

MANAGING QUALITY IN ORGANIZATIONS THROUGH PERFORMANCE MEASUREMENT

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Abstract. *The performance measurement of an organization's processes offers important information regarding to what extent the settled objectives have been fulfilled, and also its progress. This has to be achieved by taking into consideration the requirements of all stakeholders of the organization. In this paper we set ourselves to explore a manner by which an organization can remain profitable on the market, but also means to continually improve its performances. Regarding this, the paper discusses the need to plan and implement a quality management system in order to sustain and promote the change at the organizational level and to develop a culture of quality. Moreover, it is presented a system of performance indicators that will help the organization to evaluate its progress and to remain successful in the field of activity where it operates.*

Key words: evaluation of the results, process performance indicators, quality culture, quality management system.

1. Introduction

In order to successfully establish a position on the market, an organization must take into account the requirements of all stakeholders. An efficient internal and external communication system helps the organization in better understanding the requirements of their customers and continually increasing their satisfaction. The continuous satisfaction of customers' requirements ensures a greater degree of retention as well as leading to the improvement of the organization's overall performance. In the same time, continuous quality improvement constitutes an essential requirement for an organization to keep its position on the market and perform well. The organizations that are unable to adapt to the dynamic requirements of the market have little chance to survive.

Within the actual economic context, in trying to attract more and more customers and in order to perform well on the market, the organizations compete either through small prices, a better quality of their products/services or lower delivery time, either by taking into account these practices all at once (Chase, Jacobs et al, 2006). One of the methods by which an organization can reach such objectives is the development of a system of performance indicators, implementing and continually monitoring them, activities that will allow keeping under control all the organizational processes for supplying high quality products/services.

Researches show that organizations orientated towards process performances' evaluation gain a number of advantages, among which we can mention (Evans and

Lindsay, 2005): they are more responsive to the organizational changes and they successfully implement them; they demonstrate better collaboration and teamwork; they ensure the process of reviewing the employees' performance; they ensure an improved risk management; offer high quality services; ensure an efficient feedback; they develop a recognition and reward system of merits related to performance levels; look for a pathway to evaluating progress and identifying corrective and prevention actions; reduce costs through a better planning of activities and implementation of improvement actions.

Through the present paper, we intend to explore a method through which an organization can remain profitable on the market, as well as the means to continuous improvement of its performance. In this regard, the paper discusses the necessity of projecting and implementing a quality management system which will support and promote organizational change and the development of a culture of quality. In the same time, a system of performance indicators is presented in the paper, in order to help the organization evaluate its progress and remain successful in the field of activity in which it operates.

2. The role of organizational culture in projecting the quality management system

Most organizations develop and implement a quality management system in conformity with the requirements of the ISO 9000 family of international standards, which assumes a high degree of commitment and involvement of both top management and employees (Drăgulănescu, 2007). Implementing, continuous maintaining and improving the quality management system requires a high degree of teamwork, both between individuals and groups, which would normally tend to avoid cooperation.

The success of configuring an efficient quality management system is directly conditioned by the specific nature of the organizational culture at the level of the enterprise, by pre-existent cultural values, the flexibility of the organization in what concerns integrating new values and norms which are specific to the culture of quality (Necșoiu, 2006; Mainea 2006). Foster (2007) states that before projecting the quality management system, the following issues should be analyzed:

- *The management' philosophy*, namely: the mission of the organization and its strategic objectives; the values, the orientation and principles of management applied within the organization;
- *The socio-cultural context* in which the organization carries out its activity;
- *The way in which employees perceive work*: the dangers and the risks at the workplace; possible conflicts; the monotony of the job; the complexity of the activities conducted;
- *Aspects regarding job management*: organizational structure and job engineering; the decision process (structure, content and the personnel involved); the policy of personnel management; the structure and the content of the job (tasks, responsibilities, authority and decision, organizational relations);

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- *The organizational behavior*: work motivation; factors that trigger stress at the level of the organization; participation in activities organized outside office hours; satisfaction at the workplace; career progress;
- *Features of the individual*: age, education, personal values, aspirations, status and role in the society etc.
- *Work satisfaction*: relationships with coworkers and superiors, human resources management; cooperation between departments; possibility of improving knowledge and professional skills, informing and supervision; requirements associated with the job.
- *The management perception*: respects; favoritism and discrimination; teamwork; bureaucracy; mobilization of personnel.

