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ASSESSEMENT OF THE LEVEL OF MATURITY OF THE QUALITY MANAGEMENT SYSTEM – APPLIED MODELS AND RESULTS

16.1 INTRODUCTION

Modern organizations, operating on the Polish market, look for different ways of gaining competitive advantage. One of the elements which supports building up a position on the market is the quality management system compliant with the requirements of the norm ISO series 9000. The quality management system is the element which has an influence on the processes in the organization as well as reduction of costs by means of, among others, elimination of unnecessary or duplicated actions [2]. Additionally, factory production control proposed by the norm ISO 9001 constitutes an element which combines different methods of operations with the supervision of conformity of a product with relevant technical specifications [4]. Factory production control which is carried out skilfully ensures constant supervision of the products, obliges organizations to research and control the processes which are directly connected with the products, generates data related to the non-compliant products, and therefore, allows to eliminate unwanted factors in the production process [3].

The norm ISO 9001 is a universal tool which can be used by an organization, regardless of its size or business activity [8]. As it was shown in the research carried out by the authors, organizations build quality management systems in conformity with the knowledge of the highest level management, chosen employees or an external advisor [1].

The purpose of this article is to describe methods of assessment of maturity level of the quality management systems in organizations as well as to present exemplary research results.

16.2 MODELS OF ASSESSEMENT OF QUALITY MANAGEMENT SYSTEMS' EFFECTIVENESS

Despite the fact that different organizations can build their quality management systems in a different way due to the universal nature of the norm ISO 9001 which also points out the way to improve organization by means of PDCA cycle, the authors

of the norm provide exact guidelines how to assess maturity level of the quality management system.

16.2.1 Model from the norm ISO 9004

The norm PN-EN ISO 9004:2010 „Managing for the sustained success of an organization. A quality management approach" emphasizes that a success of an organization is based on effective management which includes leadership, strategy, management system, resources and processes in order to recognize weaknesses of an organization. According to the norm PN-EN ISO 9004:2010 self-assessment is based on investigating the correlation between key elements and levels of maturity i.e.:

- Managing for the sustained success of an organization
- Strategy and policy
- Management of resources
- Management of processes
- Monitoring, measurements, analysis and review
- Improvement, innovations, process of learning [9].

The norm also suggests possibilities of using the obtained results of self-assessment, for instance, to monitor progress of an organization over time, to provide benchmark with other organizations or to define the priorities of areas for improvement [9].

16.2.2 Model from the norm ISO 10014

The norm PN-ISO 10014:2008 „Quality management. Guidelines for realizing financial and economic benefits" defines the elements which have a direct impact on financial and economic benefits of an organization, resulting from the use of the principles of the quality management from the norm ISO 9000, the use of the process approach in an organization as well as PDCA approach [10].

The principles of management included in the norm PN-ISO 10014:2008 were extended in contrast to the model from the norm ISO 9004 and interrelationships between the two of them were indicated. The principles of management are as follows:

- Customer-oriented approach
- Leadership
- People's committement
- Process approach
- Improvement
- Fact-based decisions
- Management of resources [8].

The norm PN-EN ISO 10014:2008 which is used to assess the effectiveness of the functioning of the quality management system encourages self-assessment. Self-assessment can be carried out with the use of a questionnaire for the initial and

comprehensive self-assessment as well as it recommends identification of priorities for future operations related to improvement [10].

16.2.3 Model of self-assessment of the Polish Quality Award

Criteria for the self-assessment of the Polish Quality Award include: leadership, strategy, employees, partnership and resources, processes-products-services, results of employees, results of society, key results and excellence model of the Polish Quality Award, were developed on the basis of criteria of the European Quality Award established by the European Foundation for Quality Management. The criteria of the Polish Quality Award are divided into nine pillars, five of which constitute the so-called "potential of an organization": leadership, strategy, employees, partnership and resources, whereas the remaining four pillars are the so-called "results of an organization" including: results of customers, results of employees, results of society and key results [6].

