

Technological Management of Public Services Based on the DMAIC Method Applying Theory U

Bianca Moret Neubauer; Flávio de São Pedro Filho; Leonardo Severo da Luz Neto; Fabio Biasotto Feitosa; Luciano Alves Bezerra

Abstract

This study uses a qualitative case study based on technology management in public services, drawing on the background of a personnel management department. The analysis was based on the concept of the DMAIC method. This approach was chosen due to the obvious need for innovative practices to achieve improved results. The study sought to answer the following question: how can technology management impact on the sector's efficiency study? To answer the question, this study's main objective is to study the technological production management focused on public service units; and specific objectives characterize the technology management strategy of the search sector (1), make a SWOT analysis of the practices and procedures adopted in the sector under study (2) and suggest managerial innovation considering the DMAIC method, and applying Theory U (3). As a result, it was possible to recognize that the technology management strategy focuses on the organizational and internal variables with critical enabling innovative proposals in the production process. This study is of interest to public officials committed to performance excellence in administrative units under their responsibility. This is another contribution to students, researchers and others involved with the management area.

Keyword: Technology Management. Innovation. DMAIC method. Theory U.

Published Date: 12/31/2019

Page: 762-776

Vol 7 No 12 2019

DOI: <https://doi.org/10.31686/ijer.Vol7.Iss12.2073>

Technological Management of Public Services Based on the DMAIC Method Applying Theory U

Bianca Moret Neubauer. Bachelor in Business Administration at the Federal University of Rondonia, Brazil. E-mail: biamoret@hotmail.com

Flávio de São Pedro Filho. Post-Doctorate in Management and Economics at the University of Beira Interior (UBI), Covilha, Portugal. Doctor in Business Administration from USP, Brazil. PhD in Business Management from the Universidad Autónoma de Asunción (UAA), Paraguay. Administration professor in the Undergraduate Course. Lecturer and Researcher in the Professional Masters and Academic Master at the Federal University of Rondonia, Brazil. E-mail: flavio1954@gmail.com

Leonardo Severo da Luz Neto. Master in Education - Autonomous University of Barcelona, Spain. Master in Psychology - University of São Paulo. Master in Religious Studies – Logos Theology College in São Paulo. B.A. in Nursing. Physical Education Professional. B.A. in Theology. Professor at the Federal University of Rondonia, Brazil - Department of Collective Health. Researcher at the GEITEC and GEISC of the Federal University of Rondonia, Brazil. E-mail: lluz@unir.br

Fabio Biasotto Feitosa. Department of Psychology at the Federal University of Rondonia, Coordinator of the Line of Research Management of Social Innovation and Sustainability in the Amazon from Innovation and Technology Management Research Group - GEITEC/UNIR/CNPq, Brazil. E-mail: fabriobfeitosa@yahoo.com.br

Luciano Alves Bezerra. Translator and professor at Faculdade Cultura Inglesa from Sao Paulo, member of GEITEC/UNIR/ CNPq research group, Brazil. E-mail: lucalbe@yahoo.com.br

Abstract

This study uses a qualitative case study based on *technology management in public services, drawing on the background of a personnel management department. The analysis was based on the concept of the DMAIC method. This approach was chosen due to the obvious need for innovative practices to achieve improved results. The study sought to answer the following question: how can technology management impact on the sector's efficiency study? To answer the question, this study's main objective is to study the technological production management focused on public service units; and specific objectives characterize the technology management strategy of the search sector (1), make a SWOT analysis of the practices and procedures adopted in the sector under study (2) and suggest managerial innovation considering the DMAIC method, and applying Theory U (3). As a result, it was possible to recognize that the technology management strategy focuses on the organizational and internal variables with critical enabling innovative proposals in the production process. This study is of interest to public officials committed to performance excellence in administrative units under their responsibility. This is another contribution to students, researchers and others involved with the management area.*

Keywords: *Technology Management. Innovation. DMAIC method. Theory U.*

1. INTRODUCTION

This study focuses on technology management in the services provided in a public unit based on the concepts of DMAIC method. Interest in this research arises from the obvious need for adequacy in performing the tasks focused on the sector. We also consider the responsibility for public affairs, through *accountability*, the constitutional principles of transparency of public administration mechanisms and equity with justice in the provision of public services. With the emergence of New Public Management (NPM), it is possible to search for efficiency and effectiveness in the government sphere, in order to effect social demands transparently. Moreover, with the precepts of *Public Service Oriented* (PSO), which is an update of the NPM, the manager goes on to consider the public service user as a customer, providing premises as fairness, transparency, strategic planning, flexibility, justice and participation. NPM and PSO theoretical creators are the ones who support these strategic adjustments in rigged government agencies for dealing with contingencies and adapted as a result of the dynamics demanded in innovation.

The current Brazilian federal government signals to encourage innovation in public organizations, deploying a technology-based management, which implies the modernization, reduction of bureaucracy and the simplification of government services by means of goal oriented challenges. These innovative efforts can be seen in recent decisions concerning the reduction of troops, removal of unnecessary structures, insertion of institutional economy, among other measures. However, it is the administrative, economic-financial and budget efficiency that supports the optimization of public resources, while qualifying the results expected by the taxpayer.

Although there is a strategic map, it is evident in the field herein under study the lack of innovation of its practices in order to maximize the improvement in the results. The scenario motivates the search for an answer to this question: how can technology management impact on the efficiency of the sector under study? To get answers to this question, it is necessary to set as a general objective a study of the technological production management focused on the public service unit, and as specific objectives a study that characterizes the technology management strategy of the searched sector (1), to conduct a SWOT analysis of the practices and procedures adopted in the sector under study (2), and to suggest management innovation considering the DMAIC method applying Theory U (3).

This task is justified by the lack of contributive instruments within the interdisciplinary approach involving the Production Administration, Public Administration and Personnel Management. Those specialties are emphasized in the business environment, but nowadays leave significant gaps in the public sector. In addition, several other related approaches can influence in a systemic way the joints which are strategically triggered, which entails bringing to light research indicative that enrich the knowledge while serving as ballast in its management. This is because modern society has demanded more in terms of service quality, which is why this study may be more successful in encouraging organizational practices.

