

# PREMISES FOR CREATING KNOWLEDGE-BASED ORGANIZATIONS IN ROMANIA

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## Abstract

*The transition to the knowledge-based economy in Romania is the main path towards obtaining a sustainable economic growth and may even be the feasible solution our country needs in order to exit the current economic crisis. The knowledge-based organizations are the main vector, a necessary and irreplaceable condition and factor for the creation of the knowledge economy, therefore every leader should be at least familiar with the premises needed to increase the number of these kind of organizations in Romania and sustain a propitious environment for their development. Therefore, the purpose of this paper is to identify and unfold the premises that need to be fulfilled in order to facilitate Romania's transition to the knowledge economy. To this end, following the macroeconomic and microeconomic situation, not only from an economical perspective, but also from a managerial one, there have been two categories of premises, which are actually conditioning elements for Romania's transition to the knowledge economy. At macroeconomic level, the main premise is that of the need to substantiate (found), elaborate and implement a genuine strategy for the transition to the knowledge economy; at microeconomic level, the organizations need to embrace a strategic management, relocate their attention towards the human resources, receive support from the IT departments and give the proper importance to organizational culture and the processes related to change management. By emphasizing the details of these premises, the objectives of illustrating Romania's vulnerabilities and needs regarding the transition to the knowledge economy have been attained.*

**Keywords:** *knowledge economy, knowledge-based organization, strategy, organizational culture, sustainability;*

## Introduction

The paper presented finds itself at the encounter of at least two fundamental domains, specifically economics and management, but considering that the issue of the knowledge-based economy and the knowledge-based organizations is under review, it is safe to say that this is an interdisciplinary study. The purpose of the paper is to identify and unfold the premises that need to be fulfilled in order to facilitate Romania's transition to the knowledge-based economy, in particular by creating the main components of such an economic environment: the knowledge-based organizations. The European Union officially acknowledges the importance of the knowledge-based economy by outlining the Lisbon Strategy, therefore this paper shows relevance in pointing the way towards how to achieve this major and complex transformation as soon and as efficient as possible in our country, emphasizing the vulnerabilities and requisitions of Romania in regard to the transition to the knowledge-based economy. The study describes how Romania should best prepare itself to embrace the new worldwide economic circumstances, enveloping two approaches: a top-to bottom approach, the macroeconomic one, residing in the presentation of Romania's strategy for the creation of the knowledge-based economy, and the second approach, the bottom-to-top one, at a microeconomic level, consisting in the necessary organizational prerequisites. Documentation research entailed the unfolded results of the paper. Since there is no strategy for Romania's transition to the knowledge-based economy, the following national and european documents have been reviewed in order to give foundation to the upcoming strategy: the National Reform Plan 2011-2013, the National Development Plan, 2007-2013, the National Research, Development and Innovation Strategy 2007-2013, the Lisbon Strategy, and, of course, the Europe 2020 Strategy, as well as other

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strategical or tactical initiatives such as the listed ones. In regard to the microeconomic premises, the current state of research is considered to be incipient. Although a number of researches conducted in this domain (Nicolescu 2005, 2011; O'Dell, Hubert 2011; Geisler, Wickramasinghe, 2009) have led to several interpretations and definitions of this grand economic system, a consensus has not been reached yet, so that leaves the knowledge-based economy and its organizations as an indefinite subject. Starting from the main elements found in such research and taking into account the elements unfolded by the strategy, the choice has been made to present and emphasize on the premises that are of true relevance in the particular context of Romania.

### **The knowledge-based economy and organizations**

The knowledge revolution<sup>1</sup> and the transformation of the informational society into a human resources centered<sup>2</sup> society, actually, have sequentially lead to what we know and refer to today as the knowledge-based economy.

Knowledge, in all the shapes it is found, has always been the foundation of economic and even social growth. Knowledge has not just appeared over night so as to lead to the development of the knowledge-based society and economy. What did, however, occur, was the acknowledgement of the importance and the capability of knowledge to deliver a sustainable competitive advantage, considering that the classical resources are becoming fairly outdated<sup>3</sup>. When the attention of academicians and practitioners revealed the catalyst character of knowledge in regard to economic growth and sustainability, was marked the effective beginning of the transformation of the society and the economy. Moreover, when the managers of the great corporations joined the tempo, especially after the first papers dedicated to knowledge and knowledge management were elaborated, the incipient discipline of knowledge-based management emerged<sup>4</sup>. Therefore, when managers spotlighted knowledge and recognized the potential impact it can create, amplified by the expanding information society and advocated by globalization, this was the outlining of the elements entailing to the new shape of the economy: the knowledge-based economy<sup>5</sup>.

The knowledge-based economy "is characterized by the transformation of knowledge into raw material, capital, products, essential production factors and by economic processes in which generating, selling, buying, learning, storage, development, sharing and protecting of knowledge become prevalent and critically condition the profits and the assurance of the economy's long term sustainability"<sup>6</sup>.

Among the most pregnant traits of the knowledge-based economy are namely the accelerated rhythm of change and learning, digitalization, globalization, focus on intellectual capital and a high rate of innovation. A particular trait of this type of economy is entailed by the specificity of intellectual capital. The explanation would be the following: "if a physical object is sold, the seller ceases to own it, but when an idea is sold in the new economy, the seller still posses it and can sell it over and over again"<sup>7</sup>. Thus, the growing worldwide potential is practically close to infinite.

In regard to the knowledge-based organizations, they constitute "the main component of the knowledge-based economy"<sup>8</sup>. Hereby, it is difficult to conceive an environment where this kind of organizations exist and the requisite of the host-environment is not fulfilled, namely the knowledge-based economy does not exist. Therefore, this paper proposes in the following pages, as premises for the development of knowledge-based organizations in Romania, two types of actions: at

<sup>1</sup> O. Nicolescu and L. Nicolescu, *Economia, firma si managementul bazate pe cunostinte*, 19-28

<sup>2</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*

<sup>3</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 67

<sup>4</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 24

<sup>5</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 83

<sup>6</sup> Translation from O. Nicolescu and L. Nicolescu, *Economia, firma si managementul bazate pe cunostinte*, 48

<sup>7</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 68-83

<sup>8</sup> Translation from Nicolescu et al., *Dictionar de management*, 302

macroeconomic level, the elaboration of Romania's strategy for the knowledge-based economy, in order to assure this transition being handled in the best way possible; at microeconomic level, the main directions in which organizations should redirect in order to turn into knowledge-based organizations are unfolded. These directions include the practice of a strategic knowledge-based management, spotlighting human resources, having technology and information systems to rely on and taking into consideration the organizational culture and the processes relating to change management.

**The macroeconomic prerequisite: Romania's transition to a knowledge based-economy, the pad for the development of knowledge-based organizations**

In light of this prerequisite, Romania is in need for a strategy for the creation of the knowledge based-economy. Following, we present the European Union's strategy in this domain, we argue the need for a national strategy and outline a sketch of this strategy for Romania.

