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Leadership between fiction and reality

Often, reality overtakes fiction as the real world always contains the fiction germs, the latter growing and becoming susceptible to provide unpredictable results. The individual and organisational development vectors can generate, in the future, leadership patterns difficult to anticipate at this moment. The social and economic networks, the new technologies will define different ways of communication, collaboration, management and decision-making. The nowadays leadership theories risk to become, very soon, inoperative. Those experiencing reality have the great advantage to feel „on spot" its evolution trajectory. At this time it is not easy to determine which of the dependence forms are dominant: the ways eras create their needed leaders or the ways extraordinary leaders change eras. I rather act and also propose my fellows to act, so that the contexts created by us turn into laboratories allowing for the tomorrow leadership theories to develop. Between meditating and not acting, we should all choose being meditative in action.

Prof. Ph.D. Paul Marinescu

The human capital in the knowledge society. Theoretical and empirical approach

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Abstract: *We live today in a changing society based on the globalization and better valorisation of the human capital. The human capital is the central driver force for competitiveness and development of the new technology and patent and a necessary factor for their efficient use in the new society. In order to reach the competitiveness objective, the European Union member countries seek to develop their human capital value by increasing investment in education, science and technology development. Based on the panel econometrics techniques, this paper explores the statistical correlations between human capital components and national competitiveness within the EU economic context.*

Key words: human capital, knowledge society, innovation, competitiveness, globalization, education, science

Introduction

There is a large body of literature dedicated to the knowledge society, human capital and their interaction. A key value of human capital is knowledge as the result of learning and internalisation of information, data and experience. In the knowledge society, the driving forces are education, science and innovation. Therefore, we find human capital at the core of the modern knowledge society. Bontis (1999, cited by Bontis et all, 2000, p. 89) argues that "human capital is important because it is a source of innovation and strategic renewal". Human capital, introduced first by Adam Smith and later developed as a concept by Gary Becker and Jacob Mincer may be defined as "the knowledge, skills, competence and other attributes embodied in individuals that are relevant to economic activity" (Hartog, 1999, p. 1). A consistently increasing body of specialists, policy makers and governmental entities recognize now the importance of the human capital for the progress of the society and success of nations. A significant property of the human capital is that it exceeds several times the value of the physical capital. For example, in USA, the stock of human capital is over $750 trillion, much greater than the roughly $70 trillion of physical and financial assets owned by American households. (Schulz, 2012, p.2-3). Also, the human capital has a high degree of versatility, coming from different theoretical approaches: (a) "firm specific human capital" creating competitive advantage in the firm relation with other firms, with a relative effect of reducing the innovation degree, (b) "industry-specific human capital" playing an important role in the innovation level within that industry and (c) "individual specific human capital" referring to the knowledge that is largely applicable to the progress of society (Dakhli and Clerco, 2004)

The knowledge society, for the first time referred to by Peter Drucker in 1969, cannot exist without human capital because knowledge is the result of people learning, of internalization of information, data and experience facilitated by the digital technology. The knowledge society has the ability to develop knowledge and produce "new meaning", that implied creativity, and two type of knowledge difficult to obtain without highly developed people. The pillars of the knowledge society are: education, information technology and communications (ITC), science, new technology and innovation.

There is a consistent correlation between knowledge and learning, as various studies in the field revealed. Brine (2006) highlighted the importance of the relationship between learning – especially long live learning – on one side and knowledge society and the set of policy in the European Union on the other side. Lundvall and Johnson (cited by Conceição and Heitor, 2002) considered that there are two forms of knowledge: "knowledge creation and knowledge destruction". The new knowledge society replaced the old knowledge following a destruction process and then replacing it with the new creative knowledge based on innovation.

The Lisbon Strategy, introduced by the special European Council in Lisbon in March 2000, stipulate that EU must become "...the most dynamic and competitive knowledge economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion and respect for the environment"(Kok, W. et al., 2004, p.6). In this paper we analyze the relation between the knowledge society and the human

capital. Using a panel methodology and a data series form UE countries, we test the following hypothesis: The higher the level of human capital within a country, the higher the country's level of innovation is.

Measurement in the knowledge society and the human capital theory

The level of human capital within a country correlates with the country's performance in innovation. While innovation is an important part of knowledge society, measuring the human capital is actually an important part of knowledge society.

