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Quality, Environment and Safety - from individual systems to integration. A Portuguese case study.

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Abstract The purpose of this case study was to define, a model of structure for an Integrated Management System (IMS) considering the individual Management Systems - Quality Management System (QMS) according to ISO 9001, Environmental Management System (EMS) according to ISO 14001, Occupational Health and Safety Management Systems (OHSMS) according to OHSAS 18001 and others, that along the last twenty five years, were progressively and independently implemented at the Enterprise - Itron Portugal. An internal investigation by questionnaire was performed, to the 160 Collaborators of the Company. The rate responses was equal to 86%. Very important findings were highlighted. Namely, them reveal, that from the integration to result, several tangible and intangible gains for the Company, as well as to their internal and external Stakeholders. On other hand the findings show us that the integration of the individual Management Systems represent, since now, a relevant added value, that the organizations do not can bleach considering namely the accelerated evolution of the growing of requirements of the external environment, as a whole, towards the business.

Key words: Quality, Environment, Safety, Integrated Management Systems.

1 – Introduction

According to the ISO – IMS publication (The integrated use of management systems standards) (ISO, 2008), a common objective of management system standards is to assist organizations to manage the risks associated with providing products and services to customers and other stakeholders.

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The following questions may arise: How can these three management systems be integrated? Can they be integrated? According to Santos (2009), this is a problem that the most developed companies started to experience some time ago, and it has been discussed by various authors, that we highlight, among others: McDonald (2003), Arifin (2009) and Bernardo (2009), who provides a summary of the degrees of integration according to some authors, and Labodová (2004), who reported on the implementation of integrated management systems using a risk analyses based approach. In accordance with the ISO 72: Guide (2001), the experience with management system standards issued by the ISO shows that there exist a number of common elements, which can be arranged under the following main subjects: policy; planning; implementation and operation; performance assessment; improvement and management review, as stated by Rebelo (2011). Therefore, the idea of an IMS - Integrated Management System consists of establishing correspondences and to combine two or more independent management systems, for example in accordance with ISO 9001, ISO 14001, and OHSAS 18001. Evidence of this can be seen in table A.1 - of the annex A - of OHSAS 18001:2007. Despite having their origins in different aspects of company performance, the Quality, Environment and Safety Management Systems have a lot in common, as mentioned by Block (2002). According to Santos (2011) the future lies in the integration of these management systems, managed by only one multidisciplinary team with training and skills in several areas, thereby economizing both financial and human resources. As can be expected, there are several difficulties involved with implementing an Integrated Management System (IMS). However, Beckmerhgeni (2003) points out that "the management systems implemented separately in an incompatible way results in costs, an increased probability of faults and errors, duplicated efforts, the creation of unnecessary bureaucracy and a negative impact near the Stakeholders, particularly "Employees and Costumers". According to Salomone (2008), a cultural shift is underway and the number of companies with more than one certification is constantly on the increase. Many of them are advancing towards integration. According to this author and others like, Karapetrovic (2009, several countries like England - PAS 99 (2006), New Zealand, Australia, France, The Netherlands, Denmark - DS 8001 IMS (2005) and Spain - UNE 66177 (2005), have developed or are in the process of developing their own national standards on IMS, encompassing various references, functions of the organizations and stakeholders. Besides that, the responsibilities for the quality, the environment, health, safety and social aspects have to be integrated into the culture of the organization, due to the fact that these responsibilities are inherent to all aspects of the activities of organizations, from procurement to design and development, production, sales and marketing.

2 – Work Methodology

All the work was developed and the obtained model tested at a Portuguese Company - the Itron - Portugal, S. A., that is a trusted partner dedicated to delivering, products and smart distribution solutions to electric, natural gas and water utilities.

The evolution of the QES Management Systems and the different certifications achieved by the company over the years are shown in Figure 1. It is in this sense that, over the years the Quality, the Environment and the Safety have been integrated into the strategy of change and evolution of the Company. An internal research was developed to assess the perception of the Collaborators.

