

LITERATURE REVIEW ON INTEGRATED MANAGEMENT SYSTEMS

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Abstract

This paper aims to present a broad overview of the most important theoretical approaches related to integrated management systems (IMS) identified in the scientific literature. Necessity of IMSs and their applications derived from organizational management, namely in identifying ways to increase organizational efficiency and effectiveness, as a result of integrated approach regarding quality-environment-security issues. We identified a number of differences of interpretation of these concepts and their application. Also, we emphasize the importance of synergy between standards to provide solutions applicable to organizational management.

Keywords: Integrated management systems; management; integration; international standards

JEL Classification: L15; M10; M11

Introduction

Organisations must consider the well-being of their employees and the working environment, and the impact that their operations have on their neighbours and the local community. Stakeholders are also concerned about these matters and creating an image that meets customer expectations can help to improve market share. Management standards and systems such as ISO 9001 and ISO 14001 have been developed and introduced to address these needs, but dealing with separate management systems covering quality, environment and safety and other issues, and ensuring that they align with the organisation's strategy has proved difficult. The case for integrated management systems (IMS) is now starting to be made in the literature and an IMS is increasingly seen as part of the organisation's management portfolio.

Necessity for an IMS has also arisen as a result of the decision to implement QMSs, environmental management system and/or an occupational health and safety management system. It is important for researchers to understand the structure and history of the relevant standards. This can only be done through their examination, supplemented by other related literature (Harrington and Mathers, 1997; Sheldon, 1997). Researchers will also find that an understanding of QM is required and to this end, Deming (1982), Lascelles and Peacock (1996) and Ceptureanu EG et al (2017) should prove useful.

This paper presents an analysis of the key literature and provides guidance on relevant reading on the subject. In doing this it gives pointers to those researchers who may be interested in taking the subject of IMSs further.

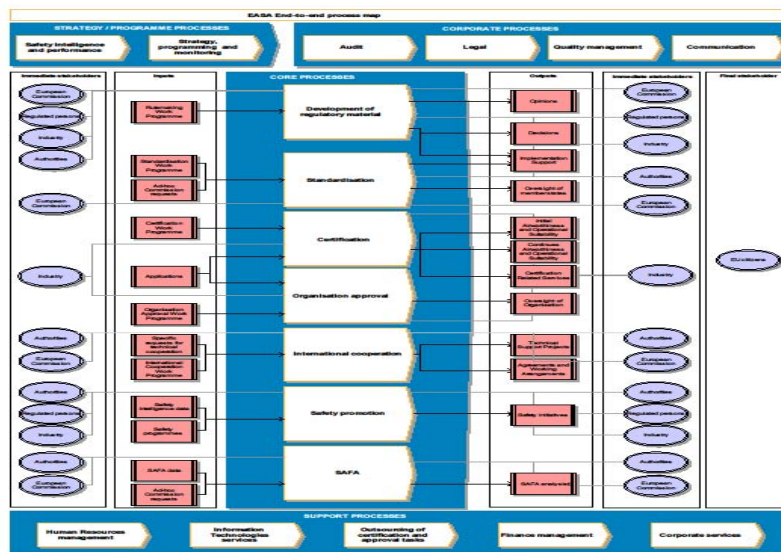
Integration and cooperation on IMS

The needs for introduction of the ISO 9000 series (Velury, 1996) and to the integration of standards and performance measurement (Bititci et al., 1997; Karapetrovic and Willborn, 1998a), has led to a number of useful suggestions, some of which are based on Beer’s (1990) concepts. Karapetrovic and Willborn (1998b) believe that their model of a system helps to beat many of the problems caused by a lack of clarity in the quality vocabulary. Karapetrovic and Willborn (1998b) also show how the philosophy can be used to give integrated audit and performance systems.

It is interesting here to see that while the need for a systems view is being advocated, proposed changes to the ISO 9000 series indicate a move from a system-based approach to a process-based one, employing a model that shows the relationship of the main elements of ISO 9001 and ISO 9004.

For instance, ASA has implemented an innovative Business Process Management (BPM) solution to improve its performance. This BPM solution helps us to identify which processes make the biggest impact on our activities, thus allowing us to prioritise and improve our processes, and ultimately to be more efficient and effective in achieving our objectives.

The end-to-end process map provides an overview of the all EASA core, management, and support processes. It describes the Agency processes by organising and managing its activities to achieve the Agency objectives and create value for our stakeholders.



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Figure no. 1: EASA BPM process chart

Source: <https://www.easa.europa.eu/internationally-recognised-integrated-management-system>

Struebing (1996) and Stapleton (1997) consider that it is important to see the differences between these systems. In ISO 9001 the system provides a way of ensuring that products conform to specific requirements, but the EMS standard is concerned with the outcome of an organisation's activities and ensuring that it conforms to the environmental objectives and targets. There is no firm link between quality policy and objectives in ISO 9001 and the standard is more concerned with control than performance improvement. MacGregor Associates (1996) also see the differences in scope as important and believe that future revisions to ISO 9001 are unlikely to change this. It is therefore unrealistic to consider integration of ISO 9001 with ISO 14001, but alignment may be possible. If differences in scope are seen as preventing integration, then perhaps the solution is to implement ISO 9001/2 company-wide.

Byrnes (1996) sees the connection between ISO 14001 and ISO 9001 as only a structural one, where documentary control and auditing protocols can be readily applied. He considers that in order to improve organizational and system performance is important to generate a culture change in the organisation.

Cultural differences and the need for change are also addressed by Shillito (1995) and Stapleton (1997). They saw responsibilities for implementation and operation, and professional and institutional pressures, as additional hurdles on the path towards integration.

