

KNOWLEDGE - BASED ECONOMY APPLIED IN THE NONCONVENTIONAL TECHNOLOGY ORGANISATIONS

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Abstract: The knowledge-based economy represents an essential element of change entailed by the knowledge revolution, which can be defined as the fundamental transition from an economy mainly based on physical resources to an economy relying on knowledge. The welfare and power of the XXI century will be the result of intangible intellectual resources, i.e. the knowledge asset. One characteristic of market economy is the placement of organizations at the forefront of economic activity. The company selected for the case study and poll is TechTeam Global. The study set forth in the present paper relies on the answers of 40 employees at TechTeam Ltd., to a set of 25 questions in order to find out their awareness about the role of quality management for the organization of the future.

Keywords: knowledge-based economy, economic activity, quality management, organization of the future

1. INTRODUCTION

The knowledge-based economy represents an essential element of change entailed by the knowledge revolution, which can be defined as the fundamental transition from an economy mainly based on physical resources to an economy relying on knowledge. [6]

The welfare and power of the XXI century will be the result of intangible intellectual resources, i.e. the knowledge asset. [10]

The knowledge-based economy is the direct consequence of the knowledge revolution. The first half of the XXI century will be marked by an intensification of the knowledge revolution whereas the knowledge economy will rapidly extend to the developed regions of the world. [9]

Principles of the new economy are: [6]

- the organization value is mainly determined by the value of intangible assests;
- the importance and impact of geographic distances on the location and ongoing of business have significantly diminished;
- the duration of innovation and its application has reduced considerably;
- the holders of knowledge become the greatest asset of a country and/or organization;

- accelerating rhythm of economic development and growth by means of networking; exponential increase of product value directly related to the value of the market segment;
- heightened significance of intermediary levels in economy;
- buyers acquire greater power, while sellers get new opportunities;
- increased customization of product and service transaction;
- availability of any product anywhere.

One characteristic of market economy is the placement of organizations at the forefront of economic activity.

An organization can be defined as a group of persons, organized according to certain legal, economic, technological and managerial requirements, planning and running a complex work process, most often resorting to other means of work, such as products and services, in view of attaining a high profit. [10]

Quality management is a sum total of the general function of management, which determines the quality policy, as well as objectives and responsibilities which are further implemented within the quality system, by such means as quality planning, controlling, assurance and improvement. [6]

The starting point for quality management is the drawing up of quality policy, including an outlook of the main

organizational trends in this field as well as identifying specific responsibilities for all activities required or entailed by the accomplishment of quality objectives. [6]

Such activities include quality planning, controlling, assurance and improvement, and they are performed within the framework of the organization quality system. [6]

2. OBJECTIVES AND MOTIVATIONS. CASE STUDY. PROBLEMS

The company selected for the case study and poll is TT Global. The company has designed and developed these business-oriented solutions and services on a wide range of vertical industries, including automotive, pharmaceutical, insurance, finances, manufacturing, government and education. The company mission is to provide valuable IT services to its customers worldwide by means of people, procedures and technology optimization. TT was founded in SUA The Bucharest branch was set up in 2004 and it currently has over 300 employees. The study was performed on a randomly selected group of 40 employees.

The study set forth in the present paper relies on the answers of 40 employees at TT Ltd., to a set of 25 questions, in order to find out their awareness about the role of quality management for the organization of the future and the opinion of the 40 employees regarding the knowledge-based economy and its impact on quality management.

For this study we have employed the close-question questionnaire.

As regards these questionnaires, the close questions have several advantages:

- they facilitate the statistical analysis of the answers;
- support the memory of the individual subject to test;
- allow the application of several-item questionnaires; serve as “filter” to subsequent questions; increase anonymity and safety for the individual subject to test;
- facilitate “commitment” to the answer provided during testing.

