

Diagnosis and TQM strategies for improving the organizational efficiency of a consulting company

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Abstract. Total Quality Management (TQM) is useful in both the industrial and service sectors. The purpose of this study was to increase profitability at a management consulting company by applying and improving internal operational excellence. This was accomplished using a case study. In order to overcome the problems, a prioritized plan of actions was developed by identifying the main sources of improvement. TQM strategies and the requirements of the ISO 9001: 2015 standard are followed. It was possible to observe some benefits on efficiency outcomes and small changes can provide to a company through large steps towards greater results. In a long-term perspective and considering that the performance and efficiency of the commercial has increased.

Keywords: TQM, ISO 9001:2015, business intelligence, quality tools, process approach.

1 Introduction

At a time where market changes and economic development are a constant, there is an intensification of competition in all sectors, with a rapid technological advance. Total Quality Management (TQM), becomes useful, not only in the industrial and related sectors, but also in the tertiary sector, where the review of literature indicates that the implementation of TQM in services has gained space and attention [1]. Although all organizations culturally unique, management and processes created for the delivery of products and services, TQM is addressed in several practices in the services sector.

Thus, the internal operations were set to be improved of a management consulting company to increase its profitability. The effectiveness of the organization's management the company started by identifying the process(es) with the most impact on its effectiveness and efficiency. In this context, the study was focused on the improvement of the efficiency of the commercial process, since it is the one which most contributes to the

profitability of the company, by following the ISO 9001:2015 standard. As such, the objective of this study is to carry out a diagnosis on the company and to evaluate the implementation effectiveness of an action plan geared towards efficiency improvement.

2 Literature Review

2.1 Lean Service Management and Quality through knowledge management

Services comprehend several activities with origins in different social structures and productive systems [2]. To understand the nature of the service process, it is essential to identify the client and their needs and inputs. There are, however, some key characteristics and transversal attributes which we can assign to the service process. In [2] the authors have listed 5 in their study: i) intangibility, which refers to the subjectivity inherent to the customer's evaluation of the service; ii) heterogeneity due to the client's unique and specific input; iii) simultaneity, since the service is produced and consumed almost at the same time; iv) perecibility, alluding to the need for JIT (Just In Time), a service cannot generate stock, since it cannot start without the client's inputs being present and without the presence of the service provider; v) the participation of the client, which is not a necessary feature of all service processes, since its inputs can be generated in other ways.

In [3] is stated that the greatest struggle of services remains in developing innovative solutions or methodologies to improve their processes to reduce costs and increase their quality and productivity. The materials flow in production, compared to the services sector, can be designated in this one as knowledge flow, taking into account that the added value of the service is created through the knowledge of the employee or team [4].

2.2 Performance measurement in the commercial process

The organizational performance allows to measure how well organizations meet their objectives. A vast number of criteria are included in organizational performance to correspond to the exact reality of the organization, thereby ensuring transparency regarding the need for continuous improvement and innovation [5]. The organizational performance is analyzed using indicators from all areas of the organization.

The sales conversion rate is a fundamental metric to evaluate the performance of sales in a given period [6]. It is the translation of the total number of business opportunities in the initial stage of the sales pipeline to the total number of those who purchase the service (per a period of time). According to the authors in [7] the conversion rate relates to the excellence of the service provided and the improvement of the efficiency of the core processes. Any business process of a service company has a sales pipeline with business opportunities. This funnel has business opportunities with different life cycles and different levels of maturity [7]. The company's sales funnel is divided into eight states of variable duration and with progressive maturity levels. One of its functions is to assist in making decisions regarding the planning and acquisition structure of potential customers. From the sales pipeline it is possible to have a general evaluation of the business process state, and possible bottlenecks. After a certain period, the funnel begins to narrow as new

opportunities are no longer placed in the first stage, either because others are considered lost or because they have had their due time transferred to another future period [7].

The pipeline includes the following steps: 1. Initial contact (steps considered as business opportunities are placed in the pipeline); 2. Email Presentation (company presentation contact and meeting request); 3. Follow up call; 4. Schedule a meeting (the potential client gets closer to closing a deal, with the appointment of the meeting); 5. Budget; 6. Second Scheduled Meeting; 7. Project Assignment; 8. Signed Contract (business opportunities that become clients).

The Global Conversion Rate (GCR), of a sales pipeline is directly connected to the profitability of the company, since the higher the global conversion rate of the pipeline, the higher the number of sales made, the greater the possibility of an increase in the return on sales. This represents the number of potential customers who have been contacted and have decided to purchase a service and is calculated using the following expression:

$$GCR = \frac{C}{PC} \times 100 \quad (1)$$

Where C is the number of business opportunities allocated to the eighth stage of the pipeline and PC is the number of business opportunities, i.e. potential customers placed in the first stage of the funnel.

Following expression 1, the global conversion rate is defined by the number of potential customers who have become customers acquiring a service in each period by the number of business opportunities contacted in that same period.

