

Integrated Management Systems of Quality, Environment and Safety - a multinational company in Portugal case study

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Abstract. With the rising concern in attaining better organizational results, the business reality has been changing over time, having the financial indicators stopped being enough to evaluate the performance of an organization. To develop a performance evaluation, it is necessary to assure its control, therefore, to deal with this problem the case study company opted to use a management model based on the Balanced Scorecard, since it allows to monitor financial and non-financial indicators relevant to the several perspectives that guide the organization.

The implementation process of the Balanced Scorecard is not easy as it requires an extensive knowledge of the organization and its operations. The biggest challenge is to transform this tool into a useful management instrument for the organization's needs.

Considering the case study, the performance management strategies will be explored, so that the case study allows to illustrate a methodology for the selection of relevant key indicators to an integrated management system of quality, safety and security and environment, that are suitable for the Process perspective of the company's Scorecard.

Keywords: Integrated Management System, KPI, CSF, Strategic Map, Balanced Scorecard.

1 Introduction

Nowadays, one of the biggest challenges for a company that desires to remain competitive and innovative in the market, depends on quality control. To maintain or improve a certain level of quality is a major challenge. In order to achieve higher levels of efficiency and efficacy, it is demanded, that top managers, master management tools that will help measuring organizational performance recurring to financial and non- financial results, that are the basis of a company' sustainability. The need to recur to broader measures for measuring these results appears and thus the Balanced Scorecard. The authors of this methodology Kaplan and Norton (2005: 3) believe that "Managers using the Balanced Scorecard do not rely on short-term financial measures as the only indicators of company performance." The Scorecard allows them to

introduce four new management processes that, contribute to linking long-term strategic objectives with short-term actions. Based on this methodology it is possible to measure the performance of an organization, allowing it to be capable of transmitting and complying with its strategic objectives and initiatives.

The present paper has as a case study, a business group owned by a global pioneer in electrotechnical engineering. Since its founding, the organization is committed to technological innovation and has also developed a persistent concern with quality, safety and environmental management. This company, having such a significant global presence and with a strong market and customer focus, could not fail to show a major concern associated with the connection between its strategic and operational elements, as well as with process optimization, taking into account all the strategic areas of the organization.

With this in mind, the motivation for the development of this paper arises, and its purpose is to review, and eventually propose key indicators related to the integrated management of quality, safety and environment, aligned according to the four perspectives of the case study Balanced Scorecard. The four perspectives should be defined and then measured and monitored. These strategic perspectives: Clients, Financial, Processes and Employees, are all interconnected and are associated with the strategic objectives and respective performance indicators. However, given the overall size of the case study, it will be dealt with only one of the four quadrants: the Processes. This quadrant includes indicators related to productivity and introduction of new products, quality, capacity, waste reduction, among others.

2 Problem Statement

An organization that seeks to remain competitive in the marketplace should have a well-defined strategy in order to fulfill its mission and achieve its vision. The definition of an organization's mission is a key point that defines how it intends to achieve the strategic objectives. This should be clear not only to the organization and its employees, but also to customers and stakeholders.

Nowadays, an organization and its various departments should be seen as a whole, all of which are interconnected and dependent on one another. Hence, the importance of integrating management systems, which allow organizations to get the message across to the entire internal and external environment of which strategic objectives and initiatives will guide the direction of the organization. These initiatives are based on continuous improvement and related to the implementation and integration of two or more certification standards, the most common are ISO 9001, ISO 14001 and ISO 45001.

Generally, management systems are configured and applied in isolation. This separation of systems causes conflicts between them due to the determination of different objectives and schedules. Ideally, these systems should be integrated, working together to consider all the organization's objectives. As such, the planning and development of an integrated management system should include the identification of risks and opportunities that may affect the organization, including quality risks and risks related to environmental, health, safety, and other obligations.

There are innumerable possible domains in conducting a performance evaluation. In this measurement process, key performance indicators or performance measures are defined as processes for quantifying the efficiency and effectiveness of an action. These measures or indicators can be classified in different ways according to the needs and structure of a given organization. Thus, performance evaluation is essential in monitoring, innovating and guiding activities and projects in the context of organizational performance. In carrying out an evaluation it is necessary to establish a comparison term that allows to compare the results obtained with the expected results (Johnson et al., 2017).