The following objectives, [7], and hypotheses have been established for the present research: A-Knowledge-based

economy and its impact on quality management;

❖ A1-The knowledge-based economy represents an evolution, shaped by specialists, whose manifestations have just emerged;

❖ A2-The characteristics of knowledge-based economy will have an impact on quality assurance and management and, implicitly, on the industrial manufacturing, in general;

❖ A3-It is acknowledged that there is an evolution from physically-based to knowledge-based economy;

❖ A4-XXIst century wealth and power are entailed mainly from intangible intellectual resources, i.e. the knowledge asset;

❖ A5-The impact of the knowledge-based economy on quality management;

❖ A6- Knowledge – as the essence of the knowledge-based economy in the organization of the future – represents a major objective of quality management;

❖ A7-The knowledge asset is indissolubly linked to the human resources, and the human resources will connect to management and the general aspect of quality;

❖ A8-The knowledge-based economy is characterized by a continuous increase of the relevance of knowledge asset in the general economy of organization capital;

❖ A9-There are three new major processes in the knowledge-based economy: knowledge acquire, creation and usage;

❖ A10-The general problematic of knowledge can modify the organizational structure and quality management;

❖ A11-A feature of the knowledge-based economy is focusing the activity primarily on tackling information and generating knowledge-goods;

❖ A12- The future trend anticipates a proliferation of symbolic equipment and products.

3. DATA ANALYSES AND RESULT INTERPRETATION

In order to highlight the employee's opinion regarding the knowledge-based economy and its impact on quality management, questions 1-12 have been addressed in the 1st chapter of the questionnaire, and the answers can be found in the next figures.

Question 1 has the function of clarifying whether the employees consider that the knowledge-based economy represents a specialist-shaped trend whose manifestations can already be noticed.

The results are presented in figure 1 (capture from Romanian software).

Data processing for this type of questions emphasizes that 57% of the interviewed take a neutral stand; 23% slightly agree; 12% are strongly in favor of this opinion and 8% tend to disagree with the afore-mentioned hypothesis.

A corresponding score was calculated for a more detailed approach with a value of -0,25 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis.

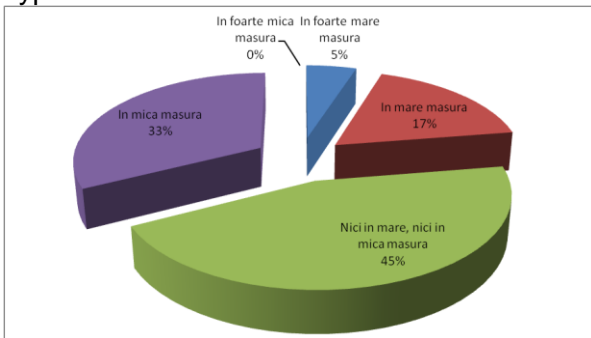


Fig.1 The results of question 1 (capture from Romanian software)

Therefore, the thesis of the present research (A1 - The knowledge-based economy represents an evolution, shaped by specialists, whose manifestations have just emerged) has been contradicted.

The answers to the 2nd question – concerning the employee's opinions about the impact of the knowledge-based economy characteristic on quality assurance and management as well as the acknowledgment and operationalization of these features as rendered in figure 2 (capture from Romanian software).

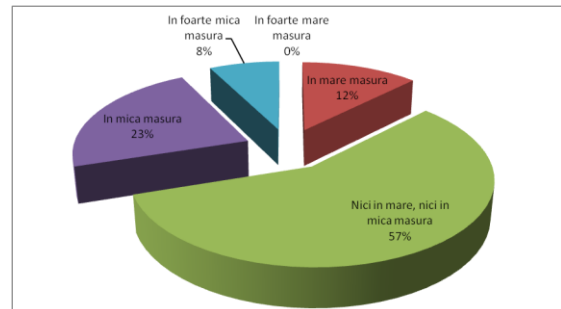


Fig.2. The results of question 2 (capture from Romanian software)

Data processing for this type of questions emphasizes that 45% of the interviewed take a neutral stand; 33% slightly agree; 17% are strongly in favor of this opinion and 5% tend to disagree with the afore-mentioned hypothesis.

