

## **A Process to Implement the Sustainability in Organizational Management: Support Tools**

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### **Abstract**

*To respond the pressures of the current economic context, climate change, resource scarcity and social inequalities is necessary to develop a consolidated new paradigm of management in companies. Sustainability has been addressed as the study area from which it must emerge from this new paradigm. For a better understanding of how organizations can achieve this goal, this research has developed an empirical study based on the analysis of sustainability reports published by six organizations from various sectors with activity in Portugal. As a result, research characterizes a sustainability implementation process in the management of organizations, indicating a set of tools / practices to support the implementation of sustainability devoted to each stage.*

**Keywords:** Sustainability; Sustainability implementation process; Sustainability Tools

### **1 Introduction**

Sustainability has taken an important role in society. The economic situation, climate change, resource scarcity and social inequalities characterize the current context. Companies have contributed to this scenario; just have to be part of the solution. They are faced with a challenging paradigm and have to develop mechanisms that enable their activities to be developed in a systemic perspective, with horizon in the future and focused in the maximization of net income: economic, environmental and social.

The Sustainability Management has been little addressed from an operational point of view and added value for companies, while still closely associated with the communication and promotion of the image of organizations (AEP, 2011). More than knowing the definition of sustainability, the question arises how to reach sustainability so that it can be monitored and managed for the competitiveness of organizations (Menezes, 2010).

Attend the current context (economic environment, climate change, resource scarcity and social inequalities) is necessary to develop a consolidated and comprehensive way of management, that allow the companies to obtain good economic, social and environmental results (Dyllick & Hockerts, 2002). The path towards sustainable development has been evolving, but still very much focused on the economic and environmental aspects (Wang & Lin, 2007). It is necessary to adopt a multidisciplinary approach designated Triple Bottom Line (Elkington, 1997). Sustainability has been addressed as the foundation to the development of the new management paradigm. However, given its scope, the discussion has focused much on the concepts and definitions. It is important to understand how sustainability can be implemented in the management of organizations, contributing to the materialization and objectification of it (Baumgartner, 2011). The authors Wang and Lin (2007) identified three problems that justify why businesses still do not have systematic and continuous practices towards sustainable development.

First, there is the lack of comprehensive *frameworks* which can be followed, to categorize, to measure and to help organizations continuously improve their performance with regard to sustainability. Second, there is no management system that integrates the economic perspective, environmental and social development in strategic management and decision-making levels. Third, the valuation models should quantify the gains and costs in relation to sustainable development. Several contributions have appeared in the literature to integrate the Sustainability in Organizational Management, however very focused on evaluation of the results (Pagell & Wu, 2009). They can only bring good results when grounded in an implementation process that allows the concepts of sustainability to be part of the management models based on an ongoing perspective. Identified these gaps in state of the art, are necessary contributions that develop the design process of the implementation of sustainability (Fahimnia, Sarkis, & Davarzani, 2015; Pagell & Wu, 2009; Wang & Lin, 2007).

In order to bridge the presented gaps, the main contribution of this work is to develop a conceptual model for Sustainability Management in organizations focused on the implementation process with the inclusion of a set of tools that can be implemented at each stage that constitutes this process. So, the main question of this research is: How do you implement the Sustainability in the management of organizations? For a detailed and complete answer to the central question we structured two specific research questions: Question 1: How is structured the area of sustainability in business? ; Question 2: How is characterized the sustainability implementing process? The research methodology initiates with the literature review, able to sustain the theoretical foundations (theoretical assumptions) that underpin the Qualitative Analysis the Sustainability Reports published by six companies from various sectors with activity in Portugal.

## **2 Literature Review**

The concept Sustainability has a very broad scope, so the following sections are dedicated to the clarification of concepts, models and characteristic elements of sustainability in this research work. Since sustainability cannot be treated in a disaggregated form of business objectives, it goes up then the description of some models featuring the main steps of the implementation of sustainability in the management of organizations. It is not intended that contributions are only the identification of the key steps to follow the sustainability implementation process, but also include which tools can be developed in each stage of the process, justifying the revision presented in the sub-section of sustainability tools. The literature review concludes with sustainability reports since the empirical study was supported in these documents.

### **2.1 Sustainability**

Following the analysis levels proposed by Wang and Lin (2007), this work relates to the micro level of analysis Sustainability, as it focuses on Sustainability Management implemented in organizations. With the contribution of Brundtland, the early 90s were marked by the appearance of new currents of thought on sustainable development, having emerged several definitions and models on the subject, as shown in this section. This multiplicity of concepts can be regarded as advantageous because it reveals a number of efforts conducting to a common goal. However, it can be perceived as ambiguous and popular concepts that from the implementation point of view may result in failure (Baker, Kousis, Richardson, & Young, 1997).

The great contribution of the Brundtland Report (1987) was the consensus of a definition of sustainable development as development that meets present needs without compromising the ability of future generations to meet their own needs. Allied to sustainability, appear the concept of the Triple Bottom Line (TBL) defending that the performance of the organizations cannot be measured only by economic results, but also by the social and environmental results (Norman & MacDonald, 2004). This term has gained popularity with the publication of John Elkington "*Cannibals With Forks: The Triple Bottom Line of 21st Century Business*" (1997). In this work the author includes responsible management approach, arguing that organizations should consider in managing the three dimensions of sustainable development: environmental, social and economic. He also states that these three aspects should be operated on principles of transparency and involvement of key *stakeholders*. Based on concrete examples, demonstrates how to harmonize traditional financial management with environmental quality and social justice. In addition to the analysis of the three pillars mentioned, is important to understand the interrelationship between them, as they influence each other in multiple ways (Wang & Lin, 2007). The economic, social and environmental vectors of sustainability are interdependent and interrelated, so that any sustainability program should be implemented through a systematic and inclusive approach (Gopalakrishnan, Yusuf, Musa, Abubakar, & Ambursa, 2012).