The method of configuring the quality management system can determine major changes within the general management of the organization. The entire management system of the organization is reshaped so that it can orientate the organization towards quality, in order to obtain the maximum level of satisfaction for all stakeholders. Also, the cultural values promoted together with the implementation of the quality management system represent a consequence of the changes occurred in the organizational culture. The change is the process through which a situation/state perceived by the organization/individual as being different than the initial one is created. This assumes a sequence of events carried out in time at the level of the organization and a psychological process that is meant to support these events.

In order to successfully implement *the process of change (as a sequence of organizational events)*, it is required to go through the following steps (Foster, 2007; Gitman and McDaniel, 2006):

- Involve all employees;
- Plan the activities which will support the process of change;
- Put into practice all activities planned;
- Evaluate the results obtained after the change has been made;
- Institutionalize the process of change (maintaining the need to operate changes in what concerns the continuous improvement of quality)

Also, the success of this *process of change (as a psychological process)* is conditioned by the way in which change is perceived at the level of the individual, as well as at the level of the group (organization), on a cognitive plan, regarding the attitudes and actions carried out (behaviors). The success of configuring a quality management system, as a process of change of the organizational culture, is strongly connected with the way in which the employees of the organization respond to this process from the point of view of the cultural values (Necșoiu, 2006).

In order to obtain a positive answer it is necessary for the employees of the organization: to know what implementing a quality management system, at the individual and group level, involves (*cognitive plan*); to have a positive attitude towards the changes that occur once the configuring of the quality management system takes place (*attitudes*); to develop a certain individual and group behavior which will support

the process of implementing and maintaining of an effective quality management system (*behaviors*) (Foster, 2007; Bovee, Thill, et al, 2005).

In order to „*know*”, the employees must be trained in what concerns the aspects that involve the implementation of a quality management system, documenting this system, elements that relate to the activity conducted by the system. This way, the employees: will know and understand what is to be accomplished, how, when and where the specific activities must be carried out; will become capable of solving problems that may occur in current activities, using change as an instrument of continuous improvement.

In order to „*create a positive attitude*” (motivation) concerning the responsibilities of employees related to implementing a quality management system one can act in the following direction: it starts from the question „Why must I accomplish these activities?”; we determine the answer (affective) of the employees – „I like/I do not like because...”; the answers are conducted in the direction of developing a positive attitude (the advantages that come out of the implementation of the quality management system are maximized; clarifying the position and role in the organization; developing the team spirit etc.).

In order to „*develop a behavior (individual and group) orientated towards quality*” among all employees of the organization, one can act in the following direction: at the beginning, top managers will send these messages (including through their own behavior) which will represent an example to follow by the subordinate personnel; following that, the managers will sustain the formation among employees of those skills that come to support the process of change (of implementing a quality management system) and together with the teams that they lead will periodically analyze the progress achieved; once the employees acquired those behaviors that come to support an effective quality management system (behaviors are developed), management will periodically analyze and support the development of an organizational culture orientated towards quality (Mainea, 2006).

Due to the organizational changes that occur, the configuring of the quality management system is a long-term process (Cole, 2001). This process starts with the commitment of top management in what concerns developing those individual behaviors which sustain change and continues by involving all employees, looking for developing those group behaviors which support continuous improvement.

In our opinion, so that all customers of the organization, all stakeholders, benefit from the implementation of an effective quality system, by developing an organizational culture orientated towards quality, it is necessary for the change to be planned, to be accomplished with everybody’s participation and have the following characteristics: the pace of change will be rationally scheduled; to obtain the approval of all groups with a decision role in the structure of the organization, ensuring the necessary participative support for implementing and maintaining the quality system; to be a continuous long-term process (the performance level, required by an efficient quality management system, is maintained and improved through personal mechanisms

and through active involvement of all the organization's employees who will ensure, in time, stability of „best practices” presented in the system documentation).

