

**FACTUAL APPROACH IN DECISION MAKING – THE
PREREQUISITE OF SUCCESS IN QUALITY MANAGEMENT**

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Abstract

In quality management system as well as in other managerial systems, effective decisions must be always based on the data and information analysis, i.e. based on facts, in accordance with the factual approach principle in quality management. It is therefore necessary to measure and collect the data and information about processes. The article presents the results of a conducted survey, which was focused on application of factual approach in decision making. It also offers suggestions for improvements of application of the principle in business practice.

This article was prepared using the research results of VEGA project No. 1/0229/08 “Perspectives of the quality management development in relation to the requirements of market in the Slovak Republic”.

Key words

factual approach in decision making, quality management, data analysis, measurement and monitoring

INTRODUCTION

Quality Management System (QMS) includes all basic activities such as: quality planning, contracts revision, purchase and verification of purchased products, identification of product and product traceability, inspection and testing process, management of control and testing devices, management of non-conforming products, corrective actions and also verification of their effectiveness, etc. The result of all these activities is the data which have to be professionally processed and analysed using various tools and methods. Application of the factual approach principle in decision making in business practice leads to the implementation of the measurements and collection of the data and information needed to achieve that objective. It ensures that the data and information are sufficiently accurate, reliable and accessible; it leads to the data and information analysis, to the application of decisions and taking actions as a result of logical analysis based on experience and intuition.

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THE NATURE AND SIGNIFICANCE OF FACTUAL APPROACH IN DECISION MAKING

In accordance with the principle of factual approach in decision making, the organisation has to define, plan and implement the measuring and monitoring activities that are necessary to ensure conformity and improvements. This includes the identification of needs and use of appropriate methods including statistical techniques. An organisation has to perform these activities to make sure that the monitoring and measuring activities necessary to ensure compliance and improvements are defined, planned and applied. The current requirements on QMS also insist on the application of new measurement processes which are rather of systemic than technical character; that means they indicate the state of QMS. The measurement process is extended by the activities of measuring and monitoring which are related to the efficiency of the QMS, performance processes, customer satisfaction, employee and other stakeholder satisfaction, the costs in quality management, etc. These measurements should provide the basis for further analysis and continuous quality improvement. (Linczényi, 2004)

The principle of factual approach in decision making implies that effective decisions are based on the analysis of data and information. To meet this principle successfully, it is necessary to perform the following tasks in organisation:

- collecting accurate and reliable data from various processes in organisation,
- using appropriate statistical methods for data collection and analysis,
- training people to use statistical methods in data collection and analysis,
- encouraging managers to use the analysed data in decision making,
- ensuring accessibility of the data analysis results for the company employees, as much as possible.

APPLYING THE PRINCIPLE IN BUSINESS PRACTICE IN SLOVAKIA

In the process of transformation of our economy to a market economy, the industrial enterprises in Slovakia found themselves in a qualitatively new business environment, characterised by intense and rapid changes. Companies are forced to continually improve not only their products, but also their internal processes and systems, in order to increase their competitiveness (Bestvinová, 2006).

In this context, we solved a research task aimed at the perspectives of the quality management development in response to market requirements. Within the VEGA project, we conducted a research aimed at the review of the current state of application of the basic principles of quality management in 124 selected industrial corporations in Slovakia.

The survey data collection was carried out using the questionnaire and we addressed the respondents in the following representation: 35 % of automotive industry, 35 % of machinery industry, 30 % of other industrial sectors. Out of the whole group of respondents, 85 % (105) have already had QMS established, whereas the remaining 15 % of the respondents (17) have not had this system established yet.

The questionnaire was structured into eight sections according to different principles of quality management. Below is the list of those with a specific focus on the factual approach in decision making and its application in industrial practice in Slovakia:

1. Do you ensure systematic data collection in your organisation?
2. Does the management examine the objectivity and reliability of data from particular processes?

3. Are there appropriate statistical tools designed and established to analyse and evaluate data in your organisation?
4. Is data from the data collection and analysis available to all who need them to manage and control processes in your organisation?
5. How are the results of the data analysis used in your organisation?
6. What do you think are the benefits of factual approach in decision making?

The data obtained from the first question revealed that there are significant differences in ensuring the collection of data between the companies with QMS and companies without QMS. The results are expressed graphically in Figure 1.

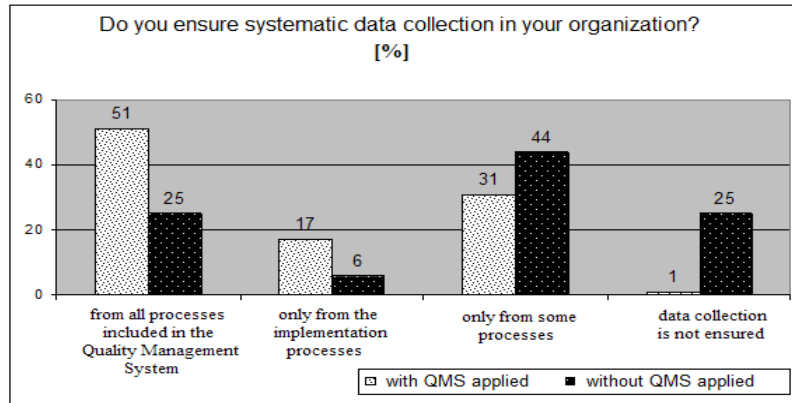


Fig. 1 Graphical representation of responses to the first question

Similar results were also obtained from the second question, in which we examined whether the management strives for objectivity and reliability of data from various processes. In this area, significant differences appeared between the companies with QMS and the companies without quality system, as we can see from the graphical representation in Figure 2.

