

Kšanová Štefánia

PhD student

Matej Bel University,

910/9 Francisciho str., Poprad, 058 01, Slovak Republic,

stefania.ksanova@mail.com

Závodská Zuzana

PhD in economics, associate professor

College of International Business ISM Slovakia in Prešov,

1 Duchnovičovo námestie Str., Prešov, 08001, Slovak Republic

zavadska@ismpo.sk

**FACTORS OF THE CERTIFIED MANAGEMENT SYSTEMS
SUSTAINABILITY ACCORDING TO THE ISO STANDARDS:
A LITERATURE REVIEW**

Abstract: The topic of article is the certification of the management system, the separation of ISO standards and the listing of their advantages and disadvantages of implementation in companies. I also focus on the current situation between the introduction of ISO standards and the coronavirus 2020.

Keywords: quality management system, environmental management systems, occupational health and safety management systems, sustainability advantages and disadvantages of ISO, ISO standards, Coronavirus 2020

JEL classification: D89, B21

Introduction

The aim of the paper is to clarify sustainability factors that can improve the effectiveness of ISO standards and mitigate the risks of misuse. The paper has a theoretical character and is the basis for future empirical research. In this article, we will focus on the most commonly used standards ISO 9001, ISO 14001 and ISO 45001, which will be the basis of empirical research.

1. Management systems according to the ISO standards

If you are wondering, why the company needs a Certified Management System? The answer is the importance of introducing an international ISO certificate of the management system, which helps to achieve

long-term prosperity for your customers in various areas. After completing the ISO process, the company obtains an international ISO certificate, which helps it to be a prosperous company, not only in the domestic but also in foreign markets. The benefits for the company can be managerial (clearly defined management system, resource management, defined powers, continuous improvement, efficiency of information systems and ensuring the stability of processes), increasing quality (products and processes), economic benefits (reducing costs and long-term prosperity of the company), business and marketing benefits (increasing customer credibility and improving goodwill). The certification of management systems is a set of complex processes that can only be performed by trained auditors. Auditors can be external or internal. If a company has its own management systems standard (MSS), then we are talking about an internal audit system. If a company does not have an MSS, and another company dealing with audits comes to it for audit, we are talking about an external audit system. Certification is the activity of an independent body (third party) and is issued by an accredited certification body. There are several certification organizations in Slovakia, but each of them must be accredited by SNAS (Slovak National Accreditation Commission).

The MSS consists of several international ISO standards. We know about 14 ISO standards and more: ISO 9001 (Certification of quality management system), ISO 14001 (Certification of environmental management system), ISO 45001 (Certification of occupational health and safety management system), ISO / IEC 27001 (Certification of information security management system), ISO 50001 (Certification of energy management system), ISO / IEC 20000-1 (Certification of service management system), ISO 20121 (Certification of event sustainability management system), ISO 13485 (Certification of medical device quality management system), ISO 17100 (Certification of quality management system in translation services), ISO 29990 (Education Services Management System Certification), ISO 37001 (Anti-Corruption Management System Certification), ISO 28000 (Supply Chain Security Management System Certification), ISO 22301 (BCMS - Business Continuity Management Certification) system) and ISO 41001 (Facility Management

System Certification) in building management organizations). (Greschner, 2019).

Currently assumes that a company operating in the market cannot produce good quality if it does not manage its losses and does not care about the protection of the environment; environment and health and safety of its employees in the procedural management system beyond the legislative requirements of our state. Ensuring the success of the organization by implementing various management systems in today's complex economic situation is becoming increasingly commonplace.

The best known and most frequently applied internationally recognized standards include:

- quality management system (QMS)= ISO 9001,
- environmental management system (EMS)= ISO 14001,
- Occupational Health and Safety Management System (OHSMS)=ISO 45001. (Chovancová, 2013)

Total Quality Management is one of the most popular and modern management concepts, and its importance has grown up on the belief that quality is the highest source of competitiveness. (Ghobadian, Gallar, 2001).

