



QUALITY POLICY IN THE INTELLIGENT QUALITY MANAGEMENT SYSTEM

Michał MOLENDĄ
Silesian University of Technology

Abstract:

The article describes the problems of one of the key elements of a quality management system which is the quality policy (QP). The quality policy is an element that determines how the quality management is managed in the organization. The phrase, present documents and the implementation of quality policy is the responsibility of top-level managers, resulting directly from the ISO 9000 standards. In the first part of the article the essence and the importance of quality policy for effective quality management is described. In the second part of the article there is a thorough description of a specially developed procedure for the establishment, implementation and monitoring of quality policy. The following procedure is based on years of experience of the author supported by the results of research, which aim was to create practices in the implementation and monitoring of quality policy in several business organizations. The approach presented in this article procedure is designed to assist managers in the development, implementation and monitoring of policy quality. The approach described as proper to the issue of the quality policy management staff will help in creating intelligent quality management system (IQMS). System, which will focus on permanent improvement based on the knowledge generated in the process of monitoring the implementation of quality policy.

Key words: Quality policy, QMS, intelligent quality management system (IQMS), ISO 9001

INTRODUCTION

Nowadays, the condition determining the existence of business organizations in the market is the so called good reputation in the market. It will not reach this state without an effective quality management, which primary goal is to build trust among customers. It is a difficult and lengthy process, since trust to the manufacturer (producers, service providers) is built up for years through reliable and timely compliance with the requirements of each customer. Quality policy plays a key role in this process. Without honestly and fairly established quality policy it is not possible to build trust in the market. This requires a special approach to the process of development, implementation and monitoring of quality policy. It is important to properly transmit the declaration of the top management to the courses of action in terms of quality and their expression in the form of gauges. However, it is important to determine the previous statement on the basis of precise objectives of quality. In addition, the quality of monitoring of implementation plays a key role in the effective implementation of quality policy. The author's procedure included in this article is designed to solve these problems. The procedure present in this article describes the process of transformation of the quality policy in the fields of directions of quality, quality indicators, quality objectives and a detailed implementation plan, which is also monitoring the implementation of QP. The knowledge generated in the process of monitoring of the implementation of quality policies will allow management staffs to respond to unwanted situations – lack of effectiveness in the implementation of QP. As a consequence, this will be a moving force for improvement of the organization. Such factors are characteristic improvement "intelligent" quality management system.

QUALITY POLICY – THE ESSENCE AND IMPORTANCE FOR THE DEVELOPMENT OF THE ORGANIZATION

The quality policy is often in the literature considered to be the most important document of quality management system. The document in which top management expresses its commitment to the functioning of the quality management system. ISO 9000 Quality Policy is defined as "the general goals and direction of the organization on the quality of formally expressed by top management" [7]. ISO 9001 obliges the top management to adopt a quality policy that [8]:

- it is suitable for the purpose of existence of the organization,
- includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
- it provides a framework for establishing and reviewing of quality objectives,
- it is communicated and understood within the organization,
- it is reviewed for continuing suitability.

The main task of the organization's quality policy is:

- integrating quality management system with the general system of organization management – postpone mission, vision and strategies for policy and quality objectives.
- communicating about quality problems in the organization, creating and cultivating of culture of quality.
- communicating about quality problems outside the organization, strengthening of customer trust.

Quality Policy, provided that it reflects the real intention of managers and is fairly and effectively implemented, becomes a key factor of improvement of the organization.

Such a policy of quality is the foundation of good quality management, and thus is the guarantor of building trust among to the company and the brand among customers.

The formulation and adoption of a quality policy should be a consequence of the mission, vision and strategy adapted by the head management. Due to this, quality policy will be part of a quality management system, which is integrating the company – its fundamental conception. It integrates quality management system with the strategic level of management of the organization. In such a situation, quality policy becomes a platform and basis for development and verification of the quality objectives pursued at the operational level. This is crucial for the effective functioning of the quality management system, and the correct direction of development of the organization in terms of quality.

