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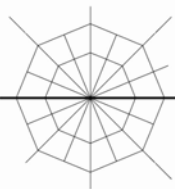
Colophon

Abstract

The front-runner firms in industry are moving towards a more sustainable management of their production and products. Integrated Management Systems (IMS) are in this paper viewed as a step in this direction. The traditional management focus on economics has in several firms been extended with other areas, such as quality, the environment, occupational health and safety as well as social accountability. International standards like ISO 9001, ISO 14001, EMAS, OHSAS 18001 and SA 8000 are made for each of these areas. Up till recently there has been a major difference between especially the quality and the environmental standards, when it comes to the underlying understanding of organisations. However, since the new version of ISO 9000 in 2000 the similarities have increased regarding the core aspects of management. This has paved the road for the idea of an integrated management system, and at the same time making it easier for companies to comply with several standards. This paper discusses the development of a standard for IMS, the organisational challenges with IMS, the experiences with IMS in industry and finally the drafts of IMS standards in Danish and Spanish context is analysed.

Integrated management systems

By Tine Herreborg Jørgensen, Aalborg University, Denmark, Marie Dolores Mellado, University of Córdoba, Spain, and Arne Remmen, Aalborg University, Denmark

Introduction

Liability in connection with quality, environment, occupational health & safety and social accountability is increasingly important for the company image. By having certified management systems covering these areas the companies give a signal of liability and concern for stakeholder relations. The four types of management systems are briefly presented in the following with focus on their development towards an increased compatibility.

Quality management systems (ISO 9000 series)

The first two editions of the ISO 9000 series published in 1987 and 1994 had the focus on enabling the firms to produce the same quality every time by specifying the policy, procedures and instructions in a quality handbook. With the revision of ISO 9001:2000 the focus on the customers and on continuous improvements has become stronger. The circles and arrows in ISO 9001:2000 symbolise a dynamic and continuous process (see figure 1).

The standard also focuses more clearly on the customers, their demands and satisfaction, so that the standard makes the company more oriented towards the product chain in which it operates. ISO 9001:2000 has also been aligned with ISO 14001:1996 "in order to enhance the compatibility of the two standards for the benefit of the user community [8]. In December 2002 about 560,000 ISO 9000 certificates had been issued in 159 countries [14].

Environmental management systems (ISO 14001 series)

The first edition of ISO 14001 published in 1996 is at the moment under revision. An environmental management system can be defined as: "A number of interrelated elements that function together to achieve the objective of effectively and efficiently managing those activities, products and services of an organization which have (or can have) an impact on the environment" [26, p.61]. ISO 14001:1996 is based on the management system principles of ISO 9000 series of quality system standards. It is mentioned in ISO 14001:1996 that ISO 14001 not necessarily needs to be established independently of existing management systems and that it in some cases will be possible to comply with ISO 14001 by adapting existing management system elements [7]. In December 2002 about 50,000 ISO 14001 certificates had been issued in 118 countries [14].
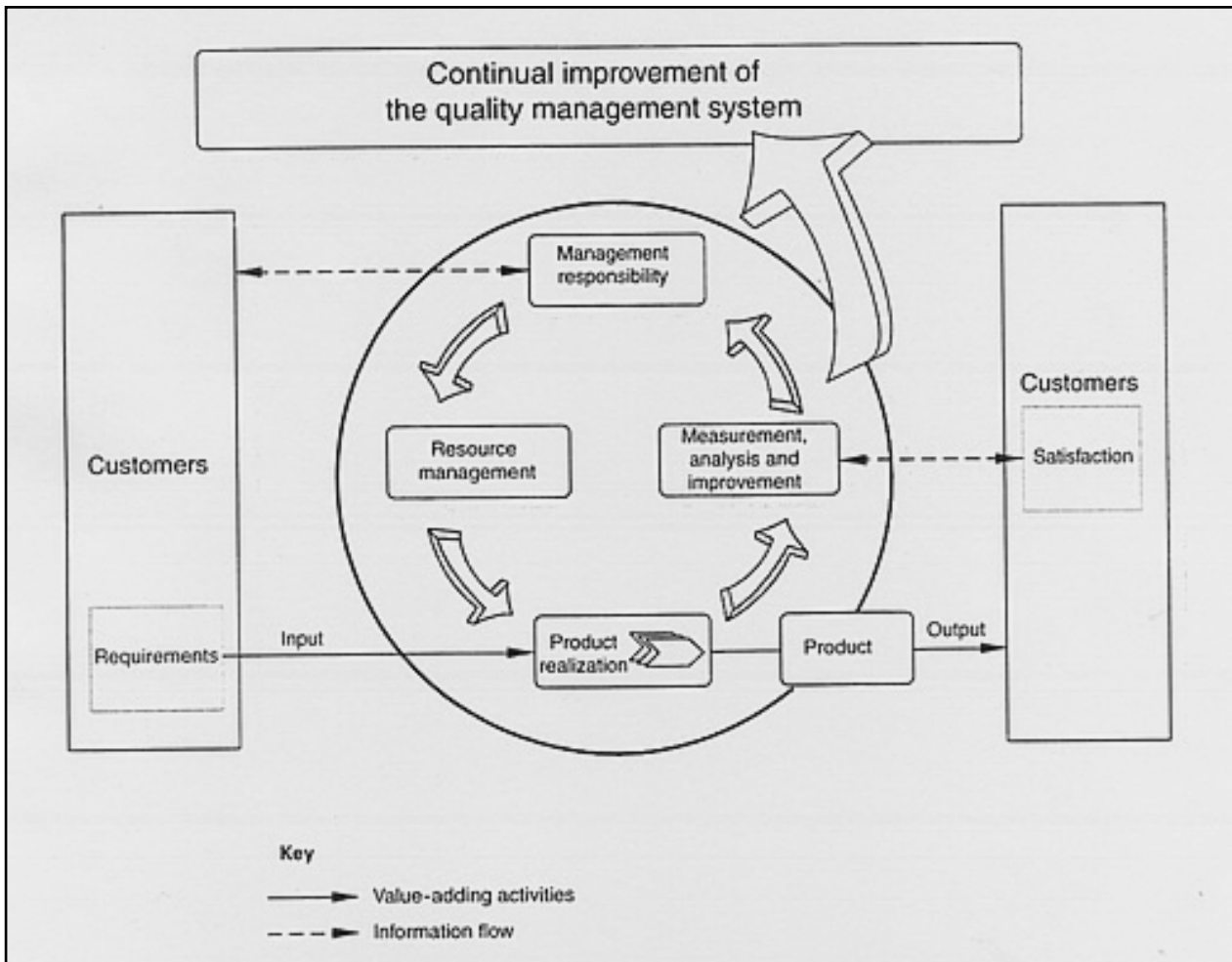
Figure 1. Model of process-based quality management system [8].