3. Orientation towards results – a constant concern for all the members of the organization

Within the organization orientated towards results, continuous improvement of quality constitutes one of the daily concerns for each employee of the organization and not only a reaction to the problems that occur within its internal processes or as a response to the actions of the competition (Miven, 2005; El-Khawas, 2001). The process of making decisions in organizations orientated towards continuous improvement of results is formed upon a complex of accurate data and information, persistent and certain concerning the organization's activities and its results. In this regard, in order to achieve the organization's objectives related to quality, such as satisfying or exceeding customers' expectations, the efficient use of the resources, or improving the financial performances of the organization, the management gathers a series of data and information which aims at all categories of customers. This information refers, for example, to: type of customers and the market segments they serve; the efficiency of the human resources; the performances of suppliers; the quality of the products and services offered; the performances of the competition etc.

The assurance of the necessary support of data regarding the functioning of the operational structures of an organization, in the quantity demanded and at the expected moment in time, allows obtaining in real time the information and knowledge necessary to evaluating, controlling and improving the organization's processes, products and services, which will in turn ensure both reaching the objectives and satisfying the customers' continually changing requirements.

Some researches indicate that organizations orientated towards evaluation of results and performances of the activities carried out distinguish themselves through several special features, among which we mention the following (Chase, Jacobs, et al, 2006; Cole, 2001): place themselves in the top of the best successful companies in their field of activity; they adapt much easier to organizational and environmental changes; participative management is promoted within the administration system; cooperation and team spirit among employees is strongly encouraged; instruments and means of self-evaluation as well as self-monitoring of the employees' performances are encouraged; and there is a greater degree of availability of the employees in what concerns assuming responsibility for the quality of their work.

Researchers bring in the attention of managers three important observations regarding the evaluation of results (Evans and Lindsay, 2005):

1. *An organization that does not evaluate results, cannot determine progress or the degree to which the objectives have been fulfilled;*
2. *An organization that is unaware of its progress or successes recorded, cannot reward them; moreover, if it doesn't acknowledge success, it is possible that it might reward the mistake instead;*

3. *An organization which doesn't acknowledge the mistake, cannot correct it.*

Therefore, we argue that the activities of gathering data and information necessary for the organization in the process of making decisions, as well as the process of evaluating results must be approached systematically, taking into account the interests of all stakeholders. The substantiation of the decisions made within the organization on the basis of the analysis of data and information gathered regarding the results obtained may bring out a series of advantages for the organization. Thus, these organizations are able to increase their degree of understanding of the customers' real requirements and to satisfy their needs and expectations at a superior level. Furthermore, organizations are able to develop a correct and transparent reward and acknowledgement system of merits, and assure necessary feedback for its employees regarding their personal performances at the workplace and the importance of their work for the overall success of the organization. In addition, organizations are able to supply the means to evaluating progress and implementing the corrective actions that are imposed and to reduce operational costs as a result of implementing certain prevention and improvement actions.

In order for organizations to effectively evaluate the results and performances of the activities carried out, we emphasize in this paper the need for companies to develop a set of performance measurement indicators which includes the requirements of both internal and external customers and other factors that generate success in the organization. Also, organizations should use comparative data and information in the process of improving its overall performance and maintaining the competitive position on the market. Continuous identification of new sources of information regarding the parties involved in the accomplishment of organizational objectives and their use within the organization is another specific action an organization should implement. Furthermore, an organization interested in improving effectiveness of its processes should assure the involvement of each employee in the activities of evaluating results and insurance of visibility and transparency of information concerning performance, within the entire organization. Finally, information accessibility and availability, as well as insurance of necessary resources for their use, to all interested parties, but also identification of knowledge that derive from this information, their dissemination and publishing of results, are valuable actions organizations should take into account.

4. Performance measurement indicators for the organization's results

4.1. Key factors for success and categories of performance indicators

In the modeling process of a system of performance measurement indicators, the organization needs to take into consideration two important aspects: the extend to which top management contributes, through its decisions, to the general health of the organization; and also the degree to which, through the measures carried on, the daily activities of the employees and decision process are encouraged.

