulating parts, tools, whenever it has nothing to do with the productive activity, it becomes a waste that must be eliminated.
- **Defective products or rework**: the production of defective parts, repairs or reprocessing, replacements in production and inspection demand dedication of time and effort that can be used to perform tasks that add value to the product.

Waste can also be grouped by levels, as described below (Ballesteros Silva, 2008):

- **Level 1 wastes**: usually presented in work in process and include poor plant distribution, rejects, reprocessing, defective products, size of containers, lot sizes, poor lighting, dirty equipment, material that is not Delivery at the points where it is required.
- **Level 2 waste**: refers to processes and methods and includes inadequate design of the workplace, lack of maintenance, the existence of temporary warehouses, problems with equipment and the use of unsafe methods.
- **Level 3 waste**: these are the known minor waste in the production process. The following are cited: stocking and reaching, double handling, walking in excess, producing to store, working on paper (making drafts and then executing), speed of production and supply of materials.

In general, and given the characteristics of the systems of servucción and especially as it is the case of the hotel services, we found that the greater representation of molts comes given by the waits when the system is not able to serve at the speed that the client requires, another example of change in the hotel sector is expressed in allocation of wrong rooms due to poor treatment of the information delivered by the client, as well as developing functions that do not correspond to the assigned position This translates into a decrease in the time allocated to perform the tasks assigned to a job, such as the quality manager performing reception functions.

### 3.3.2. Methodology to transform a traditional system of servucción in a system Lean Services.

For the development of this process is required to include in the organization 10 stages as well (Cabrera Valverde & Montenegro Marcelo, 2016):
✓ Stage 1: The starting point in any lean proposal is to identify a problem and the area where there is a problem, then define the process either internal or external, taking into account certain selection criteria, the areas could be: Warehouse, Logistics, Purchasing, Inventory management, etc.

✓ Stage 2: Define the indicators (KPI) to perform the analysis, measurement and monitoring of the benefits between the current situation and the proposed or suggested situation. Some examples of indicators for attracting customers can be: The waiting time of the client, 2) Number of Open Work Orders.

✓ Stage 3: Once the indicators have been established, a detailed current VSM of the process under study must be defined, along with a sample of time, as well as the main statistics and parameters of the process that capture the real situation, such as if several people perform the process with a time study for each, finally you can consider an average time in the given VSM.

✓ Stage 4: Before the preparation of the VSM for the future state, the lean concepts and tools previously selected should be applied, leading to the solution of the problem and therefore to a better scenario of the future state of the VSM. These concepts could be: Diagrams Cause and Effect, 5 whys, etc., It is also advisable to brainstorm with the people directly involved in the process as a critical success factor in order to design the process correctly.

✓ Stage 5: The indicators (KPI) defined in step 2 need to be captured again to see what the changes are between the future VSM and the current VSM, in order to justify moving to a redefined process.

✓ Stage 6: Generally, when improvements are made, a large number of opportunities that are identified during the study appear; therefore, steps 2 through 5 must be performed for all processes under consideration.

Stage 7: Once the future VSM has been defined for all the processes under study, it is important to determine how to prioritize the improvements during the implementation phase. This can be done through the application of a decision model that considers a weighted factor to help prioritize improvements to help with the implementation process.

Critical factors considered are:

❖ The probability of success
❖ Ease of application
❖ Return on Investment
❖ Risk
❖ Resources needed
❖ Timeline to implement

Each of the factors is scored between 1 and 5. The weights can be assigned to each factor to determine the importance of one factor over the other. A total score of each area improvement is calculated by adding the product of the factor values (assigned between 1 and 5) and factorial weights for that area of improvement.

Step 8: In this step it is important to create the relevant documentation of any improvement obtained for future reference and analysis. This documentation could contain the elaboration of standard operating procedures (POES), documentation about safety in the processes, evaluation and training of personnel and performance reports, etc.

Step 9: Sharing the documentation with other levels and locations of the organization helps to standardize the process and adopt the best practices to reach greater efficiency, for this the management of communications is important.

Step 10: Continuous improvement is essential for the survival of any company. The Lean Structure is applied again from step 1 to continue improving operations. At this point, new areas are searched and analyzed in which lean systems can be applied, as well as the analysis of the value for the client can be changed due to changes in customer needs, market conditions and the arrival of new technology.

- The biggest challenge for hotel companies in the Cartagena context and especially the hotel beach club for this process to change the business philosophy of results and implement change management processes at all levels of the organization, given that the resource human in any process of change generates resistance and this will be a major obstacle in business strengthening.
- When speaking of hotels as a system of servucción refers to those manufacturing systems of high complexity framed in most cases in the classification of production systems by project given that it is to meet particular needs, not standardized customers of various market sectors and nationalities.
- The hotel sector is very dynamic, as in the case of Cartagena de Indias, a city that due to its tourist, historical and commercial attractions has increased its tourist demand in a noticeable manner, which has favored the entry into the market of new hotel chains and new services tourism which has forced the medium-sized hotel company as it is the case study to establish schemes that allow you to make better use of its resources and thus be able to have a competitive and differentiating value offer that guarantees its sustainability in a market every day more demanding as is hospitality.
- The Lean Services becomes a very feasible opportunity for the context under study, since it will allow the organization to flex, streamline and convert its simple processes but with high efficiency, effectiveness and great impact in the economic context.

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References


Biographies

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