However, it is also important to analyze the conversion rate (CR) along the pipeline as a way of identifying the step where decision making may be taking longer than normal. This rate is computed using expression 2 (generic expression of expression 1 where n represents a stage of the sales pipeline):

$$R = \frac{\text{Stage } (n + 1)}{\text{Stage } (n)} \times 100, \quad n = 1, 2, 3, 4, 5, 6, 7 \quad (2)$$

2.3 GUT matrix

The GUT Matrix - Gravity, Urgency and Tendency - is a TQM tool that supports the decision of prioritization problems, also known as the Priority Matrix [8]. The scale ranges from 1 to 5, where a score is assigned to each of the dimensions, where 5 corresponds to the highest intensity and 1 to the lowest. The Gravity (G) corresponds to the impact of the problem on the organization; Urgency (U), corresponds to how fast a problem should be prioritized to avoid further damages. This is the time available to solve the problem. The shorter the time, the more urgent the problem should be solved. Tendency (T) represents the probability of the problem getting worse over time.

3 Methodology

The case study research method is used in this study. The data collection was carried out through semi-structured informal interviews. After identifying the key problem, the structured problem-solving technique was used in a workshop where the main users of

the process were present. The identification and analysis of root causes allows the identification and elimination of the deep causes instead of eliminating only the effects.

Thus, in the first stage a global analysis was made to the service company from the consulting sector to better understand its organization and the relationship of internal processes. The second stage concerns the literature review performed for the practical project where concepts such as TQM, continuous improvement and the EN ISO 9001:2015 standard are addressed and interrelated. After the identification of the problems, the third stage was the elaboration of an action plan aiming at the improvement points with the objective of mitigating those identified in the first stage and its implementation. After the information analysis, it was time to reflect on the constraints and contingencies, and improvement opportunities and prospects for future work for a second cycle.

4 Case Study

4.1 Process analysis approach

For the analysis of this study, the commercial process and a few sub-processes of the functional support team of a consulting company were selected, namely in terms of management and internal communication and in marketing, which are correlated with the core process, the commercial. The choice of these processes resulted from a strategic decision taken by the top management, to improve organizational performance, thus becomes necessary to consider the importance of successful sales process. After the analysis of the organizational ineffectiveness as the problem to mitigate, it was settled that the same should be solved by improving organizational efficiency, i.e. doing processes and functions in the most appropriate way in order to improve results, using, as mentioned above, ISO 9001:2015, the standard that establishes the improvement of internal processes.

4.2 Problem identification

Once organizational inefficiency was identified as the major root cause of ineffectiveness, it was necessary to connect it to several processes and subprocesses of the organization. The construction of the diagrams allowed to highlight transversal causes of problems associated to the three identified processes, such as: i) inefficiency in document management; ii) poor remote access to internal documents; poor management/organization of internal processes and documents; ineffectiveness and inefficiency in monthly/weekly analysis; lack of monitoring of internal tasks.

The root cause analysis resulted in the discovery of eight problems, mostly corresponding to causes of inefficiency of the processes. Next is a description of each problem and why is it affecting the performance of the process.

- Problem A - Absence of a single database.
- Problem B - Lack of monitoring of ongoing tasks.
- Problem C - Ineffectiveness in using the commercial support tool.
- Problem D - No uniformity in documents.
- Problem E - Non-existence of a strategic communication process.
- Problem F - Ineffective weekly/monthly analysis of the business process.

- Problem G - Poor management/organization of internal processes.
- Problem H - Poor management/organization of internal processes.

The problems identified were later prioritized using a matrix of priorities, the GUT matrix, as a way of identifying the Gravity (G), Urgency (U) and Tendency (T) of the behaviour of each problem, as seen in Table 1. The scale level assigned to each of the factors was the result of a focus group. The multiplication of the three factors will define the priority actions.

Table 1. Prioritization of problems using the GUT matrix tool.

Problem Prioritization					
Problem	G	U	T	Metric $G*U*T$	Priorization
A	4	5	5	100	1
B	4	4	4	64	2
C	3	3	4	36	4
D	3	3	2	18	6
E	4	3	4	48	3
F	3	3	4	36	4
G	3	4	2	24	5
H	2	2	2	8	7

Key:			
Grade	Gravity	Urgency	Tendency
1	Without gravity	It can wait	It will not change
2	Not too serious	Not too urgent	It will get worse in the long run
3	Severe	Urgent	It will get worse in the medium term
4	Critical	Very urgent	It will get worse in the short term
5	Extremely serious	Immediate urgency	It will get worse quickly

4.3 Analysis of results

After the implementation of the improvement actions, the results obtained and/or expected in the long term were evaluated. Table 2 summarizes the main steps taken and their results and importance. Thus, it is important to assess the results of the proposed actions, as seen in Table 3. The first phase of implementation was used to make it more fluid and organized. This involved improving documented information and internal and external communication, which had a great influence on the organization. The second phase of the project, achieved by the work performed in the previous stage, had a significant impact on the business process, completely changing the way things were done until then. Finally, the third phase corresponded to the adoption of Business Intelligence in the organization, to analyze and create sales reports that would be adopted in the meetings implemented in phase 1, through Microsoft® Power BI. In perspective it is objective that this strategy, which should be improved every cycle and reviewed whenever necessary, speeds up the conversions of the last stages of the sales pipeline.