A corresponding score was calculated for a more detailed approach with a value of -0,02 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis.

Therefore, the thesis of the present research (A2 - The characteristics of knowledge-based economy will have an impact on quality assurance and management and, implicitly, on the industrial manufacturing, in general) has been contradicted.

The answers to the 3rd question can give us a clue whether the employees are familiar with the evolution from the physically-based to knowledge-based economy, and if this is perceived and operationalized as such.

The results are presented in figure 3 (capture from Romanian software).

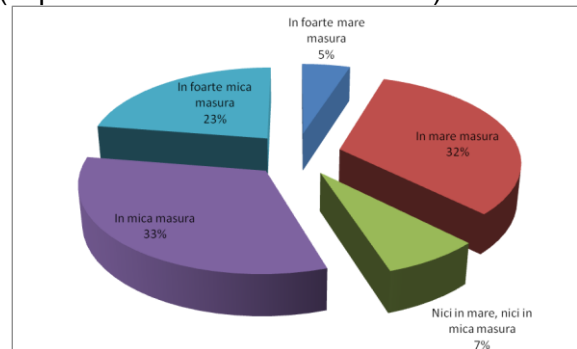


Fig. 3 The results of question 3 (capture from Romanian software)

Data processing for this type of questions emphasizes that 45% of the interviewed take a neutral stand; 37% slightly agree; 15% are strongly in favor of this

opinion and 3% tend to disagree with the afore-mentioned hypothesis.

A corresponding score was calculated for a more detailed approach with a value of -0,27 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis.

Therefore, the thesis of the present research (A3 - It is acknowledged that there is an evolution from physically-based to knowledge-based economy).

Question no. 4 helps us find out whether the employees consider XXIst century wealth and power as a result of the knowledge asset.

The results are rendered in figure 4 (capture from Romanian software).

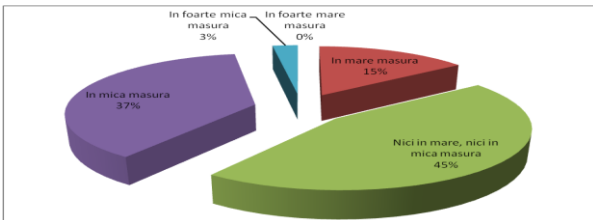


Fig. 4 The results of question 4 (capture from Romanian software)

Data processing for this type of questions shows that 33% of the interviewed take a neutral stand; 32% slightly agree; 23% are strongly in favor of this opinion and 7% tend to disagree with the afore-mentioned hypothesis.

A corresponding score was calculated for a more detailed approach with a value of -0,17 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis.

Therefore, the thesis of the present research (A4 - XXIst century wealth and power are entailed mainly from intangible intellectual resources, i.e. the knowledge asset) has been contradicted.

An employee assessment of the impact of the knowledge-based economy on quality management is given in figure 5 (capture from Romanian software)

Data processing for this type of questions shows that 58% of the interviewed take a neutral stand; 22% slightly agree; 15% are strongly in favor of this opinion and 5% tend to disagree with the afore-mentioned hypothesis.

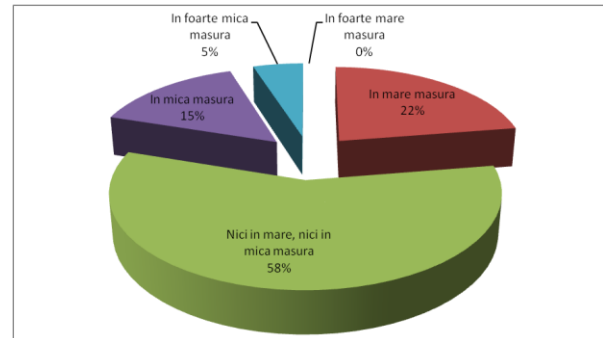


Fig. 5 The results of question 5 (capture from Romanian software)

A corresponding score was calculated for a more detailed approach with a value of -0,02 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis.

