MASP Methodology as an effective tool for improving organizational processes

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Abstract

The objective of this work is to demonstrate the methodology and analysis of problem solving and its effectiveness for the improvement of the organizational processes proposing that the method can be applied in any sector of the market and not exclusively in the industries. This will be done through the use of search for articles related to the topic addressed in different sectors of the market and a comparative table showing the results after the implementation of the method. The Masp steps will consist of 8 phases that are related to the 4 steps of the PDCA cycle, which are: problem identification, observation, analysis, action plan, action, verification, standardization and conclusion. For the development of the research, the bibliographic source was used with the use of articles and books to understand the topic applied in general and specifically based on recent case study articles to evaluate its effectiveness and flexibility.

Keywords: Masp; efficiency; process improvement;

1. Introduction

In view of the world scenario in a context that we are experiencing, it is essential that organizations know how to adapt to the most diverse challenges that arise. For that, it is necessary that those responsible for the top management (president, directors) be flexible and make decisions that are assertive for the company's permanence in the market and the achievement of long-term objectives.

Taking into account the current situation as well as the incessant search of companies to solve problems that frequently occur in their processes, it is relevant to deal with a topic related to one of the methodologies of continuous improvement that besides being effective is also flexible and can be used in any sector of the market, although, for the most part, it is applied in the industrial sector.

Increased competitiveness in the market has helped organizations to be more concerned with the quality of their products and processes in order to achieve a broad business vision. In addition, another essential factor that influences companies' decisions is the need, or desire of consumers, for quality and low prices. Thus, in order to meet customer expectations, organizations will need to focus on developing improvement actions in various sectors of the company, mainly on the production line, which is the base of the organization, making the production system efficient, using the available resources of a company. in a way that does not involve waste. Based on these improvements in the process, the aim is to reduce costs and, consequently, adapt to the market and achieve results even in an unfavorable condition.

Based on this thought, this work aims to demonstrate the methodology and analysis of problem solving (MASP) and its effectiveness for improving organizational processes with the idea of proposing that the method can be applied in any sector of the market and not only in industries . This is done through the use of research in articles dealing with this topic applied in different sectors of the market and showing its results through a comparative table after the implementation of the method.

2. THEORETICAL BACKGROUND

2.1-TROUBLESHOOTING METHODOLOGY AND ANALYSIS

The concept of Methodology and Analysis of Problem Solving (MASP), according to Oribe (2013), is an ordered path, composed of steps and their subdivisions for identifying a problem, analyzing its causes, planning possible actions that provide a solution and making sure that the problem has been solved, in addition to feeding the process in search of improving learning, it becomes important to apply in the same way in the following cycles.

Therefore, it is understood that this method follows a logical sequence of steps and steps to seek a solution to a particular problem and continuously assisting in learning in relation to knowing how to apply it in different situations.

Masp is applied in stages because there is no tool that solves existing problems within organizations at once, so it is necessary to follow a logical sequence of phases after determining the problem so that this fault can be resolved in less time. time (LIMA, 2015).

The continuous improvement tool has some main objectives, such as making the process more stable and manufacturing products with higher quality through the identification of problems so that they can be solved (SILVA; BEZERRA, 2020).

This method, therefore, becomes effective because it involves all the processes of the organization, making it necessary the participation of all the people of the company in order to be successful in the implementation. Due to its flexible methodology, MASP is applicable not only in industry, but also in the service, petrochemical, steel, and other sectors.

The quality tools will be widely used during the application of MASP, but for that it is necessary to have

knowledge of each tool, of the moment and how these resources should be implemented, because, according to SELEME; STADLER (2012) the correct use of the appropriate tool allows managers to create alternatives for decision making that solve the problem correctly.

MASP follows a logical sequence to solve the problem, so the use of these tools will be done in a structured and logical way, increasing the probability of success.

2.1.1 RELATIONSHIP BETWEEN MASP X PDCA

Masp and the PDCA Cycle have a common relationship, because they have the same purpose of improving organizational processes, so it is understood that Masp emerged through the PDCA Cycle (Silva, 2014; Nascimento et al, 2018). Therefore, the MASP steps are performed according to the PDCA cycle, as seen in table 1 below:

Table 1-Masp's Steps and Objectives

PDCA	FLOW	STAGE	GOAL
P	1	Problem identification	Clearly defining the problem and understanding its importance.
	2	Observation	Investigating specific characteristics of the problem.
	3	Analysis	Discovering basic causes.
	4	Action Plan	Conceiving plan to block basic causes.
D	5	Action/Execution	Blocking basic causes.
C	6	Check	Checking if the block was effective, if not, return to step 2
A	7	Standardization	Preventing against recurrence of the problem.
	8	Conclusion	Recording the entire process of solving the problem for the future.

