Octogono: support for improvement in processes and decision-making in a Brazilian university.


Federal Rural University of Rio de Janeiro, BR – 437 – Km 7, Seropédica, 23897-000, Brazil

Abstract

Organizations need to improve their processes for developing products and services that meet the needs of their customers or users. In many cases, the use of an application can facilitate the work to be done in the organizations. Based on this premise, the following research question has been proposed: how the use of a software can help an organization to identify, implement process improvements and raise their level of maturity. In order to seek an answer to this problem, the "Octogono" application was created, incorporating a model to assess process maturity developed by BPTG - Business Process Transformation Group, called 8 Omega ORCA. The application and respective validation of the software were performed through interviews with managers of the International Council of the Federal Rural University of Rio de Janeiro (UFRRJ). The method of content analysis was applied to data collected in the interviews, converging to a common result and outlining a pattern of Octogono validation. The study results showed that the software is applicable in the assessment of process maturity, providing consistent results for the managers decision making with the indication of improvement in several areas evaluated by the methodology 8 Omega ORCA. Considering this application's functionality, it is believed that its utility can go beyond the university processes and can be applied to companies, government agencies and other institutions.

Keywords: Process Management; Process Improvement; Decision making; 8 Omega ORCA; Octogono.

* Corresponding author. Tel.: +0-000-000-0000 ; fax: +0-000-000-0000 .
E-mail address: schiavo@ufrrj.br

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Peer-review under responsibility of the organizing committee of CENTERIS 2016
1. INTRODUCTION

The quality of processes within organizations presents an opportunity in the search of a more efficient, agile and less costly management. Despite the recognized need of a good tool for quality in processes and for organizations to recognize the value and importance of process maturity, the application of such is not yet widespread. The difficulty of organizations in developing a good quality process management has a direct impact on the performance of their activities and responsibilities. The future will belong to companies which are able to exploit the potential of centralizing priorities, actions and resources in their processes [1].

This work is part of the application of a software based on the "8 Omega ORCA" [2] framework of process maturity, designed to facilitate measuring of the process maturity level of a particular unit or organization. The concept 8 Omega evaluates and continuously improves the level of maturity of organizational processes, enabling the monitoring of its sustainable development through the controlled measurement on an 8-point scale.

The objective of this paper is to describe the application of the software and identify its functionality through the feedback generated from the achieved degree of maturity. Thus, from the survey applied with the use of the Octogono software [3] in the International Council of the Federal Rural University of Rio de Janeiro (UFRRJ), there was an attempt to measure it within a study, as well as to listen to the opinion of respondents in a semi-structured survey to identify improvements in management of their processes and to point out parts where the studied unit needs to evolve to achieve the best level of maturity. Based on this assumption, a framework was built that basically allowed to retrieve the main concepts of quality process management and model 8 Omega ORCA. Based on the survey, preliminary results indicate that respondents understood the applicability of the tool and its method to achieve a higher degree of the process maturity for the International Council. The initial analysis on the perception of respondents reveals that the software should be directed to the manager of the area who has knowledge of quality processes and is responsible for putting in place the improvements indicated by the tool.

This article consists of four sections besides this introduction. Section 2 deals with the theoretical approach to the process management concepts and the applied model. Section 3 describes the methodological procedures regarding Materials and Method used in the survey. Section 4 presents the studied unit, the analysis of the case, as well as the results and discussions of the survey. Finally, section 5 contains the final remarks.

2. THEORETICAL REFERENCES

2.1. Quality Management

The ways through which organizations manage the quality of their products and services undergo a continuous process of evolution, responding to political, social and economic changes. The ISO 9000, adopted in Brazil by ABNT NBR ISO 9000:2000 [4] designation, published by ABNT (Brazilian Technical Standards Association), has been an important tool not only for obtaining the quality certificates, but also acting as a driver for measures and policies aiming to improve the quality of processes in the companies [5].

