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The Economic System – the Basis of the Knowledge Society

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ABSTRACT

During the paper we studied the society during the development period and the impact that the information transmitted on it, through the multitude of new knowledge that it has acquired. We have highlighted the strengths and weaknesses that knowledge has in relation to society and to what extent they influence, delimiting the final result as a completely positive one. At global level, the knowledge society has experienced an upward trend over time, which has triggered a phenomenon that constantly and constructively interferes with the economic system.

1. Introduction

The economic system is an ensemble represented by relationships between people that will directly determine both the way of organization and the way of functioning of the economic and social activity. He studies the way in which the economic resources are used, but also the relations of the political bodies, legal bodies, as well as ideological bodies, which contribute to the development of the economic activity. The economic system is composed of fundamental elements, as follows: production force, social-economic relationship, the way of organizing economic activities the way of coordinating the various socio-economic processes.

2. Literature review

The knowledge society is a stage within the evolution of the capitalist society, which transforms knowledge into a basic resource, into the main source of power, into the main space that generates new jobs. At the base of the knowledge society are two determining factors. The first of these being education, which represents a set of measures and methods applied in an organized framework, the purpose being to form and develop intellectual abilities. Education is a fundamental right of each person.

In 2008, UNESCO realized a report on the existing educational situation worldwide, highlighting the fact that it is unstable. It was reported a percentage of 15% of the world's population, approximately 800 million people, who did not know the educational environment. This explains the alarming level of dysfunctional literacy in some areas.

The role of formal education, basic education, is the essential one, but also the non-formal education develops the skills of the individual in terms of professional training in the educational field. In 1995, the White Paper was adopted, thus starting the cooperation regarding the European policy in the field of education and professional training. The European Union declares itself to be oriented towards a society based on lifelong learning and the acquisition of new knowledge throughout life. In today's business environment, companies' transparency to stakeholders is an increasingly important aspect brought about by the constant need to build up and maintain a solid reputation in the market (Cristache N et al, 2019).

The second determining factor is represented by science, this represents a systematic set of knowledge in a chosen field, respectively the economic field. Science is a summation of all knowledge in a research, based on reasoning and observation. The field of research of economic science is determined by the continuous development of economic activity and diversification, studying a whole set of economic activities located at various levels.

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3. Concept – the knowledge economy

"The knowledge economy" is a concept mentioned by Peter Drucker in 1969 in his book, respectively "The age of discontinuity". The concept makes direct reference to an economy based mainly on knowledge, which uses in a significant way the specific technologies of knowledge, the result obtained being an economic one. (Drucker, 1969)

The concept of "knowledge economy" is part of the components of the knowledge society and is in a continuous stage of transition due to the fact that the basis is in complex information.

The knowledge society through its dynamics concretely influences the knowledge economy, pursuing the total transformation into a knowledge economy that involves changes in the rules and economic practices.

The change of the rules from an economic point of view is directly acted by factors such as:

- Information technology;
- Globalization of markets;
- Globalization of products;
- Use of information;
- Development of mass-media;
- Use of computers.

The knowledge-based economy is developing concretely due to the evolution of science and education, these being the factors that determine the optimal level that the knowledge economy needs.

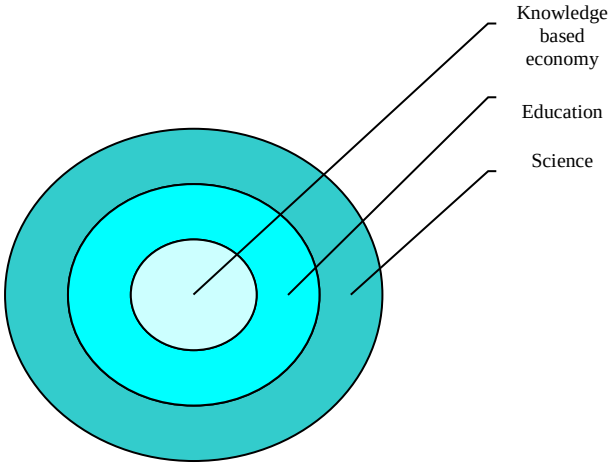

Figure. 1. The relationship between the economy and the knowledge society

Source: own conceptualization

Education and science form a reflexive relation, due to the fact that a new scientific discovery is a plus for the educational act, instead the education applied in a correct way certainly supports scientific progress. The technological revolution certainly supports the knowledge society and its development, but it can also cause social imbalances. The physicist Stephen Hawking has publicly argued that the evolution of technology will create problems at the political and social level, due to the global economic imbalance. (Hawking, 2014)

