

An Overview of The Methods for The Integration of Management Systems with Examples for International Companies

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Abstract:

The purpose of this article is to investigate through literature the most accepted models for the integration of management systems. Also, it shows how to implement this integration and the conditions that are required for each model, especially for those organizations that are struggling with complexities in implementing their management systems. These models are: the conventional model which is used by most certification bodies, the systematic model and the synergetic model. The integration models may take many forms as well, these forms change regarding to the nature of the organization like size and activity, and the willingness of the organization on how the form of the integrated management system should be.

Keywords: Integrated management system; Systems integration; Integration models; Integration forms.

JEL Classification Codes: L25, L200, L210, M11, M100

1. INTRODUCTION

During the past years the revisions of standards in ISO and the proliferation of standardized management systems have created a path towards more compatible management standards, this helped organizations to seek to integrate these systems in order to manage them better and to simultaneously exploit the related synergies to enhance their efficiency and competitiveness. The similarities between these aspects have led to the emergence of integrated management systems (IMS), in which there is a complete or partial alignment of related management systems, it is a system which consists of assimilation of different aspects (environment, safety, quality ...) in a single system promoting decompartmentalization and best synergy for greater efficiency. This transversal integration is an effort to streamline management systems to avoid the use of disparate tools and increase system efficiency throughout the organization. The elements covered by these systems are connected closely with the internal processes and this has led to the development of standards that are similar to those used for quality management.

These systems define an organizational structure in terms of resources, responsibilities and procedures. This is to establish new objectives in the context of continuous improvement. This type of system combines the requirements of different standards compatible with each other (OHSAS 18001 for occupational health and safety, ISO 9001 for quality, ISO 14001 for the environment), some incorporates social ethics references (SA 8000, SD 21000 ...) considering it also as a tool for implementation of sustainable development within a company. It is good to know that "it is not the company who adapts to the standards of management, but it is the references to adapt to the company," which ensures an acceptable performance and a sustainability management system.

Of course, the main difference between these specifications is in the implementation of each standard; for quality management standards, they are concerned with products and customer. For the environment

management standards, they are concerned with the unintended consequences of the organization's activity or the possible effects of the products that may occur. For occupational health and safety management standards, they are concerns the safety and security of people in their workplace. These differences can also be observed in the formal aspect of the items contained in each standard, in terms of their order, numbering or how they are formulated. Therefore, the integration of these specifications in a single system depends primarily on knowing the similarities and differences among these management systems to create the necessary consistency between them.

The integrated management has become a strategic axis that appears as an effective tool to cope with the effects of the crisis, customer requirements, competition, legal and social requirements and environmental standards that are emerging on the horizon. Managers not only more apprehensive each party or any single standard, but also an entire activity which it is necessary to ensure the global performance.

2. The Concept of Integrated Management

The integrated management is considered because of the proliferation of management systems and the similarities that exist between them. It helps to meet the requirements of various systems in one system to achieve the desired results and objectives.

Many authors have tried to give a general definition; some has defined it as the management of various issues and topics such as quality, environment, safety, information and others under one common framework within the organization. It is a management system that integrates the different of all these components and management systems into a consistent system that allows achieving the goal of the organization (Weib and Bentlage, 2006). As for other authors, they limited its scope in three management systems which are quality, environment and occupational health and safety. Hoyle has defined it as the management system that allows the organization to achieve its objectives in a way that meets the

requirements and the needs of stakeholders, and it is often seen as a standardization of the quality, environment, occupational health and safety and other management systems of the organization (Hoyle, 2001).

It is a single interconnected system that allows the establishment and implementation of the objectives of the organization in relation to quality, environment and occupational health and safety in a consistent manner (gillet-goinard, 2006). Through these definitions, it is possible to say that the integrated management system is the comprehensive system that combines all the systems in the organization, whether they are of quality, environment, occupational health and safety or other systems in one system that meets the various objectives of these systems and eliminates the complications that can arise between these systems.

3. The Integration of Management Systems

Integration means linking a set of parts in one unit. In a management context, it is intended to place all internal management applications in one system and link the different processes together to solve a specific problem and achieve a specific goal (Bellini and Parry, 2010). This does not necessarily mean the integration of all systems; but it can also mean the different levels of coordination that can be between these systems that have common parts and distinctive parts (Hoyle, 2006). This integration can include the whole organization or only some of its parts or all existing systems or only some of them. The implementation methods of integration differ from one organization to another according to its own needs.

