INTEGRATION OF MANAGEMENT SYSTEMS THROUGH THE NEW FRAMEWORK OF ISO

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Abstract. Systems for quality management, environmental management and health and safety at work management are analyzed in order to investigate the process of their integration. The advantages of an integrated management system and the main obstacles to its implementation are determined. The main provisions of the new framework of standards of management systems according to Annex SL are discussed. Elements that are added to the new structure of standards management systems, and the benefits to organizations of their implementation are analyzed. Particular attention is paid to the introduction of risk assessment. Implementation of the new structure standards of management systems will provide greater flexibility in the integration process and will avoid the existing obstacles and difficulties in the development and implementation of integrated management system.

Keywords: management systems, integrated management systems, ISO annex SL, structure of standards for management systems

1. Introduction

Recently the standardized systems for quality management, environmental management, health and safety, food safety, security of information management have been received widespread. These systems are successfully implemented in enterprises, as their certification ensures market image and increases the business competitiveness. The joint implementation and operation of two or more standardized management systems according to the profile of the organization and its activities have been increasingly put in practice. The integration of these systems are based on the standards of quality management ISO 9000, to which the systems for environmental management (ISO 14000 series) and those for health and safety (OHSAS 18000) are most commonly applied. As standardized management systems are designed for different purposes and are developed in a different order in time, they have their own specific structure and features, which create a number of difficulties, uncertainties, confusion and duplication of activities in the joint implantation and operation within an organization.

With the publication of Annex SL to a directive of the ISO Part 1 [1] the problems in the integration and coherence of individual standards of management are solved. This annex defines the general structure of the standards of management systems, common terms and definitions.

The purpose of this publication is to make analysis of existing standardized management systems and possibilities for their integration through a common framework proposed in Annex SL, which will ensure their compatibility.

2. Standards for the management systems and an integrated management system

Most commonly enterprises implement the quality management system (QMS), followed by such environmental (EMS) and Health and Safety at Work (HSWMS). The integrated management system (IMS) is a common management system (MS), which meets the requirements of two or more international standards and functions as one. The most common IMS in practice are based on the standards for quality management (ISO 9001), for environmental management (ISO 14001) and management of health and safety at work (OHSAS 18001).

IMS is based on good business practices of the organization − financial management, human resources management etc. Consistent deployment in an organization of management systems requires spending considerable financial resources. With the development and implementation of a unified IMS in accordance with the number of international standards will reduce financial costs. When building IMS the basic principles laid down in international standards of governance, process approach, system approach, leadership, involvement of employees and continuous improvement are applied. The application of these principles can best ensure the integration of the standards on individual systems into a single structure.

The process approach is based on the cycle:

plan - do - check - act (PDCA).

Planning - determining the objectives and processes necessary to deliver results in accordance with customer requirements and the organization's policies.

Implementation - implementation of processes.

Check - monitoring and measurement of the processes and outcomes and how near or far are they from the planned objectives.

Action - actions to continuously improve the performance of processes.

2.1. International Standard ISO 9001

International standard ISO 9001 [2] requires the development and implementation of an effective quality management system in organizations that:

- Must demonstrate the ability to deliver products that meet customer requirements and applicable regulations;
- Aim to enhance customer satisfaction through the effective application of the system, including processes for continual improvement;
- Providing assurance about the quality of goods and services in the relationship between supplier and customer.

The presence of a working quality management system (QMS) provides unity in the organization in terms of objectives, improving existing processes, motivation and commitment of all employees and in-depth knowledge of customer requirements.

The basic principles of quality management are:

- Customer focus;
- Leadership;
- Involvement of staff;
- Process approach;
- System approach to management;
- Continuous improvement;
- Decide based on facts;
- Mutually beneficial supplier relationships.

Figure 1 shows the model of system for quality management [2].