In the process of preparation for ISO certification, the start-up company will receive, among other things: elaboration of basic management regulations, assistance with elaboration of organizational structure, description of processes in the company and competencies of employees including description of their jobs, design of system of evaluation of company processes, monitoring of customer satisfaction, evaluation of suppliers or design of the improvement process. It is therefore a comprehensive package of procedural measures that will help the company to implement professionals and does not have to worry about them on its own in the form of trial and error. The company, which has been operating for a longer period of time and has relatively well-developed basic company management rules as well as management, control, evaluation and process improvement mechanisms, will obtain a clear system for monitoring them, as well as knowledge for process improvement in the company from unbiased professionals. So, whether it is a newcomer to business, an experienced entrepreneur, or a small or medium-sized com-

pany, the quality management system definitely has something to offer in all respects. (Slimáková, 2012)

Advantages of integration of management systems are:

- uniform documentation in the organization,
- clear assignment of responsibilities,
- transparency of processes,
- process orientation,
- simplified conflict resolution procedure,
- a means of promoting corporate identity,
- compliance with legislation,
- higher responsiveness, ability / speed of the organization's response

to market changes,

- increase the innovative potential in the organization. (Hrnčiar, 2011)

Disadvantages of integration of management systems:

- human factor (most influences the functioning of models),
- finance (for some companies the process of implementing ISO standards is costly),
 - high costs for employee training,
 - inadaptability of employees,
 - bureaucracy.

However, such disadvantages occur only in the phase of adaptation of the company and usually disappear with the awareness of their role and responsibility by all employees of the organization.

2. Managerial factors of the certified management systems sustainability

Coordination of work undertaken by different parts of a company. The creation of a fully integrated corporation with application links to associates (employees), salespeople, and suppliers has become a means of responding to pressures of global competitiveness. However, despite the advantages a systems integration project potentially offers a company, these projects tend to have a high

failure rate (Morales, 2006)

Setting up a management system integrated from key generic subsystems based on a process approach, its complex "involvement" in proc-

esses is permanent improvements in the Plan - Do - Check - Act cycle, which is the basic premise of sustainable development. (Dufinec,2002)

It can therefore be argued that the sustainable development of an organization without an integrated management system cannot be ensured because it lacks continuous improvement processes or requires such high costs due to disintegration that it leads the organization not to ensure this development in the required form and scope. However, the integrated management system brings considerable value, reflected in the overall performance of the organization. (Smith,2001)

Characteristics of the quality management system (ISO 9001) are:

- The connectivity of the ISO 9000 set of standards allows for easier and clearer management of the organization,
- ISO 19011 is a guide for the audit of management systems, namely for the management and conduct of environmental audits and quality audits,
- ISO / TS 16949 (Quality Management System developed by IATF - International Automotive Task Force, which closely cooperates with the International Organization for Standardization (ISO) presents specific requirements for the use of the ISO 9001 standard in the automotive industry and in organizations producing automotive components,
- ISO 22000 - standards developed by the International Organization for Standardization (ISO) relating to safety to support the continuous improvement of food safety management organizations. (Morris,2004)

Characteristics of the environmental management system (ISO 14001) are:

- contains the structure, planning activities, responsibilities, practices, procedures, processes and means for preparation, implementation, reviewing and maintaining environmental policy,
- is a component of the corporate management system, purposefully focused on the implementation of plans in the field of environmental care? (Rusko, et.al.,2006)

Characteristics of the occupational health and safety management systems (ISO 45001) are:

- assigning the same priority to safety and health at work and protection of the environment as economic aspect,
- managing the company so as to increase the level of protection of employees' health and environmental protection,
- strengthening awareness of employees' responsibilities in relation to the protection of their own health in order to motivate their cooperation in the field of occupational safety,
- integration of occupational safety and health requirements as well as environmental protection into the stage design and construction of all technological units,
- providing information to employees on how to safely perform activities within the man-machine system - environment,
- cooperation with state organizations as well as with local self-government in the prevention of major accidents and in creating conditions for occupational health (Rusko,2006)

Management systems implemented according to ISO 9001, ISO 14001 and OHSAS 18001 are advantageous to implement and integrate into a single functioning management system, which will thus become a functional management tool and ensure that all risks are prevented in the activities of the organization. This has several advantages but also a number of obstacles.

