



INTEGRATED MANAGEMENT SYSTEMS - REQUIREMENT OF CONTEMPORARY BUSINESS PRACTICES

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Abstract: *Many organizations encounter the problem of development and implementation of Integrated Management System (IMS), based on the quality requirements (ISO 9001), preservation of environment (ISO 14001) and occupational health and safety assessment standard (OH&SAS 18000). In order to help the organizations in this venture, the paper presents some of the key definitions which explain the concept. This work provides an approach to the integration of different standards requirements, based on the interrelation of mutually connected business processes.*

Key words: *IMS, QMS, EMS, OH&SAS, Business processes*

1. INTRODUCTION

The aim of the International Organization for Standardization– ISO is to develop, based on the best global practices, ISO – standards in various domains of human activity which will provide comprehension, cooperation and expeditive communication on the global market.

Many organizations are trying to develop and implement the integrated management system (IMS) which will satisfy requirements of the ISO 9001, ISO 14001 OHSAS 18001, ISO/IEC 27001 standards etc. What they need now is a clear structure of the new system and time schedule of actions that will provide them certification without major problems.

Similarities in the framework and structure of standards ISO 9001, ISO 14001, OHSAS 18001 ISO/IEC 27001 etc. point out that this integration can be performed. The International Organization for Standardization ISO has undoubtedly assisted this goal, by defining, at the proposal of the Dutch Institute for Standardization as early as 1998., the preliminary specification ISO Guide 72 - Guide on Justification and Drafting of Management System Standards. This Guide has been endorsed in 2002. ISO Guide 72 is intended to improve the interface between the standards

developing committees and the market they serve, as well as to make optimal use of resources by only developing management system standards for which there are clear market requirements (De Grood, Hortensius, 2002).

Organizations beginning integration of different management systems usually have developed and implemented one or two systems. Most often it is the QMS according to requirements of ISO9001, or EMS according to requirements of ISO14001. These systems were developed in different time intervals, with different sets of documents. There has been confusion in the market place as to what constitutes an integrated management system. This was the basic reason why BSI developed and introduced new specification for management system integration (Wang 2008).

In order to assist organizations that are starting this venture, the paper presents and explains several key definitions that will surely facilitate this work. It also demonstrates how orientation toward business processes represents the key for integration, that is, how business processes represent the backbone of integration.

2. INTEGRATED MANAGEMENT SYSTEM (IMS-QEHS)

Integrated management system represents the reality facing top management in every organization and each process “owner”. It can be argued that each organization has some form of integrated management system, the leadership and the executive officers (top-management) having the obligation to implement legal and other national regulations regarding the fulfillment of demands of “interested parties”: society, owners, employees, customers, suppliers and others. Question should be asked – to what extent is such an IMS formalized (documented), efficient and effective, giving management the opportunity of insight into every part of the business system, enabling them to make timely business decisions based on facts? Having the certificate for quality management system, ISO 9001:2000, testifies only (usually) that the organization successfully controls processes significant for product quality. However, QMS certificate does not necessarily mean the fulfillment of requirements of interested parties.

Fast development and spreading of influence of the ISO 9000 series standards have induced the emergence of other standards in the domain of management, such as environment protection (ISO 14000), occupational safety and occupational health and safety assessment (OHSAS 18000), information safety (ISO/IEC 27001), information technologies (ISO 2000) etc. New standard series are being prepared for other management systems (in health care and occupational safety– ISO 18000, risk – ISO 31000, finances– ISO/TR 10014 etc.),

establishing partial requirements for specific management domains, which will be mutually complementary.

Emergence of ISO 14000 standards and the development of the management systems for environment protection according to this standard implied its integration with QMS. When this occurred (in the second half of the past decade), the researchers and practitioners were faced with the problem of integrating these systems. This problem gains in significance later on as an entire series of new management systems emerged, some of which have been listed above. The researchers and practitioners were faced with two key problems. They are:

1. What does "integration" of management systems mean, how should it be defined?
2. How to perform this integration, how to implement it, measure it and finally how to improve it?

