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BENEFITS OF MANAGEMENT SYSTEMS INTEGRATION

Abstract: The number of implemented and certified management systems in organizations is growing. In 2013 there were more than 1.1 million organizations with certified ISO 9001 management system. A big number of companies implement also other management systems and integrate them. The purpose of this paper is to analyze the benefits of integration of management systems in Polish organizations. The presented results are based on data obtained from 81 organizations that have implemented and certify at least two standardized management systems. The organizations were divided into 3 groups with different level of integration of implemented management systems. The level of integration was measured by the degree of integration of the system goals, resources and processes. As a top rated benefits of integration have been found such benefits as: Unification objectives, processes and resources, improving the effectiveness and efficiency of the organization and avoiding of duplication. Organizations that integrated their management systems on an average level, calculated as the integration of goals, procedures and documentation, achieve the greatest benefit from the integration process. Moreover, in the group of organizations, that integrated more than 3 management systems, benefits of integration were higher than in companies where only two or three systems were integrated.

Keywords: integration, management systems, benefits, ISO 9001.

JEL classification: L29, M11, M19.

KORZYŚCI Z INTEGRACJI SYSTEMÓW ZARZĄDZANIA

Streszczenie: Liczba wdrażanych i certyfikowanych na świecie systemów zarządzania wzrasta. W 2013 roku odnotowano ponad 1,1 miliona organizacji, które posiadały certyfikowany system zarządzania jakością zgodny z wymaganiami normy ISO 9001. Duża liczba przedsiębiorstw wdraża również inne systemy zarządzania i integruje je w jeden system. Celem artykułu jest wskazanie korzyści wynikających z procesu integracji wdrożonych systemów w polskich organizacjach. Przedstawione wyniki badań uzyskane zostały na podstawie analizy odpowiedzi uzyskanych od przedstawicieli 81 organizacji, które wdrożyły co najmniej 2 różne systemy zarządzania. Badane organizacje podzielono na trzy grupy, które charakteryzowały się różnym poziomem integracji systemów. Poziom integracji został oszacowany na podstawie poziomu integracji celów, zasobów oraz procesów. Za najważniejsze korzyści z integracji systemów uznano: ujednolicenie celów, procesów i zasobów, poprawa skuteczności i efektywności działań organizacji oraz unikanie powielania się dokumentacji systemowej. Organizacje, które zintegrowały swoje systemy na średnim poziomie osiągnęły największe korzyści z tego procesu. Ponadto grupa organizacji poddały integracji trzy lub więcej systemów zarządzania wskazywały na wyższe korzyści wynikające z integracji niż organizacje które zintegrowały wyłącznie dwa systemy zarządzania.

Słowa kluczowe: Integracja, systemy zarządzania, korzyści, ISO 9001.

Introduction

Implementation of management standards is very popular in organizations. The most popular management standard is quality management standard described in ISO 9000 series. According to International Standard Organization (ISO), in 2013 there were more than 1.1 million organizations with implemented and certified ISO 9001 management system. ISO 9001 is the leading standard on quality management but there are also other quality management systems which are implemented in organizations e.g. ISO/TS 16949:2009, ISO 13485:2003 [ISO 2013]. Popularity of ISO 9001 standard, resulted in the development of other management standards such as: ISO 14001, ISO 22000, ISO/IEC 27001, IS0 50001, OHSAS 18001, PN-N 18001. All above mentioned standards are implemented in companies. Those standards can be classified according to three main criteria [Bugdol and Jedynak 2014, p. 129]:

– the objective of a management system developed in terms of a given standard,
– the application of a standard as the basis for the organizational development of a business area
– the universality of a given standard.

In Table 1 there are examples of management standards and classified according to above mentioned criteria.