**The European Union's strategy and the need for a national strategy in Romania**

In march 2000, the European Council settles in Lisbon the development plan of the economy of the European Union (EU) for the following 10 years, outlining the Lisbon Strategy, which aimed at turning the EU into "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion"<sup>9</sup>. Around the middle of the implementation interval, information concerning the progress evaluation of the member states were revealed. As far as Romania is concerned, these results were far from positive. "The Lisbon Agenda may appear as a luxury for Romania at the moment", finds Daianu in a study<sup>10</sup> former to the evaluation of the strategy. It was the first time that significance was officially granted to knowledge and the appearance of the knowledge based-economy was acknowledged, but it was obvious that Romania was not ready to complete the transition in 2004. The same study finds that the structured bases of the romanian economy are rusty, the agriculture activities don't deploy at a proper efficiency, financial intermediary is an incipient phase, granting of state aids requires revision and liberalization of the utilities market is not yet under debate. "Under these conditions, the effort of going forward in the direction of a knowledge based-economy, when we have not yet consolidated the market economy, is a dashing attempt. Nevertheless, the effort must be made."<sup>11</sup>, argues Daianu.

Therefore, by 2010, since the objectives of the Lisbon Strategy were not accomplished (and not just in Romania's case), the European Commission proposes the Europe 2020 Strategy, as an extension of the previous one. In addition to the Lisbon Agenda, Europe 2020 is not only a strategy for the transformation of the economies into knowledge-based economies, although this goal is still pursued, but this strategy also represents a solution for ending the financial-economic crisis which entered into force during 2008-2009.

At national level, in the member states, the EU2020 strategy is implemented by means of the National Reform Plans (NRP); this is where the first big deficiency appears and prevents the whole implementation process in the member states. The European Strategy cannot be implemented in the member states by means of (just) a plan. We are facing a strategic motion with implications throughout all micro and macroeconomic domains in a country, thus such a motion of complexity and profound impact on the economy demands the existence of a veritable strategy in each of the countries.

Merely by existing, these european strategies represent only the first phase. In a logical and strategical sequence, the next phase should be the distribution of these strategies and their adjustment

<sup>9</sup> "Lisbon European Council", *European Parliament*, March, 2000, accessed November 24, 2011, [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/00100-r1.en0.htm](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/00100-r1.en0.htm)

<sup>10</sup> Translation from Daianu et al., "Romania si Agenda Lisabona – aderarea la UE si competitivitatea economica", *Group of Applied Economics*, November, 2004, 4

<sup>11</sup> Translation from Daianu et al., "Romania si Agenda Lisabona – aderarea la UE si competitivitatea economica", *Group of Applied Economics*, November, 2004, 4

to the characteristics of each country under the economic entity known as the European Union, because it is not enough just to set national targets for the objectives, as has already happened. It is obvious that Romania cannot have the same target for the unemployment rate as, for example, Germany or France, since the basic values are perceptibly different. In the best case scenario, it would take a longer period of time for Romania to reach the targets set in Germany. Each country needs its own strategy, according to the national specificity, with a mission and objectives of its own, achievable strategic options, resources and deadlines according to the growth rate of the significant indicators and, last, but not least, a feasible competitive advantage. Romania needs a strategy for the transition to the knowledge-based economy moreover due to the fact that the evaluations conducted in order to estimate the degree of the construction of such an economy have placed our country at the end of the European ranking<sup>12</sup>.

The year 2004 has brought along great consideration made by the European Commission in regard to the implementation of the Lisbon Strategy. Thus, the European Institute of Romania presented in a paper<sup>13</sup> the three main categories of action in the approach of the research-development-innovation trinomial: a modern approach, a traditional approach and a group of country with peculiar approaches, different ones, hard to add up into one category. Romania was not yet a member of the European Union at the time, but still the European Commission considered it to be one of the countries with a special, peculiar approach. Also, it was found that in Romania fundamental academic research comes first and industrial innovation is not enough emphasized. The same paper mentions that only 6 countries had at that moment a national strategy according to the Lisbon Strategy, only 4 countries had a ministry for research-development and innovation, but 24 countries had a national strategy for research-development.

One other major aspect needs to be attended to when debating the macroeconomic situation and international position of Romania. Our country is currently facing three fundamentally important and extremely difficult to implement processes: defining the market economy (not yet finalized), the European Union integration and building the knowledge-based economy<sup>14</sup>. The assembly of these three processes has an essential sinergetic potential, but the bad management of these phenomenons may deepen the vulnerabilities of our country, affecting the long term economic development.

Moreover, in the past few years, a new process emerged for our country to also handle: the worldwide economic crisis<sup>15</sup>. Under these circumstances, outlining the knowledge-based economy may be the sustainable solution that Romania needs so as to exist the current economic crisis. But this grand process must be unrolled strategically, this clearly showing the need for a national strategy, adjusted accordingly to the EU's strategy, in order to be able to obtain the sustainable economic growth.

For the elaboration of Romania's national strategy for the knowledge-based economy, we propose the model presented by Nicolescu and Verboncu in "Metodologii manageriale"<sup>16</sup>: foundation of the strategy, the effective elaboration of the strategy and its implementation. Each phase, its steps and elements are unfolded as follows.

## **Romania's strategy for the knowledge-based economy**

### **Foundation of the strategy**

The foundation of the strategy is the first and most important phase of the whole process. If the fundamentals are not relevant and consistent enough, the elements of the strategy will not have

<sup>12</sup> Daianu et al., "Romania si Agenda Lisabona – aderarea la UE si competitivitatea economica", *Group of Applied Economics*, November, 2004

<sup>13</sup> Voinea, Pauna and Marinescu, "Performanta in contextul Agendei Lisabona: experienta de succes, design institutional", *European Institute of Romania*, accessed November 25, 2011, 13

<sup>14</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazat pe cunostinte*, 181

<sup>15</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazat pe cunostinte*

<sup>16</sup> Nicolescu and Verboncu, *Metodologii manageriale*, 59-86

essence, will be only apparently serving a purpose, but never will the implementation lead to long term results. Therefore, considering the basic pillars of the foundation of the strategy, we unfold a sketch of the items that the strategy for the knowledge economy should be based on:

### Diagnosis studies

Since we are dealing with the construction of a national strategy, specialists say that a diagnosis, as in a “realistic evaluation of the state of evolution of Romania towards the knowledge-based economy can only be achieved by means of an international comparative approach”<sup>17</sup> (Nicolescu, 2011). Such an evaluation was conducted in 2004 by the Group of Applied Economics, and the results placed Romania nearly at the end of the European ranking, in the inferior part (Daianu, 2004; Nicolescu, 2011). The 2004 statistics are presented in tabel 1, but considering the integration of Romania in the European Union in 2007 and the effects of the economic crisis incipient in 2008-2009, the indicators most surely have suffered changes that ought to be recorded and resumed. An evaluation as the one in 2004 should be available for 2011. Also, the evaluation has to be taken into consideration when setting quantitative targets and national objectives, because they cannot be identified without such a reporting scale.

### Ecological studies

Worldwide preoccupation for pollution and a sustainable use of natural resources was first displayed in Rio de Janeiro, in 1992, when the spotlightes highlighted the concept of “sustainable development”. Then what followed was the negotiation of an international covention regarding the environment, in 1997, agreement known as the Kyoto Protocol. The document reffers to the period between 2008-2012, during which the signing countries agreed to reduce their greenhouse gas emissions by 5.2% on average in comparison to the values is 1990. Recently, during the conference in Durban, South Africa, it was decided to prolong the Protocol until the year 2015<sup>18</sup>. Due to the current global situation and an obvious and justified concern towards environmental issues, it is safe to say that this international convention will continue to exist and press the signing countries into taking responsibilities, both on the short and medium term and the long run.