The second edition of the standard expects to be published in the autumn of 2004. The changes in ISO 14001:2004 are expected to be rather small [2]:

Improved coherence with ISO 9001:2000.

More focus on complying with regulations and other environmental provisions.

Objectives and targets must be measurable (not quantified as today).

Registrations will be moved to one joint paragraph.

The management review will be described point by point (like in the annex of ISO 14001:1996).

Occupational health and safety management systems (OHSAS 18001)

OHSAS 18001 was formulated by international certifying bodies with the basis in BS 8800 and published in 1999. OHSAS 18001 can be described as a de facto standard and is used as basis for certification of occupational health and safety management systems. ISO have two times voted about whether to develop an ISO standard in this field and both times the proposals was voted down. Currently, the International Organisation for Standardisation have no plans to prepare an ISO standard for occupational health and safety. OHSAS 18001 has been developed to be compatible with ISO 9001:1994 and ISO 14001:1996 in order to facilitate the integration of quality, environment as well as occupational health and safety management systems by organizations if they wish to do so [4]. With the new ISO 9001:2000 and ISO 14001: 2004, OHSAS 18001 needs to be revised because it is based on these two standards and should remain compatible.

Management of social accountability (SA 8000)

SA 8000 was first released in 1997. The standard was developed by the organisation, which is now called Social Accountability International (SAI). SAI is an association of different organisations that include labour unions, human rights and children's rights organizations, academia, retailers, manufacturers, contractors, as well as consulting, accounting, and certification firms. The aim of SA 8000 is to protect the rights of the employees and the standard is based on international conventions regarding human rights, child labour, forced labour, health and safety, freedom of association, freedom from discrimination, disciplinary practices, work hours, compensation and management practices. Since SA 8000 became fully operational in 1998, 363 companies have been certified, covering facilities in 39 countries. Companies can also choose to join the SA 8000 Corporate Involvement Programme. The program helps companies evaluate SA 8000, implement the standard, and report publicly on implementation progress [6]. ISO holds an international conference on social responsibility in June 2004 in Sweden with the aim to decide whether or not ISO should propose the development of international standards or other ISO tools addressing the social responsibility of organisations [15].

Integration

With the revision and new editions of the different standards for management systems, the systems have an increased number of similarities [18]. Although a standard for an Integrated Management System is still absent in ISO, the following initiatives are promoting the integration:

ISO 9001:2000 have more focus on continuous improvements, being one of the foundations of the environmental as well as the health & safety management systems.