Pursuit with a sustainable approach requires organizations to restructure a comprehensive systemic perspective. The system is not constituted only by the organization itself (infrastructure and employees) and by its customers. It is necessary to identify which actors, designated *stakeholders*, have a key role in the organization's sustainable performance. The GRI (Global Reporting Initiative) guidelines (GRI, 2013) define *stakeholder* as "entities or individuals who tend to be significantly affected by the activities, products and services of the organization or whose actions tend to affect the organization's ability to implement its strategies and achieve your goals". So it appears a reciprocal relationship, actions that affect the organization and the impact that the organization's actions have in a set of players.

With the concepts presented is concluded that sustainability only makes sense when understood in a holistic design, dynamic and multi-criteria. Holistic once an individual and unique approach does not lead to sustainability, a systemic perspective is required with the identification and involvement of *stakeholders*. Dynamic because decisions need to support the current needs without compromising future needs. Finally, multi-criteria with the integration of the *Triple Bottom Line* approach.

## 2.2 Sustainability Implementation

Presented the concept of sustainability in the organizational context, the next step will be the analysis of the sustainability implementation process. Edwards e Orr (2005) indicate that companies are in a phase of change, recognizing that the mere legal compliance of its obligations does not bring competitive advantage. The implementation of business models supported in sustainable practices, including the economic, social and environmental concepts are starting to be recognized as a business opportunity.

The concept of sustainable development includes not only the traditional guidance for profits aimed at maximizing shareholder value but also includes the interests of all *stakeholders* (employees, customers, suppliers, community and environment), revealing that companies need go beyond profit maximization. This vision brings other forms of work, the managers must develop activities to meet all key *stakeholders* (Pätäri, Jantunen, Kyläheiko, & Sandström, 2011). But how to step the awareness of desire to be better and start on the path toward sustainability achieving the goal of competitive advantage? This path is possible and tangible, it is necessary to know and implement such a set of tools that enable organizations to achieve this advantage through sustainable development strategy (Esty & Winston, 2006).

Raises the question: what will be the implementation process which will lead this path? Bellow we describe some models that feature the key steps to consider in developing a sustainability program.

According to Roosa (2010), organizations can integrate sustainability in its management through the development of sustainability programs consisting of: Change the corporate Vision and Mission; Reset goals and objectives; Identifying and implementing changes in operational processes; Establishing result reporting practices.

He also argues that sustainability programs help organizations to reduce costs by reducing waste, product innovation, and conservation of resources, improvement of infrastructure, and the consideration of social aspects.

Similarly, Furtado (2005) states that largely sustainability actions developed by organizations are not aligned with the strategic priorities of the business and are not articulated with more operational procedures. He argues also that other initiatives meet the environmental performance but do not account for the social aspects, such as social justice, inclusion and equity. Thus, the author establishes a set of steps for implementing a sustainability program: **Step I** - Guidance for sustainable development (Concepts and Attitudes); **Step II** - Establishment of sustainable macro objectives; **Step III** - Establishment tactics strategies for economic, social and environmental sustainability; **Step IV** - Management and strategic planning with social and environmental responsibility; **Step V** - Measurement and evaluation of sustainable performance, **Step VI** - Preparation of sustainable performance report.

The author Doppelt (2010) argues that the shift toward sustainability is not a linear process, it involves movements not always in one direction. As the Organization is a system, not a set of unconnected parts, the change has to be understood as a whole. The author has designated his model as "the wheel for change toward sustainability," consisting of five steps. The first three interventions (change the prevailing mentality, reorganize teams, adopting the vision and principles) together create a new organizational model. The fourth and fifth operations (Create new strategies and promote continuous communication) are linked to the functional and operational management of the organization. These last two steps promote the growth of sustainability in a long-term perspective.

Another author (Blackburn, 2007) presents an approach called SOS - *Sustainability Operating System*. This approach requires focus, skills, teams and leaders with training, planning and a very detailed implementation. Four major factors are part of the model:

- *Drivers*: are the elements that help ensure that the organization is continually motivated towards Sustainability;
- *The Efficient Enablers* (facilitators): these elements permit the development of structured sustainability program, logical, coordinated and efficient;
- *The path*: the elements that trace the path of sustainability (Vision, Values and Policies, operational regulatory systems, strategic plan to align priorities);
- *Evaluators*: allow assess the organization's progress towards sustainability, and adjust the actions depending on the results (indicators and objectives, measurement and disclosure of progress; involvement of *stakeholders* and feedback mechanisms).

Considering the sustainability implementation processes defended by various authors presented above, it is concluded that this process has to be developed in an integrated manner with a set of elements belonging to the organization. It starts of a leadership process in line with macro objectives, policies, vision and values. Requires an established organizational structure for the construction of sustainability culture at all levels of the organization.