2.2. Continuous Improvement

Regarding the scope of improvement, there is a term directly connected to this philosophy called Kaizen. When applied to work, it becomes a culture for continuous improvement, focused on eliminating waste in all of an organization’s systems and involves the application of two elements: improvement, understood as a change for the better; and continuity, understood as change permanent actions [6]. Slack, Chambers and Johnston [7] understand the concept as small sequential steps, ensuring that some improvement actually occurs.

Similarly, Mesquita and Alliprandini [8] report that the essence of continuous improvement is to constantly evolve, overcoming obstacles, solving problems, learning from mistakes and successes, teaching, meeting, sharing all knowledge, contributing both to personal-individual and professional-organizational growth.

Continuous improvement does not occur naturally. Some specific skills, behaviors and actions need to be developed, so that the improvement is sustained over time [9]. According to authors such as Bessant, Caffyn, Gallagher [10], knowledge and behavior are intangible assets and should be treated as important strategic resources.
Thus, building a behavior for improvement and change is an important contribution to the organization and can assist in developing strategic plans, such as improvement in quality and quick response to customers.

2.3. Process Management (BPM)

The term “process” does not present a unique concept, and its many meanings can lead to divergent interpretations [1]. Processes can be used as a foundation for recording the organization's performance, background and perspectives for the future within the organizational environment [11]. Also according to Paim [11] "processes are the moving organization and also a framework for action: for generating and delivering value".

The concept of organizational processes is based on the Systems General Theory, as a critique of the scientific approach. The systemic theory considers the relationship between the internal and external parties related to the organization, for the understanding and analysis of the whole and the way these parties relate, unlike previous administrative approaches that did not consider the external environment of the organization and worked upon specialization individually. [12, 13, 14]

This systemic view of the organization will be the starting point to enable creativity and promote processes that will address the new reality of fierce competition and increasingly well-informed and demanding customers [15, 16].

2.4. Processes Maturity

The maturity of business processes are demonstrated in practical terms through companies’ efforts for standardization, measurement, control and continuous improvement of value processes. There is an undeniable logic at this point: processes have life cycles in the form of levels or steps of development, which can be defined, measured and controlled in time. It is precisely for this reason that they can be managed toward goals of excellence [17, 18, 19, 20, 21]. Thus, achieving a higher level of maturity in any process is a plausible goal, provided that it presents at least three conditions [17]: a) greater control over the results of these processes; b) greater predictability in relation to the cost objectives and performance of the processes; c) higher effectiveness on the scope of pre-defined goals, as well as the ability of management to propose new and superior performance targets in time. The achievement of such assumptions clarify the reasons why the organizational strategy should enhance or encourage the internalization of a culture focused on learning and continuous improvement [22], through performance metrics, focused on effective value and total cost of ownership offered to customers.

The value of a maturity model lies in its use as a tool for analysis and positioning, as it seeks to help organizations to recognize when and why they should move forward, by providing them with a vision of the measures to be taken in order to achieve progress in maturity [23]. A high degree of maturity means better control of productive results, improved planning of goals, costs and performance, and greater effectiveness in achieving the stated objectives [19].

3. CASE STUDY

The Federal Rural University of Rio de Janeiro (UFRRJ), a public institution of college education, has approximately fifteen thousand students, with 57 Graduation and 19 Post-Graduation courses. The teaching staff is represented by 1083 teachers, with an administrative support staff of 2042 people. The International Council, the administrative unit where the survey to measure the quality of processes was applied, is composed of 5 employees and has the role of managing the study and research agreements with the associate international organizations.

3.1. Application of the Octogono Software in the International Council

This section is based on the key findings of the survey, which allowed for the development of a conceptual framework to provide a comprehensive and sufficient understanding of the degree of maturity of existing processes in the studied unit, its value in daily management of staff, and shortcomings that can be improved to achieve a
higher degree of maturity. The details of the interviews and the overview of the practices of quality processes in the unit are indicated by respondents in Table 1.