It is noted that in the integrated management system, the majority of the literature mentions QMS systems in the organization, because most of them must meet environmental requirements and safety requirements imposed by governments and stakeholders. As for other management systems such as information management, maintenance, social responsibility, they are rarely mentioned in these writings because of weakness or lack of pressure on organizations to take them into account, or the ambiguity on how to integrate these systems. However, the integrated

management must be of a nature that would contain any new additional system that the organization might consider in the future (Beckmerhagen, 2003)

It is also noted that there is no a specific theory that describes IMS so far; and here where the difficulty arises in standardizing this system due to its complexity. There have been many discussions to develop standards including ISO 14001 and ISO 9001 in IMS, which is somehow unrealistic, given that the implementation of the integrated management system differs from one organization to another according to several factors that will be mentioned in the next elements (Weib and Bentlage, 2006). Some may argue that the IMS can be made general or limited in some areas as quality and environment.

Everything that has an impact on the results of the organization must be part of the management system, therefore the IMS should include all systems of quality, occupational health and safety, environment, employees, finance, security ... etc, in a way that all the processes and documents that contain them must be integrated (Weib and Bentlage, 2006).

It is also important to pay attention to certain points concerning the integration of systems. For example, it is not enough to develop a single policy and procedure manual for quality management system, environmental and occupational safety, or developing an automated software that deals with it, or to collect all of these systems in a single department of the organization.

Rather, IMS is the concept where functional management is distributed across the organization so that managers can manage a range of functions simultaneously. For example, a production manager can manage at the same time all the issues of manufacturing, quality, environment, occupational health and safety, finances, etc in the production process under his responsibility that is given to him. The other point, as we mentioned earlier after the development and implementation of IMS, we must make sure the system is capable of introducing new elements or other systems whenever it is needed to, therefore it cannot be made closed or

unchangeable, because it is a basic principle in this system to maintain its changeability by adding and deleting with ease new elements or systems.

4. The Characteristics of an IMS

One of the most important features of IMS is its uniqueness in providing one open system that contains all activities that meet the requirements of all the management functions of the organization rather than meeting the requirements of each separate system. Although the systems of quality, environment, occupational health and safety management are developed independently, they have common elements, such as policy, objectives, organization, documentation, planning, procedures, records and auditing. All of these are included in the organizational philosophy and the management system of the organization through the process of planning, implementation and control or also known as Deming wheel (PDCA) (Plan, Do, Check, Act) for continuous improvement (Griffith, 2002).

Organizations with IMS have an effective risk management system and a consistent leadership tools that support their competitive position in the market and allow them to create their brand image as responsible organizations. Therefore, these organizations are often the ones who take the first step towards sustainable development by adopting this system because it is related to: Economic Efficiency (ISO9001), Social Justice (OHSAS 18001) and Environmental Preservation (ISO 14001) (Gillet-Goinard, 2006). Although this system is not fully compatible with sustainable development, it is an essential tool for the organization to develop itself towards sustainable development, because it contains the main actors of sustainable development in this system (Michel and canaille, 2009).

5. Factors Affecting IMS

The nature and the form of the IMS adopted by the organization are determined by a variety of internal and external factors:

5.1. Internal Factors: it is the characteristics of the organization that effect on how the IMS is applied which are as follows:

The sector of activity: It is what drives the organization to adopt some practices that are a priority for it. For example, unions often press the organizations that are in the chemical industry sector to adopt management systems related to the preservation of the environment and the safety of workers as a priority in their management systems.

The history of Integration: The history of management systems that are in place such quality, environment, occupational health and safety is very important; because the degree of difficulty of developing an IMS can rely heavily on the existing and established systems, therefore the first system that is in place in the organization determines the future nature of the integrated management system. For example, Karapetrovice & Willborn suggested that it would be easy to put the integrated management system in place if the quality management system was first introduced, because quality systems are a forerunner and a basis for other systems (Bellini and Parry, 2010).

Profile of the IMS manager: The profile of the manager can affect the mode of the IMS, as its tendencies towards an aspect of IMS can determine the nature of the implementation of other aspects of it. For example, a manager who tends to environmental management system is more concerned with the legal aspects, and this affects, for example, quality systems that focus more on satisfying the needs and desires of the client than the existing legal aspects.

Management commitment: The level of management commitment can be translated through the means and resources allocated for IMS as well as the internal culture it creates. The lack of management commitment can be noted through the level of motivation and participation of workers in this framework (Bellini and Parry, 2010).

Human resources: The importance of human resources lies not only in the implementation of IMS, but also in its maintenance. The qualification of workers is also a basis in determining how the system works and how to

avoid internal conflicts, especially between groups and systems (Zeng et al, 2007)

5.2. External Factors: These are factors that the organization cannot control, but only adapt and deal with them, and it can be summarized as the following:

The country in which the organization is operating: The nature of the implementation of IMS varies from one country to another. Some countries have developed their own IMS models such as Australia (GLOBAL SAI 1990), Denmark (AE NOR 2005) and Spain (DS 2005) (Bellini and Parry, 2010).