3. Technological development

Over time, it has been found that automation simplifies production processes in a significant percentage. Thus, more and more companies in vast industries are opting for automation, the implementation bringing positive effects for the company, such as reducing the company's costs in considerably way, increasing the quality of products, streamlining processes, the level of safety reaches the optimal threshold, and the production process is optimized.

Technology has gone through a whole process of development. At the same time, together with the evolution of the society, the innovations in terms of technology have evolved, thus the need to increase the degree of efficiency at the level of activity has been realized, and this aspect could be achieved only through automation.

Many scientists and economists have concisely summarized that automation will change our lives in a drastic way, especially in terms of workforce. According to the study conducted in 2017 by the McKinsey Global Institute, conducted in 46 countries, covering a number of 800 trades, it was found that automation will have a major impact and will affect especially economies with a high degree of development, the

explanation coming from the fact that countries with an underdeveloped economy will not afford to invest in automation, so they will be less affected.

Specialized studies admit that the term automation first appeared in Russia in 1832, when P. L. Schilling invented the electromagnetic telegraph. Automation can also be called as a phenomenon, which has existed throughout the decades, but which has manifested itself in a balanced way, abolishing and creating jobs at the same time. A concrete example may be the emergence of computers in the '80s, which created an impressive number of jobs. Nowadays, however, the technology is developing at a pace alert, while exceeding the adaptability of companies and state institutions. (Schilling, 1832)

According to the report "Workforce of the future: the competing forces shaping 2030" realized by PwC, with the participation of 10,000 respondents, the following aspects were found:

- **73%** of respondents believe that technology cannot replace the human mind;
- **60%** of respondents believe that stable jobs will decrease considerably;
- **37%** of the respondents consider that the advancement of technology will have a positive impact and new opportunities will appear;
- **86%** of the respondents believe that the skills exercised by people will always be in high demand on the labor market;
- **56%** of respondents consider that the government is the main decisional factor in the automation process;

The companies that will be aware of the dimension of the evolution and the implications of the entire process, which will invest in staff training and educational improvement, will be able to balance the leap in the automated era so that the transition is smooth and becomes a real success.

3.1. The effects of technological development

The effects will differ from one country to another and will largely depend on the government. As we well know, the main element responsible for the distribution of income in the current economy is the workplace, so the most important factor will be the way in which the income inequality will be limited.

Like any long-term investment, automation comes with a number of positive effects, which we find in the form of advantages, such as:

- ***Increasing the degree of efficiency*** - the automation process is based on a predetermined principle, that of providing productivity and efficiency at an increased level;
- ***Reduction of execution time*** - the use of artificial intelligence and machinery is a real advantage, a task performed in an automaticated way is faster than a task performed manually by humans, according to studies carried out the time can be up to 10 times shorter;
- ***Increasing the workload*** - a concrete example would be the case of a factory, from the desire to increase the workload, either the number of employees increases considerably and the costs with salaries intervene, or invest in automation, thus intervening the implementation and acquisition costs, but there will be no break, so productivity will increase;
- ***Increasing quality*** - the main advantage in using automated processes is represented by the quality with which the finished products are executed, human errors are completely reduced, the parameters are accurate, and the shape is perfectly delimited and respected;
- ***Increased safety*** - due to automated processes, work accidents have been completely reduced and at the same time reduced the exposure of employees to toxic environments to health;
- ***Increased reliability*** - represents an advantage both in terms of product development and in terms of equipment used in the automation process, the quality and durability of products reaching the highest level due to the precision and efficiency of the process.