**Tabel 1**

Domain	Synthetic evaluation <sup>19</sup>
<b>Innovation and research</b>	D
<b>Market liberalization and fluidization</b>	D+
<b>Entrepreneurial and entrepreneurship development</b>	D
<b>Employment rate and social cohesion</b>	C-
<b>Sustainable development</b>	C-

Source: translation from O. Nicolescu, C. Nicolescu<sup>20</sup>

Romania, as a participating country in the Rio de Janeiro Covension and the Kyoto Protocol, cannot disregard these agreements and the targets for greenhouse gas emissions reduction, when debating the ecological fundaments of the strategy for the knowledge economy. On the other hand,

<sup>17</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazat pe cunostinte*, 177

<sup>18</sup> Morosan, “Acord mondial pentru continuarea Protocolului de la Kyoto”, *Curentul*, December, 2011, accessed December 17, 2011, <http://www.curentul.ro/2011/index.php/2011121266618/in-lume/Acord-mondial-pentru-continuarea-Protocolului-de-la-Kyoto.html>

<sup>19</sup> Evaluation was made on a three-scale from A (best) to E (worst), with three intermediate grades (e.g.: A-, A, A+)

<sup>20</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 180

the domain of environmental protection has been favored when elaborating the EU 2020 strategy, the domain having assigned to it the biggest number of objectives (three, when other domains have only one or two). This could be explained by the statement of the Romanian Ministry of Foreign Affairs' website, saying that "the European Union has taken upon itself the role of a global leader in fighting climate change, committing itself unilaterally to reduce greenhouse gas emissions by 20%, by 2020, compared to the levels in 1990"<sup>21</sup>.

Another document important to mention in this context is the ex-ante environment evaluation included in the National Development Plan (NDP) 2007-2013, based on information from November and December 2005. "The environment evaluation of the NDP was conducted as part of the ex-ante evaluation of the NDP, included in the Phare project RO 2002/IB/SPP 01 'Building Structural Fund compatible Capacities and Instruments'."<sup>22</sup>

### **Marketing studies**

When dealing with a company we require marketing studies in order to analyse the market and the organization's environment, but in the case of the national strategy, the issue will not be approached from this angle. Both theory and practice have already shown that the one viable and sustainable response for survival and growth is the transition to the knowledge-based economy. On this behalf, instead of a marketing study, it could be more appropriate to conduct a specific SWOT analysis, emphasizing the threats and opportunities from the international surroundings in respect to the construction of the knowledge-based economy in Romania.

Included in the NDP 2007-2013 can be found a SWOT analysis for Romania, concluded after researching 12 domains of interest (the socio-economic situation; production sector; infrastructure; human capital; employment rate; social inclusion; health sector; agriculture, rural development and fishing; regional differences in economic development; European and territorial cooperation; public management capability; spatial development situation). Based on this analysis and sprinkling other relevant elements, we outline in table 2 a summary SWOT analysis for Romania from the perspective of the knowledge economy.

### **The national (international) strategy**

Since we are fundamenting a national strategy for Romania, we shall search one level higher, at a European or international scale, in order to be able to identify this base for the strategy. Therefore, the Lisbon Strategy and the EU 2020 Strategy are the two strategical documents that we point our attention towards.

Other important documents that need to be mentioned and taken into consideration are: the National Development Plan (NDP) 2007-2012, the National Reform Plan (NRP) 2011-2013, the Convergence Programme 2011-2014 and all the sectorial strategies elaborated so far in Romania (the National Strategy for Research, Development and Innovation; the Energy Strategy; the National Strategy for Exports; the National Strategy for Sustainable Development; the National Strategy for Lifelong Learning; the Fiscal Strategy, the National Strategy for Waste Management, etc.)

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<sup>21</sup> Translation from "Schimbări climatice la nivel UE", *Ministry of Foreign Affairs*, accessed November 18, 2011, <http://www.mae.ro/node/1663>

<sup>22</sup> NDP 2007-2013, 372

Tabel 2

Strengths	Weaknesses	Opportunities	Threats
Availability of a research and development strategy	The research and development sector is underdeveloped and not practical, unrelated to the economic realities.	New forms of organizations available (the network company, the network of companies, the virtual firm, etc.)	The financial-economic crisis and the post-crisis period
“A big number of ITC specialists” <sup>23</sup>	Smooth and insufficient financial and cultural base for SMEs	The Internet and the expansion of social networks (Facebook, Twitter, etc.) <sup>24</sup>	Decrease in the intensity of several industrial sectors, which move along to other locations that offer them significant financial benefits
High and increasing share of the tertiary sector in the GDP (Gross Domestic Product)	Difficulty and numerous bureaucratic barriers to obtaining financial or informational resources in the business sector	Liberalization of the public acquisition processes and the markets and the redesign of the business models	Increasing rate of Romania’s perception in Europe as an economy based on the primary productive sector, where the added value rate is low
Increase and diversity in exports	Bad climate management, bad business environment management and mis-handling of the informational infrastructure	Development of the internal business environment (clusters, business incubators, networks of firms, etc.) <sup>25</sup>	Emigration of the human resources with faculty degrees, especially knowledge-based employees (doctors, researchers, etc.)
High access rate to human resources, available at a low cost and with a solid informational base	Work force insufficiently adapted to the economic conditions and not enough engaged to handle the lifelong learning necessity	Proliferation of the e-society, including e-commerce, e-government, e-banking	Deterioration of the natural environment and scarcity of natural resources

Source: adapted from NDP 2007-2013

### Effective elaboration of the strategy

#### The mission

Romania’s **mission** could be somewhat like the following: Romania wishes to become an economy with a durable growth sustained from internal sources, knowledge-based and economic,

<sup>23</sup> Translation from NDP 2007-2013, 235

<sup>24</sup> O’Dell and Hubert, *The New Edge in Knowledge*

<sup>25</sup> Nicolescu, Verboncu and Profiroiu, *Starea de sanatate a managementului din Romania in 2010*, 144

social and ecological performance-orientated, seeking to achieve these by exploiting and increasing the competitive advantages it has, for the final purpose of maintaining the main productivity, social cohesion, employment rate and environment protection indicators at the most adequate levels in the European Union, so as to blur the socio-economical development differences between Romania and the other member states of the European Union.

The basic ideas included in mission are the main elements of the EU 2020 strategy, but also the pillars of a knowledge-based economy. Thus, knowledge is under the spotlight (*knowledge-based*), and the outcomes comprehend the three key areas of the knowledge economy (*economic, social and ecological performance-orientated*). By transiting to a knowledge-based economy, Romania will be able to maintain the sustainable growth that any state needs to have, and, moreover, it will be able to obtain and support this growth by means of internal knowledge, specifically by completing the competitive advantages of each industry (*become an economy with a durable growth sustained from internal sources, ... , seeking to achieve these by exploiting and increasing the competitive advantages it has*). The point of this transition resides in consolidating Romania's position in the European Union, by diminishing the disparities concerning socio-economic development between Romania and other member states (*for the final purpose of maintaining the main productivity, social cohesion, employment rate and environment protection indicators at the most adequate levels in the European Union*).

Since the expression "most adequate levels" is particular to a mission, ambiguous and subjective, we hereby link the following phase of the elaboration of the strategy, the setting of the objectives, in order to be able to quantify and control the evolution of the strategy. This following step is likely to be the most important, complex and comprehensive one.