Technical Guidelines: It is considered the most important factor in the external factors. There are many difficulties related to the development, implementation and evaluation of IMS faced by the organizations in terms of documentation and how to be applied for each organization, whether large or small or according to the sector in which it is operating. That’s why they often go to the certification bodies asking for continual support. But at the same time, we often find that these bodies are competent in one or two of these systems (quality, environment, occupational health and safety) as we do not find that these bodies provide technical guidance for the integration of these systems. Currently, however, technical support bodies are emerging in the process of integrating these systems (Zeng et al, 2007).

Culture: Culture may be considered as an internal factor (Organizational culture) or external (National culture). There is a strong relationship between these two sorts of culture, because organizations can not develop an organizational culture that differs significantly from that of the country in which it is operating (Asif et al, 2009). This cultural transformation has a great importance especially when considering the core values of IMS like satisfying customers, management commitment, employee involvement, continuous improvement, health and safety, attention to social responsibilities and other values. Therefore, for the success of IMS, aligning all these values with the organizational culture is

necessary, however it can be considered difficult because of the time that this process can take to establish these values inside the organizational culture (Zeng et al, 2007).

It is possible also to mention some other factors that can affect the nature and the form of an IMS as organizational policy, mode or management style (above, under, bureaucracy, etc.) (Domingues et al, 2015).

6. Forms of IMS

The extent to which management systems are integrated is based on the extent to which IMS is implemented in the organization. It can be applied to a part of the organization, the whole of it or even to the entire supply chain. This integration depends on the management of the different needs of stakeholders. For example, some of the international companies that deal with suppliers that employ children in some developing countries have caused problems with children's rights organizations. These companies should have integrated its management systems across all the supply chain from suppliers until the final customer by monitoring their activities in line with the organization's IMS policy (Karapetrovic and Casadesús, 2009).

Also, IMS is applied at different levels. First, where there is no integration of management systems at all. The three systems are independent of each other and each system has its own processes and procedures. Here, it is unlikely that each system will have an impact on the other. The second level is that some parts of the system are integrated with the other parts of the remaining systems, and there are other independent parts of each system alone. The final level, is a full integration of all systems so that there are no boundaries between them and all procedures and processes are unified, as well as all policies, objectives and other bases of the system (Whitelaw, 2004). The following table represents the types of IMS (Additive, Harmonized, and Integrated):

Table 1. Summary of The Classification of IMS

Type of IMS	additive	harmonized	Integrated	
			Total	partial
Type of audit	Audits of each independent MS	Audits negotiated together but not necessarily conducted at the same time	Common audit with team	Common audit
Level of staff involvement	Low	Changing	Strong with accountability	Changing
Level of pooling of human and financial resources	Null	Low	Total	Changing
Integration of the IMS into the organizational culture	Null	Low	Strong with management involvement	Average
Systems integration mode	not applicable	Sequential with matrix of the first system in place (quality mostly often)		Simultaneous integration of the IMS (easier when is nothing in place)
Documentation	separate	Some common parts (audit, training, parts of manual...)		Common
Readability of the plurality of systems	Total	Existing Identification of the links at the level of		Null

		Strategic Documents, Program Type		
Process approach	For quality and not necessarily for others	Progressive integration of the environment and security within the process approach		Total

Source: Béatrice Bellini et Marianne Parry, **Système De Management Intégré: Vers Un Référentiel D'évaluation des pratiques**, 10^e Rencontres Sur La Prospective Des Metiers : Quel management demain ?, Le 16 mars 2010, l'ESSEC, p.10.

6.1. The Additive Systems:

It is the existence of two or more management systems inside organization without any will to bring them closer, which is the first level mentioned above. Studies have shown that 15% of the organizations prefer to put their management systems as such because they are not convinced of the benefit of the integrated system (Bellini and Parry, 2010).

6.2. Harmonized (Aligned) Systems:

It is the establishment of a common principles and rules between two or more management systems, especially at the documentation level. Among the most common points are: internal audit, management review, document control, registrations and internal communication. This convergence is often at the strategic level without compromising or approximation at the operational level. Hence, this coordination is just formalized with the absence or the weakness of any practical activities of integration, where the workers are not involved in the coordination process. The interconnection between these systems is clearly and formally defined; which is considered as a feature by most organizations seeking to integrate their systems (Bellini and Parry, 2010).