It the Polish Quality Award, which is even more significant, developed self-assessment is additionally assessed by the jury of the Polish Quality Award i.e. impartial external body. The jury assesses the self-assessment in order to indicate the strengths of an organization, the areas for improvement as well as to award points in the competition. The RADAR method is used in order to carry out proper self-assessment [5].

16.3 RESULTS OF THE RESEARCH

The research was carried out among five big organizations (with employment over 250 people), with a developed quality management system – the Finalists of the Polish Quality Award in years 1995-2015. The organizations have their headquarters in five different voivodships i.e.: Łódź, Silesian, Warmian-Masurian, Podkarpackie and Greater Poland.

A questionnaire for an initial self-assessment from the norm PN-ISO 10014:2008 [10] was used to assess the level of maturity of the quality management systems, where each level has a following description:

1. No or false, 0% of events, no established practice;
2. Little true, approximately 25% of events, practice can be noticed only in some areas;
3. Partly true, approximately 50% of events, practice is commonly established but not in the majority of areas;
4. Mostly true, approximately 75% of events, practice is typical and common only with some exceptions;
5. Yes, always true, almost or in 100% of events, practice is implemented in whole organization, almost without exceptions.

The results obtained are presented in Table 16.1. When analysing the obtained results it can be noticed that in the group of respondents, in whole research, level 1 or 2 did not appear. It means that none of the tested organizations indicated low level of

the system development, in none of the analyzed areas.

Table 16.1 Self-assessment of an organization – research results

Quality management principle	Level of maturity– number of responses				
	1	2	3	4	5
1. Customer-oriented approach					
a) Identification of proper groups of customers or markets in order to achieve the best financial or economic benefits?			1	1	3
b) Does an organization understand fully customers' needs and expectations as well as the supply chain connected with them or can it identify the resources indispensable to fulfil these requirements?				2	3
c) Does an organization know how to measure customers' satisfaction and if a complaint appears, is it settled in the right way and in the right time?			1		4
2. Leadership					
a) Does the management establish and communicate the direction, policy, plans or other important information for sustainability of an organization?				1	4
b) Does the top management establish and communicate effective, financial and economic goals, providing essential resources and feedback about the level of performance?				2	3
c) Does the top management create and sustain essential environment, where people can fully engage in the process of realization of the organization's goals?				2	3
3. Committement of people					
a) Are people at all levels of organization considered to be an important resource which can have a big impact on the achievement of financial and economic goals?				3	2
b) Are people encouraged to engage fully in creation of possibilities to improve their competences, knowledge and experience in order to achieve common benefits for an organization?			1	2	2
c) Do people want to cooperate with other employees, customers, suppliers or other third parties?			1	3	1
4. Process approach					
a) Are operations, supervision, resources and solutions managed in an interconnected way?				1	4
b) Are the possibilities of key operations or/and processes understood due to their measurement and analysis in order to achieve better financial and economic results?				2	3
c) Does the top management allow to assess or/and establish the priorities of risk and take into consideration their potential influence on customers, suppliers or other interested parties?			1	1	3
5. System approach to management					
a) Are interrelated processes identified, understood and effectively managed in order to ensure that the system is able to achieve financial and economic benefits?			1	2	2
b) Are resources and possibilities of processes as well as limitations understood, taking into consideration interdependence of processes?				4	1
c) Is system approach used to make full use of individual processes for the benefits of the system?			1	3	1
6. Continuous improvement					
a) Does the top management encourage and support continuous improvement in order to achieve its goals, financial and economic benefits?			1		4
b) Does an organization have implemented effective measurements and monitoring to track and assess financial and economic benefits?				3	2
c) Does the top management acknowledge and confirm achievement of financial and economic benefits?				1	4
7. Fact-based decisions					
a) Are the decisions effective, based on thorough analysis of facts completed with intuition and experience when needed?				3	2
b) Does the top management provide proper access to data, information and tools which allow to carry out an effective analysis?			1		4
c) Does the top management ensure that the decisions are based on achievement of benefits with optimal added value, excluding improvements in one area which can cause worsening of the situation in a different area?			1	1	3
8. Mutually beneficial relationships with suppliers					
a) Do effective processes to assess a product and monitor the suppliers and supply chain partners exist in order to ensure common, general financial and economic benefits?				4	1
b) Does the top management ensure development of effective relationships with the key suppliers which, in turn, balances short-term profits with long-term conditions?			1	3	1
c) Is exchange of future plans and feedback effective between an organization and its suppliers /chain supply partners in order to promote and achieve mutual benefits?			1	3	1