Organisations should start by writing the ISO 14001 elements into the ISO 9001 clauses based on the linkages given in Annex B of ISO 14001:1996. In advocating this approach they believe that much of what is required is simply good business/management practice, and the inhibiting effect of culture is ignored.

Puri (1996) has developed a set of guidelines for an integrated EMS/TQM system which has three broad components and a framework based on ISO 9001. The three components are: management responsibility; process management; and support systems, and the elements of each component include those of ISO 9001/ISO 14001 plus some of the key elements of TQM. The sub-clause links between ISO 9001 and ISO 14001 are identified and the framework of ISO 9001 is used as the basis for EMS certification. The EMS elements are then incorporated and the result is a set of documentation and procedures that Puri (1996) believes should meet the certification requirements of both standards.

Hoyle (1996) points out, however, that systems manual laid out on the basis of elements is merely responding to the requirements of the standard and the system should be developed to meet the needs of the business, not the auditors. According to Greeno and Willson (1996) is important to integrate issues regarding environment, health and safety into business strategies. Hall (1998) believes that functions which are not integrated are likely to be put on one side when problems arise and the objective should be to achieve a system that employs the plan-do-check-act cycle (Deming, 1982), in a manner that addresses quality, safety and the environment, etc. in activities, such as finance, marketing, operations and personnel. While accepting that the identified linkages allow the integration of QEMS, Tranmer (1996) says that it still ignores the problem of how they are integrated with other management systems and it promotes the identification of each system as a separate issue.

Arguments and problems of integration

The rapid growth of ISO 9001 and ISO 14001, their harmonisation and the continued importance being placed on them, has led Uzumeri (1997) to compare them with earlier standards and consider their impact on management practice. The traditional approach to

quality tended to stress specification, but TQM requires continuous improvement (optimising), and in the future, managers will have to meet both requirements. The ISO 9000 series of standards, which Uzumeri (1997) describes as meta- standards will also be difficult to remove or change. Once a new requirement is written into a standard it will quickly become part of what stakeholders see as good enough and this could mean that management innovation is driven by those who seek to control what is in the standards rather than by tried and tested theories. This could lead to either the stifling of innovation or rapid growth through a common management structure. Given these possibilities for existing meta- standards, it is reasonable to expect that they would be even more important if and when an IMS standard is introduced.

The danger of reduced flexibility has parallels outside the field of management systems. Crowe (1992) has pointed out that in manufacturing systems, integration has often led to reduced flexibility. Systems that are expected to be flexible turn out to be the opposite with the result that they perform worse over time than separate systems. Researchers will see similarities here with the views mentioned earlier, that off-the-shelf packages for ISO 9001 etc. should be avoided and that systems should meet the needs of the organisation. Given this view, it is surprising that the potential loss of flexibility has not been raised more often in the literature on IMS, particularly in view of the widely accepted importance of flexibility to operations management and the part that the operations function acts in systems management (Slack et al., 1995).

Jonker and Klaver (1998) view the lack of methodology as the main reason why integration is difficult. A road map and a system of methods are needed to overcome this and a framework that focuses on different integration levels is suggested. These require management to decide on its integration policy and whether or not integration is required. A conceptual model is suggested, such as the EFQM and MBNQA. The idea of using these models is not new. Both Bemowski (1996) and Uzumeri (1997) see the models as standards for an holistically approach regarding quality.

Porter and Tanner (1996) have tried to compare and assess the ISO 9000 series, Charter Mark and IIP against the EFQM Model but differences in concept have made this difficult. The conclusion is that even if ISO 14001 and BS 8800 are included in the comparison collectively, the standards still fall short of what the business excellence model offers.

These differences have similarities with Uzumeri's (1997) and Ceptureanu SI (Ceptureanu SI et al, 2016) view that there are two ways of looking at management systems and suggest that integration can be based either solely on the requirements of the standards or on a total quality and continuous improvement approach. In the latter case, standards are still necessary but they are primarily for quality assurance and quality control, and improved business performance is the main aim. With integration through the standards, the objective is limited to reducing audit fees, management fees and administration costs.

As indicated earlier, some studies have treated integration as a secondary issue rather the main area of research. A further problem for researchers is that the case studies often contain insufficient information, which results in a gap between the data given and the conclusions reached. Considerable care is therefore needed when drawing conclusions from these studies (Ceptureanu EG et al, 2015; Radu A-C. et al, 2017).

Generally, the studies fall into two broad areas: those that examine the ways that individual organisations have addressed the introduction of their EMS and OH&SMS, and those that directly address integration. Some studies also address both areas. The preference for using an EMS standard route to EMAS in tis strongly related to whether or not the enterprise was

already certified to the international quality management standard ISO 9000 (Hillary, 1997).

Conclusions

The use of standards and integration are supported by organisational theory and there is a growing interest in the integration of management systems. There are differences however in the interpretation of definitions of integrations and how this should work, and this has led to an urgent need for generally accepted definitions. For those writing on the subject of standards, the current emphasis is on achieving compatibility between the standards in order to bring about alignment, and the proposed common process model for ISO 9001 and 9004 is seen as assisting this. The debate is still in progress however, and while it is a necessary one, it has distracted attention from the view that integration through a total quality approach could offer substantial benefits. If differences in scope are seen as preventing integration, then perhaps the starting point is to implement the ISO 9000 series company-wide.

As with many literature searches, this study has found that the number of references can be reduced to a few that address most that has been written about the topic (Beechner and Koch, 1997; Karapetrovic and Willborn, 1998b; Stapleton, 1997). For further thoughts on systems and the possible future direction of standards, Uzumeri (1997) should be useful and for more practical details of how integration has been implemented, Corcoran (1996) and Wright (1997).

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