According to the 2005 UN report: "The Index of Knowledge Societies (IKS) is a summary measure of the performance that countries register in the three main dimensions described in the previous parts of the Report: assets which are represented by: a large pool of young and educated people, and the development of the means through which information can flow; advancement is the degree to which a Member State nurtures and advances its human and informational resources and the foresightedness which is the degree to which a Member State grows and develops along its path to a Knowledge Society, while minimizing the impact of negative externalities on people and the natural environment a country displays in its quest to become a Knowledge Society". Each dimension is measured by a number of quantitative indicators. (UN, 2005, p149).

Regarding the Human Capital, the World Economic Form Report 2013 proposed four distinct Enabling Environment domains with 51 indicators: Educations, Wealth and Wellness, Workforce and Employment and Enabling Environment, different as compare to the European Union Hyman Capital Index.

A synthesis of the measurement of Knowledge society and Human capital is presented on Table1.

Table 1 - The measure the knowledge society and the human capital

Measurement for knowledge society	Measurement for human capital
1. *The Index of Knowledge Society* (UN, 2005) composed from three indices:	*The Index of Human Development (ONU):* contain four group of areas: Education (12 indicators); the Wealth and Wellness (14 indicators) the Workforce and Employment (16 indicators); the Enabling Environment (9 indicators) (WEF, 2013) The European Human Capital Index that looks at countries' abilities to develop and deploy their human capital and cover four areas: *human capital endowment, human capital utilisation* and *human capital productivities* (P.Ederer, 2006).

-*Assets* measured by: expected schooling and proportion of people below age 15; diffusion of newspapers, the Internet, main phone lines and cellular phones;	-*Educational enrolment* indicate the number of persons enrolled at a certain level of education in a certain year and its division on primary, secondary, vocationally and tertiary level; The gross enrolment ratio is the number of persons enrolled at a certain education level, divided by the relevant age group. This two indicators are a better estimation of the stock of human capital *Private and governmental expenditure on education as a percentage of GD*P (Bas van Leeuwen, 2007, Human capital and Economic Growth in India Indonesia and Japan A quantitative analysis 1890-2000, Netherlands)
- *Advancement measured by*: public health expenditure, research and development expenditure, (low) military expenditure, pupil/teacher ratios in primary education, and a proxy of the "freedom from corruption" indicator;	-*The percentage of the population of 15 years and older who have been enrolled; average years of education per capita*[1] as estimators of the stock of human capital. More recent paper (2001) use the net enrolment ratios which keep track of repeaters, and adjust them for later entries into the specified education levels. (Barro and Lee ,1993; 2001)
-*Foresightedness* measured by: low child mortality rates, equality in income distribution (GINI Index), protected areas as percentage of a country's surface, and CO2 emissions per capita.	-The experts of World Bank consider that *the years of schooling of an individual*, capture the average amount of formal education received by the people as a proxy for measure the explicit knowledge.
	Dakhli and Clerco (2004) measured the human capital based on three indicators: citizen overall knowledge, economic resources and physical well-being

[1]Acording to Barro and Lee , "the number of years of schooling for the population aged 15 and above, st , is constructed as:

$$st = \sum l_t^g s_t^a$$

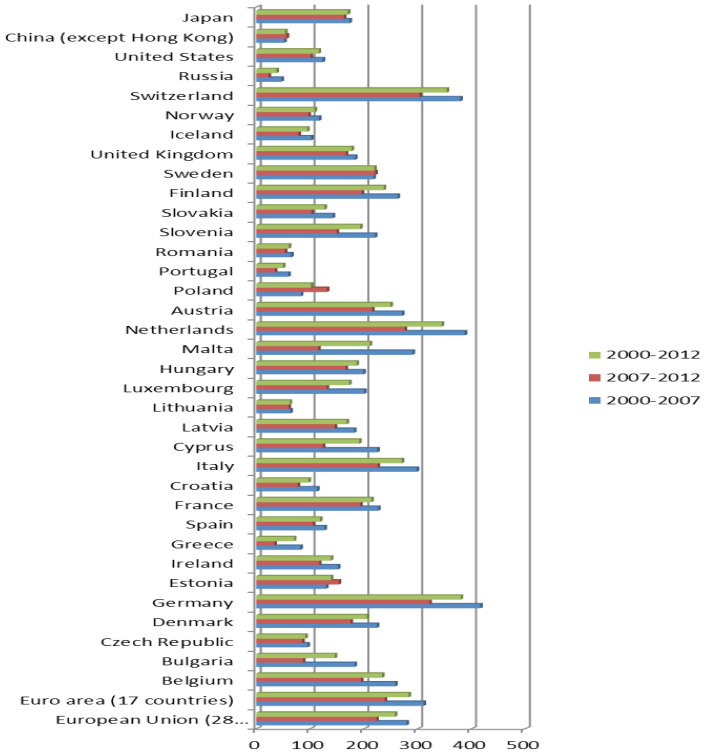
where : l_t^g is the population share of group g in population 15 and above and s_t is a : the number of years of schooling of age group a— (a =1: 15–19 age group, a =2: 20–24 age group, … , a =13: 75 and above)" see Barro and Lee, 2011 A new data Set of Educational Attainment in the World, 1950-2010, NBER Working paper Series, 15902, 2010, p.7, http://www.barrolee.com/papers/Barro_Lee_Human_Capital_Update_2011Nov.pdf, Journal of Development Economics, Elsevier, vol. 104(C), pages 184-198Accessed 17,07,2014