Table 1 - Summary of interviews and the application of the Octogono

<table>
<thead>
<tr>
<th>Categories</th>
<th>Respondent 1</th>
<th>Respondent 2</th>
<th>Respondent 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent's profile</td>
<td>Position of Administrative Assistant, graduated in Business Administration and high knowledge of management by processes.</td>
<td>Administrator graduated in Business Administration and knowledge of management by processes.</td>
<td>Position of Administrative, Assistant, high-school graduation and knowledge about management by processes.</td>
</tr>
<tr>
<td>Knowledge about Process Maturity</td>
<td>More than 5 years in the position - full knowledge.</td>
<td>More than 10 years in the position - intermediate knowledge.</td>
<td>More than 5 years in the position - superficial knowledge.</td>
</tr>
<tr>
<td>Evaluation of the Application</td>
<td>Thinks that the application can offer a great contribution to a continuous improvement process.</td>
<td>Thinks the application is directed to managers of the area.</td>
<td>Thinks that the application can offer some contribution, but has no knowledge on the matter.</td>
</tr>
<tr>
<td>Layout of the Application</td>
<td>Very good. Fonts need to be bigger.</td>
<td>Very good.</td>
<td>Very good.</td>
</tr>
<tr>
<td>Application runtime</td>
<td>Thinks the time required to perform the evaluation of process maturity is satisfactory.</td>
<td>Thinks the time is insufficient, as it requires more information.</td>
<td>Reasonable time.</td>
</tr>
<tr>
<td>Items evaluated by the Application</td>
<td>Satisfactory.</td>
<td>Average.</td>
<td>Average.</td>
</tr>
<tr>
<td>Improvement suggestions</td>
<td>Bigger font.</td>
<td>More information to managers not related to processes areas.</td>
<td>More details on the evaluated items.</td>
</tr>
<tr>
<td>Application contribution to drive process management</td>
<td>Excellent to drive necessary improvements to processes.</td>
<td>Satisfactory, mainly due to the action plan presented at the end.</td>
<td>Relevant to managers of the processes areas.</td>
</tr>
</tbody>
</table>

3.2. Contribution based on results

The results revealed that the contribution of the application to the process management in the unit is relevant and valuable for necessary improvements. The manager of the area can easily interpret the results generated by the software and identify in the action plan the improvement points to be worked out. As a result of the analyzed unit, the overall average degree of maturity was 3.79 on a scale of 8, indicating that there is room for the introduction of practices for improving the process efficiency, particularly on the reduction of waste of resources and rework in some activities performed by the unit.

In specific items, such as "technology", there was a clear need for more investment, due to the poor 1.3 average of indicated by respondents, the lowest one from the selected items in the action plan informed by Octogono. This result indicates a systemic deficiency and points to the need of developing systems in line with the objectives of the processes of the area.

With the exception of respondent 3, the "People" action plan was well-regarded. The discrepancy in the level of assessment of this respondent suggests the identification of the strategic planning process, better interpretation of the flow of communication and offer of a process training to the respondent.

Regarding the software, the layout was well-rated by the three respondents, as well as the runtime and operation, positive points that refer to the ease of the application. However, even when considering the methodology of 8 Omega ORCA, which pre-sets the items to be evaluated to obtain the degree of process maturity, two items of the tool have been technically criticized: (1) the items evaluated in the application were classified as regular and required more detail for the correct interpretation, as pointed out by the respondent 3; (2) the items covered in the software require technical knowledge of process management to allow a correct answer on the item evaluated in the organization's environment or unit, according to the respondent 2. These two comments refer to a concern about the result the software offers, about whether the user is not a professional in the field of processes and is not prepared to interpret technical terms related to process management. This concern can be seen with the lowest grade identified in the software, according to respondent 3, who had no knowledge of process management.