6.3. Partially or Fully Integrated System:

The development of this type of management system requires a change in the applications and processes of the organizations for continuous improvement. There are two types of integration: the partially integrated management system and the fully integrated management system. The difference between these two systems lies in their position in the organization and its relationship with organizational culture. The more integrated management system is linked to the organization's organizational culture, and its ease to be understood by the workers as a tool for performance to achieve the interests of stakeholders, the more its effectiveness is increased in its implementation. On the other hand, if the conviction of the system is weak, there will be no effectiveness in achieving it, even if there are strategic and operational tools to implement it. The real meaning of IMS is not to focus on managers and employees, but on workers who are in the achievement of the product or services that they inflict within the organization. Workers have a direct responsibility related to quality, Environment, and OHS as the sole driver of the organization's processes. In addition, workers' understanding of IMS can reduce or eliminate ambiguity around this system, especially with respect to the fulfillment of several specifications in a single activity. Therefore, the senior management should establish programs to achieve this end, and it must develop tools that allow them to manage these specifications (Pojasek, 2006).

7. Integration Models

Integration models are theoretical descriptions and concepts proposed to organizations on how integrated management should be implemented. There have been many attempts to develop a model that allows to an evaluation and implementation of IMS in accordance with the objectives of the organization. These attempts led to the introduction of many models proposed by researchers in this field, the most important of which are: the systematic model and the synergetic model. What we should say here, is

that it cannot be one ideal model that achieves the integration of the systems in all organizations. This is because the goal of adopting an integrated system and the conditions for its implementation varies from one organization to another. For example, an organization can require integration of all systems, while others seek only partial integration between the environment and occupational health and safety.

7.1. The Classical Method:

This method is the most used one by most of all organization, and it adopted by basically by all the certification bodies, due to its ease and clear of steps of formulating, implementing and monitoring IMS. These steps are the same as for other management systems (Quality, Environment, and OSH). However, in this system, these steps are combined, expanded or modified to include all management systems.

7.1.1. Reformulation of Policy of IMS: Typically, QMS, EMS and OHSM is structured vertically, where each system is separate from each other operating in a parallel manner and there is no sharing of the information system between them. In fact, these systems can be structured horizontally, allowing them to share the policies of these systems in a consistent manner without compromising the characteristics of each system. This allows the creation of a unified manual that facilitates the implementation of the organization's plan, which allows the translation of these policies into practical management like procedures and instructions (Griffith, 2012). In this case, as we have mentioned, policies are separated for a clear vision of each system, as well as for the precise identification of their respective external influences. In addition of this, a single manual combining the various procedures and functions of each system, is developed to help disseminate information and common practices across the organization. Thus, the implementation of IMS is easy through administrative procedures, and is clarified by separating each policy separately.

The policy of IMS is without any value only if it allows to give a clear picture of the system, which must be at the heart of the interests of the senior management. This is not considered as a fulfillment of certain

requirements, but an intellectual and analytical work that allows for the determination of convictions and orientations of the organization about quality, environment, occupational health and safety (Gillet-Goinard, 2006). On the official side, as mentioned above, it is preferable to edit a clear, precise and easy-to-understand text. This text mentions the basic principles that are based on the values of the organization and should contribute to improving its image. On the other side, this text is considered as a mean of directing workers and energies for the success of the organization's project (Pinet, 2009).

7.1.2. Processes' Modification: The modification on processes is done at two levels, the first level on the processes themselves and the second is on process mapping.

Expanding process mapping: In IMS, the concept of the customer extends to the various stakeholders; processes become having the target of satisfying the needs of the customer, but also the other stakeholders, such as environment and workers's protection; these processes are going to be managed from different angles of quality, environment, occupational health and safety. The modification on process mapping must be consistent with the nature and activity of the organization. It may also be a need to add new processes such as waste management, risk analysis and crisis management. Regarding to these mentioned processes, it is not a must for each organization to have them, because the processes map must be consistent with the policy and strategy of the organization as well as its mission. Hence the goal is to clarify and structure the system by selecting from ten to fifteen key processes of the organization that allow for the response of the needs of stakeholders in the context of achieving global performance. Thus, a process can be merged with another, or be part of another process or vice versa (Gillet-Goinard, 2006).

Process Review: The implementation of IMS requires careful identification of the characteristics of the processes and their mode of operation. In the

quality model, the process is described as a sequence of activities that allows the transformation of input elements into output elements with an added value (a voluntary customer-oriented). In the IMS model, the components of the process outputs are divided into two voluntary (customer-oriented products and services) and involuntary (waste and risk) segments. Reviewing processes in the light of IMS does not necessarily mean changing process manager or revisiting its inputs. Rather, it means revisiting all the requirements for environmental and security checking. The process review also includes a change in some elements of the process card; these elements are: goals, output data, key customer requirements, constraints, documentation, performance indicators, quality risk assessment, environment, occupational health and safety.

