



Benefits of management systems integration: a literature review



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ABSTRACT

The purpose of this paper is to identify the benefits of integrated management systems by comparing them with the benefits obtained through the individual implementation of ISO 9001 and ISO 14001 standards.

The methodology used is a literature review based on an electronic search in the Web of Science, ScienceDirect, Scopus and Emerald databases.

Findings show that although some benefits are common regardless the system management type, the benefits obtained with integration are greater than considering management systems separately because of the wider scope considered in integration.

This is one of the first papers, to the best of our knowledge, to compare benefits from the two management systems standards when implemented separately and when integrated.

In addition, some ideas are proposed for consideration in future research on the internalization of management systems and selection effect.

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1. Introduction

Quality management (QM) and environmental management (EM) are business practices that may benefit companies. As several empirical studies have shown, implementing QM (Huang and Chen, 2002; Kaynak, 2003; Parast et al., 2011) and EM (King and Lenox, 2002; Al-Tuwaijri et al. 2004; Moneva and Ortas, 2010) may effectively have a positive influence on firm performance. This positive effect may result from their impact on firm costs and differentiation levels. Firms that implement QM focus on providing superior value to the customer and on improving the efficiency of the processes. Continuous improvement of processes and product quality lead to increased revenues (through product reliability) and reduced costs (through process efficiency). Similarly, regarding EM, for example, pollution prevention can allow savings in input and energy consumption, and increase demand among environmentally sensitive consumers (Miles and Covin, 2000).

In this context, management system standards (MSSs) have enjoyed enormous success in recent years, both in the sphere of QM (ISO 9001) and in that of EM (ISO 14001). According to the most

recent ISO data, the number of ISO 9001 certificates worldwide rose to 1,101,272 and ISO 14001 to 285,844 (see ISO, 2013). The implementation of this type of standards is voluntary, although in some sectors it has *de facto* become an obligatory measure, given the coercive influence of customers (Braun, 2005; Mendel, 2006). Also, research has been done on how far these type of standards have a significant impact on business performance, with some studies finding a positive link (Chow-Chua et al., 2003; Mokhtar and Muda, 2012), while other authors state that there is also evidence for the existence of a substantial mechanism whereby better performing firms self-select to adopt certification and therefore, this link cannot be proved (Dick et al., 2008; Lo et al., 2011). However, there is a consensus with a large number of studies which have analyzed the benefits that may be obtained from ISO 9001 and ISO 14001 implementation and certification (Link and Naveh, 2006; Zaramdini, 2007; Gavronski et al., 2008; Singh, 2008).

As various authors have pointed out, the two standards have many similarities in terms of their structure and dissemination processes (Corbett and Kirsch, 2001; Corbett, 2006; Marimón et al., 2010, 2011). These two standards also present similarities regarding the standard language used and the PDCA cycle of continual improvement. For example, both standards use a similar language using terms such as objectives, audits, procedures, records, etc. Both standards also focus on continuous improvement. In this regard, ISO

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14001 requirements are classified taking into account the PDCA cycle. This suggests that those ISO 9001 certified companies working with quality objectives, procedures and records can easily adopt new objectives, procedures and records related to environmental requirements. Moreover, those companies implementing both standards can use similar practices to meet quality and environmental requirements. This similar structure and language can facilitate integration processes. Thus, following the steps of the PDCA cycle, the organization can create an effective integration strategy.

In sum, these similarities may lead to the integration of the two standards thereby achieving synergies and then increasing benefits. In this context, when organizations have multiple management systems (MSs) implemented, the next step is to manage them as a single system in order to benefit from the related synergies (see e.g., Karapetrovic and Willborn, 1998a, 1998b; Rocha et al., 2007; Karapetrovic and Casadesús, 2009), i.e., implementing an Integrated Management System (IMS). According to Wilkinson and Dale (2000), all management systems can build an IMS, although the most analyzed are ISO 9001 and ISO 14001. In this vein, several studies have analyzed the different aspects of this process (e.g. Karapetrovic and Willborn, 1998a, 1998b; Karapetrovic et al., 2006; Zeng et al., 2007, 2011; Salomone, 2008; Bernardo et al., 2009, 2010, 2012a, 2012b; Tari et al., 2010; Simon et al., 2011, 2012a, 2012b). The main benefit of an IMS according to the existing literature, is to improve internal efficiency, viewed as a global concept consisting of integrated audits, optimization of resources, human resources motivation, etc. (see e.g., Karapetrovic and Willborn, 1998a; Douglas and Glen, 2000; Zeng et al., 2005; Salomone, 2008).