The new edition of ISO 14001 has been developed to improve the coherence with ISO 9001:2000

The connection between the new edition of EMAS (published in year 2000) and ISO 14001 is made clear.

OHSAS 18001 is developed to be compatible with ISO 9000:1994 and ISO 14001:1996 [4].

SA 8000 can be combined with ISO 9001:2000, ISO 14001:1996 and OHSAS 18001.

The standard ISO 19011:2002 for quality and environmental management systems common auditing.

However, a basic condition for an integrated management system is a common understanding of organisations and how they operate. In textbooks on quality management the old versions of ISO 9000 has always been illustrated by a pyramid – symbolising a stable organisation with clear policy, procedures and instructions on the strategic, tactic and operational levels. The bureaucratic organisation is concerned with producing the same quality, and therefore ISO 9000 has often being criticised for being static, resulting in too much paperwork and having too much focus on the system [3], [13], [19]. The criticism from Total Quality Management has especially been strong stressing the importance of top management commitment, employee participation as well as creating a quality culture. This criticism has been reflected in the ISO 14001 standard, which always is illustrates as a spiral with focus on the iterative process of activities like policy, planning, implementation, etc. as well as on innovation and continuous improvements. This more dynamic understanding of organisations seems for the moment to be the turning point in how the standards are formulated.

Taking into account that ISO considers a standard for social responsibility, the question is whether the time has come for ISO to develop a standard for integrated management systems, which includes the four areas of concern. Instead of increasing the compatibility of each standard further towards a unified structure and content, a common standard could be developed based on the same core aspects of management – policy, planning, implementation, review, etc. – and stressing that all firms today have to be innovative with focus on continuous improvements. The IMS standard can be based on a common framework, extended with standards for quality, envi-
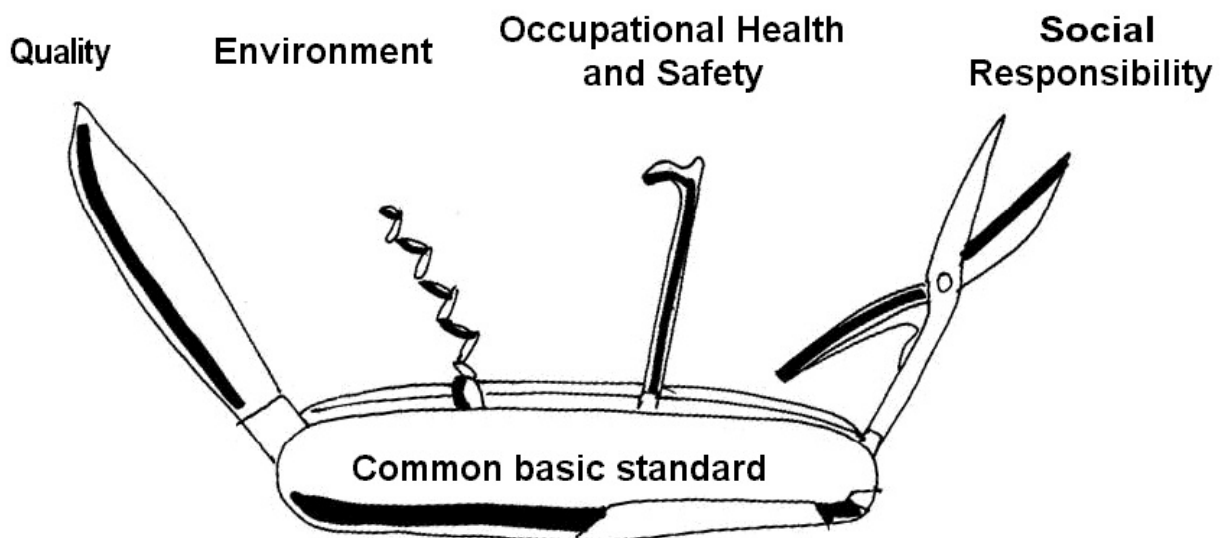

Figure 2. Integrated management system based on a common standard with supplements [16].

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ronment, occupational health & safety and social accountability which should only cover the specific demands for one area [17]. It should not be possible to be certified only according to the common standard, as there would be no substance in the system. A certification only makes sense in connection with certification of at least one of the specific standards (figure 2).

Why an integrated management system?

There are a number of differences between the four management systems, as well as several similarities, where it is sufficient to handle the different areas in the same way. About 80% of the work is common to all three disciplines: quality, environment and occupational health and safety [25]. The similarities between these management systems refer to:

Top management commitment.

Documentation and records control.

Definition of a policy.

Planning of objectives and targets.

Procedures for training of employees.

Communication procedures.

Audits.

Control of non-compliance.

Corrective and preventive actions.

Management review.