### Objectives

The **objectives** that need to be accomplished will be set from two perspectives: they will be personalized national targets adapted from the EU 2020 objectives, in order to assure the coherence and integration in the EU (these are the national targets set by the European Commission), and they will also be set individually, by each country, in such a way as to permit the overall development of the economy. Without pretending a comprehensive approach, we unfold a sketch of the main long term objectives of Romania for the transition to the knowledge-based economy, based on several targets already established by romanian and european officials.

### The objectives of the EU 2020 Strategy:

According to the EU 2020 Strategy, its objectives have been transposed into national objectives, adapted to the specificity and circumstances of each country. Romania's case is presented in tabel 3. To better understand these national targets, we also present in tabel 4 a synthesis of the levels of each indicator from tabel 3 in Romania during 2000-2010.

**Tabel 3**

Member states targets/ EU	Employment rate (in %)	R&D in % of GDP	CO <sub>2</sub> , emission reduction targets, base year 1990	Renewable energy	Energy efficiency – reduction of energy consumption in Mtoe	Early school leaving in %	Tertiary education in %	Reduction of population at risk of poverty or social exclusion (number of persons)
<b>Main EU target</b>	75 %	3 %	-20 %	20 %	20 % increase of energy efficiency (equivalent for 368 Mtoe)	10 %	40 %	20.000.000
<b>Romania's target</b>	70%	2%	-19%	245	10%	11,3%	26,7%	580.000



Source: European Commission<sup>26</sup>

### The objectives set at national level:

In order to set these objectives, we have adjusted the objectives from the NDP 2007-2013 and the National Strategy for Research, Development and Innovation, and sprinkled them with the optics of the authors and other specialists. Therefore, we present Romania's objectives for the knowledge economy.

Tabel 4

Year/target	Employment rate (in %)	R&D in % of GDP	CO <sub>2</sub> emission reduction targets, base year 1990	Renewable energy	Energy efficiency – reduction of energy consumption in Mtoe	Early school leaving in %	Tertiary education in %	Reduction of population at risk of poverty or social exclusion in number of persons (% of population)
2000	69,1	0,37	57	-	906,05	22,9	8,9	-
2001	68,3	0,39	59	-	869,24	21,7	8,8	-
2002	63,3	0,38	62	-	857,74	23,0	9,1	-
2003	63,7	0,39	64	-	847,43	22,5	8,9	-
2004	63,5	0,39	64	-	766,70	22,4	10,3	-
2005	63,6	0,41	62	-	732,99	19,6	11,4	-
2006	64,8	0,45	64	17,2	704,78	17,9	12,4	-
2007	64,4	0,52	62	18,4	659,09	17,3	13,9	9904 (45,9%)
2008	64,4	0,58	61	20,5	612,76	15,9	16,0	9418 (44,2%)
2009	63,5	0,47	52	22,4	576,90	16,6	16,8	9112 (43,1%)
2010	63,3	0,47	-	-	-	18,4	18,1	8890 (41,4%)

Source: European Commission<sup>27</sup>

**The goal of the strategy:** enhancing the characteristics of the knowledge-based economy, in order to obtain a sustainable competitive economic growth<sup>28</sup>

### Fundamental objectives:

Increasing the GDB per capita up to at least 45% of the EU average by 2020<sup>29</sup>

Reaching an average enterprise productivity of minimum 60% of the European productivity average by 2020<sup>30</sup>

Increasing the share of R&D expenses with 1% of the GDP by 2015 and 2% by 2020<sup>31</sup>

“Increasing the contribution of SMEs to the GDP with 20% by 2015”<sup>32</sup> and increasing the number of new SMEs, especially the share of innovative firms out of the total on SMEs

Increasing the share of enterprises and population using the Internet up to 85% of the enterprises and 70% of the population by 2020<sup>33</sup>

“Reduction of the primary energy intensity with 40% by 2015, in comparison to 2001”<sup>34</sup>

<sup>26</sup> “Europe 2020 targets”, *European Commission*, accessed November 19, 2011, 2

<sup>27</sup> “Europe 2020 indicators – Headline indicators”, *European Commission – Eurostat*, accessed November 10, 2011

<sup>28</sup> Adaptation to the first national development priority from NDP 2007-2013, 243

<sup>29</sup> Adaptation to the target of the main goal from NDP 2007-2013, 236

<sup>30</sup> Adaptation to the general objective of Priority 1 from NDP 2007-2013, 247

<sup>31</sup> Adaptation to the second national development objective of Priority 1 from NDP 2007-2013, 248

<sup>32</sup> Translation from the first specific objective of Priority 1 from NDP 2007-2013, 248

<sup>33</sup> Adaptation to the third specific objective of Priority 1 from NDP 2007-2013, 248

More efficient management of natural resources, in regard to protecting and ameliorating the effects of industrialization on the environment<sup>35</sup>

Accelerating the economic growth of the underdeveloped areas, in regard to ameliorating the socio-economic disparities between and inside different regions<sup>36</sup>

Development of the rural economy and increasing the productivity of the agriculture sector, by creating a knowledge-based agriculture<sup>37</sup>

Enhancement of the basic infrastructure at european standards, by “providing an extended, modern and sustainable transport infrastructure”, so as the share of the transport activities in the GDB to increase up to “a minimum of 7 billion euro by 2015”<sup>38</sup>;

Creating a network for the circulation of information in every sector of the economy, by means of broadband Internet, mobile telephony, but also classical stocking and transmitting mediums (radio, television, etc.)<sup>39</sup>

Creating a national innovation-centered knowledge system, in order to contribute directly to the enrichment of the knowledge flow, as to support a sustainable economic and social growth of Romania

Connecting through practical relations the enterprises, research centers, universities and other economic entities, in order to manage the flow of knowledge under real requirements of the business environment, as to transform that knowledge into products, services or new items<sup>40</sup>.

Engaging in state financed projects that should include and constitute the “demand” for all the unfolded research and development activities<sup>41</sup>

Increasing the qualitative and quantitative performances<sup>42</sup> of the national research and development system, by means of:

Increasing the number of articles in the main flow of knowledge (“ISI indexed publications”)<sup>43</sup>

Significant increase in the number of EPO patents per million inhabitants, USPTO patents, patents registered in OSIM and high-tech patents<sup>44</sup>;

Quantitative and qualitative growth in human resources<sup>45</sup> engaged in research and development activities, by means of:

Increasing the number of researchers and the “share of doctors and doctoral students up to over 50% of all researchers”<sup>46</sup>

Establishing laboratories and research centers and indexing them in the european research infrastructure, concurrent with improving and facilitating the access of romanian researchers to the important research infrastructures in Europe<sup>47</sup>

<sup>34</sup> Translation from the fourth specific objective of Priority 1 from NDP 2007-2013, 248

<sup>35</sup> Adaptation to the third national development priority from NDP 2007-2013, 243

<sup>36</sup> Adaptation to the general objective of Priority 6 from NDP 2007-2013, 336

<sup>37</sup> Adaptation to the general objective of Priority 5 from NDP 2007-2013, 319

<sup>38</sup> Translation Obiectivul general al Prioritatii 2 din NDP 2007-2013, 262

<sup>39</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 76

<sup>40</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 76

<sup>41</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 185

<sup>42</sup> Adaptation to the first specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16

<sup>43</sup> Adaptation to the first specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16

<sup>44</sup> Adaptation to the first specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16; Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 183

<sup>45</sup> Adaptation to the second specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16

<sup>46</sup> Translation from the second specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16

“Involvement of the private sector”<sup>48</sup> in the research and development activity, and also increasing the degree of active involvement from the government<sup>49</sup>, by means of:

Increasing the share of private research and development expenses in the GDP, by establishing technological platforms and scientific centers, thus allowing innovative firms and not only them to conduct an innovative technological development<sup>50</sup>

“Expanding international cooperation”<sup>51</sup> in the research and development domain, transforming Romania into an active and present player on this market, including also the Romanian researchers in other countries.