When integrating management systems, we can divide the main problems as follows:

- Outdoor:
 - the absence of a standard for integrated management systems,
 - different understandings of existing standards,
 - lack of tools (or non-use) in IMS audit / evaluation.

- Internal:
 - formal approach to the implementation of systems - the reason for the introduction of IMS is often not the effort to increase quality and improving the functioning of the organization, but it is the pressure of the external environment, e.g. customers, which forces organization, if it wants to work with them, to implement IMS,

- insufficient connection of management systems with the "core" activities of the organization, often no connection strategies and goals of the organization with the requirements of IMS, or are formulated only for the form,

- promoting the interests of different groups (e.g. quality to the detriment of environmental protection or Security)

- trying to comply with certification / consulting firms (also leads to a formal approach to implementation IMS),

- corporate culture - the implementation of IMS should primarily begin with a change in thinking, behaviour / behaviour organization 's management in order to create an adequate environment for value - producing employees continuous quality improvement. Reluctance to change the directive approach as well as reluctance to implement changes in causes the organization to lose enthusiasm and willingness to improve quality on the part of employees. (Beranek,2007)

Common requirements for the development and implementation of those management systems are:

- Emergency preparedness and response
- Risk identification and assessment
- Corrective and preventive actions
- Exercising and testing
- Monitoring, measurement, analysis and evaluation
- Internal auditing procedures
- Communication
- Management review (Vlachos, 2015)

Critical success factors for ISO implementations are:

- Management commitment and leadership

Management should prepare an IMS policy statement and objectives.

Then, it should be communicated and interpreted to all the employees in order for them to understand. Management should regularly conduct IMS planning and review the IMS performance. At the same time, they should provide the employees with sufficient resources (e.g. financial, physical and technical) in order for them to perform their work effec-

tively. To ensure smooth implementation of IMS, the appointment of a coordinator or “champion” is also needed to administer all related activities in daily operations and translate what the management expectations so that the people at the lower levels of the organization can understand and able to carry-out their job effectively (Beechner & Koch, 1997; Zutshi & Sohal, 2005).

- Resources management

Employee involvement is needed in all functions and at all levels. Everyone in the organization is responsible and empowers to implement and maintain quality, environment, health and safety aspects (Beechner & Koch, 1997; Zutshi & Sohal, 2005). Employees input should be obtained when defining job responsibilities and IMS procedures (Jackson, 1996). At the same time, pertinent information on IMS should be collected, analysed, managed and communicated properly to all staff in the organization (Scipioni et al.,2001). IMS will only work if everyone understands and uses them.

- Focus on stakeholders

The existence of the business is because of stakeholders. Therefore, each company needs to focus on stakeholders in order to sustain the business (Jackson, 1996; Yusof, 1999). The stakeholders include the internal customers, external customers, suppliers, subcontractors, local authorities, regulators, local community and society (Karapetrovic & Willborn, 2002). Each company should identify the customers’ needs by asking what they expect.

- Education

Employees have to be trained to ensure that they are aware and understand how to implement IMS. Employees should have well founded knowledge about internal company procedures and some of the employees are trained for interpretation of the management systems standard. (Mackau,2003).

Workers performing work affecting the conformity of the product with the requirements must be competent on the basis of the relevant education, training, skills and experience. (Grazuel, 2009)

- Performance measurement

Performance measurement is the element where the companies are able to check how far they have achieved, measure performance and compared to their objectives, check adherence to legal and standards' requirements, and plan for new improvement targets (Scipioni et al., 2001).