Having different standards to comply with is likely to result in extensive paperwork and confusion between demands of the individual standards. From a management system point of view, it would be appropriate to merge the four types of management systems into one system, because it reduces duplicate work and bureaucracy. The general advantages of integration of the management systems are:

Minimisation of documentation and records (paper-work).

Less bureaucracy and less confusion between standards.

Cost savings by optimisation of time and resources assigned to the systems.

Simplification of internal and external audits.

More focus on interrelations – synergies as well as trade-offs – between quality, environment, occupational health & safety, and social accountability.

Issues such as the company's structure, size and the commercial market have a decisive influence when a company decide whether to integrate or not, as well as the type of integration. Further research need to be carried out to examine these issues closer.

A risk of integration is the creation of different rankings of the different aspects, e.g. that more attention is paid to the quality aspects than to environmental aspects. On the other hand the potential is that environment, health & safety and corporate social responsibility will get higher up on the agenda of all the companies with an ISO 9000 quality system. Typically, the company has a quality management system and later integrates the environment in their present quality procedures. If the environment is integrated by "search and replace" this approach creates a risk of neglecting the environmental issues compared to quality issues [16]. For companies producing products with high quality demands and massive documentation requirements, for instance in the car manufacturing industry, it is recommended to handle the quality issues in a separate management system [2]. The level of integration that a company decides to pursue in the design of its management system(s) will depend on both the complexity of its current management system(s) and on the will of the company to pursue integration [5].

In a research project by Hines (2002) [10] including 12 small and medium-sized enterprises (SME) and seven large companies it was found that the SMEs were less interested in IMS than the large companies. One reason was a defensive approach towards the intrusion of a new system that might erode the position of the present system manager. The tradition of handling these issues separately can be deeply rooted in the company. The senior managers in positions above quality and environmental managers have a better understanding of the overlap and duplication of different management systems and also the strategic considerations of building an IMS that are responsive more effectively to changes in external conditions [10].

Integration and organisational changes

Focus on the capacity of organisations to handle different management systems become more important because the increasing numbers of responsibilities and demands from external stakeholders result in greater complexity in the organisation. The company faces challenges of securing a synergy between the management systems, of adapting faster to changes at the market, and of staying updated on stakeholder views, on changes in regulation, etc. In figure 3 the four different standards/responsibilities are illustrated together with three organisational challenges and transverse connections between the single standards.

The integrated management system

The integrated management systems are viewed as a transverse connection between the different standards, where the standards have a number of similarities and common activities (policy, planning, documentation, evaluation, etc.). A synergy between the different areas of an integrated management system can be created with different levels of integration. In the discussions of IMS,

Integrated Management Systems

Interaction and co-operation with Stakeholders

Learning Organisation

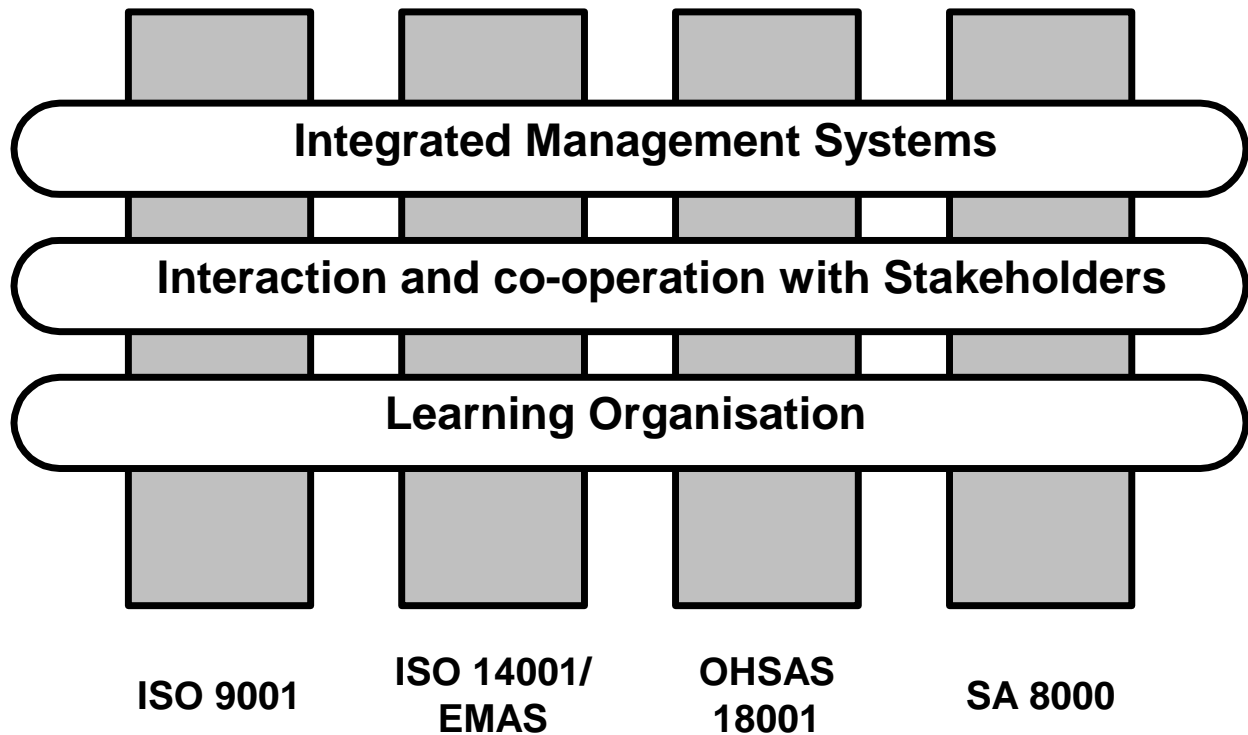**ISO 9001**   **ISO 14001/ EMAS**   **OHSAS 18001**   **SA 8000**