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Foster (2007) developed some practical guidelines for modeling a system of performance measurement indicators. These are presented below:

- *Less is better: evaluate the key, vital processes;*
- *Develop performance indicators closely correlated to the organization's key processes;*
- *Develop performance indicators to monitor the evolution/ dynamic of the processes;*
- *Develop performance indicators by taking into consideration all the customers' needs;*
- *Develop performance indicators for processes at all management levels;*
- *Inspect the indicators periodically; and*
- *Set specific targets to be achieved.*

This system of performance measurement indicators represents the organization's key to success factors as it makes the difference from the competitors and it defines its competitive advantages.

The organizations use different means to evaluate the results and their performance (Olaru, Păunescu, et al, 2007; Păunescu, 2007; Teodoru, 2007; Miven, 2005; Rusu, 2001). The choice of these measurement methods depends, first of all, on *key to success factors* which support the organization's activity (*Key Business Factors = KBS*), and also critical factors which determine the success of each organization.

The main categories of results and indicators which are frequently taken into consideration for accomplishing the benchmarking studies are: financial results; results which refer to the productivity; results which refer to the customers; performance indicators of human resources; performance indicators of operational processes; results related to the market; and performance indicators at the organizational level. In the following paragraphs of this paper we address each one of these results categories.

Financial results, for instance, *Return On Assets (ROA)* or *Return On Investments (ROI)* are probably the easiest to obtain and compare. In order to determine and analyze the financial results, it is only needed a balance sheet and an income statement. Much of this data are available both in the annual reports and on the Internet. Top management is interested in these indicators in the decision making process.

The results which refer to the productivity are useful in evaluating the capacity of an organization to efficiently use the limited resources that it has.

The results which refer to the customers include the satisfaction level of the client itself and compared to the competitors. These measurements can be loyalty programs, revenues, expenses or the value perceived by the customers, rewards received from the customers, the rating as compared to the competitor's customers. The quantification of customers' satisfaction is important for estimating the efficiency of the qualitative improvements, being also a system of relevant indicators for the financial performances of the organization.

The evaluation of the *human resources* provides important hints concerning the efficiency in managing the organization. The employees' satisfaction is correlated in a

significant way to the financial performances of many companies. Therefore, the evaluation of the employees' satisfaction, the training expenses, hours allocated annually to the trainings, the performances of the working system, the quantification of employees' efficiency, personnel turnover, the statistics related to the employees' security, the absenteeism and other information may be important measurements used in the benchmarking process.

The *operational results* are important for monitoring the production efficiency and identification of the nonconformities within the operational process at the level of the organization. The *performance indicators of the operational processes* offer information with regard to the conformity of these processes, for instance: the rates for defaults fabrication, the quantification of the necessary materials/ exchange parts or the reassembly duration, the percent of defaults, reparations, quality costs and many others.

The *results obtained on the market* represent another essential indicator for evaluating the success of an organization. Usually, these refer to the market share and the speed to enter a specific market. As the markets are segmented, the market share cumulates portions from the different markets where the organization activates.

The growing solicitation of the organizations regarding the ISO standards implementation, and also the orientation to the formalized production systems, have determined the necessity of taking into consideration a newer category of *structural indicators*, usually of reference in the benchmarking process. The structural evaluations include the conformity of the objectives, policies and procedures followed by an organization to the reference standards. These can refer to quality, environment, security, ethics and also other types of structural measurements which can be used to evaluate the organization's competitiveness.

4.2. The alignment of the performance indicators to the organization's processes

As we were mentioned before, the evaluation of the results and the performances of an organization need to be accomplished by taking into consideration the requirements of all stakeholders, namely: the internal and external customers, suppliers, partners, investors, society as a whole. In the following paragraphs of the paper we propose a specific system of performance indicators, which organizations may consider for evaluation of their progress.

Regarding the relationship with the *customers*, the measurement indicators for the performance of the organization can be considered the following: the satisfaction level of the customers; the number of unsatisfied customers; the number of retained customers or newly acquired customers; the number of lost customers; the number of complaints received on behalf of the customers; the number of complaints regarding the warranty or expiration date of the product/ service etc. The customers' satisfaction needs to be evaluated from at least three points of view: the quality of the offered product, the quality of the services delivered and the time spent for satisfying the client's requirements. So, the level of satisfaction of a customer can be evaluated

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through some indicators such as: his loyalty, buying frequency, the number of positive evaluations made by the client, the level of prizes or acknowledgements received on behalf of the client etc.