Thus, one of the biggest challenges associated with performance indicators is their selection. The organization needs to be careful in selecting its strategic objectives and then selecting indicators that should be based on those objectives; it is important to avoid using too many indicators, therefore, losing focus and making it hard to achieve the organization's goals; it is essential to distinguish and separate KPIs from other non-strategic data; it is important to review and update the indicators annually, thus checking whether they contribute to the strategy outlined. Therefore, and taking into account these general problems associated with key performance indicators, it is intended to be verified whether or not they occur.

To meet this need to assess an organization's performance, there are methodologies that incorporate and measure the key indicators associated with financial and non-financial measures, such as The Triple Bottom Line, Tableau du Bord and the Balanced Scorecard. This first tool, The Triple Bottom Line, focuses on social and environmental responsibility (Johnson et al., 2017). That is, in this methodology are considered economic, social and environmental objectives, however, according to Rohm and Montgomery, (2011) its use is limited since it does not consider the competitive strategy of the organization and the fact that it does not allow integration. The Tableau du Bord is, according to Jordan et al., (2015), a management tool for action synthesis, capable of providing information quickly in the short term. However, according to the same author, the Tableau du Bord is only an instrument of operational nature.

The Balanced Scorecard, alternatively, is a product of the organization's strategy and assumes that there are certain key indicators that measure the performance associated with a particular goal. It is important to determine which indicators are relevant and capable of aligning the organization

with its vision and strategic objectives. This is the most used method in decision-making processes when choosing key indicators.

In this context, organizations have used systems that incorporate financial and non-financial measures as a way of monitoring their progress. The Balanced Scorecard is the tool used to align and integrate the organization's sustainability and strategy. It is also indicated for the measurement and communication of the execution of the same strategy (Rohm and Montgomery, 2011). It suggests a vision of the company, under four different perspectives, Finance, People, Processes and Collaborators (Kaplan and Norton, 1996). This method emerges as a strategic management model capable of defining strategic objectives, improving the organization's strategy and implementing the same strategy.

3 Literature review

It is assumed that the concept of quality is as old as man. According to Goetsch and Davis (2013), the philosophy of total quality management (TQM) has introduced a new vision of quality. TQM does not have a single universal approach. Distinguished authors have contributed to the development of various concepts that are collectively known as total quality management. In the twentieth century, new quality systems emerged that evolved from the principles of Deming (1987), Juran (1988), among other theorists and practitioners of quality management. An example of these new systems is ISO (9001 (quality), 14001 (environment), 45001 (health and safety at work)).

An integrated management system (IMS) is a unique system that incorporates provisions for each standard or provision of other management subsystems of an organization (Apcer 2007). An organization is free to choose their system integration and the level of integration. This can be reflected in the organizational structure of the company, in the existence of common procedures, among others. The basis for SGI systematization is the process approach and the Deming (1987) continuous improvement cycle, the PDCA cycle. Systems integration is primarily intended to help organizations benefit from the integration of the common requirements of various standards. SGI directly influences the development of an organization's competitive strategy.

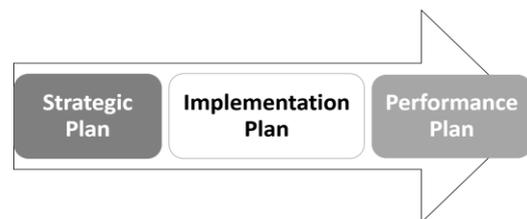
Strategic planning is a business organization model that encourages organizations to reflect on what is most important to their success, taking

advantage of the opportunities found in their environment. According to Kaplan and Norton (1996), the focus of systems used by organizations is to communicate strategy and strategic directions, allocate resources, set goals and directions for departments and individuals, and ultimately provide feedback.