Strategies should be implemented in the operational management, integrating the objectives of sustainability in operational processes and procedures at the tactical level. Finally it is necessary to develop mechanisms to measure and evaluate how actions have been developed and take decisions against the economic, environmental and social outcomes. In order to obtain recognition (internal / external), the organization has to develop mechanisms for communication of results. However, be aware of the following steps is not enough, the organization needs to know what to develop in each stage and which are the appropriate tools in each phase.

### 2.3 Sustainability Tools

As already mentioned, Baumgartner (2011) argues that the contribution of research in the field of sustainability must be the understanding/characterization of sustainability and the development of mechanisms and tools to help solve them. In the literature are some authors who have some classes in sustainability tools support. The authors Chalmers e Palomero (2011) classify the sustainability management tools into three categories:

- Tools based on proposals developed by several governmental areas that help organizations define policies and action principles with regard to environmental management, human rights and anti-corruption measures. Striking examples of these proposals are the *Brundtland Report* and the *Rio Declaration*<sup>1</sup>;
- Tools based on normative references for the development of management systems or incorporation in systems already implemented, such as OHSAS; ISO 9001; ISO 14001; SA8000; ISO 26000;
- Tools supported in Indicators. The most notable tools are *The Sustainability Metrics (ICHEME)*<sup>2</sup>; *The Business Social Responsibility Indicators (Ethos)*<sup>3</sup> and especially the *Global Reporting Initiative*<sup>4</sup>. All of these tools have a number of indicators that are grouped into different categories, making possible to monitor and analyze ratios, able to demonstrate the degree of implementation of different developed sustainability management policies.

Another author (Menezes, 2010) provides the following tools classes, designating them as tools to support the implementation of corporate commitments:

- *Environmental impact assessment*: enables verification of the effects of the companies' activity on the community and the natural environment. The *International Association for Impact Assessment*<sup>5</sup> is an example of an organization that is dedicated to the development of such tools.
- *Environmental Systems Management*: presented as an integral part of the overall management of enterprises. As examples are presented the ISO 14001, the *Eco-Management and Audit Scheme (EMAS)*, ISO 9001, ANSI / MSE 2000 for energy management, OHSAS 18001 for health and safety at work, SA8000 and Accountability 1000 reserved for social measures, ethics and relationship with society.

<sup>1</sup> [www.onu.org.br/rio20/img/2012/01/rio92.pdf](http://www.onu.org.br/rio20/img/2012/01/rio92.pdf)

<sup>2</sup> <http://www.icheme.org/communities/special-interest-groups/sustainability>

<sup>3</sup> <http://www.jussempor.org>

<sup>4</sup> <https://www.globalreporting.org>

<sup>5</sup> <http://www.iaia.org>

- Life Cycle Analysis and Assessment: analyzes the various related impacts directly to the processes (from extraction, production of raw materials, industrial operations, logistics distribution and sale, including the final stage of life). This tool is included in the ISO 14000 through ISO 14040 and ISO 14044 series.
- Communication and public reporting of corporate commitments to sustainability: this tools group requires the existence of strategies to communicate to consumers in a transparent way what the company developed, involving a third party to audit. Some examples are the FSC (*Forest Stewardship Council*)<sup>6</sup>; Global GAP – *The Global Partnership for Good Agricultural Practice*<sup>7</sup>; VISIT – *Voluntary initiatives for Sustainability in Tourism*<sup>8</sup>; GRI - *Global Reporting Initiative*. In this set of tools are included the sustainability indexes of the financial area, which includes the *Dow Jones Sustainability Index* and the *FTSE4Good Index series*.

Through literature review made, we identify a set of tools linked to the area of sustainability, including sustainability indicators; sustainability reports; Balanced Score Card; Eco-efficiency; Life Cycle Analysis; Management Systems and Performance Frameworks. With different goals, it was seen that certain tools enable data collection, other compile results, evaluate results, compare results and to communicate the results. But the question which urge is how is possible to articulate this set of tools in the organization management (strategically and tactically)? This is one of the main goals of this work.

## 2.4 Sustainability Reports

Once data analysis of the research focuses on the publication of sustainability reports, a section for this tool has been reserved. The first wave of publication of environmental and social impacts of organizations begins in the 70s in the United States and Western Europe (Ans Kolk, 2010). Since then there has been considerable diversity of voluntary publications crossing sustainability reports to all activities and countries. In the late 80s, in response to the United Nations Environment Programme<sup>9</sup>, some organizations (Large companies) disclose to stakeholders the results of its environmental performance (Perez & Sanchez, 2009).

Despite the importance and the increasing use of sustainability reporting, the review of its usefulness is still controversial. According to Solomon and Lewis (2002), customers, government agencies and NGOs use information reports to assess the involvement of organizations with environmental and social issues, allowing comparison between different organizations.

Other authors (Trevor & Geoffrey, 2000) highlight that NGOs, environmental groups and other stakeholders analyze the Sustainability Reporting to realize the proactively of organizations with regard to social and environmental actions developed. Kolk (2003) questions whether through the reports we can see how an organization implements strategies and develops management actions or merely reports in order to please the *stakeholders*. Cerin (2002) identified some discrepancies between current actions and the reported actions. The same author says that the lack of standardized guidelines creates some confusion in the analysis of the reports. Other authors (Montabon, Sroufe, & Narasimhan, 2007; Solomon & Lewis, 2002) found in sustainability reporting a good indicator of the performance of organizations.

In an attempt to address this diversity of views on the utility of sustainability reports, focusing mainly on the argument of lack of guidelines for the preparation thereof, the organization Global Reporting Initiative (GRI) has developed a remarkable job through the involvement of a set of partners to build guidelines and guide for the preparation thereof.

