EVALUATION OF MANAGEMENT CONTROL SYSTEMS IN TACTICAL-OPERATIONAL LEVELS: AHP APPLICATION

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ABSTRACT

Management control is a useful tool to guide processes management towards business goals and as an instrument to evaluate it, but many management control systems (MCS) are left in the measurement of the company global objectives being unable to measure whether local performances contribute or not to the achievement of global objectives. The aim of the research is to evaluate the MCS at the tactical-operational levels through a new procedure and the design of the Management Control Level of the Process indicator (MCLP) that integrates the four key management processes: planning, organizing, management and control, and the use of the AHP method. This indicator allows to know the extent to which management of the area or process is aligned with business goals and contributes to the strategy fulfillment. The breakdown of the calculated indicator to identify potential for improvement and priority order for implementation according to the weight given.

Keywords: management control, strategic objectives, processes, indicators

1. Introduction

Management control (MC) as part of business management, should lead operational components to achieve the strategic goals of the company, but this match does not occur by itself, in the practice of many companies is visible a gap between management control and the formulated strategy, carrying out department functions with uncoordinated plans for operational action and often presenting contradictions, leading to strategy failure over the lack of an approach that enables change management with operational and strategic vision simultaneously. In studies conducted at several companies in the area it has been seen that:

- Despite having defined strategic elements, process management is not focused on their strategic guidelines.

- Control is based on lots of existing indicators and often not oriented to analysis of compliance with the strategic goals.
- Control is not developed as a system but as isolated activities showing lack of alignment between strategic management control and business processes management.

This problematic situation highlights the need for tools to assess the contribution of areas and/or processes in strategy management to identify opportunities for improvement and increase efficiency and effectiveness levels of the business.

So the purpose of this article is to evaluate the MCS at the tactical-operational levels through a comprehensive indicator that combines the four key management processes: planning, organizing, management and control, and the AHP method philosophy. This indicator also allows standardizing the elements for evaluation so the company can be compared against other similar (benchmarking) or prior periods ensuring continuous improvement of the system.

2. Literature Review

MC is a useful process to guide management towards the organization goals and an instrument to evaluate it. Therefore it should be understood that the MC is a means to deploy the strategy throughout the organization, an information feedback process for efficient use of company available resources to achieve the desired objectives.

Most analyzed authors [Lambert (2001), Rivera Nogueira (2002), Kaplan and Norton (2009), Lehtinen & Ahola (2010), Scaramussa (2010), Montoya (2011)] recognized that the goals are the governing category because the decision-making process is aimed at achieving the goals, becoming these the pattern for management evaluation, meaning the degree to which management results approach previously established objectives.

However, few authors like Nogueira Rivera (2002) and Pérez Campaña (2006), draw attention to the role of MC as a bridge between global objectives and local objectives, reflecting the existing problems that many MCS only include the measurement of the company overall objectives but they are unable to measure whether local performances contribute or not to the achievement of this overall objectives.

The foregoing should not be seen as an isolated element or tool but as a system that relates and interacts with the whole environment and organizational culture. So it requires a permanent and comprehensive diagnosis of MCS to assess performance and identify improvement potentials to successfully achieve business objectives.

Moreover many of the MCS diagnosis are primarily based on financial measures which does not power competencies and skills required of today's organizations such as continuous improvement initiative, innovation; activities that today's competitive environment is demanding (Nogueira Rivera, 2002). In addition most of the MCS diagnostic tools are based on qualitative assessments which hinders

the benchmarking process against other companies and/or prior periods. This is a necessity to we will attempt to answer in this investigation.

3. Hypotheses/Objectives

The aim of this research is to create a comprehensive indicator to evaluate the integration level and contribution of area/process in management strategy and achievement of business goals using the AHP method, where the criteria to assess is shaped by the management processes: planning, organization, management and control; and the alternative the different elements to be considered in the strategy management at the tactical-operational levels.

This will also identify opportunities for improvement to raise levels of efficiency, effectiveness and customer service.

4. Research Design/Methodology

To achieve the objective of current research and supported by literature analysis, a procedure as shown in Figure 1 is proposed. This procedure is intended to diagnose the deployment of the organization strategic direction.