A first observation regarding previous indicators is that they provide incomplete dimensions of the complex reality as the diversity of the measure highlight. There are several questions that still need answers. First, we look to the R&D activities as creating and using knowledge and we ask whether the R&D financing effort pays back to the development of this knowledge. Therefore, we analysed the total number of patent applications by billion EUR of total R&D expenditure (GERD). This number provides a view of the R&D investment efficiency. The resulting data presented in Chart 1, show the

influence of the 2008 world economic and financial crisis over the total number of patent applications by billion EUR of total R&D expenditure. The impact of the crisis is negative in all countries, with the exception of Japan and China, the total number of patent applications by billion EUR of total R&D expenditure being smaller in 2008-2012 comparing to 2000-2007.

Chart 1

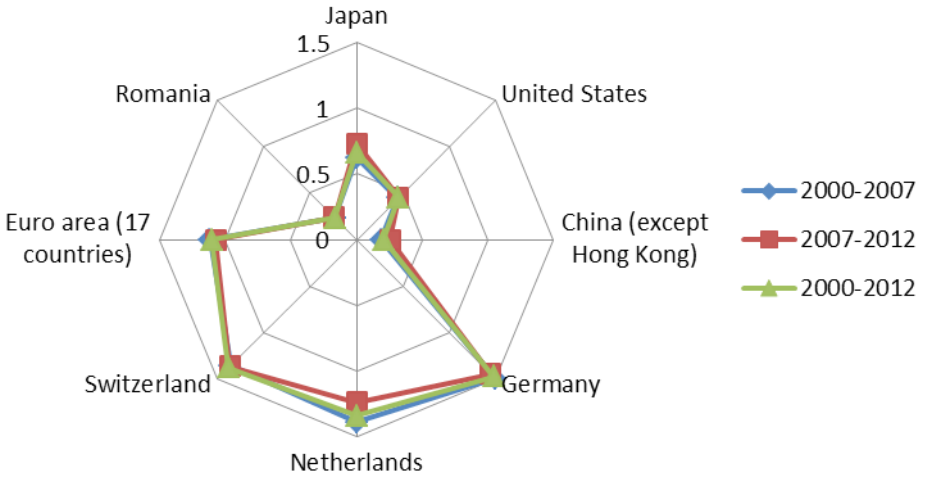
Total number of patent applications by milliard EUR of total R&D expenditure (GERD) by countries during 2000-2012 periods, before and after crisis



Source of data: Authors computation using the Eurostat data bases [pat_ep_ntot]

Germany, Switzerland, Netherland report the highest level of this indicator, followed by Italy, Austria, Finland. In the last places we find Portugal, Romania, Lithuania and Greece in EU as well as Russia and China from outside EU. By comparing with average EU 28 between 2000-2012, the highest number of patent applications by billion EUR of total R&D expenditure are reported by Germany (1.475), Switzerland (1.374) and Netherland (1.338) comparing to only 0.661 Japan, 0.4499 USA and 0.2085 China. Romania is close to China with 0.234 (Chart 2).