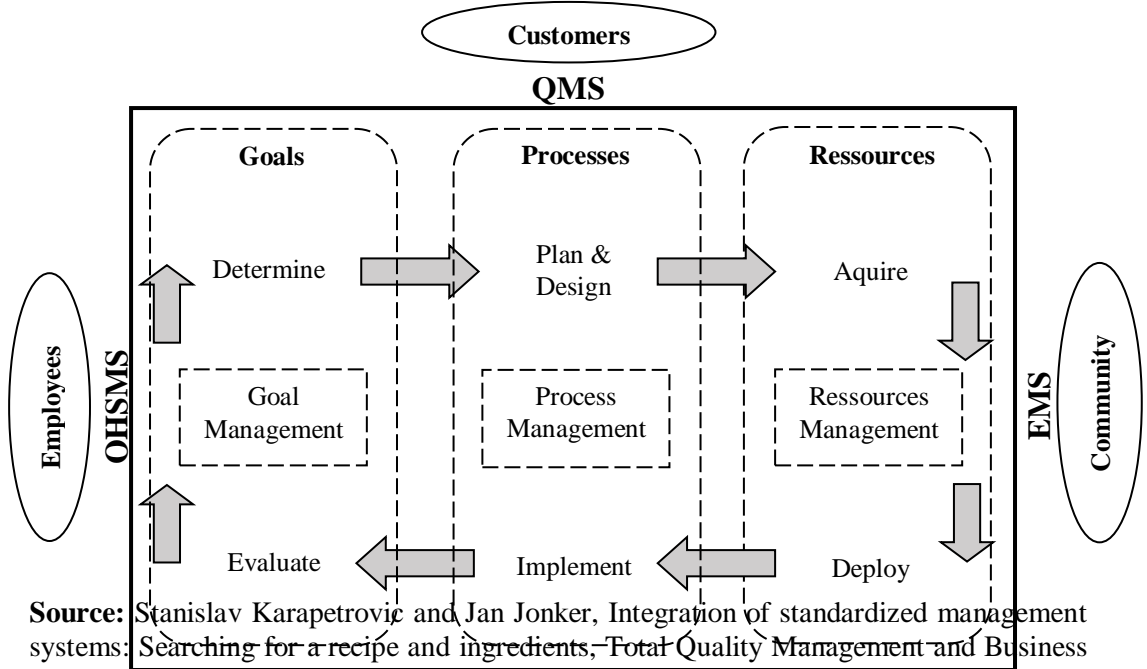
7.1.3. Modifications on Documents: The three management systems have identical structure in a hierarchical form, starting from the manual of each system to the bottom of various records and instructions. These similarities facilitate the unification of these documents in just one form and that summarize the three systems. In IMS the hierarchical structure of the documents is retained but with some modifications of each element to include the documentation of the three systems; for example, IMS manual contains the requirements of the three standards and describes how these requirements are met.

7.1.4. Audit Modification: This includes integrating the various audits of the previous systems into a single audit that meets all the specifications as well as the extent of reaching their objectives. Sometimes, before the total integration of the audits, some initial steps are taken, such as linking the various system audits in a single framework or conducting an audit of a particular management system and then taking into account the ramifications dictated by other management systems (Domingues et al, 2015).

7.2. Systemic Model:

It is proposed by karopetrovic and willborn and it focuses on how to link the three management systems (quality, environment, occupational health and safety) (Karapetrovic and Jonker, 2003). It is based on finding a balance between objectives, processes and resources as shown in the figure.

Fig.1. The Systematic Model of Integrated Management



Source: Stanislav Karapetrovic and Jan Jonker, Integration of standardized management systems: Searching for a recipe and ingredients, Total Quality Management and Business Excellence, 14:4, 2003, p.455.

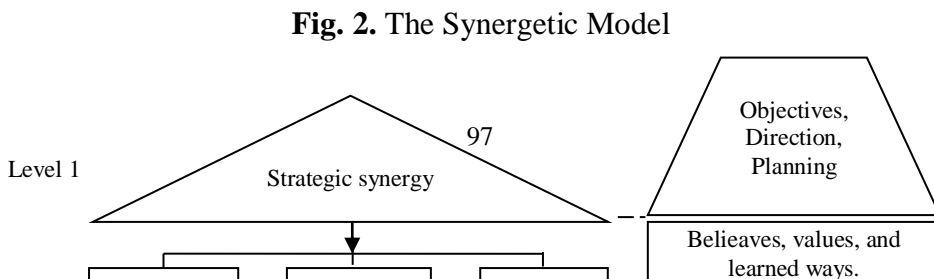
The figure shows five elements of the system model: Goal setting, system planning and design, access and use of resources, system implementation, system evaluation and optimization. These components are like those listed in ISO Standard 72 (2001) on the standard management system that includes: policy, planning, implementation, performance evaluation, improvement and management review. They are essential elements of any management system. According to this model, integrated management is a set of interrelated processes that work in harmony and

share the same human, material, informational, and financial resources to achieve a set of goals.