- Systems and processes

Beechner & Koch (1997) stated that the documentation system is a fundamental requirement for IMS. The IMS documentation includes the IMS manual, procedures, documents, forms and records. (Musli Mohammad, 2005)

- Continual improvement

Continual improvement is the glue that links the systems, and as an important tool to meet quality, environmental, safety and health objectives consistent with IMS policy. (Dubinský,2003)

Efforts to implement an integrated management system take into consideration the following criteria and arrangements (Critical factors for implementation of ISO):

- communication- is a critical factor, which besides containing all the above mentioned elements, it also should inform and show to the people involved in it, in a clear and defined manner, what the focus of the project is and the requirements that must be complied with, regarding deadlines and costs,

- the clear support of the top managers during the implementation,
- to hire the services of external consultants- that, in addition to being recognized for the professional competence and licensed by the provider and experienced in the implementation of the integrated management systems, they also need to devise a planned change management program, or be part of the change management program of the company, evaluate the organizational climate and recognize individual behavioural characteristics and organizational culture,

- to put together and develop a team in charge of the implementation project and change, led by a competent project manager capable of leading and coordinating the activities performed by the multidisciplinary

members of the team, by the external consulting and the users involved in the process,

- to promote qualification and previous training courses,
- resolution of problems during the implementation process.

(Ferreira, 2015)

According to Cooke-Davies (2002), critical success factors are such factors on the management process that directly or indirectly leads to the success of the company or project and depend on the context as well organization surveyed. (Bajon, 2019)

3. Economics factors of the certified management systems sustainability

The economic pillar contains a set of patterns of behaviour that ensure that quantity operators in the economic system do not see a free market economy and competition as a threat, but as an opportunity for its development and growth. Representatives of corporate economic responsibility are mainly investors, owners, business partners, customers, employees, employee representatives and suppliers. On the organization is subject to the diverse requirements of interest groups with regard to them economic responsibility. (Sakál et.al., 2013)

This implies a broad coherence of requirements that apply to areas such as are (Drieniková et al., 2011):

- principles for company management and control, corporate governance)
- combating the misuse and misuse of confidential information,
- fight against corruption, bribery and money laundering,
- payment morale, compliance with contracts, data protection,
- fulfilment of obligations in consumer protection,
- suppression of cartels and abuse of a dominant position,
- fight against industrial espionage,
- protection of intellectual property rights.

Interest the business community to embark on the path of sustainability is connected with the creation of a vision, a strategy and goals that will

guide daily responsible solutions, responses, management and shares. Sustainable business development is not possible without responsible implementation any activity. In the literature (Visser, 2010) there is a link between sustainability

and responsibilities:

- a) Economic sustainability requires financial responsibility.
- b) Human sustainability requires work responsibility.
- c) Social sustainability requires community responsibility.
- d) Environmental sustainability requires moral responsibility.

Balanced taking into account perspectives when deriving strategic goals leads to a balanced system goal - Balanced Scorecard (Horváth, 2002).

The task of perspectives is to determine such a model of thinking before looking for a strategy that ensure that all intended aspects of the business are in a balanced relationship.

The classic perspectives are:

1. The financial perspective, which defines the organization's financial activities indicators such as profit, CF, return on invested capital (ROI), economic added value (hereinafter EVA) etc.
2. Customer perspective, which defines what is important from the customer's point of view. The basic indicators are mainly the functionality of the product, price, speed of delivery, quality, service, customer satisfaction, etc.
3. The perspective of internal business processes sets out those critical processes that guarantee customer satisfaction. It focuses on evaluating and measuring effectiveness business processes.
4. A learning and growth perspective (sometimes referred to as a potential perspective) characterizes what qualities a company should have in order to be able to fulfil the vision permanently and strategic goals, and has also been successfully improved and adapted to change at all their levels.

