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Dear readers,

The public has almost become a kind of used to the expectation that *Horizonti* scientific journal with its every new edition, to trace a new pathway towards its further establishment on the international educational and scientific-research areas.

In its pronounced strive to achieve an increased level of quality, the *Horizonti* that we know from before has been transformed and now it is coming out as two separate issues of the same brand name, but with an improved recognizability and an increased particularity in terms of the scientific-research contents it brings.

Starting with this issue onwards, the educational, scientific and research horizons are going to spread over two groups of scientific areas, one dedicated to mathematics and basic natural science, technical, technological, biotechnical and medical sciences, and the other dedicated to the social studies and humanities. This new classification is made with a single aim driven by the motivation of attributing the journal an increased degree of focus on the scientific thought.

One more significant moment that signified our determination to transform the existing journal and to divide it into two, equally important new series, has been detected in our aspiration to obtain scientific-research contents that would greatly influence the current social processes on local and international level, and generally speaking, would turn out to represent a powerful tool in the complex processes of internationalization and integration within the European academic milieu. We strongly believe that this can only be achieved through particular and focused targeting and correspondent treatment of challenges outlined in the specific and narrowly specialized scientific journals. By 'splitting up' *Horizonti* into two editions dealing with similar, related scientific fields, our hope is to realize this objective.

It is important to stress that, *Horizonti* will, for the coming period, just as it did previously, continue respecting the principles of scientific impartiality and editorial justness, and will be committed to stimulating the young researchers in particular, to select *Horizonti* as a place to publish the results of their contemporary scientific and research work. Also there is an emphasized need for those who, by means of publishing This is also in line with the need to provide place incorporated within the publishing activity for

all those who through publishing their papers in international scientific journals, such as the two new series of our University *Horizonti*, view their future career development in the realm of professorship and scientific-research profession.

The internationalization of our *Horizonti* journal is not to be taken as the further most accomplishment of our University publishing activity. Just as the scientific thought does not approve of limitations or exhaustive achievements, so is every newly registered success of the *Horizonti* editions going to give rise to new “appetites” for further objectives to reach. In this context, for the very first time papers published in *Horizonti*, from this issue onwards, will become accessible to the broader scientific public through the EBSCO database.

Taken from the aspect of quality gradation, it is well justified if we announce the publishing of the international scientific journal *Horizonti* with a significant quantifier – journal with impact factor. This initiative of “St. Kliment Ohridski” University – Bitola is given a substantial place in the future undertakings outlined in the plan for increasing the overall quality of organization and functioning of the University.

Last, but not the least, as we have made public our future steps, we would like to express our sincere appreciation for the active part you all took in the process of designing, creating, final shaping and publishing the scientific journal. Finally, it is with your support that *Horizonti* is on its way to attain its deserved, recognizable place where creative, innovative and intellectually autonomous scientific reflections and potentials will be granted affirmation, as well as an opportunity for a successful establishment in the global area of knowledge and science.

*Sincerely,  
The editing board*

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## **SURVEY OF KEY INDICATORS IN ACCORDANCE WITH THE INTERNATIONAL STANDARD ISO 9001:2008 IN REAL INDUSTRIAL SYSTEMS<sup>1</sup>**

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### **ABSTRACT**

The global way of organization activity has completely changed the organizational approach to work. Considering three key elements of today's market society: the period of delivery, cost and quality, it can be concluded that quality is a key element for market success. A key aspect in favor of this conclusion is the identical delivery, and the changed habits of the customers. The change in buying habits has led to a situation where the buyer is willing to pay a higher price for distributed quality. In this way the quality of product or service is the key differential element. Regarding to this conclusion the implemented quality system in the form of ISO 9001:2008 international standard is one of the ways for perfecting quality in global markets. But the real question that arises is the following: What is the situation about the standard after the certification? Do organizations maintain it?

The purpose of this paper is the survey on several key indicators in accordance with the standard, realized in 82 business entities in Republic Macedonia.

**Key words:** quality, ISO 9001:2008, key indicators regarding to the requirements of the standard.

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<sup>1</sup> Review scientific paper

## **INTRODUCTION**

The global way of market activity has led to changed market conditions, which led to drastically changed purpose of industrial systems. While in the past, the basic purpose of any industrial system was profit, today priority is placed on quality of product / service. The fact that the market conditions are dramatically changed, can be recognized in today's buyers habits. Nowadays the customers are willing to pay a higher for quality.

One of the ways for differential recognition of organizations, is practically the implemented quality system, shown in the form of ISO 9001:2008 standards. Although the basis of the standard is documenting the processes and activities, numerous organizations don't understand the basic concept of the standard. This can particularly be seen from the research conducted on real industrial systems in the Republic. Macedonia.

In fact most of the organizations, the complete documentation have "prescribed" from another organizations, or their sister organization has rented a consulting company with purpose just to get a certificate. In this matter the essence of the standard, which if properly implemented, brings numerous benefits, is completely wasted.