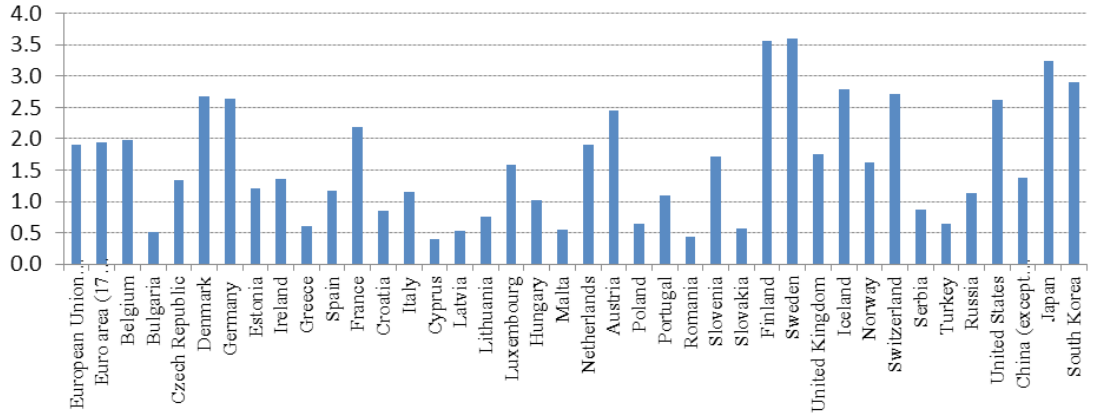
Chart 2 - Total number of patent applications by milliard EUR of total R&D expenditure (GERD) by countries as compare to UE 28 during 2000-2012 periods, before and after crisis



Source of data: Authors computation using the Eurostat data bases [pat_ep_ntot]

The R&D sustaining effort measured as percent from GDP show that the Lisbon target objective of 3% has been only met by Finland and Suede, the rest of the EU member countries being between 0.4 in Romania and 3.6 in Finland. Outside EU, Japan gives a maximum of 3.2, followed closely by USA and South Korea, while China reports an average of 1.4 (Chart 3).

Chart 3 - Total intramural R&D expenditure (GERD) by sectors of performance (all sectors expressed as percentage of GDP) average period 2000-2012



Source of data: Authors computation using the Eurostat data bases [rd_e_gerdtot]

The impact of financial crisis generated a different trend after 2008. Between 2008 and 2012, the average level increased to a maximum level 3.8 in Finland, in Denmark from 2.5 to 3, in Germany from 2.5 to 2.8 while Romania increased from 0.4 to 0.5, EU space from 1.9 to 2.1, USA from 2.5 to 2.7, Japan from 3.2 to 3.4 and in China from 1.2 to 1.7 (Annex 1). The policy makers from these countries show understanding of the importance of R&D as the main force of technological changes and progress of the countries and as a driver of the economic growth.

Literature review

David and Foray (2003) provide an introduction to fundamental issues in the development of new knowledge-based economies. After placing their emergence in historical perspective and proposing a theoretical framework that distinguishes knowledge from information, the authors characterise the specific nature of such economies. They go on to deal with some of the major issues concerning the new skills and abilities required for integration into the knowledge-based economy; the new geography that is taking shape (where physical distance ceases to be such an influential constraint); the conditions governing access to both information and knowledge, not least for developing countries; the uneven development of scientific, technological (including organisational) knowledge across different sectors of activity; problems concerning intellectual property rights and the privatisation of knowledge; and the issues of trust, memory and the fragmentation of knowledge.

De la Fuente and Ciccone (2003) examine the rationale for putting investment in human capital at the forefront of policies aimed at promoting economic growth and social cohesion, as is done in the strategy outlined in the Lisbon Summit for turning the EU into the most competitive and dynamic knowledge-based economy in the world. SOn the whole, their findings suggest that investment in people is both a crucial growth factor, particularly in the current context of rapid technological change, and a key instrument for enhancing social cohesion, and are therefore supportive of the policy strategy set out in Lisbon

Boarini et al (2012), under OECD logo state that "in recent years, many researchers and organisations have taken steps to produce more comprehensive measures of the stock of human capital. These measures have been developed to serve different analytic purposes and have typically relied on a variety of approaches. Notwithstanding these differences, several statistical offices have expressed a common interest in developing monetary measures of the stock of human capital as a useful complement of physical measures of the quantity and quality of education. They review a number of national initiatives in this field, identifies some of the conceptual and statistical challenges that should be addressed in order to improve the quality of the existing monetary measures of human capital, and suggests developing experimental satellite accounts for education, with different level of complexity, to better understand how human capital is produced and the linkages between education and its non-monetary outcomes"