According to Mintzberg (1994), there are several reasons why an organization should resort to strategic planning, namely: (1) to coordinate its activities; (2) to ensure that the future is taken into account, including preparedness against inevitability and to control whatever is possible to control; (3) to be "rational"; (4) to control. Thus, for the same author, strategy is a word whose definition is different from what is practiced, that is, strategy appears to be a pattern that arises from the combination of intentional responses and responses from a changing external environment.

Top management is responsible for the overall planning of the organization. However, each business unit must elaborate its performance plan, adapting it to its reality and taking into consideration the overall strategy of the company, making the strategy reach the operational level (Pasquim e Fumagalli, 2017). (Illustration 1).

Illustration 1 - Deployment of Strategic Planning



An organization that plans based on its strategic vision is able to define actions to be taken and thereby achieve the desired objectives efficiently and effectively. That is, using a minimum number of resources, it is possible to involve the entire organization in achieving the same goal, making the strategic process continuous. Strategic planning is a continuous decision-making process, based on a formal document, that is, a plan, containing applicable activities and procedures to achieve certain targets. Therefore, planning is often defined at three levels: strategic, tactical / policy or operational:

- (1) Strategic Level: Organizational development that presents long-term goals and guidelines (five to ten years);
- (2) Tactical or Policy Level: Medium term objectives (two to five years), usually associated with the integration of activities and definition of policies that detail the long term orientations;
- (3) Operational Level: Operational objectives and

short-term (one to two year) goals, measures, and actions, typically associated with efficiency and effectiveness within the organization. It is common for operational plans to be established in the form of programs, projects or action plans with well-defined activities, deadlines for implementation and those responsible.

These planning levels can also be structured using the cascading method, where the strategic level occupies Tier 1, the tactical level, Tier 2 and the operational one, Tier 3. To sum up, according to the Balanced Scorecard Institute, the cascading effect is used to: align strategic objectives to the main operational support units (mission, vision, strategy); align work with the organizational operations; focus individual effort on the achievement of results.

KPIs are measurable in the sense that they allow the organization to determine its effectiveness in achieving its goals. A performance factor (KPI) is, according to Olve et al. (1999), a measure that will determine or influence future results. Often the effects that the organization seeks are not immediate and, by using performance indicators, it is possible to improve, over time, the performance of the results and their effects. It is important to distinguish between performance measures and metrics. Metrics simply follow the state of a process or activity, this is, metrics support KPIs and KPIs, in turn, support the organization's overall strategic goals and objectives.

Performance measures are meaningless if they are not associated with Critical Success Factors (CSF), Balanced Scorecard perspectives, and the organization's objectives. A CSF is a critical factor that is required of any organization that wishes to fulfill its mission. It can then be said that KPIs quantify the Critical Success Factors (Parmenter, 2015).

The Balanced Scorecard is a tool developed in the 1990s by Robert Kaplan and David Norton (1996), which appeared from a study carried out in the exploration of methodologies of performance measurement, which started from the idea that financial measures were not enough to measure the performance of companies. The pair then agreed on the idea of a Scorecard that would introduce performance measures and also encompass activities across the organization, that is, nonfinancial measures. The scorecard goals, critical success factors and metrics, are derived from the organization's strategy and vision. Kaplan and Norton (1996), also argue that the Balanced Scorecard methodology suggests a vision, from four perspectives that are interconnected: Financial, Clients, Processes and Collaborators. For each of these perspectives, the objectives, performance

indicators, targets and initiatives should be developed and characterized.

According to the Balanced Scorecard Institute, the process perspective, relates to the question: "In what processes should we excel to achieve our vision?". The key element in achieving excellence in any organization is the control of internal processes, which enables consistent and reliable products and services to be produced. This perspective is, therefore, related to the other perspective, Clients and Financial, since, to achieve any type of objectives it is necessary to take into account the financial objectives, and finally, it is related to the Clients perspective, as more and more internal processes are linked to the employees of the organization.

Kaplan and Norton (1996), believe that the importance given to the BSC should be equivalent to the one given to the strategic maps. The Strategic Map is a tool that assumes a cause and effect relationship that relates the strategic objectives in each of the four perspectives and between them, and as such the respective indicators and CFS also follow the same relation. One of its main goals is to describe graphically how an organization creates value from its intangible assets. The strategic map emphasizes how the strategy will improve the performance of the organization, assisting organizations in specific aspects of management, strategy, performance and learning.