The impetus for quality certification is therefore economic integration processes, which require the harmonization of mutual quality requirements and gradually unify the whole system of standards, regulations and criteria that products have and their components match. It is a necessary

condition for mutual cooperation in production and in business in an integrated business world. (Leščišin et.al., 2002)

4. Preconditions and hypothesis of the next empirical research

Currently, the most important question is how the Coronavirus COVID-19 crisis will affect the processes of obtaining and maintaining these certificates. It is assumed that when companies have difficult economic conditions, it will be more important for them not to close down than to address ISO standards. All of these are forecasts so far, and time will tell how the situation will develop. However, it is almost certain that over time, companies will return to the introduction of standards, because they will provide them with an overview leading to increased efficiency of the organization, cost savings, improved production quality and be successful in domestic and foreign markets. „The coronavirus is throttling the global economy. In a matter of weeks, the highly contagious disease has pushed the world to the brink of a recession more severe than the 2008 financial crisis. The depth and duration of the downturn will depend on many factors, including the behaviour of the virus itself, public health responses, and economic interventions. “(Masters, 2020)

Theoretical baseline presented in this paper we consider as a baseline for the next empirical research. We will focus on how the factors of certified management systems sustainability influence the real application of the ISO standards during the certification cycle. Following the objectives of the research we formulate these hypotheses:

H1 – the most important economic factors of the certified management systems sustainability are customer demands for products;

H2 – the most important managerial factors of the certified management systems sustainability are top management;

H3 – COVID crises will reinforce the real interest of the certification.

Conclusion

This paper presented some key issues from literature regarding IMS implementation focusing on the integration of QMS, EMS and/or OHSMS. Depending on the size, types of industry, culture of the com-

pany and its available resources, the companies need to choose a suitable strategy to integrate their management systems. In this paper, we have explained the critical success factors for the sustainability of certified management systems that will help us in the implementation of ISO standards in manufacturing and non-manufacturing companies and we will use it for the next empirical research in the sample of Slovak and foreign companies.

Bibliography

BAJON, S. (2019), An empirical study: Krytyczne czynniki sukcesu wdrażania TQM 2 w organizacji, DOI: [10.29119/1641-3466.2018.132.3](https://doi.org/10.29119/1641-3466.2018.132.3)

BEECHNER, A.B., KOCH, J.E. (1997), Integrating ISO9001 and ISO14001. *Quality Progress*, 30 (2), 33-36.

BERANEK, Z.(2007), Experiences with integrated systems. In: *Planeta 2/2007*, Czech ministry of environment, Praha. ISSN: 1801-6898

COOKE-DAVIES, T. (2002). The "real" success factors on projects. *International Journal of Project Management*, 20(3), 185-190, [http://dx.doi.org/10.1016/S0263-7863\(01\)00067-9](http://dx.doi.org/10.1016/S0263-7863(01)00067-9)

DRIENIKOVÁ, K., et.al.. (2011), Zvyšovanie kvality stratégie SZP s využitím exaktných metód – II (Stratégia SZP v kontexte s ISO 26000).

DUBINSKI, J., GRUSZKA, E., KRODKIEWSKA-SKOCZYLAS, E. (2003). Integrating Management Systems? No Problem for Pioneering Poles!

DUFINEC, I.: Virtual process of quality management of production in integrated management system of company, In: *International conference proceedings QUALITY 2002*, DT Ostrava, VŠB-TU Ostrava, 2002, ISBN 80-02-01494

FERREIRA A. ,A. (2015), An empirical study: Critical factors in the implementation process of integrated management systems

DOI: [10.4301/S1807-17752015000100008](https://doi.org/10.4301/S1807-17752015000100008)

GHOBIAN, A., GALLEAR, D. (2001). TQM implementation: An empirical examination 34 and proposed generic model. *Omega*, 29(4), 343-359, [https://doi.org/10.1016/S0305-350483\(01\)00030-5](https://doi.org/10.1016/S0305-350483(01)00030-5).