The integration of management systems is based on these three elements based on the continuous improvement wheel (PDCA) or the so-called Deming wheel. Goals can be collected from various systems and formulated (quality, environment, security, social responsibility and other goals and objectives), and then after these objectives are developed, plans are set up to achieve them and appropriate resources are allocated for them. The implementation process is then carried out by the process management in accordance with the terms of the Quality, Environment and Health and safety, and then comes the process of evaluation and improvement.

7.3. Synergetic Model:

The synergetic model is based on synergy between the various requirements of ISO 9001, ISO 14001, and OHSAS 18001 which are: Documentation, Policies, Objectives, Management Commitment, Continuous Improvement, Audit and Internal Communication. These elements are the basis of the synergetic model as shown in the following figure:



Source: J.P.T. Domingues et al, Analysis of integrated management systems from various perspectives, *Total Quality Management & Business Excellence*, 26:11-12, 2015, p.1325

The figure shows three levels of consistency, the first level (Strategic Synergy), the Quality, Environment and OHS strategy is formulated according to the objectives and strategic plans. The strategy embodies the vision, mission and values of the organization and allows for synergy between structure, resources and organizational culture. While at the same time it is reflecting the continuous improvement of performance in terms of quality, Environment and occupational health and safety. If the organization lacks strategic synergy, it will focus more on short-term goals, such as getting the certificate and forgetting how to maintain and control standards.

The second level contains three pillars: structural synergy, resources synergy and cultural synergy. There are usually conflicts in organizations between work groups that manage different management systems; hence this creates inconsistencies inside the organization. For example, each management system (Quality, EHS, and OSH) can have its own representative, management team and internal audit team. The structural synergy requires coherence from the senior management to the workers at

the bottom of the organizational structure. Senior management must deploy the goals and plans of the organization as well as motivate and train its employees; this facilitates the integration of the three systems and makes the organizational structure able to create a smooth integration.

For cultural synergy it is also important for the integration; it can show the culture of the organization by the adopted rules, procedures and programs; these elements must ensure cultural change to succeed in the transmission from different systems into a one integrated system. Resources synergy involves human and financial resources. This synergy is to identify common points between systems and allocate the necessary resources instead of allocating them to each system, which helps to draw up an efficient plan for the use of resources. These three pillars (structural, cultural and resource synergy) must be supported by documentation.

The third level is concerned with documentation. The working teams must develop a documentation system according to the document hierarchy, starting with the policies, values and principles that are related to quality, environment, occupational health and safety, and then followed by other documents (Zeng et al, 2007).

8. Examples of companies implemented The Integration of Management Systems

In this part three cases will be highlighted, for companies that had already implemented an IMS by following a several methods and approaches like those discussed above. These studies have been published in international journals, and we tried to extrapolate the approaches used by these companies by comparing them with the literature we discussed. The first study is an airline, the second is a medical public administration, and the third is four plants (pharmaceutical, textile, automobile and diary plants) that have close approaches in their implementation of IMS.

8.1. The First Study Case Presentation

López-Fresno, (2010) has done an implementation of IMS through an analysis of a case study, based on a systemic approach model in an Airline, by providing guidelines and practical recommendations that may be of use to other sectors of activity when designing and implementing an IMS. The airline was the second largest airline in Spain, with 52 aircraft and 2,800 employees. First the company had only one management system of quality ISO 9001. With the year the airlines had the need to implement EMS ISO14001 and other compulsory standards (JAR 145, JAR OPS 1) as well. These management systems were functioning independently of each other. Within the company there was the perception that these independent systems resulted in an overlap of resources, inefficiency, as well as lack of communication.

The company made a custom model adequate to its needs by taking several steps to implement the IMS as follow:

- Analysis of the current situation, to identify the starting point;
- Definition of the scope of the integration;
- Interrelation of requirements;
- Identification of processes and interrelation matrix linking processes and requirements; and the design of the model.

Used Models and Approaches

The methodology for implementing this model was based on:

- ***Corporate Quality Manual:*** it was the main manual of the company, as a reference for the whole system, and it was placed at the top of the document structure.
- ***Apoptotic signals:*** different signals and indicators were identified and documented, to allow prompt reaction and to put in place an apoptotic process, if necessary.
- ***Top management commitment and co-operative leadership:*** both the CEO and the VP of corporate quality and environment were personally involved in the project, throughout its different phases. Some

of the directors and managers of the company were fully committed to the implementation of the IMS, while others were less so.