4 Methodology

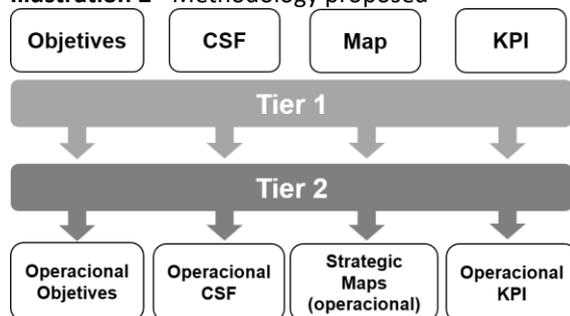
For this case study, a tool based on a single methodology cannot be applied. This is due to shortcomings found in the definition of objectives. Thus, the suggested methodology proposes the construction of a valid operational strategic map referring to the Processes scorecard quadrant.

The map will be created from operational CSFs resulting from the QEHSS performance objective "Achieving a QEHSS Index of not less than 8.20" and then the proposed KPIs for fiscal year 2019 will be validated for the Processes quadrant Scorecard. Thus, the proposed methodology follows the principles of Kaplan and Norton (1996) and Olve et al. (1999) in which KPIs quantify Critical Success Factors, and consequently, CSFs affect the achievement of objectives.

These objectives should follow a cause-effect relationship between the different perspectives and should be related to tactical and strategic objectives, according to the principles of Niven (2006), Caldeira (2009) and Johnson et al. (2017).

The methodology also follows the ideas of Markovic et al. (2015), that the strategic map can be built from the CSF, if there are gaps in the objectives. Thus, the proposed methodology can overcome the recurring gaps in the information dispersion found in the case study. Therefore, it is necessary to first identify the CSFs and only then draw the strategic map. This is the main difference presented between the proposed methodology and the one proposed by Kaplan and Norton (1996) who argue that the strategic map should be drawn from the objectives. A representation of the methodology can be seen in Illustration 2.

Illustration 2 - Methodology proposed



In summary it follows the succeeding steps:

(1) Determination of the objectives linked to the Processes quadrant. It is necessary to verify how the operational objectives contribute to the organization's strategy, as well as to the achievement of strategic and policy / tactical objectives. Regarding the problem of information dispersion: the QEHSS systems integration objectives should be made explicit, as well as the ways to reach them. That is: it is necessary to present all the objectives and the ways to reach them from the strategic level to the operational level, deducing them through the information provided by the case study company. If necessary, the objectives should be rewritten to correspond with the ideals of the authors of Niven (2006), Caldeira (2009) and Johnson et al. (2017).

(2) Identification of the Critical Success Factors related to the operational objectives of the Processes quadrant. According to Intrafocus (2014), there should be no indicators that do not contribute to the measurement of a goal, however Markovic et al. (2015), refutes saying that, there should be no indicators that are not associated with a CSF. One of the biggest mistakes in defining KPIs is focusing on activities rather than results. Objectives, as well as KPIs, relate to outcomes, i.e. CSF.

(3) Identification of the cause-effect sequence between CSFs of the Processes quadrant, through the design of the operational strategy map,

according to Jones (2011) and the Balanced Scorecard Institute (<https://www.balancedscorecard.org/>).

(4) Validation of the Process Measures of the Scorecard. A measure must be based on an operational CSF (Olve et al., 1999).

This methodology is appropriate for this case study, since it leaves out the construction of a causal model that represents its strategy in the form of a strategic map, and because it intends to specify in detail the critical elements in the growth strategy of the organization. This methodology aims to ensure a valid strategic map proposal and to ensure that the KPIs selected for the Processes quadrant are valid and monitored, the stated objectives contribute to the organizations' QEHSS performance target, contributing to the organization's success. It is intended to overcome challenges such as:

- Overcoming difficulties associated with the dispersion of information found;
- The adoption of indicators related to the Processes perspective that are adequate to the company's reality and that reflect its strategy;
- Adjustment of eventual deviations in the strategy execution, associated with the use of performance indicators analyzed separately;
- Unnecessary measurements, resulting in excessive data and loss of focus of the organization due to the dispersion of CSF information;
- Take advantage of all the benefits that the Balanced Scorecard has to offer.