Literature in English gives a variety of different answers to these questions. These topics have been a frequent subject of journals such as Quality World, Quality Progress and TQM Magazine.

2.1 Integration, Connection and Compatibility of Different Standards of Management Systems

Introduction of a new concept into business practice invariably imposes the need to define it. The basic reason for this is unimpaired and unambiguous communication between researchers and practitioners.

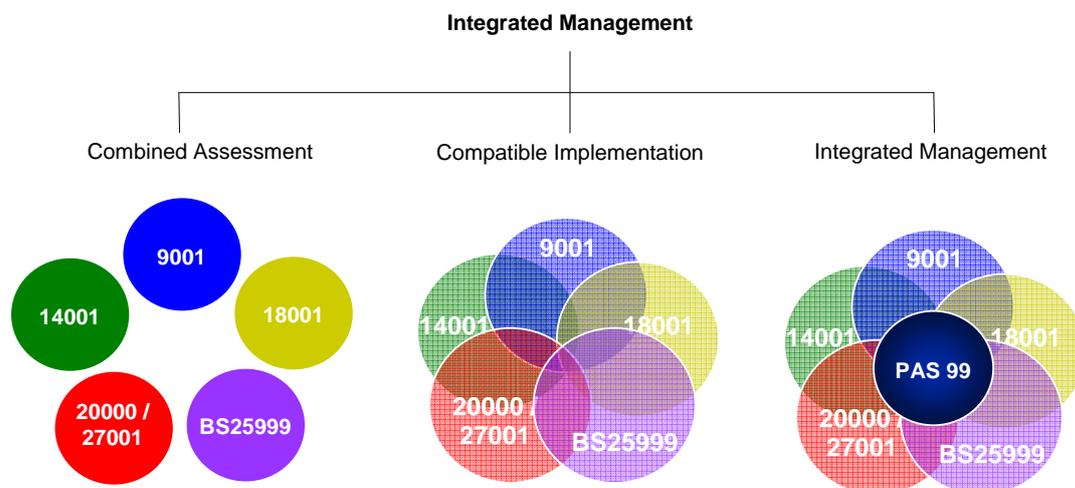


Figure 2.1. Integration and connection of different management system standards

When speaking of integrated management systems (IMS), the need arises to define the term "integrated", in the way that it is most frequently used in standardization and in the system approach to management. An excellent basis for this is the study of MacGregor Associates of 1996. This study points out the need to precisely define "integrations" and "connections" of standards. Integration is viewed as a unique essential standard of the highest management level with optional modules covering different (specific) requirements, such as PAS 99:2006.

Connection implies "parallel standards of management systems specified for a particular discipline, having high level of uniformness of structure and contents" (Figure 2.1)

In (Wilhelm 2008) a definition is given of integrated management system as:

"Integrated Management System is where an organization has a single management system that is a combination of two or more management systems standards (e.g. ISO 9001, 14001, 27001,...) and also complies with PAS 99:2006 - Specification of common management system requirements as a framework for integration" ((Figure 2.6).

If we want to imply management integration, then the kernel of the management system (Figure 2.2) must cover QMS, EMS, OHSMS, ISMS etc., as well as all future standards to be developed.

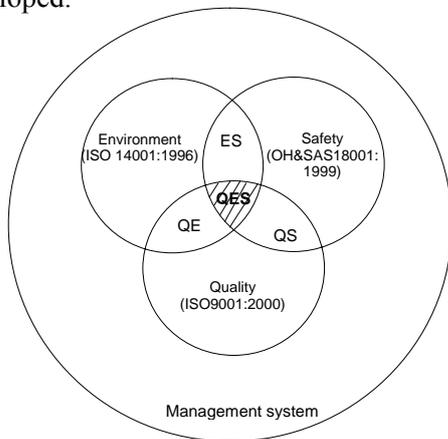


Figure 2.2. Integration and connection of quality, environment protection and safety

Backing the above statement, it is interesting to quote the ISO/TAG 12 recommendation of the technical group, requiring that ISO 9000 and ISO 14000 series should not be joined but made compatible. Under compatibility of standards, we consider "that common elements of standards can be implemented in such a way as to fulfill all standards in their entirety or in part, without

unnecessary duplication or imposing requirements that are mutually exclusive".