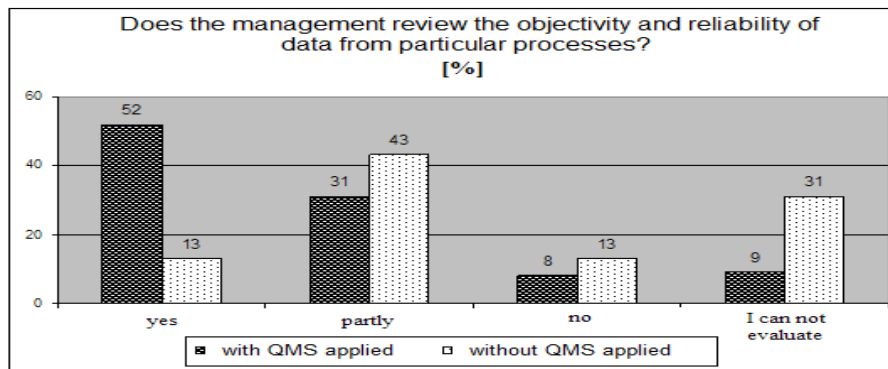


Fig. 2 Graphical representation of responses to the second question

The third question was aimed at determining, whether the organisations use appropriate tools and statistical methods in the data collection, analysis and evaluation. Based on the survey, we can conclude that this area is not handled at the required level in the corporate practice at the moment. One of the reasons of the unfavourable state is the insufficient knowledge of statistical methods amongst the involved employees and their inability to use

those methods. Within the survey, we ascertained this fact while analysing the principles of continual improvement and their application in business practice.

In most businesses nowadays, software applications are used for data collection regardless of the quality system. More than a half of the total studied organisations use software applications for data collecting. Figure 3 shows a significant difference between the organisations with implemented QMS (software applications use 59%) and those without QMS (software applications use only 44%).

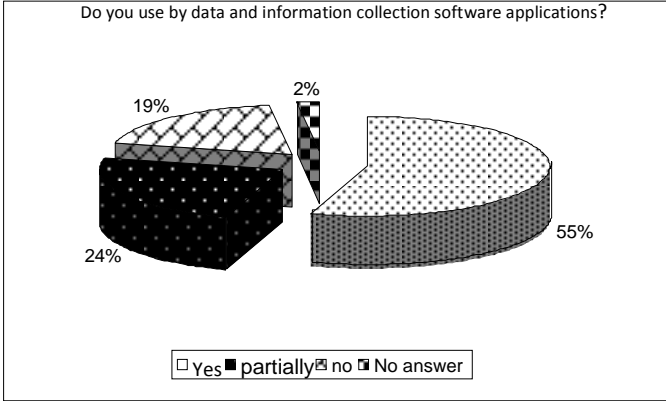


Fig. 3 Graphical representation of responses to the fourth question

Effective decisions must always be based on the data and information analysis; in other words, based on facts. To be able to follow this principle in practice, it is necessary to make all the recorded data related to quality management and other management systems available for all employees who might need them. In organisations with established quality systems, the necessary data is available to the owners of the processes in 63% of cases. In organisations without a quality system, it is only in 31%, and therefore we can say that the major differences in this area are between the studied organisations.

When we asked what the organisation uses the results obtained in the processes analysis for, the order of answers was as follows:

1. for processes improvement,
2. for setting the quality targets and standards,
3. as a basis for management review,
4. for planning funds within the QMS.

The survey revealed that factual approach in decision making mainly affects the field of measuring, monitoring and improvement. All these activities are very closely related to the analysis of data and the competent, and a proper decision cannot be made without them. Each organisation which deals with QMS has a responsibility to implement continuous quality improvement through the improvement of all processes and activities; and thus it contributes to improving the efficiency and effectiveness of QMS and the organisation overall.

These facts are clear also from assessing the following question which was focused on the benefits of factual approach in decision making. In this case, respondents were asked to choose three most important areas, so the results are expressed in absolute numbers (frequency). As we can see from Figure 4, the largest group of respondents chose the improvement of effectiveness and efficiency in the organisation as a benefit that decision making based on facts brings.