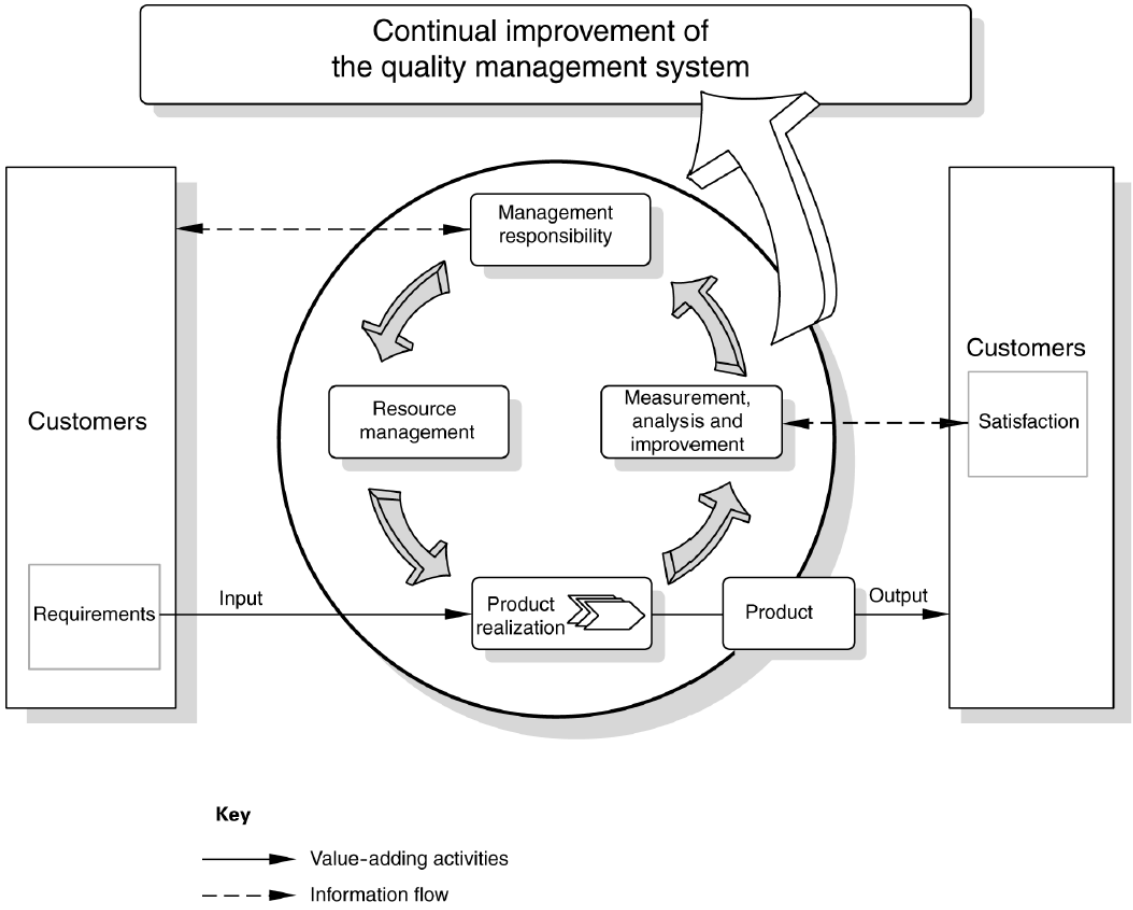

Figure 1. Model of a system for quality management [2]

The main advantages of the implementation of ISO 9001 are:

- Increasing the market image of the company;
- Ensures the implementation mechanism of customer requirements from the application;
- Improves the organization by implementing uniform rules of procedure, clear definition of responsibilities and a mechanism for self-check and improvement;
- Continuously improving the competence of staff;
- Improving relations with customers and suppliers.

2.2. International Standard ISO 14001

Environment is the environment in which an organization operates, including air, water, land, natural resources, flora, fauna, people and their interactions. International Standard ISO 14001 [3] sets the framework for a comprehensive, strategic approach to the organization of its policy on the environment, plans and actions. Despite the activity and the type of organization the requirements for the establishment and operation of an effective EMS are same. Compliance with applicable legislation on environmental protection is required. Every organization should have a systematic approach for continuous measurement and monitoring of its environmental performance. Continuous improvement is a key component of an efficient system of environmental management.

Effective EMS helps the organization to avoid, reduce or control the adverse environmental impacts of its activities, products and services, to comply with applicable legal requirements and other requirements adopted by the organization and to help improve environmental performance.

A model of a system for environmental management [3] is presented in Figure 2.