- ***Emphasis on communication and training across the organization:*** the project was presented and explained in detail at all levels, starting with top management. Specific training was performed.

- ***Implementation with internal resources and cross-functional teamwork:*** The IMS was implemented using ad hoc cross-functional teamwork. Cross-functional teamwork facilitated and ensured that all areas of the company were represented and implied.

The processes of implementation of IMS and the approach used is close the systematic model regarding to how to manage the resources, processes and goals with different Management Standards. Along with the systematic model, the company used a synergetic approach defining how the role of leadership, management commitment and human resources in the implementation of IMS. It was an adequate step to cope with its internal needs for more flexibility. However, there is no mention of strategy formulation or policies of IMS, which is considered as crucial to align the processes and procedures with it, and how to be translated into the manual.

8.2. The Second Study:

Case Presentation

Manzanera et., al (2014) in their study presented an application of the approaches discussed above in the literature in designing an IMS for an aviation company of a government-run organization responsible for the medical evaluation of work disabilities ICAMS. The Steering Committee decided to integrate its management systems based on several steps and approaches started from an establishment of an EFQM model which was done in 2006. This evaluation model helped the institution to define six lines of improvement. These lines addressed communication strategies, user service, process methodology, improvement of the clinical product, focus on the internal customer and quality improvement from a general viewpoint. However still some problems occurring during that phase like an excessive fragmentation of goals, lack of an effective communication and

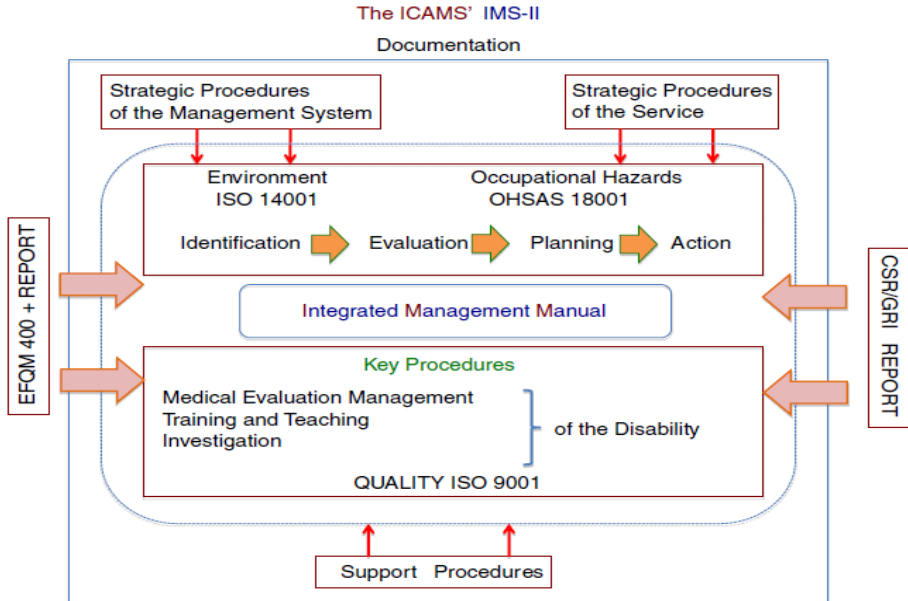
difficulties to align with the global strategy of the ICAMS. Consequently, in 2010 a decision was made to undertake an integration exercise in an

IMS with the primary goal of reducing the detected problems of dispersal, lack of synergy and lack of communication among agents, together with an excessively diverse leadership, while at the same time improving the objectives and their articulation as management tools. After this primary integration called IMS1, ICAMS has developed its final integration of systems called IMS2 which is an overall view including the strategies of the organization.

Used Models and Approaches

The model of integration highlights two kinds of strategic procedures, the first is concerned with the management system that defines the guidelines of system; the second is related with the service in general. This segmentation of strategies is due to the nature of the public administration that the organization is belonging to. The model has risk management approach regarding to environment and health and safety (identification, evaluation, planning and action). The QMS is considered as background and a basic support for the other implemented management systems. The QMS has three key procedures which are: Medical evaluation management, training and teaching and investigating. EFQM and CSR/GRI reports are considered as tools to the integration of the systems with the help of the documentation and support procedures.

Fig. 3. IMSII model of ICAMS



Source: Rafael Manzanera et al, (2014), "Design of an integrated management system (IMS) in a government-run medical evaluation organization", The TQM Journal, Vol. 26 Iss 6 pp. 550 – 565.