The quality policy expressed in the form of a formal document and implemented in the form of specific quality objectives is of great informational and motivational importance. Properly and formally implemented quality policy allows employees to understand the quality objectives, which are to be fulfilled. It also seems necessary to monitor the implementation of the objectives of the policy in a transparent manner. The information obtained from monitoring should be adequately spread within the organization. This will allow employees to become acquainted with the status of policy's implementation. As a result, it will help to stimulate employee engagement and to develop an organizationally appropriate attitudes. The most desirable effect is the development of quality culture in the organization. This term often occurs in the literature, in which the functional criterion of diversification of cultures in the organization is present, so that we can talk about cultures of: financial, quality, manufacturing, trade, or human resources [1]. Quality culture, is also described in the literature as a qualitative or a pro-quality culture. The importance of this type of culture for the development of the organization should be considered in the context of the importance of organizational culture in quality management. The biggest challenge for managers is to create a culture of pro-quality [5].

The quality policy, without a doubt, should be used to create and communicate “the identity of qualitative organization”. For this reason, should correspond to one funda-

mental question: What kind of organization is the topic in terms of quality problems ? With a documented Quality Policy, top management may communicate its approach to the issue of the quality of other members of the organization. Through a documented quality management policies one should ensure the realization of the idea in terms of quality of work, commitment, reliability, validity requirements of the customer. In other words, create and promote appropriate beliefs, values and attitudes. The quality policy should specify the way of thinking of the management and direction of development of the quality management system. Staff of the organization should know – whether leadership depends on the highest quality of production or services, or perhaps more important is the minimization of costs, allowing to serve other customers. Slowly it teaches the employees about: developments in the area of human resources, infrastructure development trends, new technologies or approaches to choose from and cooperation with the appropriate class suppliers. Consequently, with the help of Quality Policy management of the organization will actively create a culture of quality. As a result, it will contribute not only to the improvement of the quality management system, but also to the development of the whole organization [3, 4, 6, 9].

Policy shapes the quality of customer confidence in the organization. It can be said that the quality policy serves to strengthen customers' confidence. Undoubtedly, the very document, which is the quality policy is a good source of information for the customer. Thanks to this quality policy reinforces a positive image of the organization in the eyes of society and improves its credibility.

THE PROCEDURE FOR THE IMPLEMENTATION OF THE QUALITY OF THE IQMS POLICY

In order to accomplish the tasks described that quality policy faces it is very important not only to its proper identification and documentation. However, it is important to enable and monitor the implementation of quality policy. Described in this article procedure is designed to support these processes – implementation and monitoring of policies for the organization.

The quality policy should be implemented to the organization in stages as shown in Figure 1.



Fig. 1 Stages of implementation of quality policy in the intelligent QMS

QUALITY POLICY. MANAGEMENT'S DECLARATIONS.



Fig. 2 Example of top management declarations contained in the Policy quality

In the first stage, top management determines the content of quality policy, which should take the form of a declaration. In them, top management determines the priority efforts of the organization, standards of conduct, values shared by the staff. The basic areas that should be taken into consideration by top management during the preparation of the declaration to include 8 principles of quality management [7, 10]:

- Principle 1: Customer focus.
- Principle 2: Leadership.
- Principle 3: Involvement of staff.
- Principle 4: Process approach.
- Principle 5: System approach.
- Principle 6: Continual improvement.
- Principle 7: Decision making based on facts.
- Principle 8: Mutually beneficial relationships with suppliers.
- Additional areas covered in the form of a declaration to QP can include, for example:
 - Compliance with regulations.
 - Compliance with the standards of management.
 - The safety products.
 - The level of defective manufacturing.
 - The development of human resources and its competence.
 - The approach to maintenance.
 - Research and development.
 - The technology used.
 - Social responsibility.

Statements contained in QP should be presented in clear and understandable. Example declarations of top management is shown in Figure 2.