2.2 Models of Integrated Management Systems

Quite a number of models can be found in literature. We point out models of Wilkinson and Dale (Figure 2.3) and Karapetrović model (Figure 2.4).

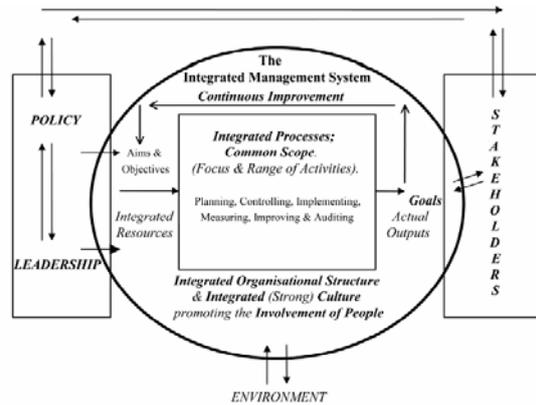


Figure 2.3. A model of an integrated quality, environment and health and safety management system (Wilkinson&Dale 2001)

BSI has in 2006. established the standard for integrated management systems. BSI's intention was to simplify the implementation of multiple management system standards and any associated conformity assessment. Based on ISO Guide 72, BSI recommends integrated approach to (Wang, 2008):

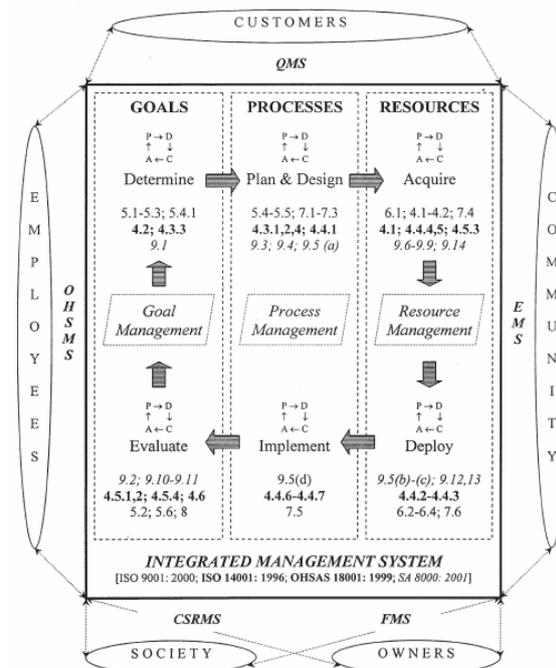


Figure 2.4. A model of IMS (Karapetrovic 2001)

- Management review that considers the overall business strategy and action plan;
- An integrated approach to internal audits upon the integrated system;
- An integrated approach to policy and objectives setting;
- An integrated approach to looking at the aspects, impacts, and risk to the business;
- An integrated approach to systems processes;
- An integrated documentation set including integrated desk instructions and work instructions;
- An integrated approach to improvement mechanisms (Corrective Action, Measurement and Continual Improvement);
- Unified management support and a coherent participation

PAS 99 is a Publicly Available Specification of common requirements for management

systems that can be used as a framework for an integrated management system.

Organizations with more than one management system can view PAS 99 as an aid to achieving a single holistic management system.

PAS 99 takes account of the six common requirements for management systems standards outlined in ISO Guide 72 guidance document.