5 Application and results of the methodology proposed

Firstly, it is essential to understand that the corporate scorecard identifies the key success measures for the organization and serves as the development basis for all other scorecards in the company. This is also the basis of the cascading effect.

The essential point is to ensure that each departmental scorecard is formulated to contribute to the scorecard objectives - preserving the true intent of the enterprise-wide strategy and top-level scorecard. Each division or department should use the high-level scorecard and relate it to their business area, identifying the activities and priorities needed. This scorecard may use different words and terminologies but should not deviate from the established high-level strategic objectives. Thus, each department must add the necessary details and measures.

5.1 Defining objectives

The company's objectives for the scorecard are based on their strategic direction, global objectives, that are a consequence of their vision, and other objectives considered relevant to the management system. However, due to the difficulty in explaining strategic objectives, this case study as with other organizations, also presents some of its objectives incorrectly. There was also the problem of the existence of operational indicators that do not derive from any operational objective. In this way, the strategic objectives regarding the integration of QEHSS systems should be explained, as well as the ways to reach them. That is: it is necessary to rewrite the objectives and the paths to reach them from the strategic level to the operational level, deducing them through the information provided.

Therefore, the proposed methodology will also attempt to solve these omissions with respect to the Processes perspective.

An organization's planning levels are an essential part of the Balance Scorecard, as it is a tool for aligning all members of the organization in achieving the defined strategy by monitoring indicators. Strategic planning covers the entire organization. In this way, using the cascading tool, the areas, departments and business units are separated to define the individual levels related to the overall strategic objectives.

Considering the information provided related to the process quadrant, some policy objectives aligned with operational objectives have been detected. Table 1 presents a proposal for classification as strategic objective, policy objective or operational objective / initiative. From this proposal, some objectives were separated, originating an operational objective and a policy objective, such as "Implementation of the QEHSS KPIs Dashboard Project in order to contribute to processes and resources optimization", resulting in "Contribute to process and resource optimization by ensuring quality standards." adding information present in the organization's manual, and, "Implementation of the KPIs Dashboard Project for QEHSS" as it can be seen from Table 1. This separation stems from Caldeira (2009) principles, according to which an objective must not contain more than one intention.

Table 1- Proposal for the designation of strategic, policy or operational objective

Strategic	Live lean governance and drive continuous optimization
Tactical	Assure preparedness, risk management, and systematic improvement.

Operational (1)	Review the 'QEHS Risks and Opportunities' identified within Enterprise Risk Management (ERM) with regard to the respective formulation, exposure level and mitigation measures.
Strategic	Live lean governance and drive continuous optimization
Tactical	Ensure the protection of the environment and human health during the production and marketing of products and services.
Operational (2)	Fulfilment of the Emergency Preparedness Tests Program.
Strategic	Live lean governance and drive continuous optimization
Tactical	Ensure the protection of the environment and human health during the production and marketing of products and services.
Operational (3)	<ul style="list-style-type: none"> - Carry on the 'We Recycle' campaign throughout FY 2019. - Conclude the change of outdoor lighting to LED technology in Alfragide facilities.
Strategic	Live lean governance and drive continuous optimization.
Tactical	Ensure quality standards in processes and projects.
Operational (4)	<ul style="list-style-type: none"> -Revision of the PM Coordinator role, in alignment with the new organizational setup. - Financial closure of old projects that are still active in the system should be continued/ concluded during FY 2019. - Assessment of PM certification needs in RC PT (e.g. new Project Managers, training gaps, etc.). - Reinforce the CPM certification of RC PT employees in order to cover current gaps in B and C projects.
Strategic	Live lean governance and drive continuous optimization
Tactical	Contribute to process and resource optimization by ensuring quality standards
Operational (5)	<ul style="list-style-type: none"> - Implement the QEHS KPIs Dashboard Project in - Align the QEHS Management System scope with the new organizational setup (e.g. new reporting structure, QEHS roles, responsibilities and resources and business specific regulations). - Evaluate the effort to perform in FY 2019 the Health and Safety Management System certification according to ISO 45001. - Align the Quality Policy and Strategy with the revised Principles and approaches. - Consider the impact of discontinuing the RDI Management System certification on the QEHS documentation (Manual and Regulations). - Include a description of 'Cyber Security'