Adopted declarations in respect of quality should be the basis for determination of directions of development of the organization in the field of quality. Directions are more detailed declarations, which at this stage does not take a quantitative and temporal dimension. Directions of quality allow the adoption of appropriate ways to implement the earlier declaration. Examples of trends arising from statements contained in QP is presented in Fig. 3.

Examples directions of quality were marked by identifiers and are summarized in Table 1.

The effective implementation of quality policy, including the directions of quality should be measured. Therefore, for each direction should be developed on the meter. Generally meter is a tool or, as appropriate in this study, the method of measurement. The meter must be precisely described, preferably in the form of equation [2]. It is best if the meter can be expressed in quantifiable unit. The results indicate that quality policies are also trends that cannot be directly measured. eg. related to the maintenance of a certain state in the organization (T7 – Positive assessment of the QMS during annual audits entity). In such cases, an alternative assessment may be used, two-stage – the state met (Yes – positive assessment QMS) or false (No – negative assessment of QMS).

In addition, each meter should have adopted the reference period (the period during which the data used were collected in the meter). The reference period will be crucial for the results (indicators) obtained through the use of the meter.

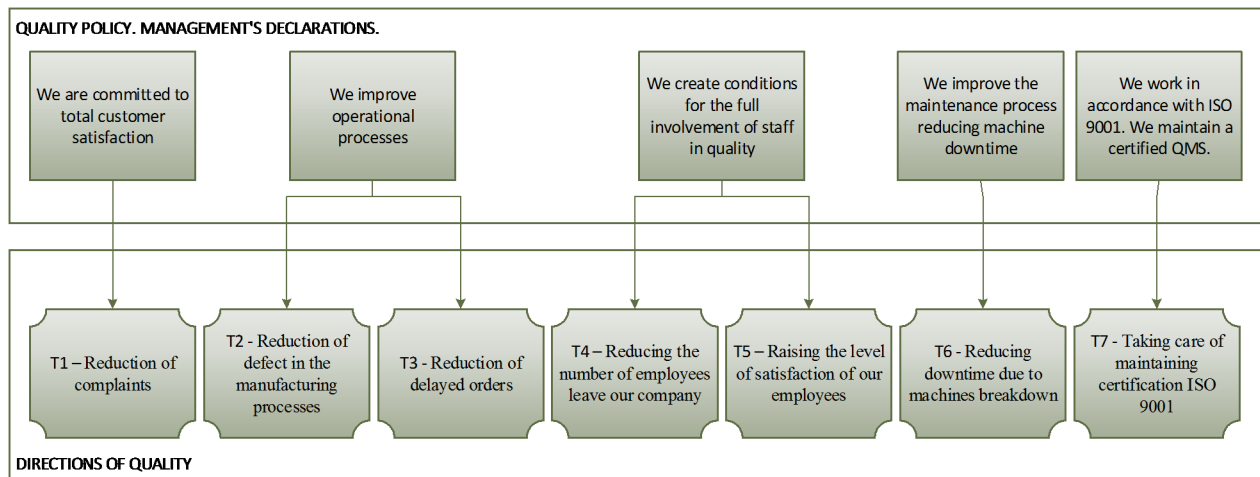


Fig. 3 Example of directions of quality established on the basis of a declaration on quality policy

Table 1
List examples of the directions of quality

ID	DIRECTIONS OF QUALITY	
T1	Reduction of complaints	↓
T2	Reduction of defect in the manufacturing processes	↓
T3	Reduction of delayed orders	↓
T4	Reducing the number of employees leave our company	↓
T5	Raising the level of satisfaction of our employees	↑
T6	Reducing downtime due to machines breakdown	↓
T7	Taking care of maintaining certification ISO 9001	↔