According to specialized reports, it is estimated that in the next 10 years, 5-10% of jobs will be eliminated due to the rapid evolution of automated technology, by 2030 a massive automation is expected. Human resources are subject to concrete implications that involve medium and long-term investments in high-level professional training, so that the staff employed in work must undergo a learning process during which to improve, to know the new technologies and to demonstrate that they are able to apply them in a practical way. These investments in the retraining and improvement of the staff are impetuously necessary to be supported by the employers, so they will be able to support in their turn the concurrency with the internal and external competition.

The technology will improve the labor market and will increase the degree of novelty in terms of prospects, as human resources will be reorganized and will conclude that a fundamental change in the way of working is necessary, not understimating the magnitude of the phenomenon.

A concret example is the company Belform Prod, which was founded in 1992, having as main activity the manufacture of bathtubs made of acrylic material. In the first table we have the staff structure in the period 2019-2020, distributed according to predefined criteria.

Age/Sex	30-40 years	40-50 years	< 50 years
Male	10	10	3
Female	12	8	2
Grand total	22	18	5
Percentage	48.88%	40.00%	11.12%

Figure. 2. Staff structure prior to the automation process

Source: data from the company

As can be seen, the average age of employees is 30-40 years, the lowest number is in the average age <50 years, respectively 5 people.

Age/Sex	30-40 years	40-50 years	< 50 years
Male	10	10	-
Female	12	8	-
Grand total	22	18	-
Percentage	55.00%	45.00%	-

Figure. 3. Staff structure after the automation process

Source: data from the company

We note that the number of staff employed has decreased from a number of 45 people to a number of 40 people, with an average age of over 50 years. Analyzing externally, the whole process of staff reduction was a process of dismissal of people over the age of 50 based on the abolition of jobs. Which in the medium and long term could have repercussions on the activity undertaken within the company, but this fact is fully assumed by the company's management, considering at the time of implementation of the automation process, the human resources less valuable compared to the development of the process itself. Following the analysis performed on revenues and costs, a benefit obtained from the investment over a period of nine years was calculated, this is represented in Fig. 3.

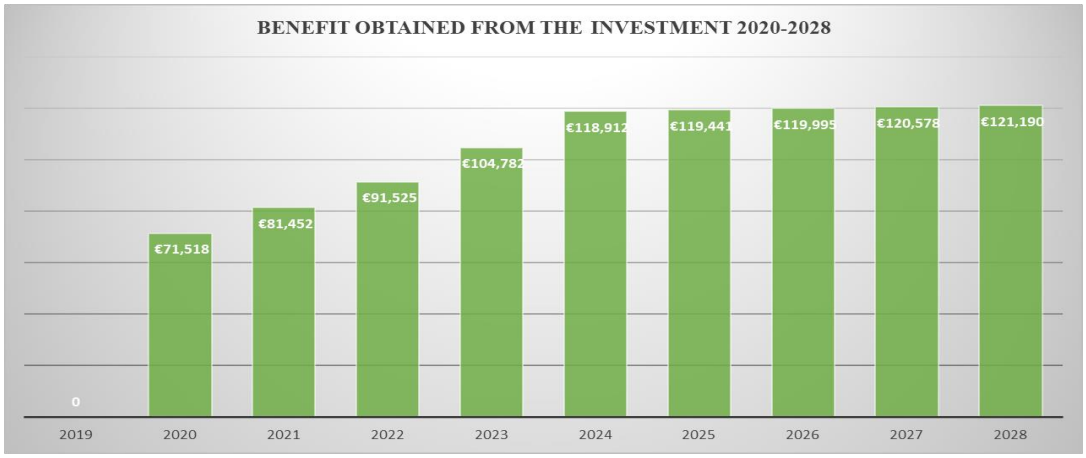

Figure 4. The benefit obtained from the investment in the period 2020-2028

Source: data from the company

The implementation of an automation system on the production process has both strengths and weaknesses within the activity of a company, regardless of the field in which it carries out its basic activity. The most affected part is mainly human resources, an inadequate human resources management can trigger serious long-term repercussions.