Therefore, the thesis of the present research (A5 - The impact of the knowledge-based economy on quality management) has not been confirmed.

Question no. 6 helps elucidate whether such knowledge represents a major goal of quality management, and the results are given in figure 6 (capture from Romanian software).

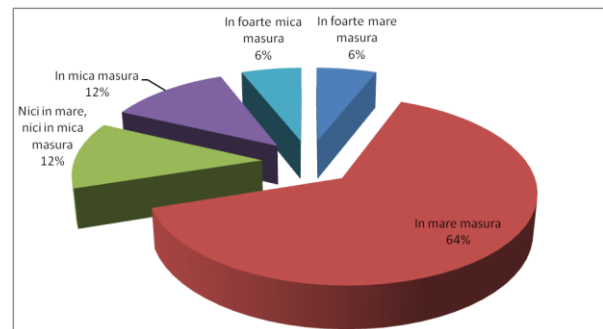


Fig. 6 The results of question 6.

Data processing for this type of questions shows that 12% of the interviewed take a neutral stand; 12% slightly agree; 64% are in favor of this opinion and 6% tend to disagree and 6% strongly support the afore-mentioned hypothesis. A corresponding score was calculated for a more detailed approach with a value of 0,65 evincing the fact that the interviewed opinions ranks between the third and fourth positions from bottom, regarding this hypothesis. Therefore, the thesis of the present research (A6 - Knowledge – as the essence of the knowledge-based economy in the

organization of the future) has not been confirmed. The knowledge asset is connected to the human resources who, in its turn, are linked to management. Question no. 7 helps us elucidate whether the employees are aware about the impact of the knowledge revolution, the results are given in figure 7 (capture from Romanian software).

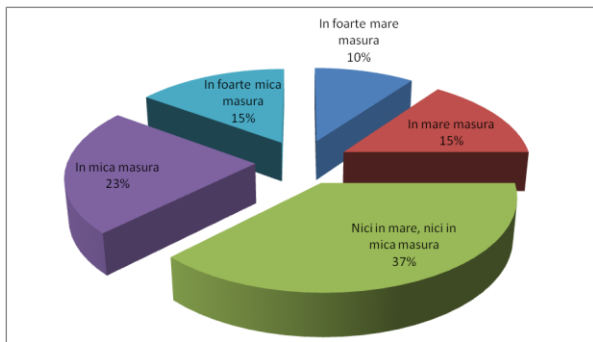


Fig. 7 The results of question 7 (capture from Romanian software)

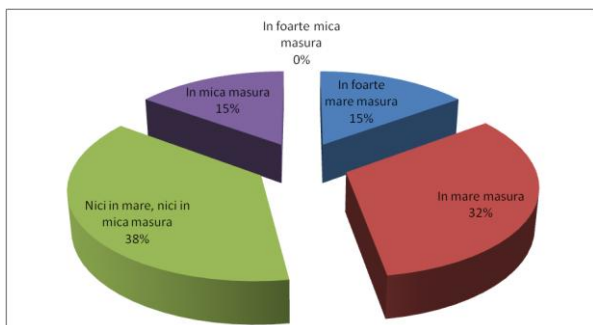


Fig. 8 The results of question 8 (capture from Romanian software)

Data processing for the answers to this question shows that: 37% take a neutral stand; 23% slightly agree; 15% tend to disagree; 15% are in favor of this opinion and 10% strongly support the afore-mentioned thesis. A corresponding score was calculated for a more detailed approach with a value of -0.17 evincing the fact that the interviewed opinions ranks between the second and third positions from bottom, regarding this hypothesis. Therefore, the thesis of the present research (A7 - The knowledge asset is indissolubly linked to the human resources, and the human resources will connect to management and the general aspect of quality) has not been confirmed. The knowledge-based economy is characterized by a contiguous increase of the relevance of knowledge asset in the general economy of organization capital, whereas its impact on employee-related quality management is

given in figure 8 (capture from Romanian software). Data processing for the answers to this question shows that: 38% take a neutral stand; 23% slightly agree; 15% tend to disagree; 32% are in favor of this opinion and 15% strongly support the afore-mentioned thesis.