Associated with the search for quality procedures, it is important to point out that evolution is incorporated in the best practice transformed into standard operating procedures and shared throughout the organization, as defined by the concept of "socialization" [24]. Attached to this concept, the successful improvement in the level of quality of
processes occur with the implementation of corrective actions applied on items flagged by the Octogono and, above all, with the involvement of the whole team in the commitment to deploy the improvement actions.

4. MATERIALS AND METHOD

The nature of the study was applicable and qualitative, since it was designed with a practical approach. It was performed through the use of software built exclusively for measuring the degree of process maturity, based on the 8 framework Omega ORCA and interviews with three senior officials of the Federal Rural University of Rio de Janeiro (UFRRJ) in Brazil.

Regarding the purpose, the adopted technical procedures were descriptive research, when deterministic or collaborative factors were identified for the occurrence of a phenomenon that deepens the knowledge of reality [25]. As for the means, bibliographical research in books and scientific papers were chosen, providing an analytical tool for all kinds of research [26], and case studies that allowed for the empirical investigation of a contemporary phenomenon.

4.1. The 8 Omega ORCA model

According to Oliveira and Oliveira [27; 28], the model 8 Omega ORCA allows users to assess the evolution of an organization through its maturity matrix. This model consists of a matrix containing nine elements and nine levels of maturity. Each element is related to a pillar (strategy, people, process and technology). The point of intersection between a level of process maturity or organization with an element defined by the model presents the current stage of the process. The model 8 Omega ORCA It can be viewed on the link http://octogono-mpge.blogspot.com.

The level of maturity of the organization can be found by applying the 8 Omega ORCA. Each pillar has an associated element - the arithmetic average of the elements in each pillar provides their level of maturity. From this average it is possible to identify the degree of maturity of the pillar and map out a specific action plan. Action plans can be viewed at the link http://octogono-mpge.blogspot.com.

4.2. Octogono

The development of the Octogono application was based on the model 8 Omega ORCA [27, 28]. Its programming was done in Visual Basic 5. The initial objective of this application was to hold a final work for the course "Management Laboratory", part of the Professional Master's graduate program in Management and Strategy of UFRRJ. Additional information, details of use and the expected results can be found on the blog http://octogono-mpge.blogspot.com.br/.

Using the information provided by the software, it is possible to issue a detailed report on the current situation of the process under study, focusing on the nature of the answers given by respondents, thus obtaining the result of the process maturity of the focused area.

For the purposes of anonymity, the unit participants were named respondent 1, respondent 2 and respondent 3. The following subsections present the findings and discussions explored during the interviews, which were analyzed at a later time. The subject of the survey was a public college institution, founded in 1943, represented by administrative units that form the institution's management structure.

The limitations of this method are due to the sample size and subjectivity of qualitative analysis, which is linked to the reliability and accuracy of the data, as well as the appropriate method of data processing.

5. FINAL CONSIDERATIONS

This survey was motivated by the perception of researchers about the need to maintain a continuous flow of evaluation of the maturity level of their processes and the lack of a tool able to assist in the execution of this task. In order to implement and test a tool that can assist in this routine, a study was developed at the UFRRJ International Council, using the Octogono application, which enabled the work to be done by the unit studied.
The main interpretations of the survey and the results obtained from the application of the tool showed that the studied unit knows the principles of process management, but identifies opportunities for improvement. This perception was only observed with the application of the Octogono, which allowed the creation of an action plan for improvement.

Although the importance of the process management is recognized by the studied organizational unit, the survey has shown that a software able to help in the assessment of the maturity level of the processes is critical to know the organization maturity level; based on this information, it is possible to propose improvements to leverage the maturity level to a higher position. Thus, the main conclusion that can be drawn from the conducted study is that the use of the Octogono was crucial in identifying and implementing the necessary improvements in order to plan and preparation for raising the maturity level processes of the surveyed unit.

However, considering the limitation of this survey regarding the number of respondents, the scope of application (restricted to a single organizational unit) and a validation cycle, it is recommended to perform the survey in other organizational units, in order to target the possible introduction of adjustments and adaptations.

References