But the situation is not so "black". This can be seen in numerous of the organizations implementing the standard as a part of a long term strategy. In this way the functionality of the standard leads to continuous quality improvements.

## **THE RESEARCH OF THE KEY INDICATORS**

Taking in consideration the nature of the standard and the applicability of the same in any organization regardless of type, size, position and organizational structure, there is a wide field for research in this area. One of the key elements of the standard is to improve the quality in all organization levels. In this direction was the conducted research on several key indicators in 82 business entities in the Republic of Macedonia who have implemented the ISO 9001:2008 standards.

The key indicators that were taken into the conducted survey were:

- Indicator – supplier
- Indicator – training
- Indicator - fulfillment of the customer's requirements
- Indicator - use of methods and techniques for validation of business processes

- Indicator - relationship with a supplier in accordance with established methodology according to ISO 9001 standard
- Indicator – nonconforming product
- Indicator - alternative actions nonconforming product
- Indicator – ways for identifying the product
- Indicator – use of the benchmarking process

The purpose of the conducted research was to get information for the use of these key indicators with the requirements of international standard for quality, in the so-called cross-certification period (time frame of 3 years).

Research as previously stated was conducted on 82 businesses that are certified under the requirements of the standard. When choosing business entities, despite the availability of information and the possibility of cooperation, as elements taken into account were: organizations from different industrial branches, with varying degrees of development, different organizational structure and a different way of management.

In this way the sample taken into research in the survey is representative and the results can be taken as a result of the population (subjects who have implemented the standard and operating in the territory of the Republic of Macedonia).

### **SOME OF THE INDICATORS TAKEN INTO THE CONDUCTED RESEARCH**

#### **Indicator supplier**

The demands of the standard ISO 9001:2008, into paragraph 7.4.2 (information suppliers), require evaluation of suppliers, which are an essential element. These key elements are inputs into business that lead to an increase or decrease of the final product quality..

The criteria that were used for this part of the research and the results of the analysis are given into tabular display 1.

Num.	Criteria	Used		Not used	
		<i>Frequency</i>	<i>%</i>	<i>Frequency</i>	<i>%</i>
1	„Just in time“ delivery	78	95.1	4	4.9
2	Quality of the delivered product	75	91.4	7	8.6
3	Nonconforming products in the last period	/	0.0	82	100.0
4	Price	82	100.0	/	0.0
5	Suppliers capacities	24	29.2	58	70.8
6	Other criteria	3	0.7	79	96.3

Tabular display 1. Research results for the indicator supplier



According to survey results in relation to the specified indicator, businesses during the process of supplier choosing, primarily use the cost criterion as a key element in 100% of the cases, then the quality of raw materials as a criteria. On the other hand, the facts shows that most businesses have a partner supplier that have constant quality of the materials delivered.

**Indicator – nonconforming product**

Each organization MUST pay attention to identifying the products that does not comply with the requirements. In the context of the above mandatory requirement, the paragraph 8.3 (Managing nonconforming product) of the standard, is with aim to prevent unintended use or delivery. Management with non-harmonized product must be defined in a documented procedure.

There are several ways to "treat" non-harmonized product in organizations such as:

- Taking action to remedy the identified non harmonized shortcoming
- Approval for its use, additional permit given from the relevant authority, sometimes from the user
- Taking measures to prevent its original intended use or application.

In accordance with the requirements of ISO 9001:2008 standard, and taking into consideration the identified gaps, each non-compliance must be properly documented and appropriate action MUST be taken for further treatment of non-harmonized product. In this direction are given the results from the researched criteria for the indicator nonconforming product, shown in Table display 2.

Num.	Criteria	Used		Not used	
		Frequency	%	Frequency	%
1	Identified nonconforming product into the process of production	2	2.4	80	97.6
2	Documenting the nonconformance product	76	92.6	6	7.4
3	Evaluation of the nonconformance	82	100.0	/	0.0
4	Report to the management	82	100.0	/	0.0

*Table display 2. Results from the research on the indicator nonconforming product*

### Indicator - Product identification

According to the paragraph 7.5.3 (Identification and Monitoring) each organization must provide adequate documented way to track the product through production stages. Methods of recording and traceability are different and depend on the subjective decision of the management team. Research results are presented into the tabular display 3.

Num.	Criteria	Used		Not used	
		Frequency	%	Frequency	%
1	Work order	77	93.9	5	6.1
2	Serial number	59	71.9	23	28.1
3	Date of production	1	1.2	81	98.8
4	Identification card	7	8.5	75	91.5

Table display 3. Results from the research on the indicator – product identification

### CONCLUSION

Taking into consideration the initial hypothesis of the study, that the largest percentage of Macedonian businesses, quality systems have on paper, and without proper use benefits, the results of the survey has proven quite the opposite. Namely the largest percentage of organizations properly identify products, identify non-compliance and evaluate their suppliers.

However the results from the indicator nonconforming product showed that in 97.6% of cases the records is after the occurrence of non-compliance, and not in the process of production. This conclusion opens the field for further research.

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