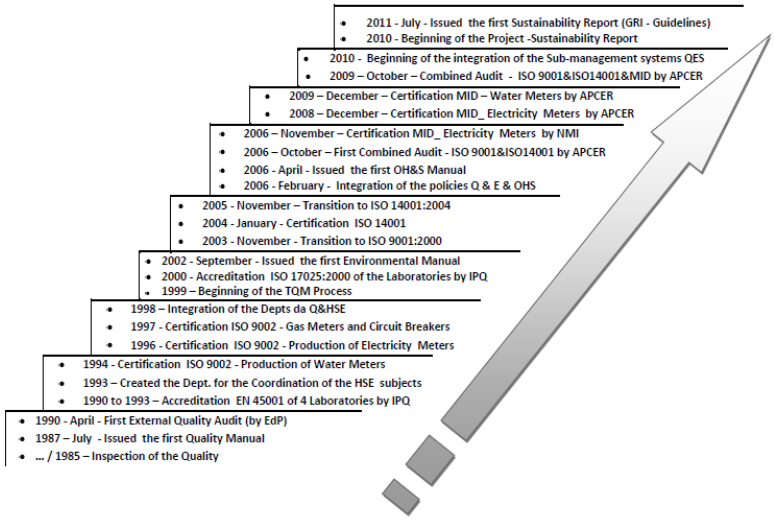

Fig.1: Milestones related to the evolution of the company's QES Management Systems (Rebelo, 2011)

For that a questionnaire was drafted, tested, validated and distributed to a representative sample of Collaborators from different Departments of the Company. The main topics of the questionnaire were: 1- Importance of motivation factors for the implementation of the IMS-QES; 2 - Stakeholder influences on the performance and evolution of an IMS-QES; 3 - Main Internal difficulties for the development of the IMS-QES model and its implementation; 4 - Potential benefits resulting from the implementation of the IMS-QES. One of the activities that supported too the study was the analyze of the compatibility of the several requirements of each involved standard, in context and framework of the characterization of the company's situation, backed up by an analysis of these standards. This compatibility represents, at our understanding, the starting point for conse-

quents activities of integration, simplification and optimization, to achieve a level of the strictly necessary and consequently the three subsystems - Quality Management system (QMS), Environmental Management System (EMS) and Occupational Health and Safety Management Systems (OHSMS) are integrated to the maximum extent possible.

The main objective of the study was to obtain a structured model of an IMS-QES, supported on the characterization of the real organizational situation of the Company as well as on the evolution of the management systems standards from individual systems to integration.

3 – Investigation Results

The synergy that an Integrated Management System (IMS) can offer have driven organizations into higher levels of performance at a cost lower than that associated to independent certification management systems. The simple schematic fig. 2 represents the vision of an IMS-QES, suggesting that they have common information and procedures.

Integration can be achieved at different levels, leading to partially or fully integrated systems. A partial integrated system keeps their manuals separated using, as far as possible, integrated procedures. A fully integrated system is based in a single manual that integrates unified management systems requirements.

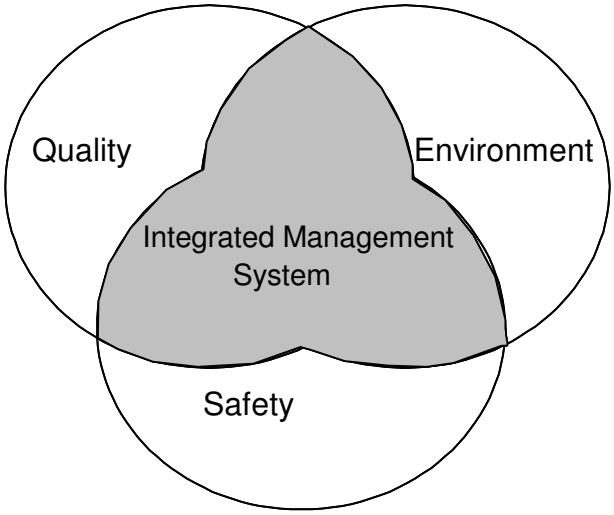

Fig.2. Schematic representation of an Integrated Management System (Santos, 2011)

The emphasis placed by the respondents, both for the present and fundamentally for the future, on the range of potential benefits identified and evaluated as be-

ing the result of the implementation of an IMS-QES, in itself particularly justifies and validates the implementation of such system and make it an enormous priority.