A corresponding score was calculated for a more detailed approach with a value of 0.47 evincing the fact that the interviewed opinions ranks between the second and third positions from top, regarding this hypothesis. Therefore, the thesis of the present research (A8 - The knowledge-based economy is characterized by a contiguous increase of the relevance of knowledge asset in the general economy of organization capital) has been confirmed. There are three new major processes in the knowledge-based economy: knowledge aquiry, creation and usage. The following responses are meant to highlight the extent to which these can become quality management objectives, principles or functions, as represented in figure 9 (capture from Romanian software)

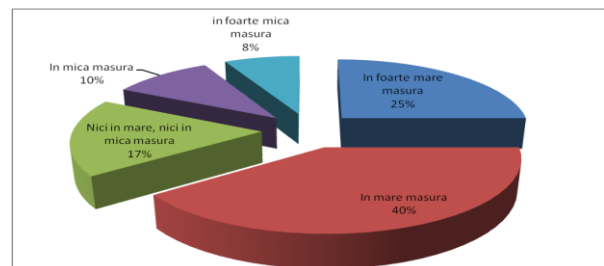


Fig. 9 The results of question 9 (capture from Romanian software)

Data processing for the answers to this question highlights that: 17% take a neutral stand; 10% slightly agree; 8% tend to disagree; 40% are in favor of this opinion and 25% strongly support the afore-mentioned thesis. A corresponding score was calculated for a more detailed approach with a value of 0.65 evincing the fact that the interviewed opinions ranks between the second and third positions from top, regarding this hypothesis. Therefore, the thesis of this research (A9 - There are three new major processes in the knowledge-based economy: knowledge aquiry, creation and usage) has been confirmed. In order to find out whether the employees consider that the general problematic of knowledge can modify the organizational structure and quality management, question no. 10 is meant to

clarify that matter, and the results are presented in figure 10 (capture from Romanian software)

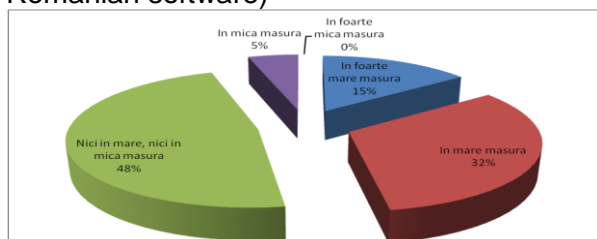


Fig. 10 The results of question 10 (capture from Romanian software)

Data processing for the answers to this question shows that: 48% take a neutral stand; 5% slightly agree; 15% tend to disagree; 32% are in favor of the aforementioned thesis. A corresponding score was calculated for a more detailed approach with a value of 0.57 evincing the fact that the interviewed opinions ranks between the second and third positions from top, regarding this hypothesis. Therefore the thesis of the present research (A10 - the general problematic of knowledge can modify the organizational structure and quality management) has been confirmed. [4], [10]

4. CONCLUSIONS

Therefore, here are the synthesized and structured conclusions emerging from the first enquiry regarding the interviewed knowledge of the knowledge-based economy and its impact on quality management: the concept of knowledge-based economy is not familiar to the interviewed; the concept of knowledge-based economy characteristics does not have an impact on quality

assurance and management; the evolution from physically-based to knowledge-based economy is not currently acknowledged; knowledge represents a major issue of quality management; the interviewed are not aware of the impact of knowledge revolution; the problematic of knowledge can modify the organizational structure and the quality management.

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