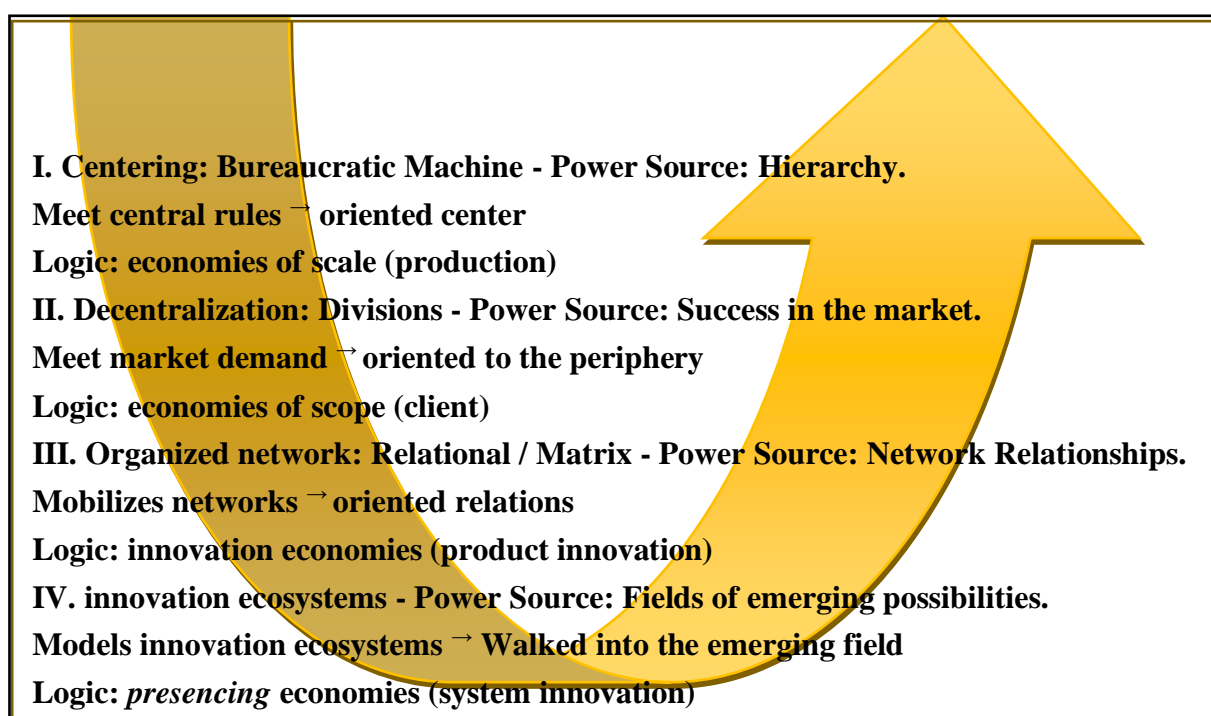
2. THEORETICAL-CONCEPTUAL REVIEW

According to Chiavenato (2014), from an administrative point of view, technology develops in organizations through know-how – the acquired knowledge of the meaning and implementation of tasks – and through concrete manifestations, such as the use of hand labor, machinery, equipment, and

facilities. Together they form a set of techniques used for turning *inputs* into *outputs*, that is, into products or services. The author separates technology into two categories: that which is amalgamated into physical goods, such as raw materials and machinery, corresponding with the concept of *hardware*, and another which is connected with people, their ability, experience, and knowledge, related with the concept of *software*. For Chiavenato, technology can be further approached from two different perspectives: as environmental technologies and external variable, and organizational and internal variable. This second variable should be in the internal system of the institution, in order to exert influence in any environment where it operates the business, being conducted by a leader.

In this theoretical conceptual block one should add Schärmer's Theory U (2014), which plays a significant role in this research for it highlights the importance of the leader in decision making. It is this leader who will influence the actions of the team, aligning reality to strategy. And the organization will function as a living organism in a dynamic cycle of changes and adaptations, and the manager's figure as fundamental in the success or failure in this trajectory of adaptive mutations that fit themselves, while preventing the diversion of institutional purposes. Mintzberg *et al.* (2010) have put in evidence the importance of the leader as strategist, emphasizing that to be successful an organization must have strong leadership, willing to make choices, to define what is worth, maintaining the coherence of tasks to strategy, while maintaining the clear direction of the commitments over time, ensuring understanding of the strategy to be followed by all. However, literature indicates that it was Schärmer (2010) who recommended organizational actions, by his Theory U, in organizational and structural levels in the face of reality, under the dependence of four stages, namely, stock-based models of the past, characterized by a centralized bureaucracy (I); external perspective, which requires decentralized decision-making (II); networked organizations, where the interflow dialogues (III); and ecosystems of innovation, assuming a field of emerging possibilities, including all stakeholders (IV). These four steps are outlined in the diagram in Figure 1 below, for better viewing and understanding.

Figure 1. Four types of coordination four power geometries



Source: Adapted from Scharmer (2010, p 237.)

Theory U allows one to focus in greater depth the facts covered in this research. Its application in the department under study is very clear. Consider, therefore, the sequential phases pointed in Scharmer (2010). The evolution of the sector will switch from a focus on processes to a focus on society and the Public Administration itself, through the enhancement of the employees' know-how. The operating module could achieve in the affected phase *presencing*, which is related to the systemic innovation, with an adaptation to the current possibilities and the insight into emerging opportunities, predicting a subsequent increase in the efficiency of an industrial sector. This will be possible by blending the dynamic complexities, external environmental factors and internal organizational variables. It has been noted that the leader's role is vital for any organization. Thus Chiavenato (2014) points out that the administrator is an agent that not only guides but also transforms and changes, directing the organization towards new levels, new strategies, and new technologies. He/She also plays the role of a teacher and tutor, for he/she guides and directs the organization, modifying behavior and the organizational culture as well as the behavior of stakeholders and other external organizations. Therefore, his/her influence is internal and external. Following this topic one can find the concepts of strategy and efficiency in the public service as well as on the SWOT analysis and DMAIC method, which are useful in the preparation of the results.