Enhancing the knowledge of the national human capital, facilitating the use of this knowledge and improving performances in regard to the added value created by human resources<sup>52</sup>

Increasing the degree of knowledge of the human capital, in order to assure an intensive development of its competitiveness on the labour market, considering the principle of social inclusion and leading towards the development of a sustainable, knowledge-based labour market, capable to include 900.000 persons by 2015 and increase this number with minimum 5% annually, by 2020<sup>53</sup>

Starting reforms and drawing up educational offers that can provide a solid basic education and facilitate lifelong learning, equally for all the citizens, as to improve their educational state for when they enter the labour market<sup>54</sup>

Perfectioning the human capital in the educational system, by including it in systems that support and enhance initial and permanent learning, concurrent with the introduction of new professions of the knowledge-based economy, these targets comprehending a minimum of 40.000 persons<sup>55</sup>

Gradual increase in higher education graduates at one thousand 20-29 aged inhabitants<sup>56</sup>

Launching educational programmes that would train 1.100.000 persons in coherence with the real and actual needs of the labour market, also including a minimum of 400.000 persons that encounter difficulties in entering or reentering the labour market, as well as training a minimum of 300.000 youths, from which 30% persons from socially vulnerable categories<sup>57</sup>

Enhancing the entrepreneurial spirit especially among the youth, by means of financing innovative start-ups and supporting the entrepreneurial culture of the managers<sup>58</sup>

The three fundamental objectives above cover the most important three areas that support growth in the knowledge-based economy: economic, research-development-innovation and human resources. These areas should be considered to be highly complex, because they take into account the objectives and the action priorities defined by the European Union. For example, the area referring

<sup>47</sup> The second specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 16

<sup>48</sup> Translation from the third specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 17

<sup>49</sup> Adaptation to the fourth specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 17

<sup>50</sup> Adaptation to the third specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 17

<sup>51</sup> Translation from the last specific objective from the National Strategy for Research, Development and Innovation 2007-2013, 17

<sup>52</sup> Adaptation to the third specific objective from NDP 2007-2013, 242

<sup>53</sup> Adaptation to the general objective of Priority 4 from NDP 2007-2013, 298

<sup>54</sup> Adaptation to the first specific objective of Priority 4 from NDP 2007-2013, 298

<sup>55</sup> Adaptation to the second specific objective of Priority 4 from NDP 2007-2013, 298

<sup>56</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 183

<sup>57</sup> Adaptation to the fifth and sixth specific objectives of Priority 4 from NDP 2007-2013, 298-299

<sup>58</sup> Adaptation to the sixth specific objective of Priority 4 from NDP 2007-2013, 299

to human resources includes equality of chances, continuous learning, poverty fighting, and also social inclusion.

These objectives need to be unfolded into short and medium term objectives, but these will be the content of several plans or programmes afferent to the strategy and referring to shorter periods of time. Objectives of this kind are also available in the NRP, but they require a reevaluation before being included in strategic documents of the implementation of the strategy for the creation of the knowledge-based economy.

### **Strategic options**

The **strategic options** are the main courses of action by which the objectives can be fulfilled. In the national strategy, they can be found among the initiatives proposed in the NRP and the Europe 2020 strategy. Therefore, taking these two important documents into consideration, as well as views of the authors and other specialists, we consider that the main strategic options of Romania are:

Optimizing the internal business environment<sup>59</sup>

Enlargement of the internal market and inclusion of it into the European market

Redesigning the national educational system, so as to be able to welcome the practical needs of the business environment, as well as to promote social inclusion and lifelong learning, centered on personal development and training

Promoting the sectors of e-government, e-banking, e-commerce and finalisation of the legislation, where it is due<sup>60</sup>

Supporting research and development in the business environment, by means of promoting business incubators and clusters, as well as other new forms of knowledge-based organizations, so as to be able to embrace the objective of increasing the number of innovative firms

Turning on a large scale towards public-private partnerships for investments and growth

Placing innovation and social and ecological elements in the center of sustainable economic growth

Paying attention to the top industrial sectors which handle great stocks and flows of knowledge, as well as promoting the set-up of new firms in the mentioned sectors<sup>61</sup>

### **Resources**

**Resources** represent one of the starting engines of the strategy, having a primary role in the implementation phase. On the other hand, equally important is the determination of the size of the resources, because neglectfully fundamenting them may turn out to be an authentic impediment in the following steps and phases of the strategy. The main categories<sup>62</sup> of required resources are:

#### **Financial resources**<sup>63</sup>:

From **national** sources: the state budget for each year from 2011 to 2020, as well as local budgets and other public and local sources for growth;

From **drawn** sources: structural instruments related to the EU objectives<sup>64</sup>, in total amount of 19,7 billion euro, granted among 2007-2013; after 2013, the following post-adhesion funds will be taken into consideration;

From **borrowed** sources: external loans from the World Bank Group, International Monetary Fund, European Bank for Reconstruction and Development, European Investment Bank;

**Technical / material resources** : various buildings where knowledge is being created or stocked (libraries, research centers, scientific parks, business incubators, etc.), technical resources (computers, pads, servers, etc. );

<sup>59</sup> NRP 2011-2013, 39-55

<sup>60</sup> Nicolescu, Verboncu and Profiroiu, *Starea de sanatate a managementului din Romania in 2010*, 145

<sup>61</sup> Nicolescu, Verboncu and Profiroiu, *Starea de sanatate a managementului din Romania in 2010*, 144

<sup>62</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 184

<sup>63</sup> NPD 2007-2013, 350

<sup>64</sup> The "Convergence" objective and the "European Territorial Cooperation" objective

**Human resources:** doctors in sciences (economy, sociology, geology, ecology, etc.), doctoral students, researchers, consultants, analysts, trainers, IT people, politicians (especially to sustain the political actions), ministers and any other person that can qualitatively contribute to the elaboration and implementation of the strategy;

**Knowledge / informational resources :** consulting companies in Romania, the main flow of publications (romanian articles from various databases), other studies (as a result of research projects funded by the government or private firms), registered patents, social networks (Facebook, Twitter, etc.);

The categories of resources mentioned above are meant to be merely general directions, because deeply fundamenting numerical values for each of them would constitute a great paper and would most certainly require a different study for the matter. Therefore, we have here a direction for further research in the presented issues.

### **Deadlines**

The **deadlines** that have to be taken in consideration when elaborating the strategy for the knowledge economy are the initial date, intermediate deadlines and the final term.

In regard to the initial date, it would have been ideal to start on 01.01.2011, since in 2010 the Lisbon Strategy becomes outdated and the Europe 2020 Strategy becomes effective.