The benefits of IMS-QES, identified by the respondents are: The elimination of conflicts between individual systems and the optimization of resources, specifically human resources related to management and operationalization; The integrated management of sustainability components in a global market, where quality no longer makes a competitive difference and is now just a starting point for a business; the improvement of partnerships with suppliers of goods and services; Dialogue with our main stakeholders and commitment to their ongoing satisfaction and increased contribution to the company's competitiveness; Common management policy, objectives, targets and KPIs - Key Process Indicators related to QES performance; The creation of added value for the business through the elimination of waste, especially that of bureaucracy associated with independent management systems and their certifications, including the laboratories and MID; Improvement to the company's internal and external image and to its credibility in QES areas, specifically in relationships with Clients, Official Entities and other Stakeholders; Improvements to the coordinated and integrated management of risks to the safety of people and property, the environment and the quality of products from "cradle to grave"; A reduction in the number of internal and/or external audits and audits of suppliers and the consequential amount of time taken and associated costs; Greater valuation and motivation of employees as a result of the expansion of their skill base, actions and responsibilities, with their resulting empowerment; The integrated management of sustainability components.

A set of management system standards that apply to any type of organization and activity were considered. Others exist. Others will certainly be created. These standards cover a wide array of different disciplines, aims and activities of organization and operation of the Enterprises including the interfaces and satisfaction of all theirs stakeholders.

3.1 - From individual systems to integration - observed integration level

There are various standards for individual management systems: QMS according ISO 9001; EMS according ISO 14001; OHSMS according OHSAS 18001; Social Responsibility management - SA 8000, and others. The organizational structure of the QES Management includes a coordination and a group of functional and operational areas whose managers have responsibility for, and authority over ensuring that the requirements of each Sub-system, either operated in an isolated way or in inter-action with others, are understood by all employees and implemented at the Company, in a coherent manner as established.

It has been observed that there is an integrated QES management policy. This policy figures in each of the QES Manuals, and establishes coherent and defining principles and proposals for common actions and responsibilities for the Integrated

Management of Quality, the Environmental and Occupational Health & Safety issues. In the Figure 3 is shown a result of the natural evolution, recent, of integration of the IMS-QES, that will as relevant the step of finalization of the structuring.

For a better integration of the different existing sub-systems and consequent development of the respective model, it turned out to be fundamental to structure an specific action plan, consisting of four fundamental phases supported on an approach based on the Deming Cycle - PDCA - Planning; Execution; Implementation; Monitoring and assessment for continuous improvement.