Table 1
List examples of the directions of quality

METERS OF QUALITY (Indicators)											
Meter ID	DESCRIPTION OF THE METERS OF QUALITY (indicators)	Unit	Reference period	DIRECTIONS OF QUALITY							
				T1	T2	T3	T4	T5	T6	T7	
T1-1	= value of complaints products by customer A	\$	year	X	X						
T1-2	= value of complaints products by customer B	\$	year	X	X						
T1-3	= value of complaints products by customer C	\$	year	X	X						
T2-1	= (Number of faulty products X/number of manufactured products X)*100%	%	month	X	X						
T3-1	= Total delay in customer orders A	h	month				X				
...								
T4-1	= (Number of employees resigning / total numbers of employees) * 100%	%	year					X			
T5-1	= (Number of employees satisfied with their work (satisfaction index>80) / Total number of employees) * 100%	%	year						X		
...								
T7-1	A positive evaluation during the audit of the QMS certification body.	Yes/No	year								X
...								

In Table 2 shows examples of quality measures that have been developed on the basis of the adopted directions of development of quality (Table 1). In practice, each direction should be "represented" at least one meter. Table 2 has been designed to transfer the directions of quality measures. That table is also used to verify the completeness meters with established quality development directions. Each of the measures listed in Table received unique identification number associated with the number corresponding direction. Each of the measures has been precisely defined in equation form, the individual and the reference period.

Thanks precisely determined and defined meters, it will be possible to set specific, measurable goals. Table 3 shows the number of monitoring implementation of sheet quality policy, which has a broader task than documentation purposes. The sheet is also used for planning and monitoring of the objectives, and thus the whole quality policy.

In Table 3, the first two columns (A and B) of the sheet IDs and information for quality measures.

In the third column (C), initial states entered an example of measured values. These values are the benchmarks in the process of setting goals. By having information about the initial state will be possible to maintain privacy news purposes. Goals are specific values that the organization plans to achieve. Examples of targets included in Table 3 in column E. It should be noted that the exemplary objects directly result from the majors and are expressed in units determined by meters.

Columns G, H and I are part of a sheet of sheet designed to monitor the achievement of the objectives. Column G contains information about the frequency of monitoring of

a particular size – meter. Column I in the illustrated embodiment is constructed on a monthly basis in order to facilitate monitoring of the objectives. Monitoring the implementation of the objectives of the quality policy is a necessary action. Not only acts as a control, but also information. Particularly important is that it allows for an early response in the event noting the lack of effectiveness of the implementation of the objectives. The frequency of monitoring implementation of the objectives may not be the same as the period for which a meter (compare columns D and G). The calculation of the value of the meter once for the data obtained throughout the year does not allow for an earlier reaction. Where implementation of the order is particularly important or are at high risk of failing to take frequent intervals to monitor implementation of the order. Monitoring sheet included in Table 3 calibrated in months (column I). Despite this monitoring purposes T4-1, T5-1 and T7-1 is consistent with their reference period and amounts to one year.

Column H contains findings about the forms of saving results in achieving goals. In the case of measures for which the reference period, and the frequency of monitoring has been set for a month, it can be assumed that the sheet meringue topped cumulative value denoted by (+). This solution was adopted in the case of measures T1-1, T1-2.

Proposed in this article sheet monitoring the implementation of quality policy allows for an ongoing replenishment value. Consequently, it supports oversee the implementation of quality policy in the organization. This form allows you to react in situations of adverse events (lack of efficacy) and taking in advance of improvement activities.