The point of view expressed by E. Dinga in a study<sup>65</sup> of his is considered to be relevant in regard to establishing the intermediate terms for monitoring the strategy. The author proposes a “two-step system for progress monitoring”: in order to assure the identification of errors in time, the first step consists of elaborating annual progress reports; the second step consists of an overall evaluation of the implementation of the strategy, done every two years.

It is important to mention here the concept of european semester. It consists of the first six months of each year, period during which the member states coordinate their policies according to the European Union, in various economical aspects. In january, the Commission establishes the main goals of the EU for the following period of time, based on an annual growth survey, previously presented. In march, the national policies are being outlined, then they turn into NRPs by april and are sent to the European Union in june, to undergo evaluation and possible recommendations<sup>66</sup>.

The final term, concurrent with the EU 2020 Strategy, is the year 2020. It is useful to mention that since we are dealing with an european or national strategy, the 10 years duration (between 2010 and 2020) is adequate, recommendations having been made as to extend the strategy over approximately 10-15<sup>67</sup> years.

### **Competitive advantage**

Taking into account the two well known types of competitive advantage described by Michael Porter, cost leadership and differentiation, Romania's obvious choice should be going for a cost leadership. This would imply, for example, low fiscality, according to the opinion of Sebastian Bodu, ex-president of NAFA (National Agency for Fiscal Administration). He stated in march 2011 that “we have a low fiscality, it is good to keep it this way, this is the only competitive advantage of Romania”<sup>68</sup>. Mugur Isarescu, governor of the National Bank of Romania, declared a little while ago, in october 2011, that he believes that Romania has a three-way orientated competitive advantage: “it is all about the industry in which financial capital, technology, internal and external management

<sup>65</sup> Dinga, Prelicean and Baltaretu, “Noua strategie europeana pentru crestere economica si ocuparea fortei de munca (Europa 2020): Obiective, instrumente de monitorizare a implementarii, resurse necesare”, *European Institute of Romania*, March 31, 2011, 11

<sup>66</sup> “Europa 2020 – Guvernanta economica”, *European Commission*, accessed November 19, 2011, [http://ec.europa.eu/europe2020/priorities/economic-governance/index\\_ro.htm](http://ec.europa.eu/europe2020/priorities/economic-governance/index_ro.htm)

<sup>67</sup> Nicolescu and Nicolescu, *Organizatia si managementul bazate pe cunostinte*, 184

<sup>68</sup> Translation from Alina Bardas, “Bodu: Fiscalitatea redusa, singurul avantaj competitiv al Romaniei”, *ziare.com*, March 15, 2011, accessed November 15, 2011, <http://www.ziare.com/sebastian-bodu/stiri-sebastian-bodu/bodu-fiscalitatea-redusa-singurul-avantaj-competitiv-al-romaniei-tv-ziare-com-1081721>

have been invested, as well as the work force in IT and the wine industry. One can not rely solely on the work force, especially since migration is one of the essential elements of Europe<sup>69</sup>. Therefore, even if Romania would hold several advantages on each industry, most of them would be cost leadership orientated.

### **The implementation of the strategy**

Implementing the strategy involves three aspects: analysing the work climate and assuring the managerial premisses, as well as the other categories of conditions (financial, human and material).

**The work climate**, in the context of a national strategy, will be equal to the state of mind of the people. In this regard, worth mentioning is a study conducted in 2010 by the Institute for the Quality of Life (ICCV), entitled “The quality of life in Romania 2010”. The results of the study have shown that in 2010 the population felt the overall situation of the country roughly at the same level as in 1999 or even worst, without any improvement having been registered, as one would have expected, due to socio-economic progress. Romanians turned out to be optimistic and faithful concerning non-economic elements, such as family and relations with neighbours, but when it comes down to income, taxes, high prices and difficulty to enter the labour market, the people consider them to be “the most critical elements of the quality of life”<sup>70</sup>. Among the online press articles, there have also been titles to, unfortunately, describe very synthetically and expressive the research conducted by the above mentioned study: “Pessimism, life style among romanians”<sup>71</sup>. Under these circumstances, implementing a strategy for the transition to the knowledge-based economy may be more difficult. The proper conditions would imply an open-minded population, prepared for change, optimistic and faithful, ready to embrace fundamental changes that would open the path towards a sustainable, efficient and environment-friendly lifestyle.

By all means, the cultural aspects have a major importance in implementing the strategy, but making a swift in the national culture may take dozens of years, if possible at all, so hope in regard to this strategy is that the realities of the knowledge economy, as well as the strategy itself, will be the departure point in the birth of new values, behaviours, thinking patterns and even processes.

As far as the **managerial conditions** are concerned, they would be administrative premises when dealing with a national strategy. E. Dinga finds in a study<sup>72</sup> such three institutional conditions for the implementation of the EU 2020 strategy in the member states:

bordering and acknowledgement of the EU2020 strategy as a “master programme for the institutional construction of the European Union, socially and economically”<sup>73</sup>;

convergence of the National Reform Plans, as implementing instruments, with the National Stability Programmes, as main monetary policy instruments; evaluations should be conducted annually;

carefully monitoring of the progress: establishing an European Council responsible for writing the annual progress report, as well as a Biannual European Forum for the evaluation of the state on implementation of the EU2020 strategy<sup>74</sup>.

<sup>69</sup> Translation from “Isarescu identifica trei avantaje competitive ale Romaniei in lupta pentru atragerea investitiilor”, *evz.ro*, October 28, 2011, accessed November 12, 2011, <http://www.evz.ro/detalii/stiri/care-sunt-avantajele-competitive-ale-romaniei-in-opinia-lui-isarescu-951628.html>

<sup>70</sup> Margineanu et al., “Calitatea Vietii in Romania 2010”, *Research Institute for the Quality of Life (ICCV)*, 2010, accessed January 12, 2011, 5

<sup>71</sup> Translation from “Pesimismul, stil de viata la romani”, *9AM News*, August 20, 2010, accessed December 15, 2011, <http://www.9am.ro/top/Social/156724/Pesimismul-stil-de-viata-la-romani.html>

<sup>72</sup> Dinga, Prelipcean and Baltaretu, “Noua strategie europeana pentru crestere economica si ocuparea fortei de munca (Europa 2020): Obiective, instrumente de monitorizare a implementarii, resurse necesare”, *European Institute of Romania*, March 31, 2011

<sup>73</sup> Translation from Dinga, Prelipcean and Baltaretu, “Noua strategie europeana pentru crestere economica si ocuparea fortei de munca (Europa 2020): Obiective, instrumente de monitorizare a implementarii, resurse necesare”, *European Institute of Romania*, March 31, 2011, 10

The same study names three vulnerabilities for the European strategy. These include “misunderstanding the national targets as being quantitative differentiations, placing the accent away from the objectives to the implementation actions and over autonomising the targets, by conserving their nature”. Very eloquent, the author shows an explication, the risk involved and a solution for each of these weak spots of the strategy.

Another administrative prerequisite is the involvement of high state officials, as to ensure the support necessary for such an initiative and increase the trust of the population and other entities or institutions interested in contributing to the achievement of the strategy’s targets.

Last, but not least, **ensuring the material, financial and human conditions** is equivalent to ensuring the resources necessary for the effective implementation of the strategy. This phase is actually the beginning of the process of turning the economy into a knowledge-based economy, as the presented strategy pursues.