	and 'Crisis Management/ Business Continuity' approaches in the QEHS Manual. - Perform the internal and external QEHS Sales and Services audits before March, 31.
Strategic	Live lean governance and drive continuous optimization
Tactical	Guarantee consistent management of suppliers.
Operational (6)	

In this proposal, the policy objectives emerge from an analysis of the company's manual, rewriting some of the objectives to match the requirements of Caldeira (2009) that the objectives should start with verbs that illustrate intentions, such as "Ensure quality standards in processes and projects" resulting from "Quality standards in processes and projects" and "Ensure the protection of the environment and human health during the production and marketing of products and services." resulting from "Prevention, risk management and systematic improvement".

5.2 Determining CSF

Regarding the Critical Success Factors, and as mentioned previously, KPIs have no meaning if they are not associated to them. The CSFs are used to implement the company's strategy, and the Balanced Scorecard is based on CSFs. Although the case company study is aware of its critical success factors, this information appears scattered in their QEHS manual, therefore it is essential to understand whether the focus is on results, i.e. whether there is a distinction between CSF and objectives. CSFs are activities, characteristics or conditions that have a direct impact on the efficiency and effectiveness of an organization. They should answer the question, "What should be the focus for achieving the goals?" Thus, in order to respond to the gaps found with respect to the objectives, the identification of the business support unit's CSFs will represent the essential factors for the achievement of all operational objectives and the previously mentioned missing objective. Taking into account the requirements of the organization manual (S, 2018) and the operational and tactical objectives of Table 1, the critical operational success factors for the Processes quadrant were identified. Knowing that the organization aims to ensure the protection of the environment and human health during the production and marketing of products and services; Risk management is also an integral part of the planning and execution of business strategies, thus establishing a risk management policy; it is essential

to ensure the fulfilment of the QEHS requirements; the selection and evaluation of suppliers is also essential and the product/service control life cycle. Considering all these elements and the operational objectives, Table 2 was built:

Table 2- CSF proposal

Processes Perspective	
Operational Obj.	CSF
(1)	Control and Risk assessment (U)
(2)	To prevent accidents and occupational diseases (T)
(3)	Minimize environmental impacts (W)
(4)	Quality of measurements, reports and data (X)
(5)	Management system control (Y)
(6)	Supplier Management (Z)

Identifying the CSF will allow to focus and allocate resources on critical activities that create lasting value for the organization. CSF identification will be used to outline the gaps found in the following step regarding the strategy map representation. Thus, as it is possible to draw a strategic map from operational QEHS objectives, the same map can also be represented through CSFs (Markovic et al. 2015).

5.3 Strategic Map

A Balanced Scorecard based on the strategic map focuses on issues that relate to how the strategy will improve the organization's performance. The emphasis of this tool is on how the strategy drives change and improvement. This approach includes operational details but focuses the organization's attention on managing and implementing the strategy. The cause-effect model allows much more than simply tracking results, i.e. whether objectives have been achieved or not, it also lets the organization know if it is progressing towards the end result. In short, the strategic map assists in structuring the BSC and supports the organization's strategy. A careful design of the strategy map ensures that the developed Scorecard will truly address the organization's strategy (Jones, 2011).