Evaluating the customers' satisfaction allows the organization to develop a series of actions with the purpose of improving its performance, such as: to identify the client's perceptions regarding how well the organization meets the customers' needs and identifies the causes of dissatisfaction, but also the unfulfilled expectations and the conceiting factors; to compare the organization's performance with the competitors' in order to sustain the planning and a better strategic initiative; to identify improvements areas regarding the design and delivery of the products and services, but also the training and coaching for the employees; to identify the tendencies in order to determine whether the changes actually bring improvements.

Adequate evaluation of the customers' satisfaction allows the identification of those processes that have a major impact on the satisfaction level and makes a distinction between the low-level performance processes, medium-level and high-level of performance. A way to assure that the evaluation is adequate it is to collect information both on the importance, and also the performance of the key quality characteristics of the product/ service. In figure 1 we show the relevance of considering the performance – importance link of the product/ service characteristics.

From the point of view of the *quality of the products and services*, the measurement of the organization's performance can be made through some indicators such as: the number of defaults per product or lines of products, the quality level of the product determined by the set of quality characteristics, the response time at the client's request, the easiness of using the product/ service, the framing of the product in different quality classes (by the consumer). These indicators are highly correlated with the customers' satisfaction indicators and buying frequency decision.

IMPORTANCE	PERFORMANCE	
	Low	High
	Low	<i>Who cares?</i> There is no interest and demand for such a product/ service
High	<i>Vulnerability:</i> The performances of the product/ service do not satisfy the client's requirements	<i>Strengths:</i> There is great interest and demand for such a product/ service

Figure 1. Importance vs. performance of the product/ service characteristics

As measurement indicators of the *financial performances* of the organization, we mention here, besides the solvability evaluation indicators and the financial liquidity of the organization – such as the income level, profit rate, investment recovery rate, capital use – quality costs, or more exactly the “non-quality” costs. The evaluation indicators of the *market performances* of the organization refer to the market share, the

sales volume, rate of launching new products, the degree for entering on new market segments, the level of sales associated to new products etc.

As measurement indicators of the *human resources* performances of the organizations can be used the following: in what concerns the welfare and the employees' satisfaction, there are used as indicators the employees' health condition, the absenteeism at the work place, the number and nature of strikes, the personnel's replacement rate; referring to the personnel's motivation it needs to be taken into consideration the following indicators, such as: the number and nature of the education, instruction and perfection courses for the employees, the effectiveness of these courses, the methods of reward and merit recognition, different recompenses; in what concerns the effectiveness and the performance of the working system, there needs to be evaluated each employee's productivity, the rate of suggestions, the nature and frequency of improvement actions etc.

For evaluating the *performance of the entire organization* can be used indicators like: the flexibility of the production lines, the production cycle duration, innovation rate, the launching of a new product/ service on the market, work productivity, investment volume in research and development, the level of pollutants in the environment, the quantity of wastes produced, acknowledgements and certificates obtained, quality audits developed, cost savings, new means of communication used (for example, e-commerce) etc.

Particular performance measurement indicators of the organization are directly correlated to the *operations*. The operations performance indicators refer to the faults and errors rate made during the production or along the logistics chain of the product, or the measurement indicators of efficiency such as the production cost, the production cycle's duration, the productivity, downtime of the machines, the rate of problem solving, efficient use of raw materials and energy.

Another category of indicators refer to the *social responsibility* and the *ethical behavior*. The following indicators can be included here: the conformity with the legislation and the legal frame, the number of hours/ services in the community's interest, different volunteer activities, the promotion of an ethical behavior in making decision etc.

In table 1 we present an instrument for monitoring the organization's performance, which can be developed for each category of performance indicators.

Therefore, in order to have a clear perception on the performance and position as compared to the competitors and the good practices in their industry, the organizations need to evaluate their performances and to compare the data obtained, by taking into consideration at least the following criteria: the industry/ field of activity averages; the performances of the best competitors; the results of the benchmarking process.

Table 1

An instrument for monitoring the organization's performance

FINANCIAL PERFORMANCES				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				
HUMAN RESOURCES				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				
PRODUCT/ SERVICE QUALITY				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				
CUSTOMER RELATIONSHIP				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				
OPERATIONS				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				
SOCIAL RESPONSIBILITY				
Component element	Monitoring frequency	Who monitors?	How it is monitored?	Graphical representation
.....				