According to some authors (Brown, de Jong, & Levy, 2009) have been developing some guidelines for the preparation of sustainability reports, and the GRI is currently the most widely used and recognized by many organizations around the world. According to this organization (GRI), the sustainability report should represent in a balanced way the performance of the organization, including the positive and negative impacts that result from its activity (GRI, 2013). The urgency and magnitude of threats to collective sustainability can only be solved with a policy of transparency by organizations in the dissemination of their impacts on global sustainability, together with strong relationships with stakeholders in decisions about investment and the remaining market relations. To support this challenge, is required a shared structure and accepted globally, a consistent language and widely understood metric in order to communicate clearly and transparently the sustainability issues (GRI, 2013).

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<sup>6</sup><http://pt.fsc.org/>

<sup>7</sup>[http://www.globalgap.org/uk\\_en/](http://www.globalgap.org/uk_en/)

<sup>8</sup><http://www.visit21.net/>

<sup>9</sup><http://www.unep.org/>

### 3 Theoretical Framework And Propositions

Based on literature review presented above, there was an additional analysis of the various deployment models, described in section 2.2, in order to identify the various elements that compose the sustainability implementation process, namely: Leadership; Team; Culture; Strategy; TBL; Aactions; Assessment; Evaluation; Communication; Stakeholders and Tools.

Graphically these elements can be arranged in the conceptual model shown in Figure 1 where the identified theoretical dimensions are interlinked, representing a proposal to answer how sustainability can be implemented in organizations. It is intended that this model is able to contribute to understanding the implementation of sustainability in the management of organizations. It is differentiated by the fact that its focus is on operational approach to sustainability and on implementation phase. Thus, the model is designed for orientation of three main axes, argues any action for the implementation of sustainability must have the coordinates: the *Triple Bottom Line* approach, be inserted in the sustainability implementation process; It is supported by a set of appropriate tools.

The organization is represented by dashed Box, symbolizing the permeability necessary for the organization in relation to inputs and outputs (information flows and resources) with stakeholders.

The triangle positioned on top of the template represents the necessary structure of the Sustainability area in organizations. Note this triangle is positioned on the coordinates of the three main axes, so the development of this phase needs to be based on the *Triple Bottom Line* approach, supporting appropriate tools.

The implementation process is characterized by four main steps: Engagement; Implementation, Monitoring and Communication.

**Engagement:** the prior involvement of stakeholders is important to identify their needs, prioritize them and to engage stakeholders in the implementation of actions to define the next step. This step focuses on the relationship of reciprocity between the parties, allowing the alignment of the strategies and policies, and the collection of information on the relevance of the aspects to be included in sustainability management. It cooperates with the process of dissemination of sustainability to a wide range of organizations (Esty & Winston, 2006).

**Implementation:** this step is composed by planning and implementation of a set of actions to develop in the tactical management level, to improve the organization's economic, environmental and social outcomes.

**Monitoring:** The planning and execution of actions are not enough; it must follow their implementation and assess their progress towards sustainability. The previous steps will enable the organization to implement practices capable to promoting sustainability. At a later stage it is important to realize the effectiveness of the implemented practices.

**Communication:** Communicate of the results leads to the construction of feedback channels, allowing analyze a set of data for later adjustment of defined actions. Is necessary to report the results to the identified *stakeholders*, develop feedback mechanisms to adapt and improve its sustainability program. Hence these four steps are interconnected, giving continuous process feature. It is understood that the conceptual model is able to answer the research questions presented in the introduction, supported a number of theoretical propositions showed below.

<b>Question 1: How is structured the area of sustainability in organizations?</b>
<b>Proposition1:</b> Implementation of the Sustainability in organization's management requires leadership and the establishment of an organizational structure. Furtado (2005), Doppelt (2010); Blackburn (2007); Gopalakrishnan et al. (2012).
<b>Proposition2:</b> The implementation of sustainability in the organization's management needs to create a culture of sustainability Blackburn (2007); Doppelt (2010); Gopalakrishnan et al. (2012); Walker and Brammer (2009).
<b>Proposition3:</b> Sustainability needs to be integrated into the strategic management of the organization. Furtado (2005); Blackburn (2007).
<b>Question 2: How is characterized the sustainability implementing process?</b>
<b>Proposition 4:</b> The implementation process of Sustainability is initiated with the involvement of stakeholders. Esty and Winston (2006); Seuring and Müller (2008);
<b>Proposition5:</b> The implementation of Sustainability results from the development of a set of actions with social, economic and environmental objectives that enable to pursue strategic management. Furtado (2005); Doppelt (2010); Blackburn (2007);
<b>Proposition 6:</b> The actions taken need to be monitored and evaluated. Furtado (2005); Blackburn (2007).
<b>Proposition 7:</b> The results of actions need to be reported. Furtado (2005); Doppelt (2010); Blackburn (2007).
<b>Proposition 8:</b> There is a set of appropriate tools that support the implementation of sustainability in each step. Chalmeta and Palomero (2011); Menezes (2010); Baumgartner (2011).

#### 4 Methodology

The methodology for the development of this work is positioned in the field of Qualitative Research, and was developed an empirical study based on the analysis of six Sustainability Reporting. This empirical study is based only on secondary data comprising the information contained in a published document (report), so secondary data sources within the organization (Amado & Vieira, 2014). By the characteristics of these reports, these documents exceed two points referred to as disadvantages in this type of sources (Yin, 2010): it does not appear of difficult access because they are public; and the partiality of secondary data, because they are built following common guidelines and in the majority with external verification, which is a voluntary option.