Table 1. The examples of the major management system standards

Criterion	Types of standards	Examples
Objective	To ensure product/service quality	ISO 9001, ISO/TS 16949, TL 9000, AS 9100, AQAP
	To ensure food safety	HACCP, BRC, IFS, ISO 22000
	To reduce an organization's operational risk	ISO 14001, OHSAS 18001, PN-N 18001, ISO 27001, ISO 22301, ISO 28000, ISO 31000, ISO 55001
	To improve an organization's results and image	ISO 26000, ISO 50001
Business area	Quality management	ISO 9001, ISO/TS 16949, TL 9000, AS 9100
	Food safety and hygiene management	HACCP, BRC, IFS, ISO 22000
	Environmental management	ISO 14001
	Occupational health and safety Management	OHSAS 18001, PN-N 18001
	Information security management	ISO 27001
	Business continuity management	ISO 22301
	Supply chain security management	ISO 28000
	Risk management	ISO 31000
	Social responsibility management	ISO 26000
	Energy efficiency management	ISO 50001
Universality	Universal	ISO 9001, ISO 14001, OHSAS 18001, ISO 27001, ISO 22301, ISO 28000, ISO 31000, ISO 55001.
	Sector-related	ISO/TS 16949, TL 9000, AQAP, AS 9100, HACCP, BRC, IFS, ISO 22000

Source: Based on: [Bugdol and Jedynak 2014, p. 130].

In some cases more than one management standard is implemented in one organization, and that leads to a natural need to integrate some of the elements of individual systems.

Many of the requirements in management standards are common and this can be accommodated under one generic management system. According to PAS 99 specification, integration of management systems help organizations to achieve benefits such as: improve business focus, a more holistic approach to managing business risks, less conflict between systems, reduced duplication and bureaucracy and more effective and efficient audits both internally and externally [BS/2006, pp. 3–4].

There are also other than PAS 99 normative models of management system integration. The most popular ones are Global SAI. AS/NZS 4581:1999, HB 10190:2001, NTS (1996), DS 8001:2005, UNE 66177:2005 [Kafel and Sikora 2010, pp. 45–53]. There are many descriptions of models of integration of management standards in literature, e.g.:[Karapetrovic and Willborn 1998, pp. 204–213; Wilkinson and Dale 2001, pp. 318–330; Oliveira 2013, pp. 124–133; Rebelo, Santos, and Silva 2014, pp. 143–159]. Despite the existence of the models allowing the integration of management systems, most polish companies did not benefit from the guidelines contained in them, and led the integration of systems in their own way [Nowicki, Kafel, and Sikora 2013, pp. 93–102].

There have been many studies investigating organizations' motivations for certification of different management standards, their implementation experiences and the benefits received [Masoud, Daily, and Bishop 2011, pp. 5–19]. Some of the benefits are resulted from the implementation of the systems and some are related to the integration of the standards [Simon, Karapetrovic, and Casadesús 2012, pp. 828–846].

Benefits of management system integration are discussed for instance in: [Karapetrovic and Willborn 1998, pp. 204–213; Wilkinson and Dale 2001, pp. 318–330; Douglas and Glen 2000, pp. 686–690; Zutshi and Sohal 2005, pp. 211–232; Rocha, Searcy, and Karapetrovic 2007, pp. 83–92; Salomone 2008, pp. 1786–1806; Zeng 2011, pp. 173–187; Ejdys 2011, pp. 69–84; Simon, Karapetrovic, and Casadesús 2012, pp. 828–846] present improvements related to having an integrated system such as costs savings (e.g. costs of certification), operational benefits, better external image, improved communication across the organization, improved customer satisfaction and enhanced employee motivation.

1. Materials and methods

The methodology used to collect the data was a survey mailed in 2014 to a sample of Polish organizations registered to at least two management systems selected from popular international standards, e.g.: ISO 9001, ISO 14001, PN-N 18001, ISO/IEC 27001, ISO 22000. The main reason for conducting the study in Poland was because it is one of the countries with the average number of registered MSS, ranking 11 place in Europe with ISO 9001 and ISO 14001 certificates [ISO 2012]. It is possible to obtain a sample big enough to analyze the order of MSSs implementation in a country which is not in the top in the word in terms of issued certificates and popularity of MSSs implementation. Not without significance was also origin of the author. The survey was send to 885 organizations located in Poland. There were 81 valid questioners obtained, representing 9.2% respond rate.

According to the European Commission's [2003] classification, there are 24.7% of small organizations, having 50 employees or less in the studied sample. About 37.0% of medium sized organizations with the number of employees between 51 and 250, while 38.3% are large organizations having more than 250 employees.