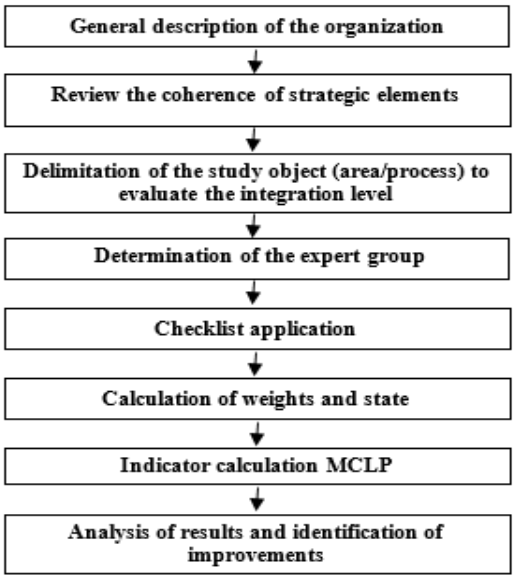

Figure 1. Procedure to evaluate the MCS at the tactical-operational levels

5. Data/Model Analysis

To construct the Management Control Level of the Process indicator (MCLP), elements (alternatives) to be analyzed in order to evaluate the management control and integration level of the selected process were grouped into four management processes (criteria): planning, organization, management and control. Its hierarchical representation according to Saaty philosophy shown in Figure 2. For information acquisition this analysis is based on a checklist that was

developed and validated by an expert group. This allowed the analysis of coherency and evaluation of actions state taking place in the tactical-operational levels in relation to the achievement of strategic business goals.

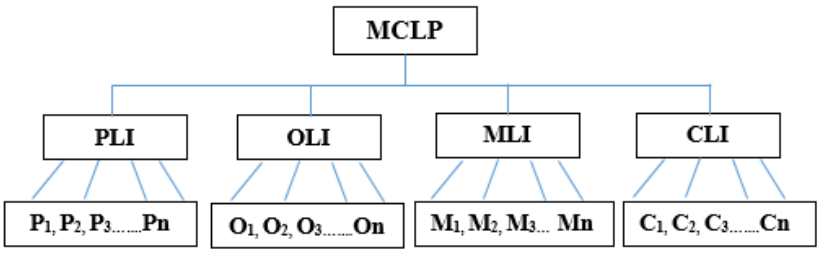

Figure 2. The structural model of the MCLP

The application was developed in the logistic process of the telecommunications company.

Registration information was supported by a group of experts, as well as direct observation of experts in relation to the evidence collected by applying the checklist.

To evaluate the checklist is necessary to determine the status of the various elements analyzed, it is determined by a heuristic method established for the purpose of this research and is shown at work at length.

Matrices and paired comparisons obtained allowed finding the weights by criteria and alternatives. Also allows such comparisons with a certain simplicity and to prove the consistency of decisions.

Thus resulting in the following indicators:

$PLI = \frac{\sum P_i * w_i}{P\max}$ (1)	$OLI = \frac{\sum O_{i*} * w_i}{P\max}$ (2)	$MLI = \frac{\sum M_i * w_i}{P\max}$ (3)	$CLI = \frac{\sum C_i * w_i}{P\max}$ (4)
$MCLP = PLI * W_p + OLI * W_o + MLI * W_m + CLI * W_c$ (5)			

where:

PLI : Planning Level Indicator OLI : Organization Level Indicator

MLI : Management Level Indicator CLI : Control Level Indicator

Pi, Oi, Mi, Ci: State of element i (alternatives) Planning, Organization, Management and Control (criteria) accordingly.

$P\max$: Max Score w_i : variable weight *i*

Determination of the weights was performed using the Super Decisions software, determinining during the case under study: Planning (0.33), Organization (0.17), Management (0.21) and Control (0.29). The extended work will also show weights obtained by alternative and the model structure. In all cases the calculated inconsistency does not exceed 10%.

To determine the final qualitative state of the area or process a scale was determined through a working group with experts yielding as shown in Table 1.

Table 1. Scale for qualitative evaluation of Management Control Level of the Process

0-0.4	Low
0.41-0.8	Medium
0.81-1	High

The calculated value (0.391) with expression 5 as overall measure of the integration level of the logistic process in the organization management strategy, shows the need for improvement programs to increase the efficiency and effectiveness of the process studied.

The ordering of the elements identified with difficulties, conforming each criterion, contributes to the development of the intervention program for improvement.

6. Limitations

The main limitation of the research is the need for correlation analysis and sensitivity between criteria and elements considered in the checklist and covered by the model. These studies are intended to be carried out as a continuation of the investigation.

7. Conclusions

The proposed method considers the design of an indicator to assess comprehensively the elements to be taken into account in a MCS in the operational-tactical levels for strategy management, taking into account the process management philosophy, alignment with the strategic level and the contribution of these processes to achieve business objectives. Identifying potential for improvement and setting priorities for implementation is an added value to increase the effectiveness of management.

Using the AHP methodology allows for weights in evaluating management processes and their subprocesses checking the consistency of given judgments. Also allows to add items to the specific nature of the process/area which ensures generalization of the tool for its application.

8. Key References

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