As a result, this model helped the organization to increase its efficiency in the use of resources (more and better medical evaluation activity and improvement in peer-agreement). It helped also to easily formulate its strategies and vision with a smooth alignment of the existed management systems. Make the Implementation of a management by processes simpler (processes mapping, procedures and quality management system).

In addition, the organization emphasized the culture on social responsibility by reporting on Corporate Social Responsibility and adherence to the Global Reporting Initiative.

Although the benefits we mentioned this model is facing some limitations regarding its implementation. Most of these limitations is about the lack of flexibility in the Public Administration, because of the rigid

administrative procedures. This model does not focus too much on resource management which is crucial in determining the efficiency of the processes and the results, as well as making a an appraisal system for monitoring performances.

8.3. The Third Study

Asif et al, (2010) in their study aimed to identify the empirical side of the organizational approaches used for integration of management systems (MSs) and the comparative effectiveness of such approaches. This study was carried out on four companies (Pharmaceutical plant, Textile plant, Automobile plant and a Dairy plant) about the approaches used to integrate their management systems. The study was as the following:

Pharmaceutical Plant

The company employed before separate MSs of quality, environment, health and safety, and social responsibilities and systems related to its sector of activity. To integrate its MSs, management started a stakeholder dialogue process to identify their requirements, formulate policies and strategies accordingly. Then those strategies have been translated into organizational approaches for every management system in an integrative way, including all documentations, operations, procedure, processes, instructions, records and one audit for all.

Textile Plant

The reason why the textile plant is considering IMS is to cope with its big factory, rival competitors and a complex production management. The plant started its integration process based on the requirements of stakeholders through the development of a core infrastructure that would promote integrated operations. After that they formulated a new business policy that made extensive structural changes in organization. After that they merged the three departments of the three systems they had into one department called “Systems department”. These changes aligned with other changes from the integration of responsibilities, Audits, documentations, and procedures.

Automobile Plant

The automobile plant employed MSs for quality, environment, health and safety, and social accountability separately. It started the integration process mainly in response to external pressures. They started their integration process by employing teams from multiple departments inside the company to look for better integration. This process was carried out to define the main problems for each management systems and act accordingly. The integration proceeded from the company's management manual and then followed the integration in operating procedures and work instructions. The operational activities and records were also redesigned to align with the new integrated procedures and documentation.

The automobile plant achieved full integration at the operational and tactical level whereas partial integration was found at the strategic level.

Dairy Plant

The dairy plant used an integration approach similar to the automobile plant. They used interdepartmental teams to carry out the integration of the existed MSs. Because the plant was aiming to an operational improvement, they implemented a full integration at the operational level, while only partial integration occurred at the tactical level with no evidence of integration at the strategic level.

Used Models and Approaches

The pharmaceutical and textile plants show similar patterns in their strategy of integration. They have started the integration with defining stakeholders and their requirements, and then deriving business policy, strategy, objectives, and targets encompassing regarding those requirements. The automobile and dairy plants carried out integration through bolting together of common elements in various MSsc Regarding to the automobile and dairy plant, the integration started at the tactical level through development of teams; and the integration was carried out by combining the common elements in various MSs. The automobile plant was highly integrated at the operational and tactical level, whereas partial integration was found at the strategic level. The dairy plant was highly

integrated at the operational level, but partially integrated at the tactical level with no evidence of integration at the strategic level.

As a result, and through what has been mentioned for these cases, two archetypes of integration strategies could be identified. The systematic approach and a techno-centric approach. The systematic approach is based firstly on the identification of stakeholders and their requirements. The techno-centric approach is based on the organization and the operation of the IMS. The findings of this study confirm and reiterate the need of carrying out integration at the strategic level. Otherwise, the benefits of integration would remain confined mainly to tactical and operational level.

9. CONCLUSION

The IMS must be implemented in a way that allows to the desired performance. In addition, many reliable elements can be devised as a basis for achieving the desired integration (like processes, resources, culture, documentation ...). Furthermore, any organization willing to integrate its systems or create a new IMS, it can adopt and select a comprehensive model fitting to its nature and specifications that is consistent with its policy, strategy and objectives. The models and the methods that have been discussed above are not exclusive, because any organization can adapt its own method or model of integration or even coming up with a new one. The only goal that must be looked at, is to achieve the targeted performance and a smooth implementation.

Hence, to achieve the IMS's desired results, it is necessary to identify all parties of its stakeholders and balance between their requirements. This can be done by assessing the most important aspects of each of the stakeholders. The IMS must be as simple as possible to achieve the effectiveness, efficiency and the flexibility required.

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