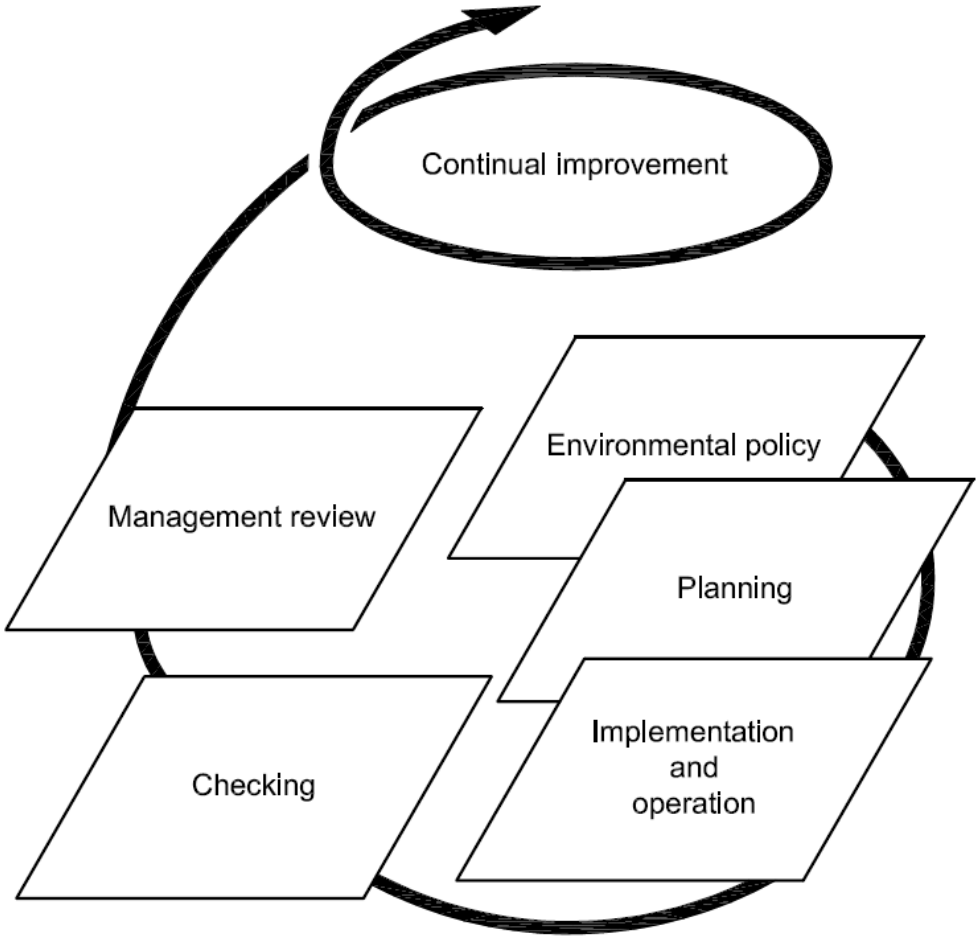

Figure 2. Model of a system for environmental management [3]

Implementation of EMS contributes to sustainable development of the organization based on:

- The introduction of management with regard to the environment among the priorities of the organization;
- Identification of environmental aspects associated with activities, products and services of the organization over which the organization has harmful effects;
- Knowledge of and compliance with the legal requirements and other requirements adopted by the organization's environmental aspects of the organization;
- Ensuring the involvement of management and all persons working for or on behalf of the organization for the protection of the environment with a clear definition of the respective responsibilities;
- Provision of appropriate and sufficient resources

for training to comply with applicable laws and other requirements adopted by the organization and to achieve the objectives and targets of environment on the basis of permanent actions;
- Evaluating the effectiveness in terms of the environment to policy goals and objectives of the organization and improving environment, where appropriate;
- Introduction of a management process for review of the EMS and to identify opportunities to improve the system and related environmental performance;
- Encouraging suppliers to introduce the system of environmental management.

Organization with a certified EMS has a better image and a strong presence in the market, with a high confidence of investors.

The advantages for the organization of the implementation and certification of EMS are:
- Minimize the risk of environmental accidents resulting obligations;
- Waste reduction and improved control over raw materials and energy, reducing costs and increasing profits;
- Involvement of all levels of the organization by setting goals and expected results and delegation of responsibilities;
- Increasing customer confidence and external stakeholders to comply with the legal requirements regarding the environment;
- Maintaining good relations with the community and local government;
- Meet the criteria of investors and improve access to capital;
- Improve the image and market share;
- Improving cost control;
- Development of the organization through responsibility to preserve the environment and effective control of operations;
- Improve links between industry and government.

Trend in the world practice is world's largest companies certified to ISO 14001, to put all of its suppliers and subcontractors certification requirement in this standard.

Economic benefits from the application of EMS are:
- Linking of economic interests and those related to the environment;
- Identify economic benefits to stakeholders of environmental management;
- Linking goals and objectives on the Environment with specific financial results;
- Achieve significant competitive advantages.