2.1 Strategy and Efficiency Concepts in Public Service

In this topic are exposed the concepts on strategy and efficiency in the public service. They will complement the theoretical framework already started with the theory U. First, the strategy concepts allow a broader view for the subsequent construction of the result analysis, as they will demonstrate the importance of the leader in technology management. As a result, the concepts of efficiency in public service become inevitable for any research that has as object of study Public Administration, since the efficiency in public service is a constitutional requirement in Brazil. As stated in the Brazilian Constitution, the direct and indirect public administration of any powers, in all spheres, shall comply with the principles of legality, impersonality, morality, publicity and efficiency (BRAZIL, 1988).

2.1.1 Strategy Concepts

Maximiano (2015) states that the term strategy is used to define the choice of means to achieve goals. He also points out that, when it comes to business strategy, it should be noted the systematic application of techniques of strategic management of established authors on the subject. The author recalls that Alfred Sloan recognized the need of the strategy aiming to return on capital, correcting the defects, or abandoning activity whenever it is impossible to visualize the return in the long run. Sloan's and Du Pont's studies inspired Chandler to define action strategies and resource allocation toward goals and long-term goals. It is worth mentioning that Maximiano (2015) reinforces the strategy concepts when he draws on H. Igor Ansoff's views by inferring significantly on Chandler's ideas when he publishes something about the goal-making processes and strategies in light of the analysis of the opportunities of the environment. It is possible to understand that the concept of Strategic Management stems from a process which involves not only

strategic planning, but also the implementation of the strategy in an environment with their threats and opportunities, in addition to internal resources, their capabilities and vulnerabilities.

2.1.2 Concepts efficiency in the public service

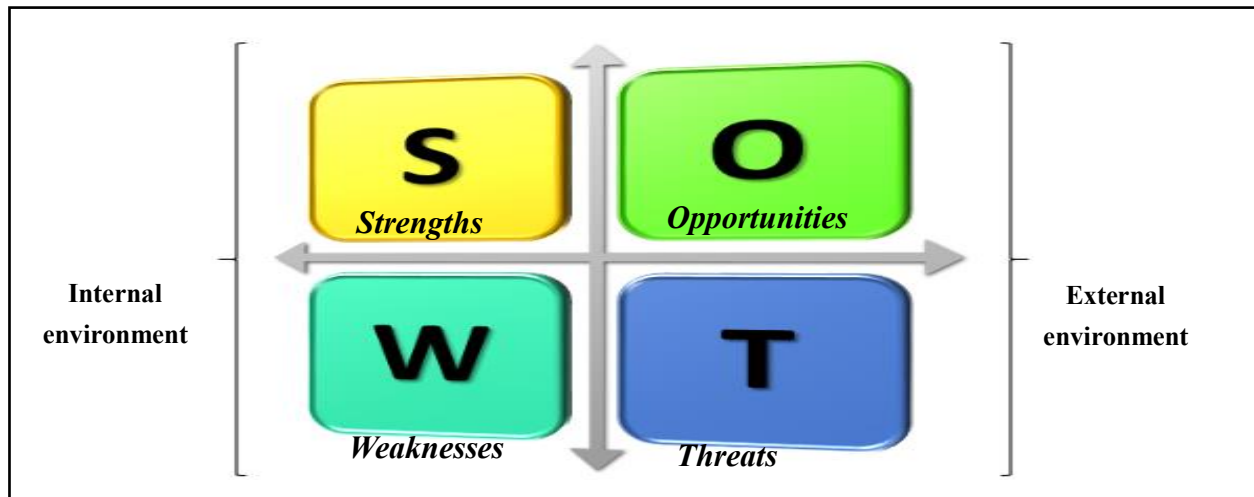
Survey carried out in Maximiano (2015) indicates that classical theorists such as Adam Smith, James Mill, Taylor, Charles Babbage, among others, had already sought ways to improve production. They also prescribed administrative procedures for the performance efficiency which can contribute today to a new perception of results in public service.

By reading Chiavenato (2014) one is allowed to interpret the efficiency and the benefits and correction through compatible use of available resources or optimization, application of appropriate methods in the production or ideal resources, rationally performed tasks, having productivity as a direct consequence. For Maximiano (2015), efficiency is the productive or economic use of these resources. The author also states that the search for efficiency stimulates the generation of studies on the basis of Economic Science and Management Theories.

On the other hand, when efficiency is placed in the context of the public service, one should pay attention not only to the production and optimization of resources but also to the attainment of satisfactory results for society and for the Public Administration itself. For a long time, efficiency remained unfocused in the Brazilian Public Administration, but this issue gained importance with the Master Plan of the State Apparatus Reform and subsequent managerial reform during the second half of the nineties in the country. For Bugarin and Meneguim (2016), managers begin to act inspired by New Public Management in the search for improved effectiveness and efficiency in the public service.

1.2 SWOT Matrix Concepts

SWOT matrix concepts can provide guidance to the development of organizational strategies. For this, the use of instruments and tools is necessary to support the base of the actions planned in strategic planning. One such tool is the SWOT matrix. According to Andrade and Azevedo (2018), this matrix constitutes a significant information processing method, the analytical framework, focusing on the environments, in order to assist in the competitive strategy formulation. Moreover, these authors prescribe this method for the evaluation of the organization's market position, and the interpretation of their ability to compete, identifying internal and external factors. The SWOT matrix model can be seen in Figure 2 below.

Figure 2 configuration diagram SWOT Model

Source: Adapted from Maximiano (2015, p.320)

Andrade and Azevedo (2018) state that the implementation of this SWOT matrix in the management requires intense crossing of information on issues relating to each of the elements being analysed. For these authors, the analysis requires the identification of important elements such as the opportunities, threats, strengths and weaknesses which will support the construction of future organizational vision, essential in the development of media-oriented actions in the short, mid and long term. The SWOT matrix is a dynamic process fundamental to the strategy deployment because it allows us to offer routing options when faced with contingencies in the internal and external environments of the organization, and it enables the enhancement of the strengths, helping to recognize and neutralize weaknesses, together with the exploitation of the opportunities and protection against threats that surround the activities undertaken.