Figure 3. Integration of standards and types of organisational change [16].

distinctions between two approaches/levels of integration are often made [10], [28]:

Alignment: A parallelisation of the systems using the similarities of the standards to structure the system. The purpose of the alignment is to reduce administration and audit costs. Still separate procedures for each area but placed in only one manual.

Integration: Full integration in all relevant procedures and instructions. Total Quality Management (TQM) approach with focus on employees, customers and continuous improvements.

With the alignment approach the company often reduces some double work and bureaucracy. But a potential danger with this approach is a spreading of problems and duplication of problems across badly stuck together systems [10].

"In the vision of unification, the term TQM would represent, in formal terms, all the management systems in the organization, given that it is not possible to satisfy the external customer without satisfying the internal customers. Only in this manner will the interests of all the organization's stakeholders (employees, customers, shareholders, suppliers and society) be conveniently satisfied." [20].

Wilkinson and Dale (2002) [28] point out that an IMS model should have a common systems concept with no significant differences in the scope of the IMS. Further they point at the need for a strong culture, which support the main elements of TQM like involvement, teamwork, education, training, commitment and leadership [28]. Hines suggests a team-based approach to problems and solutions in IMS and equal credence to the input of ideas and actions from all employees as to the structures and procedures developed by management [10].

Summing up, an integrated management system consists of the core elements in the standards like policy, planning, implementation and management review as well as a common handbook with the documentation of procedures, etc. However, this is just the system – in order to make it work in the organisation there is also a common challenge regarding management commitment, employee motivation and participation, stakeholder involvement, and a focus on continuous improvements of the performance in the different areas. In other words changing organisational culture and tradition might be the real challenge compared to building up an integrated system.

Interaction and co-operation with stakeholders

The second transverse connection is co-operation with stakeholders and different actor networks. In a global market with increasingly focus on innovation and differentiation most companies has to understand changes among the stakeholders through co-operation, openness and dialogue. The challenge is to embed this responsiveness in an integrated management system and in the organisational culture in order to adapt new demands as well as internal and external conditions.

Up till now, the existing management standards for quality, environment, occupational health and safety primarily point at the internal activities of the company. However, as pointed out the revised ISO 9000:2000 standard has now the core attention on customers and continuous improvements. At the same time, environmental management systems are becoming more product-oriented, and concepts like life cycle management (LCM) and product-oriented environmental management systems (POEMS) are getting popular in industry and among other stakeholders [24], [12]. A health and safety system has mainly the focus inside the firm, but Corporate Social Responsibility (CSR) and SA 8000 has expanded the responsibility along the product chain. In order to contribute to a sustainable development, companies have to expand the social and environmental responsibility for their own production to the different actors up- and downstream the product chain.

For the companies this challenge makes it important to co-operate with the actors in the product chain and other stakeholders in order to improve the conditions of quality, environment, occupational health & safety and social responsibility in the whole life cycle of the products. The question is how far the companies' responsibility goes, and the answer seems to be that the fields and range of responsibility are continuously increasing, reflecting and depending on the expectations of the stakeholders.

The learning organisation

The third transverse connection (figure 3) is labelled the learning organisation. This is in order to stress that expanded responsibility for environmental and social issues in the whole product chain together with continuous improvements are putting new demands on the firms regarding building

up the relevant competencies in order to meet these dynamic and innovative challenges. An integrated management system will require continuous rebuilding, updating and innovation within the different areas of the management system. Without having personally and collectively integrated the related values, the desired behaviour will not last; it will only occur incidentally and will not be manifested for long [9]. Culture is seen as an important enabler for improvements of performance, however ISO standards are not dealing with these issues, so it will continue to be an issue for organisations to deal [28].