### **Microeconomic prerequisites for creating knowledge-based organizations**

As it has been shown how to create a favorable environment for knowledge-based organizations using Romania’s strategy for transition to the knowledge-based economy, attention should focus on the efforts that organizations must do at a microeconomic level and on the areas that should be of most interest.

#### **Premise 1: Strategic knowledge management**

Promoting strategic management has so far validated its merits, demonstrating that without a strategy, any result (efficient or not) obtained by organizations, is just a contextual variable and there is no sustainable basis to ensure the survival and competitiveness of the organization.

Regarding strategic knowledge management, the situation becomes more critical, because an initiative in this area cannot lead to results unless it starts as a strong strategic approach. Studies have been made in recent years to show how strategic knowledge management can lead to improved organizational performance, presenting the main faults, concepts, steps to be followed to succeed and the importance of communities of practice<sup>75</sup>. On the other hand, other studies have shown that strategic knowledge management is applied under the shadow of classic strategic management paradigms; hence the weaknesses of it, weaknesses that can be disproved<sup>76</sup>.

Analyzing how the daily routine of an organization affects the processes of treating knowledge, it was found that strategic commitment and “strategic engagement” are a crucial direction to be followed in the knowledge-based organizations<sup>77</sup>. In addition, strategies and knowledge strategic management suffer many optical adjustments or changes due to the emergence of knowledge and intellectual capital. For example, what shows up is the need to redirect attention to the financial aspects of risk measurement and to the value of investments in intellectual capital in terms of long term sustainability<sup>78</sup>. Another example in this respect is the model developed by Snyman and Kruger, which combines strategic knowledge management and classical strategy formulation, in order to capture the changes that occur due to increased importance of knowledge<sup>79</sup>.

Another point of view is that of human resource strategic management, which becomes more important than in the traditional organization. Human resources as a whole increases as significance

<sup>74</sup> Dinga, Prelicean and Baltaretu, “Noua strategie europeana pentru crestere economica si ocuparea fortei de munca (Europa 2020): Obiective, instrumente de monitorizare a implementarii, resurse necesare”, *European Institute of Romania*, March 31, 2011, 10

<sup>75</sup> Cook, “Strategic knowledge management”

<sup>76</sup> Nielsen, “Strategic knowledge management research: Tracing the co-evolution of strategic management and knowledge management perspectives”

<sup>77</sup> Sun, “Five critical knowledge management organizational themes”, 507

<sup>78</sup> Bose, Oh, “Measuring strategic value-drivers for managing intellectual capital”

<sup>79</sup> Snyman, Kruger, “The interdependency between strategic management and strategic knowledge management”

in the knowledge-based organization, but these issues will be addressed in the following premises. The main idea of this paragraph is that strategic management should include human resources from the organization. In a paper describing the importance of human resources in the knowledge-based economy, the main challenges the management of knowledge-based employees is facing and the human resource management strategies applied in these conditions due to their deep centering on people, the authors conclude with an expressive statement: “*As the industrial economy transforms itself into a knowledge economy, the people management function need a similar transformation to be able to fulfill its critical role in leveraging intellectual capital as a sustainable competitive advantage*”<sup>80</sup>. Studies over time have provided evidence to support the claim that the human resource management strategy is a key determinant of organizational performance. The correlation of knowledge management initiatives with the strategic management of human resources is argued; the aim is to increase organizational performance, even if specific human resource management activities do not directly influence the performance of the organization, but rather influence human resources by increasing capital intellectual possessed by them or improving communication, issues that indirectly contribute to achieving performance<sup>81</sup>. Moreover, it was shown that implementing the same strategy in two different companies leads to different levels of performance results due to other internal control factors, as for example organizational culture<sup>82</sup> (which is another prerequisite treated in the following pages) or were described effects driven by two types of human resource management strategies on knowledge treatment processes and on human resources behaviour<sup>83</sup>.

In conclusion, strategic approach must always be present in a knowledge management initiative and is especially useful and necessary because the managerial problems are always the deepest within the organization and they do not disappear with technological or informational changes that can be made at any time<sup>84</sup>. Without strategic knowledge and strategic knowledge management, it's like the entire organization is “getting on board a wagon with no horse to pull you through your journey”<sup>85</sup>.

## Premise 2: Increased attention to human resources

Going further, the second premise appears, namely, the increased importance to be given to human resources, and treating them differently from classical organization. Human resources are the main bearers of knowledge, which gives them a special status in the knowledge-based organization, aspect that was submitted to research by studying the links between knowledge management and four key areas of human resource management: “*training, decision-making, performance appraisal, reward and compensation*”. The results show that the knowledge-based organizations required a different approach than in traditional organizations, hence the special role of human resource management<sup>86</sup>. However, acceptance and action in accordance with this role, namely the attention given to human resources is one of the challenges knowledge-based organizations around the world

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<sup>80</sup> Thite, “Strategic positioning of HRM in knowledge-based organizations”, 41

<sup>81</sup> Afionni, “Human resource management and knowledge management: A road map toward improving organizational performance”

<sup>82</sup> Teo et al., “Strategic human resource management and knowledge workers: A case study of professional service firms”

<sup>83</sup> Edvardsson, “HRM and knowledge management”

<sup>84</sup> Evanschitzky et al., “Knowledge management in knowledge-intensive service networks: A strategic management approach”

<sup>85</sup> O'Dell and Hubert, *The New Edge in Knowledge*, 23

<sup>86</sup> Yahya, Goh, “Managing human resources toward achieving knowledge management”



are still facing<sup>87</sup>. “In order to manage this type of human capital, managers at all levels of the hierarchy must develop abilities that exceed those of traditional managers.”<sup>88</sup>

To ensure the success of knowledge management, human resources have been studied by many authors and summaries have shown the benefits that can be obtained from a synergetic promoting of human resources management and of knowledge management, the two together being able to lead to increased organizational efficiency and performance<sup>89</sup>. Once managers and researchers have realized the importance of this, the best practices regarding knowledge management and human resource management have been identified. A recent study identified less common practices, especially how they energize each other, and final focus fell on how the practices handle less known classic dilemmas of human resource management and knowledge management, in organizations which received National Award for Quality in Uruguay<sup>90</sup>.

Thus, we can say that human resource management is one of the the basic pillars of knowledge management. “People, not technology, are the key to KM.”<sup>91</sup>

### **Premise 3: Support from technology**

Even if is not the key to knowledge management, technology is certainly a very important pillar, that should not be ignored, nor confused with this phenomenon. Knowledge management initiative needs to rely on technological tools in order to ensure the full benefit of this management system in all its dimensions. For example, emerged from a study in Africa, related to analyzing factors that stimulate e-commerce, the relationship between knowledge, information and IT support has been analyzed, concluding that managing information and knowledge depends on a good informational, software base.<sup>92</sup>

Definitely, it must be clarified that knowledge management is not just informatics, information systems, technology or information management. In a work that aims to clarify precisely the concept of knowledge management, it is set out, that “*In particular, information systems and human resource management are two important pillars of KM but none of these per se can be termed as KM, which is a much bigger and comprehensive concept*”<sup>93</sup>. Another expressive approach in this regard urges not to allow software to become the brand of knowledge management initiative, as many management programs have failed because they acted under the name of technological applications. “*Don’t let your software brand your program. We have seen many KM programs get branded by their technology application and then crash and burn. A wiki is a tool, not a brand to promote your KM program. Ensure that KM is seen as a holistic approach enabled by dedicated employees, standard processes, and robust technology tools.*”<sup>94</sup>

Usually, investments in advanced technologies and information systems are already completed when the organization considers the promotion of knowledge management, so a proper knowledge management must support and exploit the investments already made<sup>95</sup>. Software systems to support the technological aspects of knowledge management are multiple and diverse, so there are many ways to ensure information support to the implementation of specific solutions for this management direction<sup>96</sup>.