Barro (1996) analysed the relation between human capital and economic growth by using a cross countries method, showing "a significantly positive effect on growth

from the years of schooling at the secondary and higher level for males aged 25 and over (0.0118 [0.0025]). On impact, an extra year of male upper–level schooling is therefore estimated to raise the growth rate by a substantial 1.2 percentage points per year. (In 1990, the mean of the schooling variable was 1.9 years with a standard deviation of 1.3…. Male primary schooling (or persons aged 25 and over) has an insignificant effect… More surprisingly, female education at various levels is not significantly related to subsequent growth." (Barro, 1996, p.15-16)

Dakhli and Clerco (2004, p.117) tested the role of human capital and social capital in fostering innovation at the county level using a sample that include 59 countries from five continents and found that a "country's relative number of R&D-related professionals is positively related to its overall level of human capital (r ¼ :571; p < :001) as well as to our human capital dimension 'educational attainment' (r ¼ :592; p < :001)".

Presentation of the model

Data and sample

Taking into consideration the diversity of indicator that should measure the human capital and the knowledge society, it was a challenging task to select a representative data set to test the research hypothesis: the higher the level of human capital within a country, the higher, the country's level of innovation is.

The selected data indicators are as follows: the expenditure of R&D as percent of GDP (noted as RD_Exp), the number of the patent (noted as Patents), total number of patent applications by billion EUR of total R&D expenditure –GERD (noted as Pat_applic), total public expenditure on education as % of GDP(noted as Exp_edu), the total graduates (ISCED 5-6) per 1 000 of population aged 20-29(noted as Graduate).

The first indicator is the number of the patent, composed as the sum of domestic ownership of foreign inventions in patent applications to the EPO by priority year at the national level and foreign ownership of domestic inventions in patent applications to the EPO by priority year at the national level.

The second indicator is the expenditure of R&D as percent of GDP which reveals the national effort to increase the stock of knowledge, new products and technologies.

The fourth indicator is total number of patent applications by billion EUR of total R&D expenditure (GERD), showing a significant view of how effective the R&D expenditures are.

The fifth indicator is total public expenditure on education as % of GDP, offers information about the national effort to grow the intellectual capacity of the people.

The last indicator is the total graduates (ISCED 5-6) per 1 000 of population aged 20-29 is used as a proxy for the creation capacity of new meaning, considering that the "tertiary education is central to the creation of the intellectual capacity on which knowledge production and utilization depend and to the promotion of the lifelong-learning practices necessary to update individual knowledge and skill."(World Bank, 2002, p.xvii).

The sample data covers the period 2000-2012 and all the 28 European countries and the source of data is Eurostat database.

Table 2 shows results for statistical descriptions of the model variables: mean, median, the maximum and minimum value,

standard deviation, skewness and kurtosis and J. Bera coefficient. The statistical analysis of the model reveals significant differences with a relative large standard deviation. Also, there is an asymmetry on the right side for the data series, while Kurtosis increases from 2.37% (Graduate) to a maximum of 10.17 (Patents).

Table 2 - Descriptive statistics of the data

	EXP_RD?	PATENTS?	PAT_APPLIC?	EXP_EDU?	GRADUATE?
Mean	1.431926	926.8986	179.9271	5.321351	56.80473
Median	1.17	120.5	171.565	5.27	54.6
Maximum	4.13	8437	537.65	8.8	110.5
Minimum	0.25	1	26.7	2.88	18
Std. Dev.	0.932081	1657.631	95.83837	1.114108	19.93616
Skewness	0.904333	2.63907	0.756227	0.741584	0.375617
Kurtosis	2.977322	10.17098	3.420064	3.669651	2.374515
Jarque-Bera	40.35207	977.8083	30.38901	32.66136	11.78553
Probability	0	0	0	0	0.002759
Sum	423.85	274362	53258.42	1575.12	16814.2
Sum Sq. Dev.	256.2884	8.11E+08	2709573	366.1647	117247.9
Observations	296	296	296	296	296
Cross sections	27	27	27	27	27

Source of data: Authors computation using the Eurostat data bases

All the data series were used in logarithm terms and are stationary on difference of order one.