Companies with multiple suppliers, customers and stakeholders might need to have separate groups dealing with only quality, environment, occupational health and safety and social accountability because each area needs different types of expert knowledge. But at the same time these groups have to work closely together and to have an understanding of the issues and impacts related to the other areas of responsibility. Co-operation between the groups and across departments is necessary in order to reduce trade-offs between the different areas when for instance developing or changing a product.

Knowledge management are a central issue of an integrated management system. The Danish pharmaceutical company Novo Nordisk views the road towards sustainable development as a learning process: "Moving up the learning curve, there is no magic formula for sustainable development. That is why we need to create the appropriate learning processes. By putting our thinking into practice, we also build up our competencies. In this learning process, we identify best practices which we can apply in new areas of sustainable development" [23]. There is a need for methods and tools for knowledge management regarding integrated management systems. This paper will, however, not deal further with this issue.

Initiatives promoting IMS in Denmark and Spain

This section compares the development of IMS in Danish and Spanish industry, and the experience so far. The empirical basis is interviews with Dansk Standard and AENOR (the Danish and Spanish organisations for standardisation, respectively) about their current development of a standard for an IMS. Interviews were also conducted with lead auditors and companies about their interest in the implementation of management systems for quality, environment, occupational health and safety, social responsibility and of the experiences with IMS.

In Denmark more than 50% of the companies that have a certified environmental management system (ISO 14001 or/and EMAS), also have a certified quality management system. Most of these companies have chosen to integrate quality and environment into one system [16]. Of the about 165 companies certified according to OHSAS and with the possibility of integrating with ISO 9001:2000 and/or ISO 14001 it is estimated that more than 50% of the companies integrate the systems. The alignment approach is the dominating choice for the companies with an IMS in Denmark. So far, certification according to SA 8000 has not been made of Danish companies, but the awareness of corporate social responsibility (CSR) is increasing [21].

In Spain, Villaseñor (2004) [27] expects that around 10% of companies will be able to deal with an IMS and with different levels of integration. This must be examined closer, because no study is

made about the degree of management systems integration in Spain. Nevertheless, there is a study about the status of integration in Andalucía (a region in the south of Spain). According to this study, around 55% of companies with certified quality and environmental management systems have developed an IMS for quality and environmental management systems; and around 30% of these companies have implemented an IMS for quality, environmental and occupational health and safety management system [22].

Corporate social responsibility is a relatively new concept in Spain. Therefore, the majority of Spanish companies have not integrated CSR. This means that when you talk about an IMS in Spain, at the moment it generally refers to quality, environmental and occupational health & safety management systems, excluding the CSR issue. Otherwise, the interest of Spanish companies in CSR is growing and currently an increasing number of non-profit organisations are working to improve the management of CSR issues. Another indicator of this increasing interest in CSR is that AENOR is currently working with a CSR standard that may be published in 2004 [21].

Development of an IMS standard by Dansk Standard in Denmark

"One company, one system" is the slogan for the development of an integrated management standard in Denmark. A first draft has been made in the autumn 2003, and is discussed in a broad group of interested stakeholders. The first draft has been criticised for not being coherent, since it consists of at least three different approaches to an integrated standard: a strategic management oriented; a system based inspired by ISO 9004 and an activity based like in ISO 14001. The general impression is that the core aspects of ISO 14001 will be the turning point for the integrated standard.
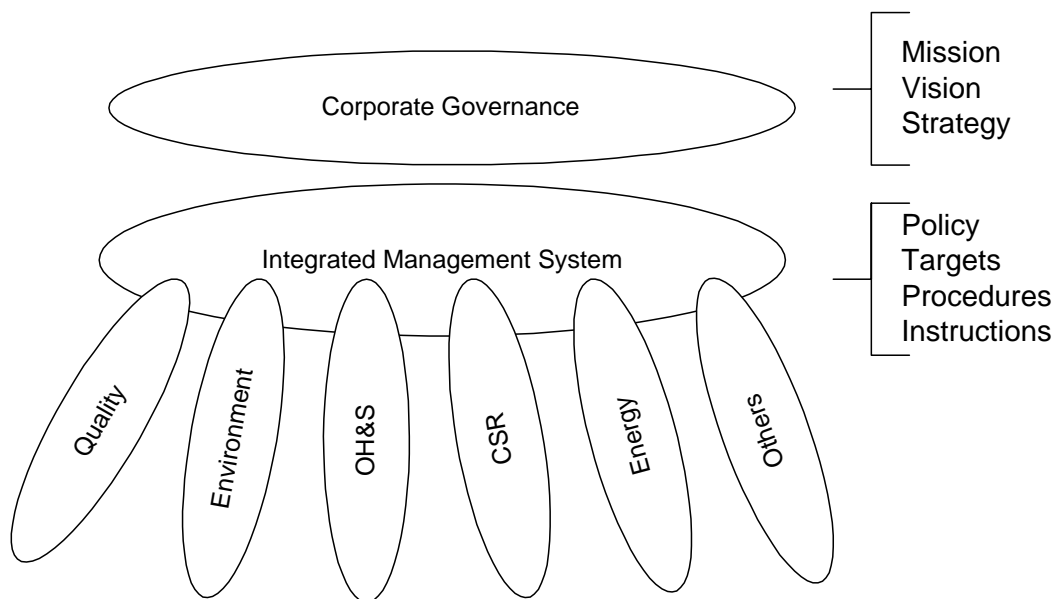