Source: adapted from Campos (2013)

It was noticed that the operation of MASP, through the demonstration of the table above, is organized according to the logical chain, divided into 8 (eight) stages within the PDCA cycle, which are only four phases.

Therefore, it is recommended that both PDCA and MASP be used together as an aid in decision making regarding the analysis of the problem and the effectiveness of the action plan (Mello, 2011). The MASP steps are:

1. Problem Identification

The problem arises when there is a non-conformity in the process or when the established objectives are not reached. At this stage, it is necessary that the problems are ranked in order of importance according to the degree of urgency (SELEME; STADLER, 2012).

2. Note

It is obtaining detailed data for the analysis of the problem, verifying in a specific way all possible irregularities (SELEME; STADLER, 2012).

3. Analysis

It is concerned with the identification of the possible causes of the problem through suggestions with the use of some tools, for example, Ishikawa diagram and the 5 whys to assist in the discovery. After that, the hypotheses that have been suggested to justify the occurrence will be tested. of the problem and analyze its effects in order to find out what the proposed hypothesis was responsible for the emergence of the problem (SELEME; STADLER, 2012).

4. Action Plan

A plan will be made that must be executed in order to eliminate or reduce problems with the aid of the 5W2H tool. To obtain a satisfactory result in the execution of the plan, it is important to have enough materials, time and money (SELEME; STADLER, 2012).

5. Action

It is the stage of the execution of the action plan with the purpose of combating the source of the problem. The training of the employees involved will be the differential because, first, they are already used to following the procedures prescribed in the documents in the workplace and also so that get used to the new procedures. It is necessary that all the proposed actions made during the planning of the action be carried out in detail and detail the observations of the results (SELEME; STADLER, 2012).

6. Verification

The effectiveness of the proposed solution is analyzed after modification in a process to ascertain the results and also its desired or unwanted side effects. If the results are satisfactory, the measures adopted must be recorded for application and standardization. Otherwise, it will be necessary to analyze possible causes again in order to obtain new hypotheses to be evaluated and tested (SELEME; STADLER, 2012).

7. Standardization

These are the procedures recorded in the documents in order to ensure that the results will maintain stability and predictability if all employees perform their tasks according to the procedures established in the document, blocking the emergence of the cause of the problem. One of the steps that can be considered standardization is monitoring in the workplace to verify that employees are carrying out activities as prescribed in the document (SELEME; STADLER, 2012).

8. Conclusion MASP

In this phase, a remaining problem is chosen as a priority for a new cycle of improvement and to promote the creation of a culture of organizational learning with the purpose of acquiring skill regarding the use of the method (SELEME; STADLER, 2012).

3. Materials and Methods

For the development of the research, a source of bibliographic origin was used through books, scientific

articles of case study in order to thoroughly understand the proposed theme, after all, according to PRODANOV; FREITAS (2013), the bibliographic research has the purpose of placing the researcher in direct contact with the subjects published by other authors.

Regarding the reading of the articles to understand the topic, a restriction was made to analyze the MASP subject in its general aspect and its application, between the years 2010 to 2020, where there was greater coverage on these subjects, and it was noticed that the MASP methodology can be used in several sectors in the market and not only in the industrial area. Some authors of the articles, during the production process of their works, applied only the planning phase of the PDCA, which contains the 4 stages of MASP.

The work was based on the analysis of recent case study articles, which have already been properly completed by the authors. All with the purpose of demonstrating, by means of results obtained, after application of the method, its effectiveness in relation to the achievement of goals and also as one of the main tools of continuous improvement, generating what organizations are most looking for: increased profitability, cost reduction, quality of your products or services and improvement in your production processes.

4. Results and Discussions

To demonstrate the effectiveness of applying the MASP method to improve organizational processes, a reading and analysis of the case studies of articles in which this method was used was made, checking the results after its implementation. Three articles were chosen in different areas in order to show that the MASP tool can be applied in any sector of the market and not only in industries, taking into account the context and its focus on the market.

The first article analyzed Proposal for improvements in stock control using the masp tool in a disposable factory (REIS et al, 2019), where the proposal of the work was to propose improvements for stock management. The authors had the following conclusion of that through the first four steps of the applied tool they were able to clearly identify and define the problem and its importance, in this way it was possible to analyze the identified non-conformities. Therefore, this brought the possibility of elaborating an action plan to solve the causes and carry out improvements in the organization's environment to obtain optimized results.