Table 3
Example of sheet of monitoring implementation of quality policy

SHEET OF MONITORING IMPLEMENTATION OF QUALITY POLICY																			
A	B	C	D	E	F	G	H	I											
ID	Meter description	Initial state (k=1000)	Reference period	GOALS	Unit	Monitoring frequency		Month											
								I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
T1-1	= value of complaints products by customer A	21k	year	15k	\$	m	target						15						
							result (+)	1,1	4,3	5	6								
T1-2	= value of complaints products by customer B	5k	year	3,8k	\$	m	target						3,8						
							result (+)	0,4	0,9	1,2	1,4								
T1-3	= value of complaints products by customer C	7,8k	year	6,2k	\$	m	target						6,2						
							result												
T2-1	= (Number of faulty products X/number of manufactured products X) *100%	3,1	m	2	%	m	target	2	2	2	2	2	2	2	2	2	2	2	2
							result	2	1,1	1,8	0,9								
T3-1	= Total delay in customer orders A	112	m	96	h	m	target	96	96	96	96	96	96	96	96	96	96	96	96
							result	87	90	95	97								
...
T4-1	= (Number of employees resinging / total numbers of employees) * 100%	12	year	10	%	year	target						10						
							result												
T5-1	= (Number of employees satisfied with their work (satisfaction index>80) / Total number of employees) * 100%	78	year	85	%	year	target						85						
							result												
...
T7-1	A positive evaluation during the audit of the QMS certification body.	-	year	-	Y/N	year	target						Maintenance of ISO 9001certification						
							result												
...

CONCLUSIONS

The current market situation require managers to build trust among customers to the company and to the brand. Building trust on the market should be a primary goal of any quality management system. A key element of the QMS is the quality policy. This document transferred into the field of goals and effectively implemented determines the level of QMS and its success in building customer confidence. Therefore, it should be a key principle for managers to create a quality management system, which will support the implementation and execution of quality policy. In creating such a system of quality management an author's procedure proposed in this article will be helpful. The de-

scribed procedure is designed to assist managers in developing, implementing and monitoring the implementation of quality policy. An approach proposed in this paper will create an intelligent quality management system, which aims to build trust among customers and improving the organization based on properly developed, implemented and monitored quality policy.

This article was prepared within the statutory research titled "Intelligent development in the organization and the region" work symbol BK-223/ROZ3/2015 performed at Silesia University of Technology, Institute of Production Engineering.

REFERENCES

- [1] M. Czerska. Zmiana kulturowa w organizacji. Wyzwanie dla współczesnego menedżera. Warszawa: Difin, 2003.
- [2] G. Gruchman. „Cel zakłety w miernikach”. Available: <http://www.cxo.pl/news/293796/Cel.zaklety.w.miernikach.html> [Accessed: July 10, 2015].
- [3] P. Hąbek. „Proces innowacyjny a nowe narzędzia doskonalenia jakości”. Problemy Jakości, no. 2, 2011.
- [4] M.J Ligarski. Podejście systemowe do zarządzania jakością w organizacji. Gliwice: Wydawnictwo Politechniki Śląskiej, 2010.
- [5] K. Lisiecka. Kreowanie jakości. Uwarunkowania – strategie – techniki. Katowice: Wydawnictwo Akademii Ekonomicznej im. K. Adamieckiego, 2002.
- [6] K. Midor. „An innovative approach to the evaluation of a quality management system in a production enterprise”. Scientific Journals Maritime University of Szczecin, no. 34, 2013, pp. 73-79.
- [7] PN-EN ISO 9000:2006 Systemy zarządzania jakością. Podstawy i terminologia.
- [8] PN-EN ISO 9001:2009 Systemy zarządzania jakością. Wymagania.
- [9] B. Szczęśniak, A. Gębczyńska. „Modele EPC w dokumentacji systemu zarządzania jakością”. Materiały VII Międzynarodowej konferencji naukowej Systemy wspomagania w zarządzaniu środowiskiem. Skalne Miasto, Czechy, 5-7 września 2010. Warszawa: ORGMASZ, 2010.
- [10] R. Wolniak. Parametryzacja kryteriów oceny poziomu dojrzałości systemu zarządzania jakością. Gliwice: Wydawnictwo Politechniki Śląskiej, 2011.

dr inż. Michał Molenda
Silesian University of Technology, Faculty of Organization and Management
Institute of Production Engineering
ul. Roosevelta 26, 41-800 Zabrze, POLAND
e-mail: Michal.Molenda@polsl.pl