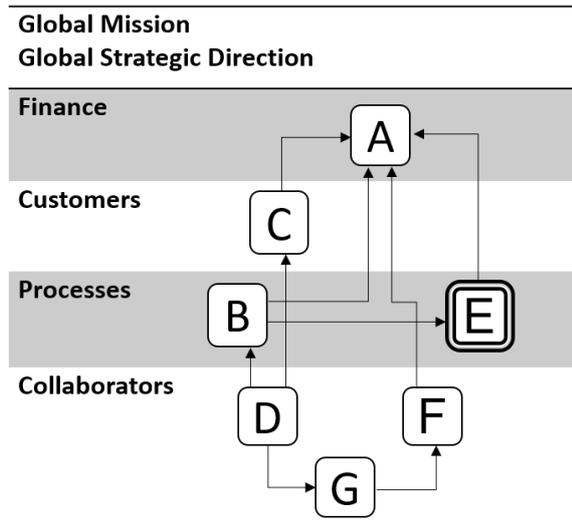
It is the cause and effect relationship represented in the strategic map and used in the Scorecard that distinguishes it from other strategic measurement systems. Thus firstly, a proposal for the global strategy level strategy map, presented in Illustration 3, will be made for a better understanding of the Tier 1 map.

The company's' strategic goals are: (A)- Grow

company value; (B)- Sharpen business focus in E-A-D; (C)- Be a partner of choice for our customers; (D)- Get closer to our markets; (E)- Live lean governance and drive continuous optimization; (F)- Be an employer of choice; (G)- Ignite pride and passion for the company through ownership culture.

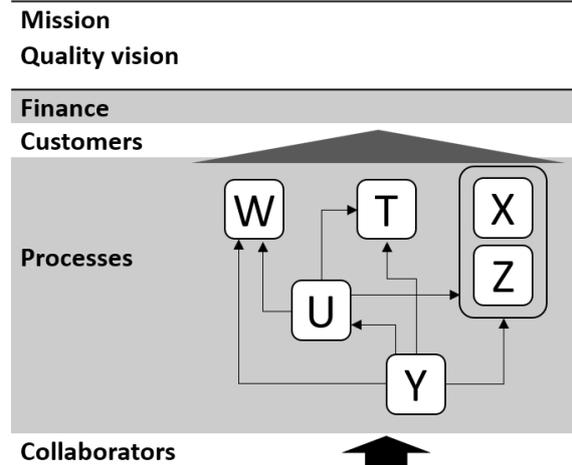
It is the “(B)- Sharpen business focus in E-A-D” business objective that drives the “(E)- Live lean governance and drive continuous optimization” objective, which in turn has an effect on the “(A)- Grow company value” objective. “(A)- Grow company value”, also results from other goals such as “(C)- Be a partner of choice for our customers”, “(F)- Be an employer of choice” and “(B)- Sharpen business focus in E-A-D”, because satisfied employees strive for better organizational results, satisfied customers are able to increase the value of the organization and ultimately business focus will also make the value of the company grow. Other cause-effect relationships can be deduced from Illustration 3.

Illustration 3- Global strategic map



It is from the “(E)- Live lean governance and drive continuous optimization” objective that the QEHSS strategic directions and the Tier 3 strategic map of the case study are born. The remaining objectives will be dealt with by other units or departments. For Tier 3, it is the teams' responsibility to select the most appropriate objectives and measures that respond to the tactical and strategic objectives. Considering Table 2, and due to the gaps found, the map shown in Illustration 4 was built, showing the respective cause-effect relationships between operational CSF. Thus all the critical elements are present, since these CSF contribute to the achievement of the company's goals.

Illustration 4- Operational strategic map



The CSF “(Y)- Management System Control” influences the determination of risks and opportunities, as well as the CSFs “(W)- Minimize Environmental Impacts”, “(T)- Preventing Accidents and Occupational Diseases” and the CSFs related to Quality Elements as it is through It is from these factors and from the established goals and objectives that compliance obligations are met and the quality and continuous improvement of the integrated system is ensured.

The CSF “(U)- Control and Risk Assessment” contributes to the determination of possible problems that may influence the quality, environment and safety in the activity of the organization. In turn, CSFs that demonstrate the essence of the integrated QEHSS system contribute to an improvement of CSFs in the Customers and Finance quadrant.

Theoretically, it should be possible to combine all strategic maps to create a master map that contains all interrelationships.