5. Conclusions

The paper presents a way through which an organization can remain profitable on the market and means to continuously improve its performances. Regarding this, we highlight in the paper the need to plan and implement a quality management system that sustains and promotes the change at the organizational level and the development of a quality culture. In addition, we state that in order for all customers of the organization to benefit from the results of a quality management system, through the development of a quality – oriented organizational culture, it is necessary that the changing process to be planned rationally, to be achieved with everyone's involvement and to be a continuous and long-term process.

Moreover, we present in the paper a specific system of performance indicators which help the organization to evaluate the progress and to remain successful in the field of activity where it operates. The system of performance indicators referred to in the paper, includes the following categories of results: results related to customers and quality of products/services, financial and market results, results related to employees'

performance, results which refer to operational processes, and results related to the impact over the society.

References

- Bovee, C. L.; Thill, J. V.; Mescon, M. H. (2005). *Excellence in Business*. Revised Edition. New Jersey: Pearson/ Prentice Hall
- Chase, R. B.; Jacobs, R. F.; Aquilano, N. J. (2006). *Operations Management for Competitive Advantage*. 11th Edition, New York: Mc Graw-Hill/ Irwin
- Cole, R. E. (2001). From Continuous Improvement to Continuous Innovation, (Electronic version)/ *Quality Management Journal*, **8**(4), 7-21
- Drăgulănescu, N. (2007). *Competitiveness Through Quality - A New Challenge for Romania*. In Proceedings of the 7th International Conference of the Central and Eastern European Countries, Iasi, 5th-6th of December 2007
- El-Khawas, E. (2001). Who's In Charge Of Quality? The Governance Issues In Quality Assurance. *Tertiary Education and Management*. Dordrecht: 7(2), p. 111
- Evans, J.R., Lindsay, W.M. (2005). *The Management and Control of Quality*. Sixth Edition. Mason, Ohio: South-Western, Thomson
- Foster, S. T. (2007). *Managing Quality. Integrating the Supply Chain*, Third Edition, New Jersey: Pearson& Prentice Hall
- Gitman, L. J.; McDaniel, C. (2006). *The Future of Business. The Essentials*. 2nd Edition. Mason, OH: Thomson/ South-Western
- Mainea, M. (2006). Cultura calității. Impactul orientărilor culturale asupra abordării calității în firmele românești (I) Crearea și consolidarea culturii calității. *Calitatea – Access la succes*; Anul 7, no. 11, pp. 15-18
- Miven, P.R. (2005). *Balanced Scorecard Diagnostics: Maintaining Maximum Performance*, Hoboken, NJ: Wiley
- Necșoiu, R. (2006). Maturitatea SMC și intensitatea orientării către calitate a culturii organizaționale. *Calitatea – Access la succes*; Anul 7, no. 6, pp. 11-14
- Olaru, M.; Păunescu, C.; Cherciu O. (2007). *Developing an Organization Maturity Assessment Tool to Enhance its Performance*. In Proceedings of International Conference on Business Excellence, Brașov; Edited by C. Brătianu, D. Lixândroiu, N.Al. Pop; Special Issue of Review of Management and Economic Engineering; vol. 6, no. 6/ 2007, Editor-in-chief: Ioan Abrudan, Universitatea Tehnică din Cluj-Napoca, pp. 102 -107
- Păunescu, C. (2007). *Dynamic Approach Regarding the Organization Global Performance*. In Proceedings of Commodity – Consumer – Quality. The XX1st Century's Perspective, Tipografia Samperi – Messina, Italia; pp. 95 -101
- Rusu, B. (2001). Small - and Medium - Size Enterprises and Total Quality Management: Experiences in Post-Communist Romania, *Post-Communist Romania: Coming to Terms with Transition*, Editori - Duncan Light și David Phinnemore, Palgrave, (2001), London, p. 224-242
- Teodoru, T. (2007). *Metode de îmbunătățire în managementul calității*. Editura Conteca 94, București
- ISO 9004:2000 International Standard: Quality Management Systems – Guidance, Second Edition, International Organization for Standardization, Geneva, Switzerland