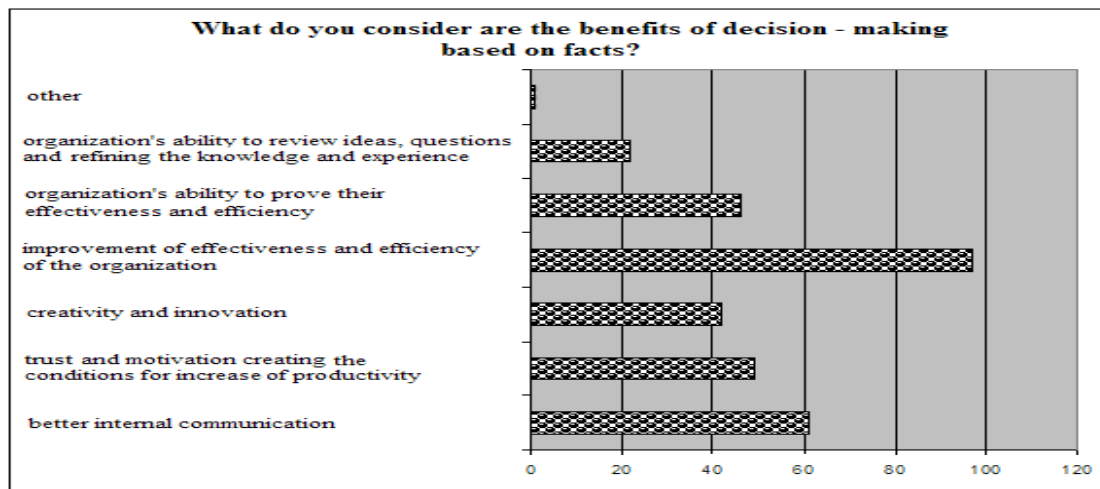


Fig. 4 Graphical representation of responses to the sixth question

Executives must be able to provide and also use objective information in QMS in the decision-making processes. They have to be aware of the trends in development of efficiency indicators of these systems and estimate the areas of further development objectively. These facts indicate greater demands on the level of knowledge about methodology and procedures of various measurements, both technical and systemic (Paulová, 2010).

SUMMARY AND RECOMMENDATIONS FOR PRACTICE

Current QMS is based on process approach, and its importance keeps growing. The process-oriented QMS model highlights the importance of understanding and meeting customer requirements, which is necessary for monitoring processes from the perspective of creating values; obtaining results on processes performance and efficiency; and continual improvement of processes based on objective measurements results. It is therefore necessary to ensure the permanent monitoring, measuring and analysing not only of the processes, but also of QMS performance. Observed organisations perform this as an internal audit and do not perform other forms of monitoring and measuring, for example management review, self-assessment, etc.

For effective management of processes, it is necessary not only to systematically collect data about processes, but it is also important to test the collected data from the perspective of objectiveness and reliability. The survey results show, that only a half of the addressed organisations with applied QMS obtains data from every process. This is a significant deficiency, because, from the perspective of a satisfied customer, it is crucial that every process in organisation is clear, well managed and properly ensured. This status can be achieved only in the case, if the data from process will be objective and reliable.

Statistics is a necessity for an effective and meaningful quality management, and therefore it must be in the centre of attention on every level of company management and the study of statistical tools along with other quality management methods should be the basic approach in implementation of QMS or TQM (total quality management). The obligation of using the statistical methods should not be perceived and understood as a formal order or rule. It must be understood only as a recommendation of tools, which will enable to improve the company's economical situation in the cheapest way while finding weak points in all stages. It will also provide sustainable quality improvement and stable statistical process – in this manner we prevent the occurrence of nonconforming products, we contribute to higher

quality for lower costs and thus meet customer satisfaction and requirements. It is therefore important to make the involved employees aware of suitable statistical methods and their utilisation and application in practice.

Many measuring and monitoring activities performed in industrial practice are only formal and the obtained data is not used effectively in quality management, so the information is not fully and sufficiently used on every level of organisation. In industrial practice, the considerable problem is that the data obtained in a difficult way, is not used effectively. There is a lot of data in every organisation, which is not systematically processed. This fact is reflected in QMS. A performed measurement in organisation does not make sense unless managers systematically deal with the obtained results within their strategic and operative decisions.

Only 50% of the addressed organisations with established QMS use the results of data analyses from measurements as the documentation for management review. Data analysis is however necessary for assuring that the QMS is effective and there are places and points identified in the process, where we need to collect and analyse data for the purpose of quality management.

In the context of factual approach in decision making, every organisation must define, plan and apply the measuring and monitoring activities which are necessary to achieve the conformity and improvement. It includes determining the needs and using the suitable methodologies, including statistical tools. The organisations must perform these activities to make sure that the monitoring and measuring activities necessary to ensure the compliance and achieve improvement are properly defined, planned and applied.

Managers must be able to provide and subsequently use in the decision-making processes the objective information about QMS, recognise and understand the trends in development of performance indicators of these systems, and thereby objectively forecast and determine the areas of further improvement. These facts result in higher demands for the employees' knowledge about the methodology and procedures of measurement; both, technical and systematic.

CONCLUSION

Factual approach in decision making is one of eight quality management principles. During the research, we studied the application of the principle in business practice and we compared the differences in its application in various industries in Slovakia. We determined important aspects, which have become a subject for further study in our research project. Data analysis is needed in order to make sure that the QMS is effective, and that the places or points to collect and analyse data for quality, detect potential problems and identify opportunities for improvement were identified in the process.

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