2.3 Concepts of innovation and the DMAIC method

This section includes the concepts and definitions related to innovation and the DMAIC method, which are instrumental elements needed for the promotion of the *corpus* underlying the results for this research.

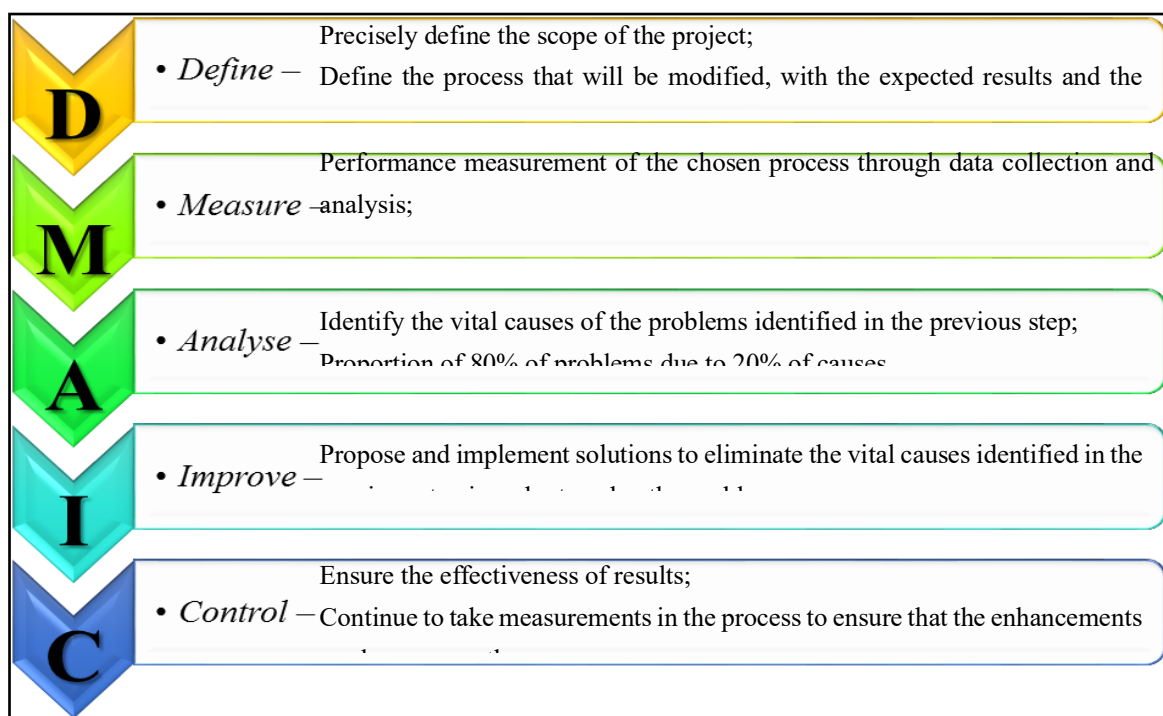
2.3.1 Innovation Concepts

Nascimento *et al.* (2015) make it clear that innovation can be a quality instrument, while Silva and Burguer (2018) deal with organizational innovation and its importance for those contingent adaptive brought about by globalization and its close relationship with the continuous systemic learning required in an institution. Silva and Burguer (2018) warn that organizational innovation is only possible when the ideas created are implemented, i.e., more important than a supportive and stimulating environment for the development of innovation is the creation of strategies linked to the skills of the employees. In addition, innovation remains flexible and adaptable to the environment of the organization. Thus, it is possible to conceptualize innovation as the unequivocal agent in charge of the survival and maintenance of organizations in a competitive environment.

2.3.2 Definitions for the DMAIC method

According to Souza (2018), the DMAIC method is a strategic implementation tool of organizational innovation which seeks to improve efficiency in the production of services. The author states that this method enables one to solve problems, for it identifies, quantifies and reduces volatility processes via quality application of Six Sigma, considered by the author as an acronym DMAIC. The method is outlined according with the phases that form its initials, namely *define*, *measure*, *analyse*, *improve* and *control*. Maximiano (2015) states that this methodology seeks greater efficiency in the production of services by merging Administration of Quality and the School Efficiency. This methodology works through projects, starting at when one chooses the process to be modified, and ending when the new process replaces the obsolete one, via the five stages of the DMAIC method, as shown in Figure 3 below.

Figure 3 - Model diagram DMAIC



Source: Adapted from Maximiano (2015, p.414).