The results of the panel model

In order to highlight to the links between knowledge society indicators and human capital in EU, the panel data technique has been employed. This technique allows us to capture non-time varying unobservable and other unobservable factors that might explain structural differences at the level of each individual country, regarding the level of human capital and innovation capacity existing in EU member countries. Taking in consideration that data spans from year 2000 to 2012 and 28 countries, the fixed effects panel model has been selected for the scope of the research.

The model is Pooled Last Squared with cross fixed effects and cross section fixed dummy variable, where the independent variable was the number of patents (Patents) as expression of innovation pillar for the knowledge society. The dependent variables are indicators that could measure the human capital (R&D expenses as % of

GDP (Exp_RD), total number of patent applications by billion EUR of total R&D expenditure (Pat_applic), graduate per 1000 of population aged 20-29 (Graduate) and total public expenditure on education as % of GDP (Exp_edu).

The model equation is:

$$dlog(Patents) = -1{,}482617 + 0{,}600283\,dlog(Exp\_RD) + 0{,}592436\,dlog(Pat\_applic) + 0{,}377216\,log(Graduate(-4)) - 1{,}059209\,dlog(Exp\_edu(-2)) + \varepsilon_{it}$$

	(-2.5283)	(3.238719)	(4.34552)
	[0.0124]	[0.0015]	[0.0000
(0.377216)		(-2.358725)	
[0.0149]		[0.0196]	

where i =1.....28 represents the country and t is time index.

The tests for fixed effects indicate that the two statistics value (1.043533 and 32.30209) and the associated p-values not reject the null hypothesis that the cross-section effects are redundant. The forms of statistics of the next two tests (for significance of the period dummies in the unrestricted model against restricted specification and for the joint significance of the all effects) strongly reject the null hypothesis of no period effects and the restricted model in which there is only a single intercept (see Annex 3).

As we expected, the model data shows a positive and statistically significant correlation between the actual number of patents and R&D effort at national level, between number of patents on one side and both number of patent applications by billion EUR of total R&D expenditure and graduate per 1000 of population aged 20-29 with a 4 years lags, legitimate if we take into consideration the experience build-up within this period, for young researchers, on the other side. Theoretically unexpected is the negative correlation between number of patents and the total public expenditure on education as % of GDP. One explanation is the relative heterogeneity of the countries regarding education expenses and the worst level of the European Human Capital Index (only Sweden register a – the best score -8 as compare to 4 the best score possible- P. Ederer, 2006, p.3 and P Ederer at all, 2007). In order to verify this hypothesis, an in-depth analysis depending on the economic development level of each country is necessary. Also, there are significant differences between EU15 countries (with negative coefficients on transversal effects) and emergent countries, with the exception of Poland and Baltic area (with positive coefficients on transversal effects). Also, the model highlights time differences, one possible explanation being the 2007-2011 financial and economic crises, closely followed by sovereign-debt crisis.

Conclusions

Human capital is an important section of the knowledge society and the level of knowledge employed by the respective society correlates with the amount of human capital within the same society. Although the investment in education still needs clarification from the statistical viewpoint, we found that human capital strongly influences the innovation level of knowledge society as well as their efficiency.

The investment and their return depend on country specific. From the positive values of the coefficients within the model we conclude that the developed economies record a high level of returns while investing in human capital. At the same time, the corresponding coefficients for emergent economies are negative values. This shows a relative low level of return from the investment in human capital, in these emergent economies. Possible explanations are various, including loss of a

great part of the mature human capital due to its migration from emergent economies to developed economies, as well as the fact that developed economies concentrate more on exploiting traditional forms of capital rather than human capital. Further research needs to be done in order to clarify this aspect.

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Economic and social analyses at a regional level in the light of competitiveness

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Abstract: *In most economic studies, competitiveness is considered a key issue of the political success/ failure. A major element which contributes to regional inequalities is the level of competitiveness. This element has been the subject of numerous studies over the past years, even though more attention was given to the national level and less to the regional one. Moreover, the purpose of these regional analyses is the correlation of territorial objectives and problems with possible sources of financing, seeing to ensure optimal combinations between regional demand and supply, the optimal distribution of the income and of the results obtained, regional competitiveness, the location of clusters, etc.*

Key words: region, competitiveness, research-development, innovation

In the literature regarding the field of regional science, the economic growth is one of specialists' favourite topics, because solving problems relating to employment, infrastructure, economic and social imbalance, environment, etc. is aimed at reaching a certain level of development (including the well-being of the inhabitants). Thus, the main topics of research covered are correlated with the identification of the sources of regional growth, the optimal combinations between regional demand and supply, the optimal distribution of the income and of the results obtained, regional competitiveness,

the location of clusters, full employment, etc.