The impact of automation on human resources is a negative one, and solutions are needed to reduce this impact. Specifically, new economic and social policies are needed to stop this incident. Among these measures we find:

Diminishing the work schedule - In an economy where robotization takes over the human labor force, a first solution would be to reduce the working time, so that the digital part takes over a part of the human one, not to replace it completely. John Maynard Keynes, a famous economist predicted that towards the end of the 20th century, the population of the Great Britain and the United States of America would not work more than 15 hours weekly, this was not necessary due to the accelerated development of technology, especially in the manufacturing sector. (Keynes, 1920).

The existence of basic income - It may seem like an unattainable solution, but due to accelerated digitization, the robotic part that takes over the production processes to the detriment of humans, in the near future the work will be taken over entirely by machines and the lack of jobs will increase. Thus, a suitable alternative would be to establish a basic income, granted to each citizen, thus giving the possibility to access the necessary resources. The existence of a basic income can give the possibility to the people directly affected by automation, to follow training courses so that they can acquire new qualifications, necessary to work in another field.

The steps in this regard have begun since 2018 at European level, the financing being through the fees charged by the European Commission and the amount of income being around 200 euros. The solution is supported by the main successful entrepreneurs in the digital market, such as Bill Gates, Mark Zuckerber or Elon Musk, who consider this option to be absolutely necessary in the near future.

4. The SWOT analysis

Through the SWOT analysis we have highlighted the main aspects that are the basis of the knowledge economy in a society in full process of technological development:

Strengths	Weaknesses
• Educational development; • Decrease in the percentage degree of illiteracy; • The possibility to follow specialized studies;	• Lack of desire for professional development; • Lack of formal education;

Opportunities	Threats
• The possibility of staff improvement; • The environment open to the development of the knowledge economy; • Social and economic factors;	• Technological development in full expansion; • Reluctance to educational development;

The first proposal is the need for a strategy that harmonizes the technological process with that of human resources, so that both human and digital resources can be capitalized in a complementary way, in this case the automated ones.

The second essential strategy proposal, would be to carry out before the to the automation process, a detailed analysis of the human resources within the company, to establish how they can productively complete of the future automated process.

5. Conclusions

We can conclude that the knowledge society dynamically determines the knowledge economy, due to its ample character, which is determined by the educational factor and the scientific factor and their evolution determining the optimal level that the knowledge economy needs. Technological development directly influences the knowledge economy due mainly to the evolution of information technology. We are in a century of development and knowledge on all levels, especially in economic and social terms, which determines a fast evolution in these sectors.

Education and professional development are decisive factors in the knowledge economy, because knowledge is science, evolution and development, and the human resource that takes an active part in this process must respond to all the actions that take place. The awareness of the evolution dimension by the great economic agents will determine large-scale investments in staff training, becoming the factor meant to balance the transition into an automated era in an optimal way for the human resource, determining a perpetual development.

As we can see, the automation of the production processes that were previously carried out by the human resource are begining to amplify at a fast pace, advancing in an unexpectedly short time even for the adaptability power of the society. The most affected part are mainly human resources, an inadequate human resources management can trigger serious long-term repercussions due to inadequate preparation in the management of the new process, that of automation.

Companies that undergo a process of automation of the production process is absolutely necessary to have previously established a management of human resources, to classify this aspect as the main development of the whole process, so as to limit the degree of decrease of the staff emplpyed in the work process.

The changes caused by automation are diverse and can affect most of the structures involved if they are not prepared to face the new reality. In conclusion, the implementation of an automation system on the production process has both strengths and weaknesses in the activity of a company, regardless of the field in which it carries out its basic activity. The rule around which the entire implementation process should revolve is the analysis, the analysis situations carried out before the implementation itself are those that offer the expected results and at the same time considerably decrease the repercussions that may exist in this process.

In conclusion, the implementation of an automation system on the production process has both strengths and weaknesses in the activity of a company, regardless of the field in which it carries out its core business. The rule around which the entire implementation process should revolve is the analysis, the analysis situations carried out before the implementation itself are the ones that offer the expected results and at the same time the repercussions that may exist in this process decrease considerably.

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