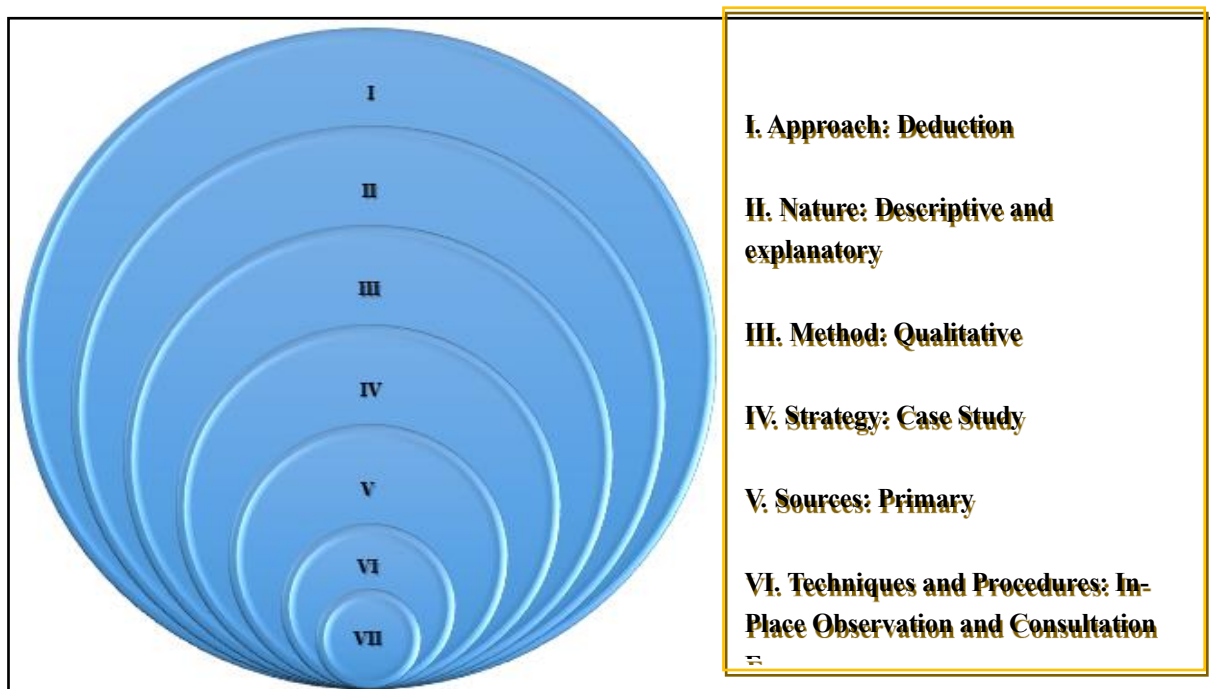
3. METHODOLOGY

This topic will cover the methodology for the preparation of this task, outlining the set of means used to achieve the research objectives. Saunders, Lewis and Thornhill (2012) state that methodology can be described as the procedures and the techniques used to obtain and analyse research data. These authors state that the word method refers to the conceptual elements of the stages found in a research. It is the path to achieve the results of the study proposed herein. Following Cooper and Schindler (2016), this is a descriptive research. The authors describe the type of purpose to be achieved by consistently identifying the research setting and the elements involved in an investigative work.

3.1 On the method adopted

In order to obtain the results for this study we have chosen the Case Study Method. According to Nascimento *et al.* (2015), this method consists of a set of parts each of which with a particular function. Cooper and Schindler (2016) say that the Case Study is a combination of qualitative methodologies, involving individual and group interviews with analysis and observation records. These are strategies that allow the researcher to treat information extracted in direct observation, usually performed in the natural environment of the participant. With the data collected in interviews or through consultation forms, the researcher reaches the multiple perspectives of the study in the organization, whether related to specific processes or to the events occurring in a given period, hence the descriptive or explanatory character of the investigation. Figure 4 below contains the strategic characteristics of this case study.

Figure 4 Strategic Characteristics of a Case Study



Source: Adapted from Saunders, Lewis and Thornhill (2012, p.128-160)

The case study method adopted here is the means to achieve the objectives of the research, focusing on outstanding cases of a solution in a technical or scientific field. The concepts and interdisciplinary theoretical foundations were very significant for the comparison with the practice in the context of reality treated therein. Generalizations significantly enrich the interpretation of the facts and also serve as ballast in understanding the organizational practices of the treated routines.

3.2 Procedures and techniques applied

The procedures involved the collection of data in primary sources. To do that, it was used an interview guided by semi-structured forms of consultation with the respondents, who were later treated by the Likert Scale and the Excel software. Open interviews and *in loco* observations were also used in order to understand the environment of the department under study. Then the collected information was treated

through the SWOT analysis task, which allowed us to characterize the management strategy adopted in the public sector under study. This critical procedure promoted the development of suggestions for innovation.

4. MANAGEMENT STUDY UNDER THE DMAIC METHOD APPLYING

THEORY U

The investigative *locus* in this study is a public sector that operates in the judicial system. A team of twenty-one employees from different hierarchical levels operates in this administrative unit. The *in situ* observation allowed the characterization of the technology management strategy adopted in the sector, which made it possible to interpret the reality of the operation, with contextual analysis for the proposed improvements. Interviewing respondents was important for it allowed us to interpret their perception of the tasks in which they were involved. It can be argued that the intervention technique practiced in this study qualifies the research. Criticism on the relations between the leaders and their collaborators in the production platform of services points out that the subordinates and the leader interact with perfect consistency of commitment, regardless of the need for changes to achieve the desired efficiency.

4.1 Characterization of technology management strategy of the sector researched

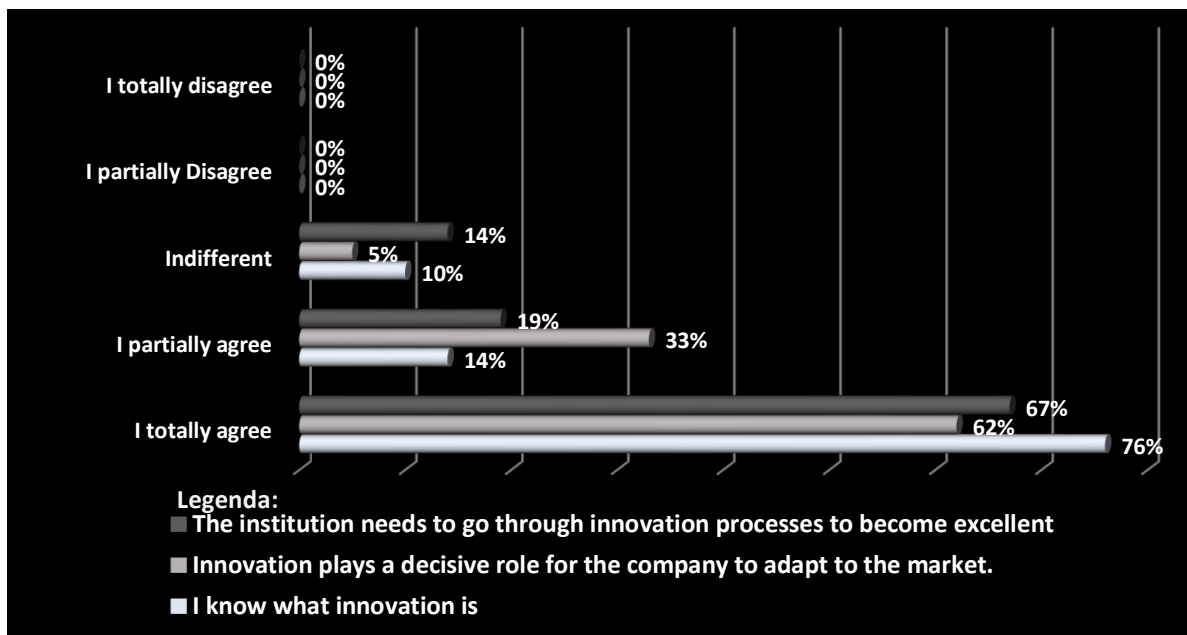
The management strategy focuses on the organizational variables, as claimed by Chiavenato (2014). It is settled in the homeostatic relationship between leader and staff, allowing a favorable environment for innovation. They are values that can contribute to the sector's efficiency as well as to the quality of provision of services offered to the public. As pointed out in the theoretical framework of this study, from an administrative point of view technology develops in organizations by means of know-how and its physical manifestations, according to Chiavenato (2014). Technology management, therefore, is not limited to the management of embedded technologies such as raw material and machinery, but also to the skills and expertise of the employees.