2.3. OHSAS 18001

(OHSAS – Occupational Health and Safety Management Systems)

OHSAS 18001 [4] is designed to be compatible with the standards for quality management systems ISO 9001 and the environment - ISO 14001 as the achievement of economic goals related to health and safety at work. It specifies requirements for HSWMS that allow each organization to develop a policy and objectives in accordance with the requirements of the regulations and information on the risks to health and safety at work. OHSAS 18001 is designed for organizations of all types and sizes in different geographical, cultural and social conditions. Model HSWMS essentially repeats that of the EMS shown in Figure 2.

The process approach **plan - do - check - act** (PDCA) is used. Construction and operation of HSWMS enables any organization to manage its risks to health and safety at work and to improve performance in this area. Effectiveness of the system depends on commitment from all levels and functions of the organization. HSWMS allows the organization to develop a policy on health and safety at work, to determine the objectives and processes for achieving the commitments under the policy to take action to improve and demonstrate the system compliance with the requirements of OHSAS 18001. The ultimate goal is to support and supports best practices for health and safety at work in accordance with the needs of society.

The advantages for the organization of implementation and certification according to OHSAS 18001 are:
- Supports and improves the management and control of health and safety;
- Facilitates the identification of all applicable requirements for the organization;
- Provides employee engagement;
- Supports compliance with regulations;
- Provides efficient methods of communication with the control bodies;
- Enhances the credibility of the partners and external stakeholders and establishes confidence in negotiating with clients, hiring new employees, participation in public procurement;
- Improving the culture of safety at work in the organization;
- Reduces the cost of accidents and improves the efficiency of labor;
- Improves the organization's reputation for safe work.

The analysis of the process of integration of

management systems at regardless implementation of several standard management systems shows the following difficulties:

- A common unity structure of management systems standards is missing, which leads to duplication of processes, documents, functions of individual units;
- The process of integration is weak, there is slow progress due to violation of the interrelationships between QMS, EMS, HSWMS, etc.;
- Compatibility between the standards for control systems is missing, which leads to low efficiency of planning, control and management as a whole;
- Consistent deployment in an organization of complementary management systems requires the consumption of significant financial, material and human resources;
- Time to market of individual standards is extended and the process of functioning of the system slows down.

The main conclusion of the analysis is that the structure is needed high level for all standards of management.

Advantages of the integrated management system:

- Ensures coordinated action in the company's activity and a favorable effect on its functioning and sustainable development by combining processes such as planning, management review, document management, training, internal audits, etc.;
- Reduce the number of documents;
- Enables efficient and optimally to realize the requirements to standards of individual management systems by creating a common management structure;
- Creates conditions for a more economical and effective deployment and management of company resources by reducing the cost of development, implementation and operation of the management system;
- Creates confidence in consumers and interested parties;
- Improves the competitiveness and market image of the company.

3. Basics of Annex SL

Annex SL [1] is designed to determine a unified structure for standards ISO of management systems, chiefly for the work of technical committees, where the standards are created and revised. It describes the structure of standards for quality management systems, which will be followed by all of them, regardless of their purpose. The specifics of each standard will be provided by the introduction of additional points; explanatory texts in the form of comments and examples; new paragraphs to subdivisions; additional text to clarify the requirements. The change of the standards for the new structure will be accompanied by their scheduled review.

Annex SL defines identical structure, text and general terms and definitions of all new and future revisions of standards for management systems. Thus establishing coordination and coherence of all standards for management systems so as they to have the same basic structure, format and wording, this will prevent inconsistencies, duplication and misunderstandings of previous standards.

Annex SL is a document which includes proposals for feasibility and flexibility of implementation. Any future or revised standardized management system must follow the structure and leadership of this document.

Objectives of the document are:

- To improve the consistency of the standards of management by standardizing and coordinating structure of a high level; identical basic text and general terms and basic definitions;
- To improve the compatibility of standards MS;
- Various standards of MS will add additional requirements for specific order;
- This general approach to the new standards of MS and those subject to future revision will enhance their usefulness to consumers;
- Will be particularly useful for those organizations that choose to work with an integrated MS, which simultaneously fulfills the requirements of two or more standards of the MS.