The implementation of both MSSs, either separately or in an integrated fashion, leads to the obtaining of benefits. Although some studies analyze the benefits from these standards separately by means of a literature review (e.g. Psomas and Fotopoulos, 2009; Sampaio et al., 2009; Tari et al., 2012), to the best of our knowledge there is no literature review of the empirical studies analyzing the benefits of IMSs. This issue can be interesting and relevant from an academic point of view and also for management practice. Consequently, the purpose of this paper is to identify the benefits of the IMSs through a literature review.

The contributions of this study can be summarized from two perspectives. First, from an academic position, this work supplements previous literature reviews about ISO 9001 and literature reviews about ISO 14001 and expands existing knowledge about the benefits of the IMSs by comparing them with the benefits obtained through ISO 9001 and ISO 14001 standards. In this regard, through the literature review, several groups of benefits are identified in order to summarize all benefits shown by previous studies, which can be used as a guide to identify impacts of IMSs in future empirical studies. Second, from a managerial perspective, this work may help practitioners to consider the benefits and advantages that can be achieved through an adequate integration of these management systems. This knowledge may help managers to make decisions about the level of integration in their companies.

The paper is structured as follows. First, a background on the benefits gained from ISO 9001 and ISO 14001 standards, managed separately or in an integrated fashion, is presented. Second, in the methodology section, the search strategy is described. The results show the benefits of integration and finally, in the conclusions section, the benefits are discussed and future research is proposed.

2. Literature review

2.1. Benefits of the ISO 9001 and ISO 14001 standards

Both ISO 9001 and ISO 14001 are the most widespread management system standards (MSSs) implemented and certified

worldwide (see ISO, 2013). As the literature shows, many scholars have analyzed the benefits derived from the ISO 9001 and ISO 14001 standards on several performance dimensions. Table 1 shows which of these benefits are addressed in some previous studies.

In order to analyze the benefits arising from the ISO 9001 standard, some authors have used lists of benefits to examine its effects, whereas others have used or even proposed classifications of benefits, such as (1) internal benefits and external benefits (Casadesús et al., 2001), (2) benefits related to operational performance and financial performance (Naveh and Marcus, 2004; Briscoe et al., 2005), (3) benefits related to operational, customer, people, and financial results (Casadesús and Giménez, 2000; Karapetrovic et al., 2010), (4) other classifications (e.g. Lee, 1998; Nield and Kozak, 1999). A similar classification has been also proposed for the ISO 14001 standard: (1) internal and external benefits (Hillary, 2004), (2) internal performance benefits, external marketing benefits, and relationship benefits (Poksinska et al., 2003); (3) environmental performance and business performance (Link and Naveh, 2006), (4) other classifications (e.g. Zeng et al., 2005; Gavronski et al., 2008).

In this context, several benefits have been detected for both MSSs. The literature show positive effect on operational performance and there is not a clear relationship between the standard and financial results (Cañón and Garcés, 2006; Link and Naveh, 2006; Sampaio et al., 2009).

2.2. Integration of management systems

Beyond ISO 9001 and ISO 14001, the proliferation of new MSSs of different nature and function, gives firms the option to integrate the corresponding MSs into a single and more efficient system in order to benefit from their existing synergies (Labodová, 2004; Zutshi and Sohal, 2005; Rocha et al., 2007; Karapetrovic and Casadesús, 2009). Karapetrovic and Willborn (1998b) propose that organizations integrate rather than separate their MSs and empirical studies regarding the scope of integration confirm this idea (Zeng et al. 2007; Salomone, 2008; Karapetrovic and Casadesús, 2009; Bernardo et al., 2009).

The integration of MSs can be defined as “putting together different function-specific management systems into a single and more effective IMS” (Beckmerhagen et al., 2003). Referring to the concept of synergy, Ansoff (1965) defined the term as “the effect of $2 + 2 = 5$ ”, i.e. the effect whereby the integration of various elements produces maximization of the qualities of each element with a score higher than that which is derived from the simple sum of the elements.

The integration process can be defined according to four main aspects: integration strategy, integration methodology, integration level and audit systems' integration. Table 2 summarizes them.

Benefits have been also analyzed in the literature. Several authors have found that firms perceive value from having an IMS, such as costs savings, operational benefits, better external image and improved customer satisfaction (Zeng et al., 2007; Salomone, 2008; Asif et al., 2009). However, a literature review on this issue has not been conducted. In the next section, this review is carried out indicating the search strategy and the results.

3. Methodology

The paper conducts a literature review in order to identify the benefits of the two standards managed as an IMS. A literature review is conducted to find information from various research articles which either justified or discouraged integration. In this literature review, empirical studies related to the integration of both standards and benefits are reviewed in order to show the impacts of these standards on performance.

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