A Sustainability Reporting database was consisted by 16 organizations, randomly selected to represent a broad universe of industry sectors such as Transport; Energy, Manufacturing Industries, Services and Distribution. All these documents were subject to a preliminary analysis in order to characterize the experience in publishing reports, the level of implementation of sustainability, the guidance followed, implementation period and the existence of external validation.

After this characterization were following these selection criteria:

- With information relating to the years 2011 and 2012;
- With inclusion of sustainability performance results;
- Organizations from various sectors of activity;
- Experience in development reports by the number of publications;
- With external validation;
- Relevance of the content considering the main objectives of the study.

Following the described selection criteria, were analyzed the Sustainability Reports from: **Galp** (Exploration, Production and distribution of petroleum products and natural gas), **EDP** (Utility: Production, Electricity Distribution and Marketing); **Portucel** (Production and sale of pulp and paper); **Autoeuropa** (Manufacture of motor vehicles, tools and parts); **Lipor** (Waste Management); and **Sonae** (particular focus on the retail sector).

Only six organizations were chosen because we intend to make an in - depth analysis of the data collected. The number of reports analyzed is also justified by the criteria to consider in deciding the completion of the data collection process (Gall, Gall, & Borg, 2007):

- Completeness of sources – it happen when becomes apparent that it cannot obtain little more information from sources considered;
- Saturation of categories - where the continued data collection brings only tiny increments over the effort expended, or when the researcher considers the satisfactory and comprehensive collection;
- Repeatability - when seen enough consistency that allows them to understand the phenomenon that is proposed;
- Beyond the extension - when to collect new information feels that it is departing from the scope of the study, not revealing to contribute.

As expected, organizations integrated in this study allow us to analyze the implementation of sustainability practices in various economic sectors, particularly the energy sector, production and sale of pulp and paper, automotive manufacturing, waste management; distribution and retail. All organizations included here have opted for external validation of its sustainability report. During the external verification process, the report content is verified by an independent entity. To increase the credibility of sustainability reports, some organizations may voluntarily include an external evaluation to document produced. As this is a relatively recent practice, it is not properly regulated in most countries, thus resulting in different verifiers entities with different methodologies (Junior, Best, & Cotter, 2014).

#### 5 AnalysisAndResults

After collecting the data is required a consistent analysis thereof that consists in the examination, the categorization, the tab, the tests or the evidence recombined to reach the empirical findings. The developed methodology to this review process is called Content Analysis (Strauss & Corbin, 1990). A Content Analysis of the data collected was developed by coding the data, resulting in a set of "operations in which data is divided, conceptualized, and reassembled differently. It is the nuclear process of building theories from the data "(Strauss & Corbin, 1990, p. 57).

From the point of view of the intended theorization, the analytical process is situated in the explanatory level, since it aims to identify concepts and interconnections, thus contributing to a more comprehensive theory (Amado & Vieira, 2014).

As described by the author Flick (2005, p. 183) one of the essential features of the Content Analysis is "the use of categories, often derived from theoretical foundations: the categories are applied to empirical data, are not necessarily drawn from it, although repeatedly facing it and, if necessary, modified".

**Proposition 2:** The implementation of sustainability in the organization's management needs to create a culture of sustainability

Once built the database in qualitative analysis software WebQDA<sup>10</sup>, the data analysis process also has its foundations in the same software. Each company is individually analyzed in order to complementing the information able to answer the research questions. Thus was created the structure of categories (node) in that software. As mentioned above, the structure followed for the presentation and analysis of sustainability reports was the answer to specific research questions

From the results obtained by the studies conducted, it can be concluded that they helped strengthen the theoretical propositions formulated in each research question, given in point 4. It was also possible to identify the practices developed by these organizations and validate the sustainability implementation process defended by the conceptual model. Next we present the individual reflection of the various propositions.

**Proposition 1:** Implementation the Sustainability in organization's management requires leadership and the establishment of an organizational structure.

Through all the posted messages, it was found that the recognition of the need to integrate sustainability in the organizational management is made in the highest level of management of these organizations. See EDP, LIPOR and GALP with the messages of the Chairmen, which are the selected elements to communicate the strategies and the importance of sustainability to all interested parties. Therefore, involving the top management of organizations in the sustainability implementation process strengthens the integration of sustainability in organizational strategy.

The assignment of roles and responsibilities in sustainability area by formalizing an organizational structure was practice followed by almost all organizations of the studies, although there was some diversity of the way they do. Some take the option to be framed in terms of executive positions, as EDP and GALP. Others choose to structure the Sustainability in organizational units as the Communication Department or the Quality Department, as published by Autoeuropa and LIPOR respectively.

From the data analyzed, it was found that the organizations promote the culture oriented to the concepts of sustainability to internal employees and other stakeholders, such as suppliers and the local community. To do this, integrate sustainability in defining their values and principles as the case of LIPOR (LIPOR, 2013, p. 24): "To be responsible in our activities"; or SONAE in the integration of social responsibility in their values (SONAE, 2013, p. 22). The promotion of values is carried by the development of initiatives and programs such as Sonae Program *Activshare* (SONAE, 2013, p. 15); Or projects as the "Garden of the Natural" developed by LIPOR (LIPOR, 2013, p. 76).