Next, and with the elements so far established and defined, it is possible to validate the KPIs.

5.4 Key performance Indicators

According to Parmenter (2015), an indicator is usually a percentage or a rate, however in this case study, and since the organization uses its own scale, an indicator will be considered an index, thus representing a value indicative of a quantifiable reality. which is expressed numerically on a scale from 0 to 10. Given the information provided by the company for the selected KPIs for the year 2019, the key performance indicators for the processes quadrant will be as follows:

- QEHSS Audits and Assessments index;
- Supplier performance index;
- Operational environmental performance index;
- Emergency preparedness index;
- Project Management Process Control index;

- QEHSS risk mitigation index.

To the proposed critical factors, it is important to ask the question “Is the organization performing as it should in order to achieve its objectives?” this will allow to identify key performance indicators. Thus, for the factor “(W)- Minimize Environmental Impacts” it is essential to monitor environmental performance with regard to CO2 emissions, water and electricity consumption; To “(T)- To prevent accidents and occupational diseases” it is essential to understand if the organization is prepared to face emergency scenarios; It is also essential to ensure the monitoring and compliance with the regulations and procedures necessary to ensure the quality of project planning, coordination and management activities. For the factor “(Z)- Quality of data measurements and reports” arises the need to measure the quality of processes inherent in marketing, design, production, installation and after-sales service activities. Still related to the quality elements, for the “(Z)- Supplier Management” factor it is necessary to monitor the performance of suppliers and ensure that they comply with the requirements of the organization. Finally, risk monitoring and mitigation enables the organization to meet the objective of “Assure preparedness, risk management, and systematic improvement.

By using this methodology the company will be able to:

- Determine the creation of value in the company for both current and future customers.
- Highlight the needs and skills that are indispensable for a good future performance of the organization.
- Ensure communication of goals and objectives, and possibly reward employees whose performance has contributed to the achievement of those goals and objectives.

6 Conclusion

There is no doubt of the usefulness of the Balanced Scorecard for an organization such as the case study company, namely regarding performance measurement, employee motivation, strategic control, among others. This model that provides the means of communication within the organization is based on several conceptual assumptions that include four-perspective guidance, the alignment of the vision with the organization's strategy, and the cause-and-effect relationship between perspectives. The internal processes perspective, in particular, focuses on the company's' current business processes and practices and aims to ensure that there are efficient and effective systems capable of producing

products and services that meet certain specifications regarding quality, safety and environment and that add value to the customer.

ISO standards are very flexible, and their adoption in combination with management systems integration improves the efficiency of the organization, enhances entry into new markets and meets consumer needs. BSC is a performance management tool capable of incorporating ISO standards into the daily and management activities of an organization. SGI uses integrated compatible systems that can deliver good results for any organization that adopts them. Therefore, an organization such as the case study can improve its environmental, quality, safety and health performance, among others, by implementing this strategy.

In summary, the Balanced Scorecard has been used in strategic management to track key performance indicators and was designed to provide a framework for resource management. These are just some of the basic principles for creating a BSC that will allow to keep track and use the organization's key performance indicators. However, in order to take full advantage of the benefits of this methodology, the identification of the CFS and the representation of the strategic map should be used.

According to the literature review, the key points in the constitution of the BSC and its KPIs are:

- Creating a cause and effect map that reflects the organization's strategy;
- Process alignment with the strategic map;
- The use of significant performance indicators, i.e. associated with CSF.

Thus, and considering these key points, the proposed methodology provides a framework capable of guiding the case study company decision makers in the process of selecting indicators related to the Processes quadrant. Criteria should be identified and considered systematically, as should measures. The consolidation of the strategy came from an analysis of the case study, as well as from the literature review.

The main objective of the CSF proposal is, as noted above, that being aligned with key performance indicators, they allow for more effective and efficient monitoring and control, ultimately contributing to achieving the performance targets for the fiscal year 2019 and thus improving the company's performance with regard to quality, environment, safety and health at work. With the CSFs it is also intended to avoid the gaps found regarding the definition of objectives.

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