On analysing the answers to the consultation forms, one could prospect the basic parameters in this work. The majority of the employees feel recognized by the company, thus identifying a team predominantly motivated. This is confirmed when 48% of them claim they feel they are an important part of the organization, while only 5% totally disagree with this statement. The reason for such motivation is related to the industry's leader behavior, and his/her participatory orientation. As showed, 81% of the employees consider him/her a model to be followed; in addition, respondents state that their leader is interested in their opinions and their welfare. This significant influence of the manager refers to the concepts of the Theory U, described by Scharmer (2014) on the manager's power to influence the actions of the group, with the alignment of strategy.

In this task Theory U is inserted in the presencing phase, however an analysis can be done from the perspective of all phases of this theory, which would reinforce this empirical research. An in-depth look into this U stage allows one to identify opportunities in the researched unit. It is worth mentioning that 90% of the respondents claim to be aware of the innovation required in the sector, while 95% recognize the importance to innovate the organization. This view is reinforced when 86% of the respondents perceive the

need to introduce innovation in order to achieve institutional excellence. What this shows is a need to maximize the skills of employees in the management field, as shown in Table 5 below.

Figure 5 Perception of *stakeholders* as the innovation



Source: Prepared by the authors based on the consultation respondents.

4.2 SWOT Analysis on the practices and procedures adopted in the sector under study

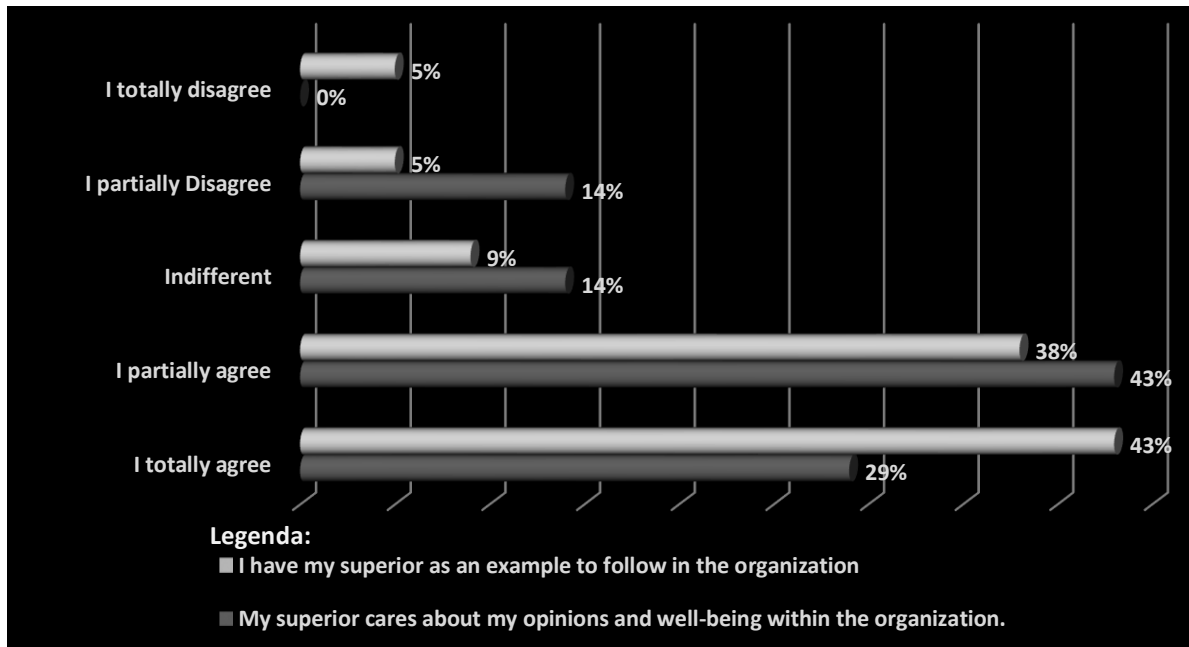
For the treatment on the management in the studied locus this SWOT analysis was conducted, which focuses on the procedural practices of the current routine. Research on the services platform has enabled the identification of various points of view, as well as their applications in functional routines. This information provided the foundation for the construction of critical mass, in harmony with the notes of Maximiano (2015). This author discusses the SWOT Analysis, suggesting that its application enables the monitoring of internal and external contingencies, adjusting strategies, improving decision making, as well as specific objectives, oriented such elements to the desired competitive advantages. As the studied body integrates the Public Administration, the excellence in the rendering of services to the society is understood as a competitive advantage, and a premise for New Public Management that covers the services you offer to society. Based on the interviews with the employees, and the results of the data collected by the consultation forms applied in the agency under study, it was possible to systematize the analysis of strengths and weaknesses in the internal structure. Through criticism of the facts dealt with, it became possible to scrutinize the positions in the investigated organism, as well as its relationship with the society that uses its services. Moreover, the critical analysis consolidated in this task allowed us to deal with the opportunities and threats located in the external environment of the unit under study.