These six common requirements are:

- Policy
- Planning
- Implementation and Operation
- Performance Assessment
- Improvement
- Management Review

Integrated management model is provided on figure 2.5 and 2.6

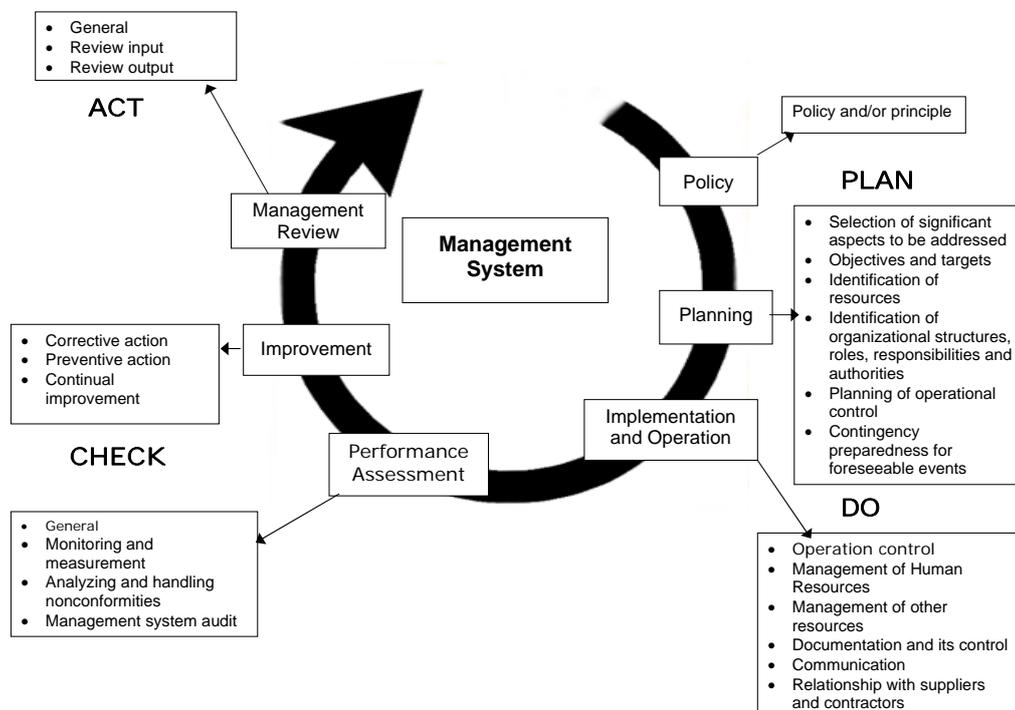


Figure 2.5. PAS 99 PDCA cycle

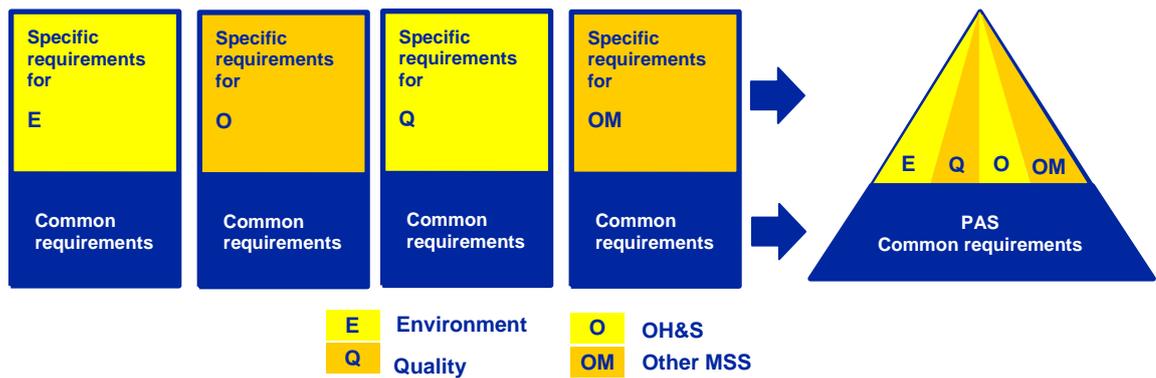


Figure 2.6. Integration of requirements of different management systems according to BS PAS 99:2006

BUSINESS PROCESSES – KEY TO THE INTEGRATION OF MANAGEMENT SYSTEMS

Many organizations starting the development of IMS have implemented at least one management system. The problem they are faced with is how, under such circumstances, to develop and implement an integrated system.