The new framework of standards of management systems includes the following ten points:

pt. 1 Scope - Specific industry

pt. 2 Regulatory Requirements

pt. 3 Terms and definitions

In 2 and 3 for each specific sector the regulations and terms with their definitions will be indicated.

pt. 4 Context of the organization

4.1 Understanding the organization and its context

4.2 Understanding the needs and expectations of stakeholders

4.3 Definition of the scope of the XXX management system

4.4 XXX management system

pt. 5 Leadership

5.1 Leadership and commitment

5.2 Policy
5.3 Role of the organization, responsibilities and powers
pt. 6 Planning
6.1 Actions to address risks and opportunities
6.2 Objectives and planning to achieve them
pt. 7 Support
7.1 Resources
7.2 Competence
7.3 Awareness
7.4 Communication
7.5 Documented information
pt 8 Activities
8.1 Planning and management of activities
pt. 9 Assessment of implementation
9.1 Monitoring, measurement, analysis and evaluation
9.2 Internal Audit
9.3 Management review
pt. 10 Improvements
10.1 Non-compliance and corrective action
10.2 Continuous improvement

4. New elements in the structure of the standards of MS (Numbering according to Annex SL)

4.1. Context of the organization

4 Context of the organization
4.1 Understanding the organization and its context

The organization shall determine internal and external issues that are related to its purpose and that affect its ability to achieve the intended result(s) of its XXX management system.

6 Planning
6.1 Actions to address risks and favorable opportunities

When planning the management system, the organization should consider the matters referred to in 4.1 and the requirements specified in 4.2 and determine the risks and opportunities that need to be considered in order to:

- Ensure that the management system can achieve its expected result;
- Prevent or reduce the adverse effects;
- Achieve continual improvement.

The organization shall plan:

a) activities relating to these risks and opportunities, and
b) how to
- Integrate and implement activities in processes of management system;
- Assess the effectiveness of these actions.

4.2. Documented information

This information is required to be controlled and maintained by the organization and the medium on which it is contained. Documented information can be in any format and media from any source. Documented information may relate to:

- The management system, including the related processes;
- Information designed to enable the organization to work (documentation);
- Proof of performance (records).

7.5 Documented information
7.5.1 General

Management system of the organization includes:

- Documented information required by this International Standard;
- Documented information defined by the organization as necessary to the effectiveness of the control system.

Note: The scope of documented information for management system may differ for different organizations due to:

- The size of organization and type of its activities, processes, products and services,
- The complexity of the processes and their interactions, and
- Competence of persons.

7.5.2 Creating and updating

When creating and updating documented information organization must provide adequate

- Identification and description (for example, title, date, author, or reference)
- Format (e.g. language, version of the software, graphics) and medium (e.g. paper, electronic)
- Review and approval of suitability and adequacy.

7.5.3 Control of documented information

Documented information required by the management system and by this International Standard shall be controlled to ensure that

- It is available and suitable for use wherever and whenever it is needed
- It is adequately protected (e.g. loss of confidentiality, improper use, or loss of integrity).

For control of documented information, the organization should focus on these activities, as applicable:

- Distribution, access, retrieval and use;
- Warehousing and storage, including the maintenance of legibility;
- Change control (e.g. version control);
- Storage and destruction.

The documented information of external origin determined by the organization to be necessary for the planning and operation of the control system must be identified as appropriate and controlled.

Note: Access implies a decision to resolve only a review of documented information or authorization and right of the power, to review and change the documented information, etc.

4.3. Risk

According to ISO 31000 [5] risk means influence of the uncertainty to achieve objectives. The influence is a deviation, positive and/or negative, in relation to an expectation. The objectives may have different aspects (e.g. financial, health and safety or the environment) and can refer to different levels (strategic level, project level, product and process or the entire organization). A risk is often characterized by an indication of potential events (2.17) and effects (2.18), or a combination thereof. A risk is often expressed as a combination of the consequences of an event (including changes in circumstances) and their ability (2.19). Uncertainty is a state of incomplete information about understanding or knowledge of an event, its consequences or opportunity.

6. Planning

6.1 Actions to address risks and opportunities.

When planning the management system, the organization must consider matters referred to in 4.1 and the requirements specified in 4.2 and determine the risks and opportunities that need to be addressed to:

- Ensure that the management system can achieve its expected outcome(s);
- Prevent or reduce the adverse effects;
- Achieve continual improvement.

The organization shall plan:

a) actions to address these risks and opportunities, and

b) how to

- Integrate and implement the actions in process management system;
- Assess the effectiveness of these actions.

5. Conclusion

The analysis of the various management systems such as QMS, EMS and HSWMS indicates a common methodology, common principles and common elements, allowing their integration into a common system. Certain advantages and disadvantages in the successive integration of management systems are determined. The advantages of the creation of IMS and the main obstacles to its realization are underlined. The basics of the new framework of standards of management systems according to Annex SL are examined and discussed. New elements in the structure of the standards of MS are analyzed.

Implementation of the new structure standards of MS will provide greater flexibility in the integration process and will avoid the existing obstacles and difficulties in the development and implementation of IMS.

At present, ISO 9001 and ISO 14001 are under revision, ISO 27001 is now revised and published.

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