<sup>87</sup> Kalkan, “An overall view of knowledge management challenges for global business”, 390

<sup>88</sup> Geisler and Wickramasinghe, *Principles of Knowledge Management: Theory, Practice and Cases*, 160

<sup>89</sup> Svetlik, Stavrou-Costea, “Connec ting human resources management and knowledge management”

<sup>90</sup> Algorta, Zeballos, “Human resource and knowledge management: best practices identification”

<sup>91</sup> O’Dell and Hubert, *The New Edge in Knowledge*, 129

<sup>92</sup> Badamas, “Knowledge management and information technology: Enablers of e-commerce development”

<sup>93</sup> Pillania, “Demystifying knowledge management”, 98

<sup>94</sup> O’Dell and Hubert, *The New Edge in Knowledge*, 134

<sup>95</sup> Schafer, “Beyond access – from IT to managing knowledge”

<sup>96</sup> Lindvall, Rus, Sinha, “Software systems support for knowledge management”

#### Premise 4: Considering cultural aspects

Culture, whether organizational, managerial, national or any other nature, is a direct determinant of management and its various branches, including knowledge management. In this respect, compared to many qualitative works, studies to provide a quantitative basis, for all previous work proving the influence of culture on knowledge management, have appeared. One such study, conducted on 14 foreign subsidiaries of a pharmaceutical company in Japan, captured more pronounced influences of organizational culture on knowledge management, than the influences from the national culture<sup>97</sup>.

Starting from investigating the premise according to which culture is a critical antecedent of knowledge management, a concepts base has been developed to be used by companies to analyze the relationship culture - knowledge management or by researchers to deepen this relation's study. In the same time, it was described how the five levels of culture (from the national culture to the climate in the working groups) influence the practices and knowledge management success<sup>98</sup>.

Due to recognition of the significant impact of culture, studies have continued to widen, in order to solve the challenges brought by the equation of implementing knowledge management. A new approach indicates, unlike most experts that recommend attention to culture before implementing knowledge management, to "get over it. Culture change is more often a consequence of knowledge sharing than an antecedent to it."<sup>99</sup>

Other studies have focused on the influences of a culture from a hierarchical organizational structure on knowledge management processes, showing management areas where such a culture is friendly and where it is an impediment to knowledge management system performances<sup>100</sup>. Some authors have even deepened the relationship among organizational culture, knowledge management and other items of managerial interest, such as ERP systems<sup>101</sup>, being presented theoretical and pragmatic implications of these management areas' association.

Another example of research made due to the importance of cultural aspects is a study made at a manufacturing company in China, that captures the specific barriers and factors favoring China's culture in relation to knowledge management<sup>102</sup>. One of the conclusions of the study was, for example, that the Chinese prefer to keep knowledge in tacit form, and if they share them or turn them into explicit knowledge, prefer to do so informally. The importance of cultural factors appears once again, crucial.

Stating the importance of culture by referring to a traditional model of knowledge creation, stands out the work of Glisby and Holden. The study "attacks" the famous model of knowledge creation, developed by Nonaka and Takeuchi, the authors arguing that the model should be considered as specific to its culture of origin, namely, Japanese culture. They describe how, in different cultural environments, the model can behave differently, so it should be regarded as indicative only and not an authentic model of reference in the field of knowledge management<sup>103</sup>.

Of course, the informal part of organizational culture takes on special features in the context of knowledge management. It becomes an environment favorable for the manifestation of knowledge-based employees, and a climate of trust, based on sustainable relationships between employees remains a cornerstone in the foundation of the company's competitive advantage<sup>104</sup>.

<sup>97</sup> Magnier-Watanabe, Senoo, "Shaping knowledge management: organization and national culture"

<sup>98</sup> King, "Questioning the conventional wisdom: culture-knowledge management relationships"

<sup>99</sup> O'Dell and Hubert, *The New Edge in Knowledge*, 129

<sup>100</sup> Tseng, "The effects of hierarchical culture on knowledge management processes"

<sup>101</sup> Palanisamy, "Organizational culture and knowledge management in ERP implementation: an empirical study"

<sup>102</sup> Tong, Mitra, "Chinese cultural influences on knowledge management practices"

<sup>103</sup> Glisby, Holden, "Contextual Restraints in Knowledge Management Theory: The Cultural Embeddedness of Nonaka's Knowledge-creating Company"

<sup>104</sup> Pyoria, "Informal organizational culture: the foundation of knowledge workers' performance"

Thus, in the light of various approaches presented and of all aspects regarding cultural influences, already tested and validated, we report that cultural issues should be viewed carefully in implementing knowledge management.

#### **Premise 5: Promoting change management**

Many works dedicated to knowledge management associate it with an intense process of organizational change, a process that cannot be left to chance, but must be managed with change management tools and techniques. “*Knowledge-sharing is a change-management exercise*”<sup>105</sup>, is the title of a study showing the benefits of sharing knowledge attitude and the need to promote change in the company to obtain such an attitude.

Starting from existing models of change, a new model was even proposed for transforming institutions into “learning institutions”, through strategies specific to *Knowledge Management as a Mechanism for Change Management – KM-M-CM*<sup>106</sup>.

The fact that the relationship between change management and knowledge management is bilateral, shows that this correlation cannot be ignored, because not taking it into account can be an impediment to the success of becoming a knowledge-based organization, with a specific management. It was said that “success in measuring KM is about 20 percent process and 80 percent change management”<sup>107</sup>. In fact, things are exactly the same when it comes to the whole process of implementing knowledge management, instead of just measuring it.

#### **Conclusions**

This work aimed at identification of macro and microeconomic premises to facilitate Romania's transition to knowledge-based economy, according to Europe 2020 strategy. At the macroeconomic level, we argued the need of Romania's strategy for creating knowledge-based economy and we also outlined the main elements of it. At the microeconomic level, we defined the main issues organizations should pay attention in order to become knowledge-based organizations and to form this way the whole economic and social system of this kind. These microeconomic assumptions happen to be well summarized in the following expression: “Three main components constitute a knowledge strategy: culture as the foundation, knowledge architecture as the blueprint of approaches and technology as the enabler.”<sup>108</sup>

Thus, strategic approach is needed, as knowledge is important (hence the attention to human resources, in their role as key knowledge holders); culture should be regarded as a basic factor and the technology support is vital. Of course, all these elements must be included in the change management process. The purpose of these results is to redirect the attention of all actors interested towards building a successful knowledge-based society in Romania. Thus, we consider that future research directions should move toward developing a real strategy to create the knowledge-based economy and deepening on the functioning and organization of knowledge-based companies.

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<sup>105</sup> Totsch, “Knowledge-sharing is a change-management exercise”

<sup>106</sup> Shoham, Perry, “Knowledge management as a mechanism for technological and organizational change management in Israeli universities”

<sup>107</sup> O'Dell and Hubert, *The New Edge in Knowledge*, 153

<sup>108</sup> Saint-Onge and Armstrong, *The Conductive Organization*, 91

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