**Proposition 3:** Sustainability needs to be integrated into the strategic management of the organization.

As presented, organizations do not dissociate the implementation of the sustainability of the organization's strategy. The examples describe some methodologies for integrating sustainability into strategy, since the definition of policies (Portucel), detailed Strategic priorities in objectives and goals (EDP); strategic priorities (Galp); defining the mission and vision; and establishing the principles of sustainability (Autoeuropa).

**Proposition 4:** The implementation process of Sustainability is initiated with the involvement of stakeholders.

With the studies presented, detailed methodologies have been identified for the identification and prioritization of stakeholders, such as Dependency Matrix LIPOR (LIPOR, 2013) or Materiality Matrix Volkswagen Autoeuropa (AutoEuropa, 2013).

It was evident the importance given by organizations to identify and involvement of *stakeholders*, the sustainability program should be developed with *stakeholders* and to *stakeholders*, corresponding to their needs and expectations. Take the case of LIPOR that structures the process of implementing sustainability by defining inclusion: "*LIPOR should be inclusive, encouraging the participation of interested parties in the development and implementation of a strategic and responsible response to sustainability*"(LIPOR, 2013, p. 47).

**Proposition 5:** The implementation of Sustainability results from the development of a set of actions with social, economic and environmental objectives that enable to pursue strategic management.

Although all the studied organizations have identified the strategic direction for Sustainability, the process by which the Sustainability Strategy is disseminated at the level of tactical management was not always mentioned. Still, the processes described by Galp and Sonae allow clearly align strategies with actions to develop.

The analyzed organizations develop action plans supported in the implementation of specific tools (Carbon Footprint, 5S, TCO) whose results are consistent with the objectives of sustainability. They rely on management systems (ISO 9001, ISO 14001, OSHAS 18001; NP 4406); or may even get to develop specific programs focused on sustainability, such as "*Think Blue Factor*", developed by Autoeuropa(AutoEuropa, 2013)or EGO Program: Global Efficiency of Portucel Operations (Portucel, 2012).

**Proposition 6:** The actions taken need to be monitored and evaluated.

The research has shown that organizations do not give as finished the implementation process after the development of actions. They continue with its monitoring through control procedures as the specific methods presented by Sonae and Autoeuropa.

Monitoring is also developed with the implementation of a set of indicators for the performance assessment with regard to sustainability, considering the approach *Triple Bottom Line*. With the development of sustainability reporting, these organizations present various indicators defined by the GRI.

LIPOR reports that "*Their performance is monitored through well - defined indicators which allow to reflect and evaluate the Strategic Vision - the Sustainability- in its different aspects* " (LIPOR, 2013, p. 20). For example, showed the following indicators:

- Direct economic value generated and distributed, including revenues, operating costs;
- Used material by weight or volume;
- Ratio between the lowest salary and the local minimum salary in important operating units, by gender;

It was also evidenced the monitoring by use of indexes, including the EDP "*We have been recognized by the Dow Jones Sustainability Index as a leader*"(EDP, 2013, p. 7). Similarly, Galp also highlights the importance of ratios: "*The community and our employees, suppliers and customers benefit from our success. Proof of this is the entry of GalpEnergia in the group of top five oil and gas companies in the DJSI, one of the most important sustainability indexes in the world*"(Galp, 2013, p. 17).

**Proposition 7:** The results of actions need to be reported.

The analyzed data showed that organizations communicate their results through sustainability reports or other reports, through official portals dedicated to specific themes, by sending performances or through other publications. LIPOR created a new portal with the aim of "*strengthening the activation strategy LIPOR Brand together its external and internal audiences, focusing on brand positioning, an integrated communication between each other and with the Organization 's strategy*(LIPOR, 2013, p. 51).

**Proposition 8:** There is a set of appropriate tools that support the implementation of sustainability in each step.

Data analyzes allowed identify a set of tools addressed for each implementation stage of sustainability, as shown in the table 1.

**Table 1: Tools / Practices examples by class**

CLASS		TOOLS / PRATICES EXAMPLES
INTEGRATION	STRATEGIC	Establishment of: <ul style="list-style-type: none"> <li>○ Policies of sustainability</li> <li>○ Sustainability elements</li> <li>○ Strategic Priorities</li> <li>○ Strategic lines</li> <li>○ Goals</li> <li>○ Sustainable Vision</li> <li>○ Sustainable Mission</li> </ul> Allocation of Sustainability functions in body charts Messages / Publications at the highest level of management Sustainable Balanced Scorecard
	MOTIVATORS	Development Sustainability Programs Pilot initiatives Volunteer Programs Sustainability Training actions Workshops about Sustainability Thematic visits programs Seminars about Sustainability Definition and communication of principles and values aimed at Sustainability
IMPLEMENTATION	ENGAGEMENT	Stakeholder Identification Tools: surveys / questionnaires Stakeholder Selection Tools: Matrices of influence / dependency matrix Meetings Periodic hearings Visits Development programs with inclusion of stakeholders Formal communication platforms (computer management systems, online sites)
	IMPLEMENTATION	Environmental Aspects Assessment Management Systems, like: <ul style="list-style-type: none"> <li>- Quality: ISO 9001 and ISO TS 16949</li> <li>- Environment: ISO 14001; EMAS</li> <li>- Safety: OHSAS 18001;</li> <li>- Energy: ISO 50001;</li> <li>- Social Responsibility: ISO 2600</li> </ul> Standards: NP 4457; SA8000: 2008; AA1000AOS Life Cycle Assessment (eg. ISO 14040) legal and regulatory issues Total quality <i>Just in time</i> Risk Assessment Tools Supplier Development Programs Projects (Ex EGO. Global Efficiency of Portucel Operation (Portucel, 2012) Lean Manufacturing Projects / Eco-Efficiency
	MONITORING	Environmental, social and economic indicators (GRI) Performance frameworks ex. EFQM Sustainability Indexes, ex. Dow Jones Sustainability Indexes audits verification and control mechanisms included in the developed action programs Definition of KPI's evaluation systems (Ex. Supplier Evaluation) meetings Business Programs
	COMMUNICATION	Accounts reports Sustainability Reporting (GRI Sustainability Report) Formal communication platforms (computer management systems, online sites) Newsletters Newspapers