The second article Reduction in requests for extra materials in the manufacture of wind towers by applying MASP (NOBREGA; SANTOS; SOUZA NETO, 2018), where the authors' intention, through the use of quality tools, was to reduce cost losses extra production, in the stage of assembly of the inmates in the wind towers production process concluded as follows that the problem of losses with orders for extra materials was detected through knowledge of their characteristics through observation, the causes were defined and then a an action plan was created to combat them, the implemented actions obtained a positive result. Therefore, it can be said that the application of Masp met the expectations that it was to reduce losses in the assembly stage of commercial interns.

The last article chosen Application and development of MASP - method of analyzing and solving problems in a non-profit institution (LIMA et al, 2017) aimed to normalize the cash flow of the institution that was negative, that is, more money was spent than he received. The authors reached the following conclusion,

after the implementation of the method, that it is possible to affirm the efficiency of the tool at all points, avoiding future problems if the standardized methods are used correctly. proposed actions there was a 60% reduction in the institution's financial expenses, thus balancing cash flow.

Table 2 below was constructed to summarize the fundamental elements found in the articles and to show their results after the application of the methodology, as well as the tools used, the sector of the company applied and its segment

Table 2: Summary of the comparative table of the results of the Masp application

Segment	Applied Sector	Problem	Tools used	Results found
Disposable industry	Purchasing, Goods Receipt and Production Sector	Lack of products in stock	Pareto Chart, Process Mapping, 5W2H, Check Sheet	Improvements in the organizational environment to obtain optimized results through the first 4 steps of the applied tools
Metallurgical	Production sector	Increased requests for extra material	Brainstorming, Pareto Diagram, Ishikawa Diagram, 5W2H, Histogram, Standard Operating Procedure	A 33% reduction for material damaged by production, 59% for the kit delivered incomplete and 37% for material damaged in the yard.
Social	All sectors	Negative Balance	Ishikawa Diagram, Pareto Diagram, 5W2H, Control Graph	60% reduction in the institution's financial expenses by balancing

Source: Article data

Analyzing the three articles, it is noticeable that MASP promotes satisfactory results for companies in solving specific problems, if it is well studied and applied in a logical sequence, with the aid of quality tools, in which each step, at least, one tool is used. Thus, it is essential that organizations think about cost reduction, waste reduction and kaizen processes or systems.

Therefore, it is essential to use this method not only to promote continuous improvement, but also as a way of preventing the company's survival in the face of any type of crisis that may affect it financially. In view of the results explained in the three articles and, correlating with the current situation, the managers' responsibility to deeply know the methods for solving problems increases, in order to prepare themselves for any unfavorable situation that may affect them, such as the case failure to reach goals and objectives.

For there to be effectiveness in the applicability of the MASP method, a change in the company's culture is necessary, which will affect the behavior of employees and will require a lot of time to focus on training and education. It is worth mentioning that this will happen not only to change the mentality, but also to the company's purpose in creating a routine of seeking improvements in processes.

5. Conclusion

This work sought to demonstrate the effectiveness of the problem analysis and solution methodology (MASP) for the improvement of organizational processes, after the evaluation of three case study articles revealing their final results after the implementation of the method in the production processes. After reading and analyzing it, it was noticed that the tool promotes satisfactory results and improvements in its processes.

A detailed study of several articles and references consulted in this work revealed the flexibility of this methodology, which allows its applicability in several companies in different sectors, just understanding the operation of this tool and adapting them to its context.

Therefore, it can be seen that the MASP method and continuous improvement are correlated, because they make it possible to meet the expectations of both the company and the final consumers. In the case of companies, there is an improvement in the quality of processes and, with this, a reduction in costs for the manufacture of a product and, consequently, consumers end up purchasing a quality product and enjoying a more affordable service.

Therefore, the importance that the methodology is known by every type of company because the problems in the processes happen with any organization, so, it is necessary that managers invest in training so that their employees have skill in the application giving them autonomy in the search solving problems, increasing competitiveness, quality, creativity and organizational development.

However, to occur these situations mentioned above, it will be necessary to change the mindset of the upper dome, which are the main agents of cultural change in their organizations, the company needs to always think about improving its processes and products every day, only this way. way, that there will be interest in the search for knowledge of every type of method or tool aimed at continuous improvement, for example, Masp.

So, it can be said that MASP promotes benefits by making processes simple, facilitating the work of employees, reducing waste of resources that generates financial balance for companies.

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