The first step that has to be performed is to analyze whether there exists a business justification for such a project. It is important to consider requirements of all interested parties, as well as the influence of the new system on them.

If the answer to the first question is affirmative, it is necessary to plan everything and to provide resources and the necessary budget for the implementation of IMS.

The next key task is to determine where does the organization stand with respect to the requirements of all standards constituting the scope of IMS. It is important to assess the efficiency of the existing management system.

Diagram of business processes (Figure 3.1) is a useful tool for this analysis. If it has not been made previously, it should be generated now. Based on this diagram, it can be determined how are the standard requirements making the scope of IMS implemented in all organization's processes, and especially in basic processes. In this way **business process becomes the backbone of the integration requirements of different standards** (Figure 3.2).

Within the structure of business processes, not every process has the same potential for integration of different standards' requirements. Processes having the greatest potential for integration of requirements of quality, environment protection and occupational health and safety are:

- Document control
- Record control
- Strategic planning and organization management (investigation by the leadership)
- Human resources management (education and training of employees)
- Research and development control
- Control of the operative product realization (Production management)
- Control of the measuring, testing and control equipment
- Equipment maintenance
- Control of supply of semifinished products, components and services
- Corrective measures
- Preventive measures
- Internal audits.

For each of these processes, it is possible to identify an integration strategy.

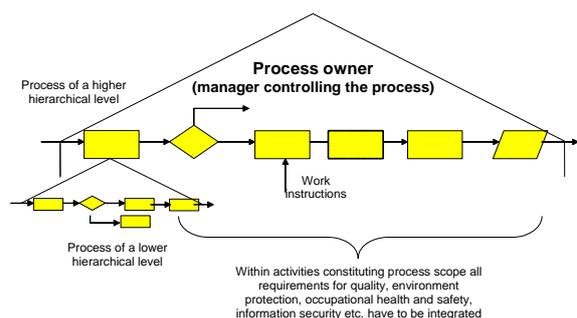


Figure 3.2 Business process as the backbone of integration of different standards' requirements

3.1 Strategy for Integrating Requirements different Management System Standards (MSS)

Existence of three or more separate approaches to operative production process management can lead to confusion among

employees about which approach is best to be used. Many organizations generate different manuals referring for example to quality, environment protection and occupational health and safety. Such manuals are usually made without analyzing their mutual influence, and

most often they are mutually conflicting. In this way, they can lead to misunderstandings, especially when novice employees being introduced to particular activities in the process are introduced to them.