GRAZUEL, J. (2009)– Technická normalizačná komisia (TK 22 Kvalita): Systém manažérstva kvality – Požiadavky (STN EN ISO 9001:2008).

GRESCHNER, E. (2019) - externý audítor spoločnosti CeMS, s.r.o.,2019 <https://spolupracuj.me/clanky/quo-vadis-iso-kam-smeruju-iso-normy/>

JACSON, S.L. (1996). The ISO14001 implementation guide: creating an integrated management system. New York: John Wiley & Sons Inc.

HRNČIAR, M.(2011), Potenciál integrácie systémov manažérstva, Seminár Systémy manažérstva- revízia EN 19011

HORVÁTH, et.al. (2002), Balanced Scorecard v praxi. Praha: Profess Consulting, 386 s. ISBN 80-7259-018-9

CHOVANOVÁ, J. , TEJ, J. (2013), Implementation of quality, environment and safety management systems with focus on their mutual integration,

KARAPETROVIC, S. , WILLBORN, W. (2002), Self-audit of process performance. International Journal of Quality & Reliability Management

LEŠČIŠIN, M., STERN, J., DUPAL, A.: (2002), Manažment výroby. 467 strán, vydala Ekonomická univerzita – fakulta podnikového manažmentu,

MACKAU, D. (2003). SME integrated management system: a proposed experiences model. TQM Magazine, 15 (1), pp. 43-51.

MASTERS, J., (2020): Coronavirus: How are countries responding to the economic crisis? <https://www.cfr.org/backgrounder/coronavirus-how-are-countries-responding-economic-crisis>

MORALES, M. (2006), Critical success factors for managing systems integration. DOI:10.1201/1078.10580530/45925.23.2.20060301/92674.7

MORRIS, A.S. (2004), ISO 14000 Environmental Management Standards: Engineering and Financial Aspects. ISBN: 0-470-85128-7.

MUSLI, M. et. al. ,(2005), Strategies and critical success factors for integrated management systems implementation, [https://www.researchgate.net/publication/255633735 Strategies and critical success factors for integrated management systems implementation](https://www.researchgate.net/publication/255633735_Strategies_and_critical_success_factors_for_integrated_management_systems_implementation)

RUSKO, M., BALOG, K. (2006), Selected chapters of environmental and safety management. - Bratislava: VeV et Strix, Edícia EV-4, First slovak edition, ISBN 80-969257-5-X,

RUSKO, M. (2006), Bezpečnostné a environmentálne manažérstvo. Bratislava, VeV et Strix. 1. vydanie, 2006, ISBN 80- 969257-0-9

SCIPIONI, A. et.al. (2001), Integration of management systems. Environmental Management and Health, 12 (2), 134-145.

SLIMÁKOVÁ, V.(2012), Význam certifikátu kvality (ISO) pre malé a stredné podniky, <https://www.podnikajte.sk/manazment-a-strategia/iso-certifikat-pre-male-a-stredne-podniky>

SMITH, D.(2002), IMS. Implementing and Operating, British Standard Institution, London 2002, ISBN 0 580 33328

SMITH, D. (2001), IMS. The Framework, British Standard Institution, London 2001, ISBN 0580332985

VISSER, W. (2010), Reframing Corporate Social Responsibility: Lessons from the Global Financial Crisis (Critical Studies on Corporate 351 Responsibility, Governance and Sustainability, Volume 1), Emerald Group Publishing Limited, pp.231-251.

VLACHOS, T. et.al.(2015), Operational risk management_in lignite mines throught the implementation of certified management systems, <https://www.researchgate.net/publication/283216963>

ZUTSCHI, A. , SOHAL, A.S. (2005), Integrated management system: the experiences of three Australian organisations. Journal of Manufacturing Technology Management