4.2.1 Internal environment

In the domestic environment strengths and weaknesses that come to be treated in this compartment of the results were highlighted. Analysis of Strengths indicates the leadership, with the motivation of the team

and the freedom of employees to express their opinions on methods and procedures. As for leadership, the team demonstrates the recognition and manager approval, when a total of 72% percent of respondents agree that the leader cares about the opinions and welfare of employees; also the percentage sum of 81% of employees claim to have it as an example to be followed in the organization, as can be seen in Figure 6 below.

Figure 6 graphics performance of the perception of leadership



Source: Prepared by the authors based on the consultation respondents.

This fact corroborates with Scharmer (2014), who reflects on the leadership attributes when he deals with Theory U, highlighting the end of a kind of leadership that is inflexible and that centralizes control, while reinforcing relationships by default. They are positive aspects in a public institution, consistent with the notes collected in Maximiano (2015), among which stand out the effects of motivation arising from the successful leadership.

Another factor that emerges from the leadership, and allows it to be identified as stimulating motivation in the team is the participation of employees in decisions. Most stakeholders consulted perceived the predominance of an advisory or participatory leadership in the sector under study. This is similar to Maximiano’s view (2015) when he talks about people oriented leadership. This leadership model comprises the behaviors classified in democratic model without the use of authority. Specialized literature reports that the leader can focus on his/her own employee or group in order to emphasize good human relations and the development of the ability of individuals to work in a team.

Regarding Weaknesses, open interviews allowed to verify that employees identify the need for physical documentation in some sections, in addition to the constitutional requirement of publicity, which mandates the publication of administrative acts. Demand overload is impacted by the reduced number of employees crowded in the sector, which reveals another dysfunction. This fact directly affects the efficiency and effectiveness in the organization, and is related to inflexibility or to non use of the skills of employees. As a result, there is the individualization or centralization of tasks in people. The *in situ* observation also

indicated the concentration of information on people, which is another failure in the administration of the routines, for example, when there is the removal of any employee for an extended time or unexpectedly, congestion becomes a factor of multiple losses, which is aggravated by the interdependence between the routines involved sections. Finally, another weakness refers to the *layout* of the sector. Space is insufficient for the functional performance of the cases filed in the enclosure. These are problems that contradict the provisions found in Chiavenato (2014), when the author discusses on the effectiveness, benefits and correction, in its reasoning on the available resources, optimization, application of appropriate production methods, and other logical arguments that are reflected in the physical space.

4.2.2 External Environment

Regarding the external environment, SWOT analysis of the productive platform under study is now being focused on relevant issues in the context of the opportunities and threats. Regarding Opportunities, the analysis allows us to state that the organization being studied has the support of the State for access and management development and power, but it involves political factors and competitive advantage in the market, regardless of whether it is a government agency. With reference to the Threats, analysis points to those that are inherent to the public service, such as the lack of autonomy to make decisions due to its dependence on the law. Besides the legal requirement to act, a threat to the efficiency and management observed *in loco* refers to the absence of access control for the external public to the Director of the sector under study. The need for a person to filter access to this public undermines the routine in every part of the company.

4.3 Suggestions for management innovation considering the DMAIC method applying Theory U

The study focused on innovation in the public agency is based on the principles of efficiency, and later considered to bring the settings for Management Administration model. This step follows the design method for the instrumental guide, the new method of obtaining the results investigated on the platform, which now follows Born *et al.* (2015). Silva and Burger (2018) also focus on the organizational innovation and say that this is only made possible when the created ideas are implemented. Let this be a resource to encourage employees to pursue an innovation able to increase the management efficiency of the search industry, it is necessary to identify factors that prevent or decrease the efficiency of processes. Scharmer (2014), on his Theory U, points out the expectation of modernity, in which public officials can develop a *sui generis* style coordination and self-organization; this indicative supplements this understanding planned for attitudinal innovation in favor of procedures to be followed by stakeholders.

It is worth adding to this management study by the DMAIC Model, the prescriptive Maximian (2015) incident on one of the Six Sigma. It consists of the convergence of the movements of Quality Management and the School of Efficiency. The criticism formulated on the reasoning raised *in situ* reveals that the origin of the inefficiency of management stems from the concentration of information on people, the demand overload, the layout, and the lack of control of the public outside the researched sector. The deviations identified here significantly influence the efficiency of the organization as a whole. So much so that Maximiano (2015) emphasizes that the strategy is planned and executed through leadership,

communication, operational planning and work in the functional areas. It is clear then that these are interdependent and linked to management processes.

Enhanced implementation of the DMAIC management method, this proposal evokes the application of the assumptions of the theory U Scharmer (2014), which places it as the perception and mentoring are essential to the results to say that the quality of the results depends on the awareness of the quality of participants who operate the system. In the survey for this proposed innovation, the data indicate the heart of the problem; It is in the form of structuring of production and technological processes. The main causes were properly listed from the SWOT analysis. Stages of implementing solutions and ensuring the long-term results are the industry's position in the study; improvements can be implemented there by contemplating the various suggestions received from stakeholders involved; when selecting such indications, one should consider the impact on the quality of processes, as the model presented here deals with the evolutionary convergence of two movements. Whose efforts are materializing focuses on definitions derived from the Quality Management and Efficiency School, in the updated version in proceedings of scientific management explained in Maximiano (2015).

In addition to the process, this proposed innovation also considers the importance of automation of routines, unification of the programs used in single software, optimization of physical space, access filter to the general public and, finally, a rotation servers. The automation of routines and the unification of the programs in one *software* would increase the sector's efficiency, because such measures optimize very well the speed of production; besides contributing to the reduction of costs, produce less environmental impact by reducing traffic on papers in the unit while would improve information security.

Reducing the flow of printed documents would optimize layout, eliminating furniture used for local archiving. With the filter of access to the external public, it would promote an agenda attendance with the manager, amplifying the manager's role in direct supervision and contact with employees, strengthening the power of their leadership. These are measures that enable the leader to prioritize the trade-off of alignment of their management strategies; There are useful and emerging sequencing there, the effective organization of assignments, which will actively contribute to efficiency, as well as ensuring the security of industry information, which translates into greater industry credibility with service users.