As noted in the presentation of Conceptual Model, this model focuses on the importance of integrating the concept of sustainability in strategic management and operational management, with input to identify the mechanisms and tools to implement at each level of management. Thus bridges the gap identified by Baumgartner (2011) which calls for research in this area will focus on the ability to find solutions to sustainability problems.

As the results of the empirical study allowed answer to specific research questions and consolidate theoretical propositions formulated, we can say that the organizations studied needed previously to structure the area of sustainability in its inside structure. For the validation of Propositions 1, 2 and 3, this organization needs a team with responsibilities assigned in the development of sustainability, situated at the level of top management gives the leadership character, necessary for the transmission of messages and policies throughout the organization.

The creation of a culture addressed to objectives of sustainability will lead to the success of the actions taken and can be enhanced by training initiatives, the establishment of values and the involvement of stakeholders in sustainability dynamics projects. The implementation of sustainability should be part of the strategic management of the organization, and later deployed to the tactical level of organizational management. This can be considered the first phase for the implementation of sustainability, which was responsible for preparing the necessary elements for sustainability to be firmly implemented in the organization.

The studied examples allowed to answer the second question of this work "How is characterized the sustainability implementation process?" In incrementally way, we can share the mechanisms developed to transfer the organizational strategy in a sustainability program. This, to be implemented, needs to go through four phases: engagement, implementation of the defined actions; Monitoring the implementation of actions and evaluation of results; and the communication of the results to all parties.

For each phase were also identified a set of practices / tools that have been implemented by the companies included in this research.

### **6 Conclusion, Contributions and Limitations**

Considering the research results, it can be concluded that they helped strengthen the theoretical propositions formulated in each research question. It was also possible to identify the practices developed by these organizations, the sustainability implementation process defended in the conceptual model. As advocated by Fahimnia et al. (2015) should not leave for the evaluation of the results without prior implementation process has been well characterized. Thus, this work aims to contribute to the systematic description of the steps that should be covered in this process. The central body of the model Sustainability implementation process is constituted by four steps: Engagement, Implementation, Monitoring and Communication.

The definition of an implementation process characterized by a set of steps leads to that sustainability is not only implemented within the organization. Which is also expected to contribute to that sustainability is not just the intent and planning a set of short-term specific actions. It is important to recognize the added value of actions taken, elapsing the evaluation and reporting stages.

As advocated initially, one of the theoretical elements are the support tools, arguing that for each phase of sustainability implementation stage there is a wide range of tools / practices. This axis is a result of the validation of Theoretic Proposition 8 that defends the existence a set of appropriate tools for each step supporting the sustainability implementation process. Thus, the knowledge of a set of tools aimed at each stage of the process can support the implementation of sustainability. The literature review carried out in Section 2.3, brought together a wide range of tools already developed based on well-structured methodologies and processes. Along this review, it was found that the tools are developed and characterized individually and are not identified a connection between tools and the implementation process itself.

The results of the empirical research allowed identify the use of support tools for organizations; identify new tools, and some were developed by the organizations themselves. Since the analysis of the studies was done by applying the conceptual model in these organizations, allowed to link the practices developed at each stage of the implementation process. It is hoped that knowledge of the tools that can be used in each stage of the sustainability implementation process, contribute to facilitate the selection of tools to implement in order to achieve the intended goals. Thus, to complement the conceptual model, another contribution of research is the development of a tools classification model (figure 2) to support the sustainability implementation process:

The followed classification criteria were the steps of the sustainability implementation process, defended in the theoretical model:

**Integration Tools:** include all the tools and practices that lead to the structuring of sustainability within the organization, including the establishment of a sustainability strategy supported by a leadership process, set a Sustainability team and the promotion of a culture that fosters a 'breeding ground' for the development of sustainability effectively. This group is divided into:

- Strategic: are all tools that enable at the highest level of management (top management) to develop and solidify the sustainability in the organization's strategy, establishing the link between policies/strategies and operational management.
- Motivator: have the function to stimulate the sustainability area with programs that seek the involvement the entire organization and stakeholders, that is, to promote a culture of sustainability.

Implementation Tools: match all of the tools that can support each step identified in this stage. It is subdivided into the following classes:

- Engagement: tools / practices that allow dialogue and engagement with important *stakeholders* considered (or in a sustainability language "Materials");
- Execution: Examples are tools that allow operationalize the defined strategies and implement the requirements of the various management systems. Are included are more specific tools applied to the steps of a process, product or family of individual products, eg the eco-efficiency and the Life Cycle Analysis.
- Monitoring: It is important to identify a set of tools to monitor and assess the progress of organizations with regard to their economic, social and environmental results. Within this group belong the indicators, indexes and *frameworks* performance.
- Communication: includes all the mechanisms developed to communicate and publish the results, in order to gather information capable of adapt and improve the Sustainability Management.