Figure 4. Dansk Standard's draft model for an Integrated Management System (IMS) [2].

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The system and activity based approach has already been discussed earlier. The reason for the strategic approach in the draft is an impression in Danish Standard that the companies in general have not emphasised the overall corporate governance of the management systems satisfactorily.

Therefore, special attention is given to these issues and is illustrated separately in a figure in the draft (like figure 4). The strategic dimension is defined at the corporate level as follows [2]:

Mission: Why are we here?

Vision: Where do we want to be in 4-5 years?

Strategy: How do we want to do that?

At the system level (see figure 4) the common basic system includes policy, targets, procedures and instructions. The system is based on the ISO 9004:2000 standard the methodology known as "Plan-Do-Check-Act". The focus of the new guideline is on the system, not on the four issues in specific of quality, environment, occupational health and safety, and social accountability [2]. As mentioned the draft also draws on the activity based approach of ISO 14001 with focus on continuous improvements, so it is unclear how these different approaches are combined.

Development of an IMS guide and certification by AENOR in Spain

AENOR, the Spanish organisation for standardisation, understands integration as the evolution of the different management systems in a company, and has also experienced a demand for an IMS by its clients [27]. AENOR has tried to give an answer to this market trend. In the area of certification AENOR has launched the "Integrated Management Systems Certification". This certification can be used for every company with an integrated management system for quality and environment. The occupational health and safety issue is not included. So far, nine companies are certified.

AENOR is currently developing a Spanish standard called: Guide for the development of integration strategy in companies (developed by AEN/CTN 66 SC 1 /GT 4 "Systems Integration"). The aim is to assist companies to choose the suitable level of integration according to the company's structure, and to develop the proper strategy in order to obtain more effective results than before. The Guide for the development of integration strategy in companies consists of guidance and recommendations for the integration and is not intended for certification (Villaseñor, 2004). The normative references are ISO 9001:2000, ISO 14001:1996, OHSAS 18001:1999 and UNE 81900:1996 EX for occupational health and safety [1].

The guide has the following structure: first of all it recommends an initial check of the company situation regarding the different management systems. Afterwards, the company has to analyse the advantages and barriers of implementing an IMS and, lastly, with all these data the company might be ready to choose the most suitable type of integration according to its structure. There are two recommended models of integration in the Guide for the development of integration strategy in companies:

FORM   CONTENT

Platform to   Sustainability
communication

Explaination   Management of
                        product-chain

Illustrations   Management of
                        production

Description   Input/output

                                        1   2   3   4

Authorities
or no one in specific

Shareholders
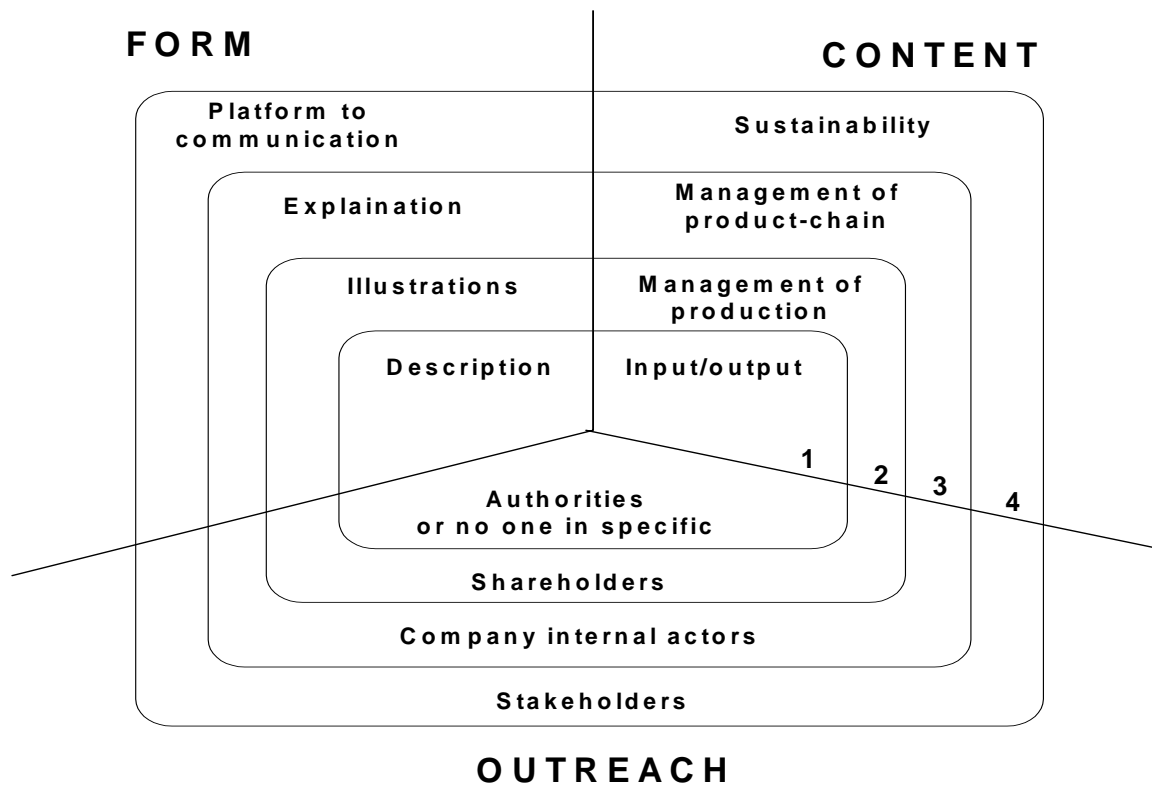
Company internal actors

Stakeholders

OUTREACH

Figure 5: Ambition level of reporting differentiated in regard to content, form and outreach [11].

Model 1: Partial integration. This model consists in the integration of some common procedures from the three management systems.

Model 2: Total integration. This model goes beyond integration of common procedures and involves an integration based in process approach and continuous improvement.

Finally, the guide recommends an integration plan based on the UNE-EN ISO 9001:2000 standard. This guide is expected published in summer of 2004. The expectations to the utilisation of the guide in companies are big, according to Villaseñor (2004), who bases this affirmation on the 1500 AENOR clients with certified quality and environmental management systems.

General discussion of IMS standards

A standard for IMS comprising the four areas might be the next step for ISO to develop. The standard for quality management systems have been revised three times, ISO 14001 two times (summer 2004), and OHSAS 18001 need a revision in order to correspond to the new editions of ISO 9001 and ISO 14001. At the same time development of a management standard for CSR is under consideration in ISO. With the companies interest in integration and several national initiatives to publish standards for IMS it seems like the ground is fertile for such a standard.

The traditional management systems do not demand publication of reports regarding aims, target, performance and improvements. In the environmental field, EMAS has a demand for publication of an environmental statement, and an increasing number of countries have implemented regulation that demands companies to deliver a green account. SA 8000 offer a programme for reporting, though not included in the standard. In connection with the development of IMS it could be considered to include integrated reporting. For companies with an integrated management system, the accountability and the communication of the activities are an obvious aspect. Different levels of ambition in the reporting can be distinguished regarding content, form and outreach – this is illustrated in figure 5.

Conclusions

At the moment several national standardisation organisations in Europe are developing their own standards and guidelines for an integrated management system, mainly because their clients are demanding an integrated response to the different responsibilities like environment, health and safety, etc.

As mentioned the single company have to decide the degree of integration (alignment or integration). Alignment of the systems is appropriate in large enterprises with several people working on the different aspects. However, integration is worthwhile considering because it gives more attention to the cultural aspects of the management system.

In any case, competitive advantages can be achieved if the companies combine the new focus on customers in the quality system with a focus on the products in the environmental management system. This can create a synergy between quality and environment as well as more focus on continuous improvements and product innovations – compared to the traditional focus on the production process. Furthermore, this also involves the challenge of expanding the focus of the systems to include the whole product chain, which also corresponds to a similar focus in Corporate Social Responsibility.

There is probably not "one best way" of managing these responsibilities in practise, since the context and conditions of the firms are diverse in different countries. How firms are taking care of their social responsibilities will for example differ from Brazil to Malaysia, from Denmark to the US.

Companies committed to contribute to a sustainable development have already in one way or the other assigned employees with the different responsibilities in the organisation. However, this is just the first step. In order to "walk the talk" the responsibilities for quality, environment, health & safety and social aspects has to be integrated throughout in the organisational culture because the responsibilities are inherent in every single aspect of the firms activities from procurement over product design and production to sale and marketing.

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