As for the rotation scheme for employees between sections, this would be a possible innovation that would not only avoid unexpected surprises in the absence of an employee, but also avoid blocking the routine of the other sections; and contribute to knowledge sharing. Chances are very well interpreted reading in Scharmer (2014), to address the high performance team and consequent optimization of efficiency in the results. Moreover, this reasoning justifies the application of the Theory U on DMAIC method considered in this study. It is notorious the possibility of applying these tools, because there is seamless integration between the concepts outlined in the theoretical framework and its application in practice, as is apparent from the data processed, the clashes made and criticisms made in this task.

5. CONCLUSION

This paper focused on the core technology of the DMAIC Method applying Theory U, in order to innovate practices to achieve better results in a public service unit. The proposed objectives were achieved, and it

was possible to characterize the management strategy in the researched sector, applying the procedures that can be replicated in similar studies to assess the other possible results. It was possible to confront concepts of management strategy in a governmental body confronting organizational and internal variables. This study allowed us to delineate proposals for innovation in the productive and technological processes, albeit in an empirical context, as it requires deepening, despite serving as a basis for the exhortation of future modeling in which employees' know-how should be valued.

The analysis of strengths, weaknesses, opportunities, and threats in this study shows that team motivational skills, coupled with consultative leadership, become significant in gaining advantage. Thus, in a government agency, it is possible to avoid the evasion of the employee, given the remuneration attractiveness offered to him/her in the highly competitive market. This study allowed proposals for innovation in production and technological processes, indicating process automation, unification in a single software, optimization of physical space, access filtering for external audiences, and rotation of servers; but it is the motivation for suggestion that is rooted by the presencing phase indicated by Scharmer (2014). Therefore, focusing on the complexity of organizational dynamics, integrated action, and the development of skills not yet embodied are measures to be taken immediately. It is important to increase the team's know-how by adding new technologies, while updating the skills and abilities of those involved.

The leadership approach verified in this task is important to help employees in government offices to recognize themselves as an important part in the organization, motivating them to give their best, while ensuring efficiency in the unit where they work. In addition, whenever a successful action in consultative leadership is recognized, the manager understands more swiftly the need to overcome possible deviations at the operational level. Several routine details, which adversely impacted the routines, are not always within reach of the managerial or strategic level, but as soon as they are perceived they can be brought about by the employees.

The reasoning in this research can lead to several other investigations, such as one related to the interdisciplinary confrontation of the DMAIC Method in light of I. Ajzen and M. Fishbein's Theory of Planned Behavior. Here is another collaboration with those committed to excellence in management, providing support to scholars and researchers in the field of administration or related areas.

6. REFERENCES

- ANDRADE, Italo Welke of; Azevedo, William Alexander. (2018). Panorama of information analysis for competitive intelligence. **Competitive Intelligence Magazine**, São Paulo, v. 8, no. 1, p. 23-43, Jan / Mar 2018. ISSN: 2236-210X. Available in: http://www.inteligenciacompetitivarev.com.br/ojs/index.php/rev/article/view/245/pdf_131. Accessed on 03 December 2018.
- BIRTH, Natalia Araujo Tracey *et al.* (2015). Quality Parameters: A deconstruction method routines. In: IX Brazilian VIRTUAL CONFERENCE. **Convibra Administration.**: Convibra, 2015. p.1 - 16. Available at: <http://www.convibra.com.br/dp/default.asp?pid=11981&ev=87>. Access: 23 Sep 2017.

BRAZIL. **Federal Constitution** (1988). Official Gazette of the Federative Republic of Brazil, Brasília, DF. Available in: http://www.planalto.gov.br/ccivil_03/constituicao/constituicaocompilado.htm. Accessed on December 1. 2018.

BUGARÍN, Mauricio; MENEGUIN, Fernando B. Incentives for corruption and inaction in the public service: A mechanism design analysis. **Honor student. Econ.**, São Paulo, v.46, no.1, p.43-89, sea.2016. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0101-41612016000100043&lng=en&nrm=iso. Accessed on: 09 April 2019.

CHIAVENATO, Idalberto. (2014). **Introduction to the Theory of General Administration**. São Paulo: Manole.

COOPER, Donald A.; SCHINDLER, Pamela S. (2016). **Research Methods in Management**. 12. ed. Porto Alegre: Amgh. Translation: Language Scientific Ltd., texts 10. Publisher Iuri Duquia Abreu.

MAXIMIANO, Cesar Antonio Amaru. (2015). **Introduction to general theory of administration**. São Paulo: Atlas.

MINTZBERG Henry et al. (2010). **Safari's strategy: a road map through the jungle of strategic planning**. Porto Alegre: Bookman. Translation: Lene Belon Ribeiro; Technical Review: Carlos Alberto Vargas Rossi.

SAUNDERS, Mark; LEWIS, Philip; THORNHILL, Adrian. (2012). **Research Methods for business students**. England: Pearson.

SCHARMER, C. Otto. (2010). **Theory U: how to lead by perception and realization of the emerging future**. Rio de Janeiro: Elsevier.

SCHARMER, C. Otto. (2014). **Leading from the future that emerges: the evolution of ego-centric economic system for eco-centric**. Rio de Janeiro: Elsevier.

SILVA, Talita Caetano; Burger, Fabricio. (2018). Organizational Learning and Innovation: Contributions of Knowledge Management to propel a Corporate Environment Focused on Learning and Innovation. **NAVUS - Journal of Management and Technology**, vol.8, no.1, p.7-19. ISSN: 2237-4558. Available in: <http://navus.sc.senac.br/index.php/navus/article/view/569/pdf>. Accessed on 03 Dec 2018.

SOUZA, Bruno de Carvalho *et al.* (2018). Implementation of 5S program via the DMAIC methodology. **Brazilian Journal Of Development**. Curitiba, v.4, no.5, p.2163-2179. in Oct 2018. ISSN: 2525-8761 Available in: <http://www.brjd.com.br/index.php/BRJD/article/view/245/204>. Accessed on 03 Dec 2018.