Table 2. Analysis to the diagnostic and planning phase of the study.

DIAGNOSTIC PHASE	RESULT
Global analysis carried out to the company	It allowed to perceive the information flow of the company and the interconnection and functioning of internal processes.
Identification of the different levels of problem causes.	Identification of all causes of organizational ineffectiveness. Inefficiencies were identified and pointed out which, even though they seemed irrelevant in isolation, affected the performance of the commercial process.
Prioritization of problems through the GUT matrix.	Established the agenda for the actions and the responsibilities were assigned, helping in the planning of the whole project.

The implemented CRM & Sales tool has brought greater efficiency to the process. An increase of 412 percent in the number of contacts made between the two periods indicated was observed, as well as an increase of approximately 21 percent in the conversion rate of numbers of companies contacted and number of meetings held. However, it is necessary to pay attention to the business cycle and how different periods within the same cycle have their variability. Although the comparison of this period is the only one possible due to the lack of data from previous cycles corresponding to the project period and, more specifically, the period where the data was collected, it has its limitations. From a long-term perspective and considering that commercial performance and efficiency has increased with the implementation of the new tools, it is expected that the initially proposed objective will be easily achieved. Finally, with this project this gap has been filled for future projects, with the contribution of the systematization of the process and monitoring.

Table 3. Synthesis of the obtained results through the proposed implementations.

IMPLEMENTATION PHASE	RESULT(Short Term)	IT IS EXPECTED (Long Term)
1. Implementation of an organized management of information and documentation.	More fluid and organized process.	An increase in the organizational performance of the commercials.
2. Implementation of a new operating system for the commercial process.	Efficiency increases in the first stages of the pipeline. More structured information.	
3. Monitorization of the commercial process using artificial intelligence.	Weekly and monthly analysis support.	To assist in the acquisition of strategies to adopt for the success of sales.
Outcome after the 3 implementations in the short term.	A more organized management of information, without duplication of it. Organizational knowledge improvement. 412% increase in the number of contacts made; 21% increase in the number of meetings held.	

4.4 Improvements proposals

After the analysis of the identified problems, these fall into three categories: i) implementation of an organized management of information and documentation - a moment that corresponds to the actions taken to solve problems A, B, D and H; ii) implementation of

a new system of operationalization of the commercial process- it includes actions for problems C, G and E; iii) monitoring the business process using artificial intelligence - Power BI - action performed for problem F. These moments are considered dependent on each other since it is important to have organized information on how to operationalize the process. To its monitorization it is necessary that this process is systematized and well organized. In Table 4 we have access to the prioritized action plan carried out.

Table 4. Description of each proposed action.

Phase	Gut Matrix	Action	Objective
1. Implementation of an organized management of information and documentation	A	Uniformity, in a single document, of all the commercial contact databases.	Improve the way business contacts are organized, reducing the time of searching for a database entry and eliminating the number of database duplicates.
	B	Reimplementation of weekly meetings.	Establish a reporting routine of the tasks of the commercial process, to achieve a strategy.
	D	Uniformization of documents used in the commercial field with alignment to other processes.	Improve the way the company's services are communicated (externally);
	H	Adoption of a cloud and its management.	Improve the internal communication through the standardization of documents used daily.
2. Implementation of a new system for the operationalization of the commercial process	G	Modelling of the commercial process.	Allow remote access to internal documents.
	E	Formulation of a new strategy to be adopted in relation to the target audience.	Document the commercial process in a universal.
	C	Research and Implementation of a tool with CRM, Sales and Marketing functionalities. Commercial action implementation.	Increase the effectiveness of first contacts with potential customers. Database in one place; better organization of the sales pipeline; automation of commercial contact subprocesses (example: contact reminders, registration of the number of contacts made ...)
3. Monitoring the commercial process using artificial intelligence.	F	Design and implementation of Power BI analysis with KPI definition.	Ensure, in a first stage, that the tool is ready to be used.

5 Conclusions

In this study, the objective was to conduct a diagnosis on a service consulting company and to assess whether an action plan geared towards efficiency improvement has been implemented effectively. With this project, data creation, information management and analysis were ensured, making the business process more fluid and efficient in the short term with the objective of making it effective in the long term. The use of certain requirements of the standard has increased the efficiency of contacts, with more time for strategic analysis. GUT matrix was used, due to its capability of quantifying information and classifying it based on its importance. The creation of Power BI dashboards for weekly and monthly analysis of the business process in another way that will contribute, in the long term, to increasing its efficiency. Implementation of the CRM & Sales tool has made the process more efficient. The number of contacts made increased by 412 percent between the two periods indicated, as well as the conversion rate of contacts made and meetings held increased by about 21 percent.

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