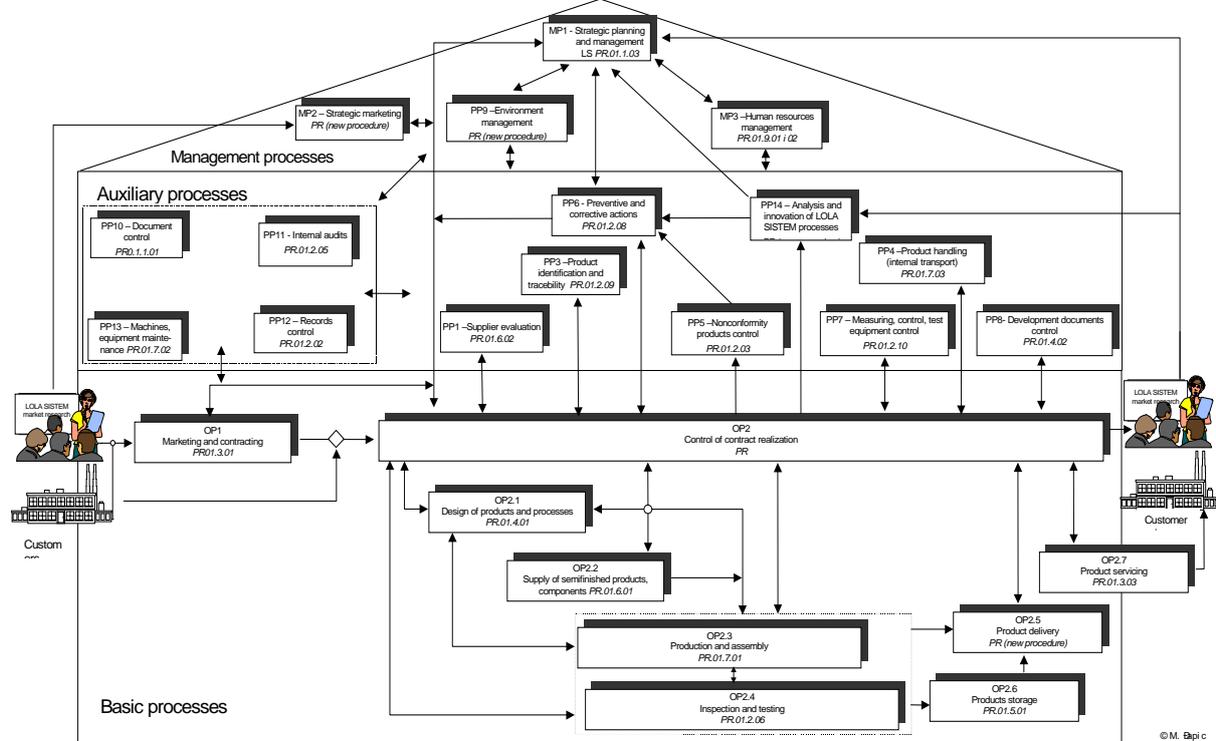


Figure 3.1 Business processes diagram

Therefore it is useful to identify **strategy for the integration of these requirements** (Phillips 2002):

- Identify those activities in the production process that can influence quality, environment, and occupational health and safety.
- With the help of employees engaged in the production process, develop and document procedure(s) for operative management of the production process with operating manuals **that clearly define operative criteria for the production of high quality products observing occupational health and safety, which least affect the environment.**
- Develop and operatively manage processes in order to ensure that raw materials, parts in the production process, and final products are clearly identified.
- Develop and operatively manage processes for handling, storage, packing and delivery of products.

Benefits from integrating requirements are:

- Organizations that have integrated operative management of the production process have great support from the employees.
- Confusion and conflicts that can be generated by mutually contradictory documents are decreased.
- Employee training is less tedious.
- The greatest benefit is that in this way the developed management system displays how the tasks are performed and controlled within the organization.

When integrating operative management of the production process, organizations have to avoid usual catches. Some of them are:

- Employees are not involved in the design of the process and documentation demonstrating how the process is operatively managed.
- Generation of lengthy, discursive documents that are rarely used or read.

- Nonconformity to specified procedures of process realization, as defined in documents, especially by the management.

4. CONCLUSION

Many organizations wishing to satisfy requirements for quality, environment protection and occupational health and safety are faced with the problem how and in what way to integrate different management systems. Integration of several systems into one is more efficient and economical than developing and implementing separate systems.

In order to aid organizations that are starting this project, the paper presents and explains several key definitions that will surely facilitate this venture. Also, it is demonstrated how orientation toward business processes is the key to integration, that is, how business processes represent the backbone of integration.

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ИНТЕГРИРАНИ СИСТЕМИ ЗА УПРАВЛЕНИЕ – ИЗИСКВАНЕ ЗА СЪВРЕМЕННИТЕ БИЗНЕС ПРАКТИКИ

Мирко ДЖАПИЧ, Любомир ЛУКИЧ

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Резюме: Много организации срещат проблеми при разработването и прилагането на Интегрирана система за управление (ИСУ), основаваща се на изискванията за качество (ISO 9001), опазването на околната среда (ISO 14001) и стандарта за оценка на здравето и трудовата безопасност (OH&SAS 18000). За да се помогне на организациите в това начинание, докладът представя някои от ключовите дефиниции, които обясняват концепцията. Тази разработка осигурява подход за интегриране на изискванията на различните стандарти, базиращ се на взаимодействието на взаимосвързани бизнес процеси.

Ключови думи: IMS, QMS, EMS, OH&SAS, бизнес процеси.