Given the set of tools to support implementation of Sustainability presented in section 2.3 and the identification of tools researched in this studies, in Table 1 we present some examples of them according to the proposal conceptual model. It is intended that the support tools classification model facilitates the selection of tools to implement, making it an element of support for organizations that want to engage the challenge of integrating sustainability in their management models.

The research methodology developed in this work allowed to share a set of practices developed, materialized and operationalized by the organizations selected in this research. This sharing enables familiarity with the concepts of sustainability, especially with the key concepts: multi - criteria approach; *triple bottom line*: environmental, economic, social; Open and systemic perspective with the inclusion of *stakeholders* in various processes of management; and *perspective in the future*, a future that consider the next generations. It also contributes to the knowledge of a set of practices / methodologies aimed at the development of sustainability in organizational management.

In conclusion, it can be said that this research has enabled:

- Contribute to stimulate discussion of the need for organizations to adopt management paradigms that bring to the forefront issues relating to sustainability. The organizations need to adopt a proactive approach focused on sustainability.
- Contribute to the characterization of the sustainability implementation process in the management of organizations, characterized in four main phases: Engagement; Implementation; Monitoring and Communication.
- Disseminate a set of practices by applying the conceptual model to a group of organizations, selected for their maturity in the implementation of sustainability. It is hoped that these examples will help managers to awaken to the sustainability and to follow the path of the organizations analyzed here.
- The development of empirical studies contributed equally to complement and develop the theory concerning sustainability support tools. Data analysis was able to point examples of tools for each step of the implementation process. This result contributed to the development of the sustainability support tools classification model (Figure 2).

It is recalled that the focus of the problem was the need for organizations to be actively involved in the commitment to sustainability by modifying their management paradigms, both at strategic level and tactical point of view. Thus, the sharing of practices developed by various organizations included in the study was intended to also make a contribution addressed to managers.

The limitations are associated with the selection of organizations because were included in the study only large and medium sized companies. The aim was to bring a group of organizations with a degree of high maturity in the implementation of sustainability, which by their practices was capable of contributing to the characterization of the process.

The research was not comprehensive micro and small companies, fairly representative of the Portuguese business market. Another identified limitation is the analysis that was focused on the concept of sustainability, the interrelationship of the pillars that constitute the TBL approach need to be also included. As future studies we point to a research that apply the model developed in SMEs in order to assess their suitability to all kind of organizations and to identify features that can complete the developed theory. It is also important to develop studies, supported in our models, which focus the interrelationship of the pillars that constitute the approach *Triple Bottom Line*.

The road to sustainability is possible and tangible, it is necessary to know such implementation mechanisms, supported by a set of tools that enable organizations to achieve competitive advantage through sustainable development strategy (Esty & Winston, 2006). The important issue now is that managers / decision makers conduct and discuss the sustainability, albeit imperfectly, it is not acceptable that the problems of future generations are justified by ignorance (Azapagic & Perdan, 2000).

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8 Figures and Tables

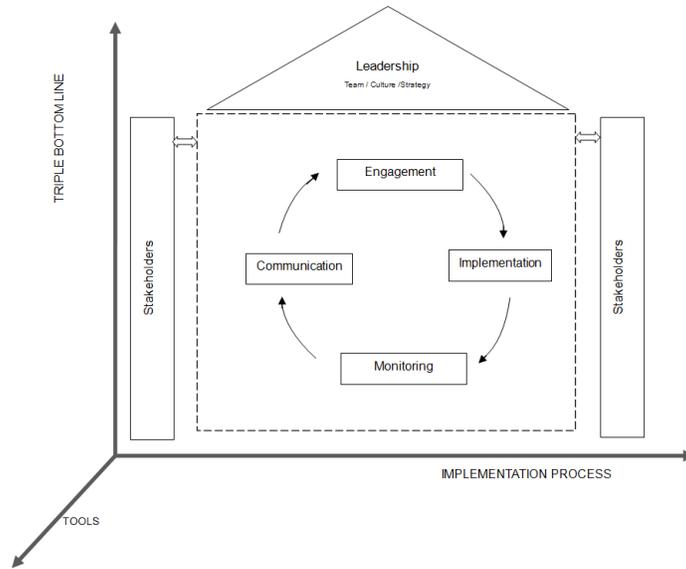


Figure1: Conceptual Model - Sustainability Implementation Process

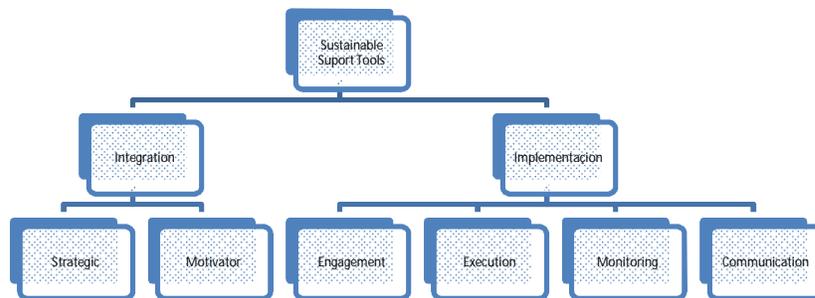


Figure 2: Sustainability tools classification model