With respect to implemented MSS in studied organizations, all have implemented ISO 9001 standard. Two other popular standards that are widely implemented are environmental management standard ISO 14001 – 67.9% and occupational health and safety management standard according to Polish or British standard (PN-N 18001, BS OHSAS 18001) – 50.6%. Both Polish and British OHSAS standards are modified and adopted guidelines developed by International Labour Organization and have quite similar requirements and goals [Sung-woon, Kyu-hwan, and Tae-gu 2012, pp. 1085–1089]. Due to that this standards are considered in the study as a OHSAS standard, without distinguishing between them.

Other standards implemented in organizations represented less than 20 percent of the population. Most commonly implemented and certified among those systems are AQAP standards 19.8%, ISO/IEC 27001 – 9.9% and internal control process (ICS) / PN-N 19001 – 9.9%. Within studied organizations there were 36% which had two management standards integrated, 35% with three systems, 22% with four systems, 5% with five management systems and 2% with six management systems.

The level of integration of MSSs was measured by the degree of integration of the system goals, resources and processes. In the survey, the organi-

zations indicated whether certain aspects of integration were fully integrated, partially integrated or not integrated. Only organizations that declared the integration of MSS answer the questions about the level of integration. In order to measure the degree of integration of system goals, resources and processes 5 point Likert scale were used. In the survey open-ended questions were used to gain the information about the implanted systems and the time of the implementation.

That kind of measure is popular and used by other authors [Seghezzi 1997, pp. 42–49; Kirkby 2002, pp. 2–4; Karapetovic 2002, pp. 61–67; 2003, pp. 4–13; Pojasek 2006, pp. 89–97; Bernardo *et al*. 2009, pp. 742–750; 2012, pp. 291–307].

The results of the study are presented in the next section. Data processing was largely descriptive in nature. This descriptive analysis enables an illustration of the benefits of integration of management systems in polish companies.

2. Results and discussion

Studied organizations were asked about the integration of management standards and benefits that were obtained from the integration. Within the group of 81 companies, only three organizations haven't integrated the management systems. The main reasons not to integrate the implemented management systems were as follow:

1. Different branches / subsidiaries in which there were implemented various systems, eg. ISO 9001 in one localization and ISO 14001 in another one. That reason was indicated by two organizations as a most important reason.
2. The possibility of faster implementation of the second and subsequent standards without their integration.
3. Lack of interest and lack of resources for integration. That reasons were indicated as a most important one by two organizations.

Companies that hadn't integrated their management standards also hadn't indicated such reasons as: problems with understanding of the standards or excessive requirements of the new standards which were seated as a reasons by Karapetrovic [Karapetrovic, Casadesus, and Heras 2006, pp. 41–53]. The other 78 companies have integrated at least at some level their management system. Figure 1. shows the benefits of management systems integration in that companies.

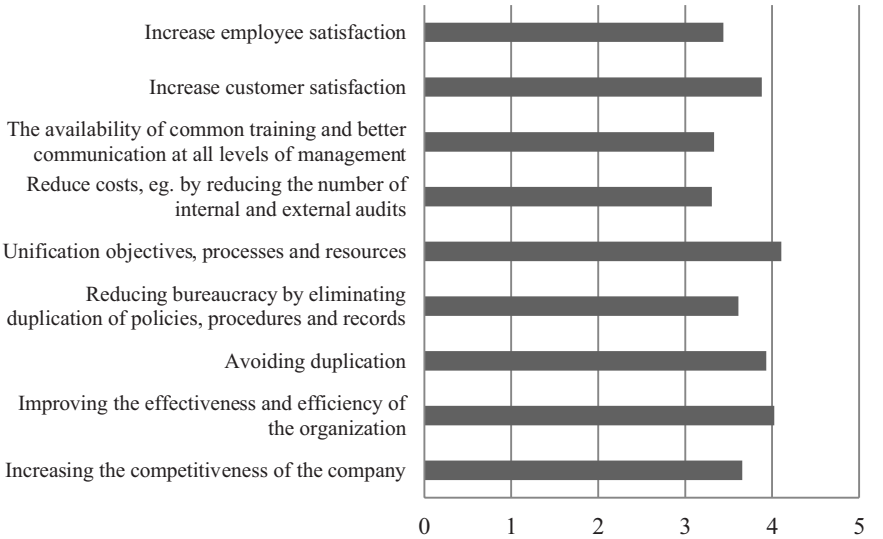

Figure 1. Benefits of management systems integration

All studied companies indicate some benefits of the integration. There are some studies that point out lack of benefits in a personnel perspective [Ejdys 2011, pp. 69–70]. In this study, it is presented management opinion about the benefits, which is different than the staff opinion [Ejdys 2011, pp. 69–70]. Unification objectives, processes and resources according to studied organizations was the most important benefit of management system integration. Improving the effectiveness and efficiency of the organization was second most important benefit obtained by the organizations. The third best scored benefit was avoiding of duplication. The first three benefits identified by the organization, are an internal one. That result indicates that integration is an internal process driven by internal motivations and mostly it is performed to enable the common operation of multiple systems.