Source: own work

All of the tested organizations have developed, mature quality management systems, described mostly on level 4 and 5, level 3 was relatively infrequently indicated.

On the basis of the results obtained it is possible to carry out analyses related to the level of system developement in individual areas.

But, on the other hand, using collective results it is difficult to refer to the research of the system maturity in individual organizations. In order to consider levels of maturity in individual organizations, it would be necessary to compare the results in each of the surveyed organizations separately.

16.4 SUMMARY

Modern organizations with implemented and functioning quality management system compliant with the norms ISO series 9000 have ready-made tools to improve as well as measure the effectiveness of the actions taken up by the organizations. They are models (based on self-assessment) which are recommended in the norms as well as identical models propagated by the European Foundation for the Quality Management and the Polish Quality Award. Range of recommended self-assessment is different and so are the criteria adopted by the authors. What is important is that each of the models – used to carry out a diligent self-assessment, provides a comprehensive picture of a situation of an organization, indicates its strengths and weaknesses, constitutes a guideline to establish priorities to take up proper actions in an organization which is self-assessed. If an assessment of the level of maturity of quality management system in an organization is carried out periodically, it allows to obtain reliable information related to the progress of a given unit in improvement.

In this article the results of self-assessment carried out with the use of an initial questionnaire of self-assessment from the norm PN-EN ISO 10014:2008 are presented. The research was carried out among 5 organizations within the sector of big companies. The results showed that the organizations take up actions aimed at fulfilling the principles of the quality management and reached the level of maturity of the system, mainly described as level 4 or 5, therefore, in 75% or 100%. The obtained results can be used in different analyses and comparisons of the level of maturity of the system in its different areas. However, in order to obtain information related to the level of maturity of the system in individual organizations, it would be necessary to prepare a comparison of the results obtained in individual organizations.

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ASSESSMENT OF THE LEVEL OF MATURITY OF THE QUALITY MANAGEMENT SYSTEM – APPLIED MODELS AND SAMPLE TEST RESULTS

Abstract: *In the article there are presented models and methods of assessment of the level of maturity of the quality management system in organizations included in the standards and promoted by the European Foundation for Quality Management. The fundamental principles of forming pro-quality approach to quality management are presented. The results of self-assessment of selected group of Polish pro-quality managed enterprises on the basis of the carried out research with the participation of the Finalists of Polish Quality Awards.*

Key words: *quality management system, maturity assessment, self-assessment*

OCENA POZIOMU DOJRZAŁOŚCI SYSTEMU ZARZĄDZANIA JAKOŚCIĄ – STOSOWANE MODELE I PRZYKŁADOWE WYNIKI BADAŃ

Streszczenie: *W artykule zostały przedstawione modele i metody oceny poziomu dojrzałości systemu zarządzania jakością w organizacjach zawarte w normach oraz promowane przez Europejską Fundację Zarządzania Jakością. Zaprezentowano fundamentalne zasady kształtujące projakościowe podejście do zarządzania jakością. Przeanalizowano wyniki samooceny wybranej grupy polskich przedsiębiorstw zarządzanych projakościowo w oparciu o przeprowadzone badania własne z udziałem Finalistów Polskiej Nagrody Jakości.*

Słowa kluczowe: *system zarządzania jakością, ocena dojrzałości, samoocena*