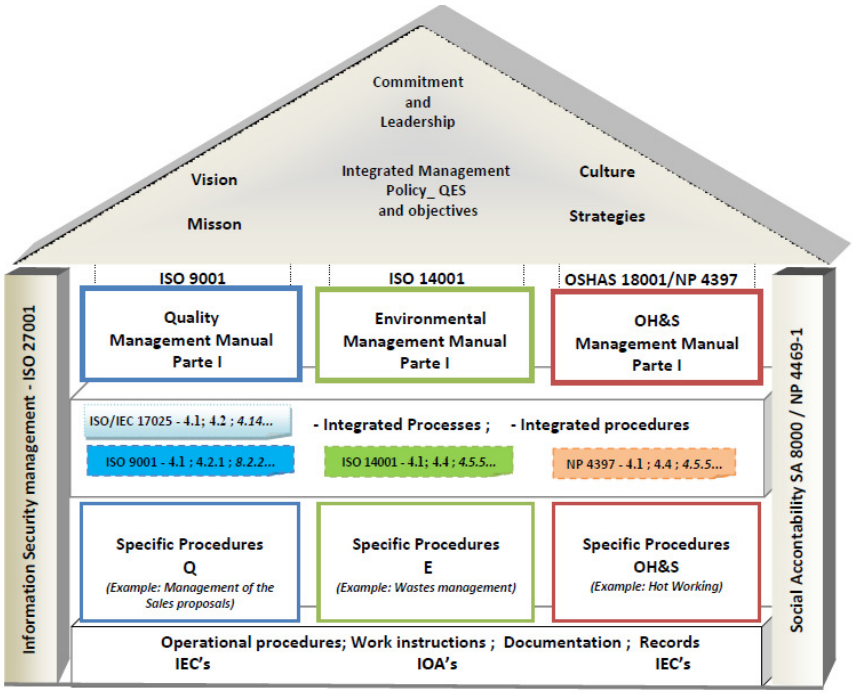

Fig. 3: From individual systems to integration - observed integration level (Rebelo, 2011)

4 – Discussion

This research reveals that integration of management systems brings fundamental improvements which we can highlight: The elimination of conflicts between individual systems and the optimization of resources; The integrated management of sustainability components in a global market; Common management policy, objectives, targets and KPIs - Key Process Indicators related to QES performance; The integrated management of sustainability components. To achieve this

results, this research and the respective observed integration level is in line with PAS 99 (2006), where many of the requirements of multiple management system standards may be integrated into one common system, in that it could be the best suitable for a specific organization. Similarly, in accordance with that set out in Annex D of UNE 66177 (2005), the structure of common and specific processes and documents in an IMS may be configured as processes and documents that are common to the three management systems.

Another model for an IMS in accordance with DS 8001 (2005) is mentioned by Jørgensen (2006) and the observed integration level presented in this work is in line with him. However, other IMS models are referenced or presented by other authors, such as, Arifin (2009) and Santos (2011). According to Rasmussen (2007), the common elements/requirements of the different standards maybe identified using ISO Guide 72 (2001). This was also considered in PAS 99 (2006) the model of which was recommended for an integrated management structure, is configured with the six main requirements of ISO Guide 72: Policy; Planning; Implementation and operation; Performance assessment; improvement and management review, following the Plan, Do, Check, Act cycle. Therefore, table B.1 in Annex B of ISO Guide 72 (2001) identifies common management system requirements in ISO standards, which are structured/grouped into six components: B1 – Policy, B2- Planning, B3 – Implementation and Operation, B4 – Performance assessment, B5 - Improvement and B6 – Management review. It recommends that this common structure be followed when developing and reviewing management system standards, in order to guarantee their compatibility and to improve their alignment. This was our main worry when the model presented in this work was designed. To conclude this discussion, we would like to emphasize that, according to Figure 3, we consider Information Security Management (ISO 27001) and Social Accountability (SA 8000) as two fundamental pillars for successful Integration of Management Systems and consequent sustainability.

5 – Conclusions

There is no an international ISO standard with a specific structural model for Integrated Management Systems for Quality, Environment and Safety, or for other management areas such as: Risk Management; Information Security Management; RDI Management; and Social Responsibility Management, among others. The observed integration level follow this path.

As greatest benefits of IMS we highlight, among others: the elimination of conflicts between individual systems with optimization of Resources; integrated management of the components of Sustainability in a Global Market; common management policy, objectives, targets and KPI's - Key Process Indicators of QES performance; the creation of added value for the business through the elimination of the waste.

The proposed objectives and goals were achieved. Specifically, the Company has now an adequate model for its IMS-QES, structured based on the Lean philosophy and its individual management systems, with real usefulness and added value to the Company's business, and globally more easily manageable.

The development, implementation, maintenance and improvement of IMSs in Organizations require that they affect Human Resources with multi-faceted competences, what is not always possible for various reasons.

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