Surprisingly, indicated benefits of integration does not correlate with the perception of a reduction in operating costs of the system. The costs reduction, e.g. by reducing the number of internal and external audits, was indicated as the lowest from all other benefits arising from the integration. Only 12 company representatives scored that benefit on 5 in 5-point Likert scale.

The average result for all studied companies was 3.31. The availability of common training and better communication at all levels of management was the second less scored benefit in studied companies. Some of the

organizations pointed out other benefits of integration. That benefits were related to: improving the company's image, fulfillment of the conditions of contract and increase of employee engagement in management system improvement.

In Table 2 there are presented indicated benefits of management integration, in organizations divided by the number of management system integrated in that organizations.

Table 2. Benefits of management system integration in companies with different number of systems integrated

Number of management systems integrated	Benefits of management systems integration								
	Increasing the competitiveness of the company	Improving the effectiveness and efficiency of the organization	Avoiding duplication	Reducing bureaucracy by eliminating duplication of policies, procedures and records	Unification objectives, processes and resources	Reduce costs, eg. by reducing the number of internal and external audits	The availability of common training and better communication at all levels of management	Increase customer satisfaction	Increase employee satisfaction
2 systems	3.67	4.04	3.86	3.68	4.18	3.39	3.36	3.89	3.46
3 systems	3.56	3.92	3.80	3.64	3.88	3.12	3.36	3.88	3.32
More than 3 systems	3.76	4.14	4.18	3.50	4.27	3.41	3.27	3.86	3.55

In the group of organizations, that integrated more than 3 management systems, benefits of integration were the higher that in companies where only two or three systems were integrated. Exception to this rule are such benefits as: reducing of bureaucracy, the availability of common training and increase of customer satisfaction.

Studied companies were divided into three groups of organizations according to their similarities in the level of integration[1]. In first group of organizations there are 42 organizations and it's the largest group, representing 51.8% of the sample. The average level of integration of goals and

[1] Detailed description of the three group is provided in: [Kafel and Casadesus, 2016].

documentation is 94.7%, while integration of procedures is on the average level of 97.72%.

Second group is made up of 17 organizations representing 20.9% of the sample. Organizations belonging to that group have integrated MSSs on the lowest level of all 3 groups of organizations.

In the group no. 3 there are only 13 organizations, representing 16% of the sample. It is the lowest group of organizations that was obtained during the cluster analyses. The average level of integration of companies from group three, is between the other two groups of organizations. The average level of integration of goals and documentation is 77.7%, while integration of procedures is on the average level of 95.8%.

Figure 2 shows the benefits of management systems integration in studied companies divided into three groups of organizations with different level of integration.

Figure 2. Benefits of management systems integration in three groups of organizations

Data presented on figure 2 suggest, that in the group no. 3, the benefits of integration are top rated. Within the group no. 2, which is the group with the lowest level of integration in most cases the benefits of integration indicated by organizations are also the lowest. Only in case of two questioned benefits: increasing the competitiveness of the company and reduction of

cost, obtained benefits are higher than in a group of organizations with higher level of integration.

The results obtained in research are similar to those, that were obtained in other studies, for instance in [Simon, Karapetrovic, and Casadesús 2012, pp. 828–846]. A new aspect of presented results is the division of the studied organizations into groups with different level of management system integration.

Conclusions

The objective of this paper was to analyze the benefits of integration obtained by polish organizations. As a top rated benefits of integration have been found such benefits as: Unification objectives, processes and resources according, improving the effectiveness and efficiency of the organization and avoiding of duplication. Organizations that integrated their management systems on an average level, calculated as the integration of goals, procedures and documentation, achieve the greatest benefit from the integration process. Moreover, in the group of organizations, that integrated more than 3 management systems, benefits of integration were higher than in companies where only two or three systems were integrated.

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