In a national or regional economic system, the growth process is regarded and interpreted as an increase of the results in a certain period of time, measured usually with the help of the real gross national product regional (adjusted with the deflator) or of the gross domestic product (total or per capita). The economic growth is a favourite subject of the regional analyses and studies, because it tries to bring answers to a series of current problems related to employment, infrastructure, economic and social imbalance, environment, etc. Moreover, the purpose of these regional analyses is the correlation of territorial objectives and problems with possible sources of financing, seeing to ensure optimal combinations between regional demand and supply, the optimal distribution of the income and of the results obtained, regional competitiveness, the location of clusters, etc. The regional policy is aimed both at reducing the relatively high lag between the level of economic and social development of the old member States/regions compared to the national level, as well as at reducing the relatively low regional inequalities from inside the country. The process of regional development is regarded as a necessary step for the creation of an adequate framework for the significant and especially sustainable improvement of the living standard, the diversification of the economic activities, private investments incentives, reducing unemployment, etc.

In order to identify the level of the current economic and social inequalities recorded between the eight growth regions of Romania, we will perform a series of specific analyses regarding different aspects of the evolution of this process in a regional context.

A major element which contributes to regional inequalities is the level of competitiveness. This element has been the subject of numerous studies over the past years, even though more attention was given to the national level and less to the regional one. In most economic studies, competitiveness is considered a key issue of the political success/failure. According to the definition, regional competitiveness refers to those characteristics of the region/nation which affect both the business environment, as well as the economic structure and the ability to encourage innovation and the learning process. The competitiveness notion is beginning to have a growing importance and new valences, together with the idea of well-being and productivity.

In the paper Cities, Regions and Competitiveness (Turok, 2004) the importance of competitiveness is underlined from more perspectives:

- first of all, it can be regarded as a selection mechanism (only the regions/companies with better products and more efficient production processes survive);

- second of all, it is considered a stimulating mechanism (the need to improve technology and organisation to remain in competition); it also highlights the difference between the competition at company level and the one at territorial, regional level.

Regardless of the level at which is being analysed (national, regional and local), the decision factors consider competitiveness as a major objective of their activity, being associated to the „success of the competition between regions and cities for winning market shares at a domestic level, but especially internationally" (Kitson, Martin, Tyler, 2004).

In the studies regarding the evaluation of competitiveness, one of the indicators

used (most frequently) is per capita GDP (including constituents), shown in the formula below:

GDP/ total population = GDP/ total no. of hours worked X Total no. of hours worked / employed population X Employed population / Working age population X Working age population / Total population

Even though labour productivity is considered a key indicator for the characterization of regional competitiveness, the research-development costs, together with the innovation capacity, the education level, the human capital investment costs (schooling, continuous learning) have significant implications upon it, thus:

- the differences in technology and human capital determine differences in productivity;

- the human capital and the improvement of the technologies can be considered the engine of economic growth;

- the investments in research and development are vital.

In the present context of the knowledge based economy, a major importance is given to innovation, considered a decisive factor of sustainable economic growth. The study of regional competitiveness and the creation of hierarchies require the use of indicators such as the level of employment and of productivity, the sectoral structure of employment, the demographic evolutions, the investments, the provision of infrastructure, the level and nature of education, the innovation and research-development. The analysis of per capita GDP at a regional level in Romania shows the following:

- there are large regional inequalities regarding per capita GDP between Bucharest-Ilfov region, on the one side, and the other regions, on the other side; in Bucharest-Ilfov region it is recorded a more than double GDP compared to the national average;

- considering the national average, only Bucharest-Ilfov region and the West region are above the national average regarding per capita GDP level;

- The North-East region is at the last place at per capita GDP value (is 55,6% from the national average), followed by the South-West region Oltenia, with approximately 76% from the national average in the year 2011 (Table 1).

Table 1: Gross Domestic Product (GDP) - (Euro/inhabitant)

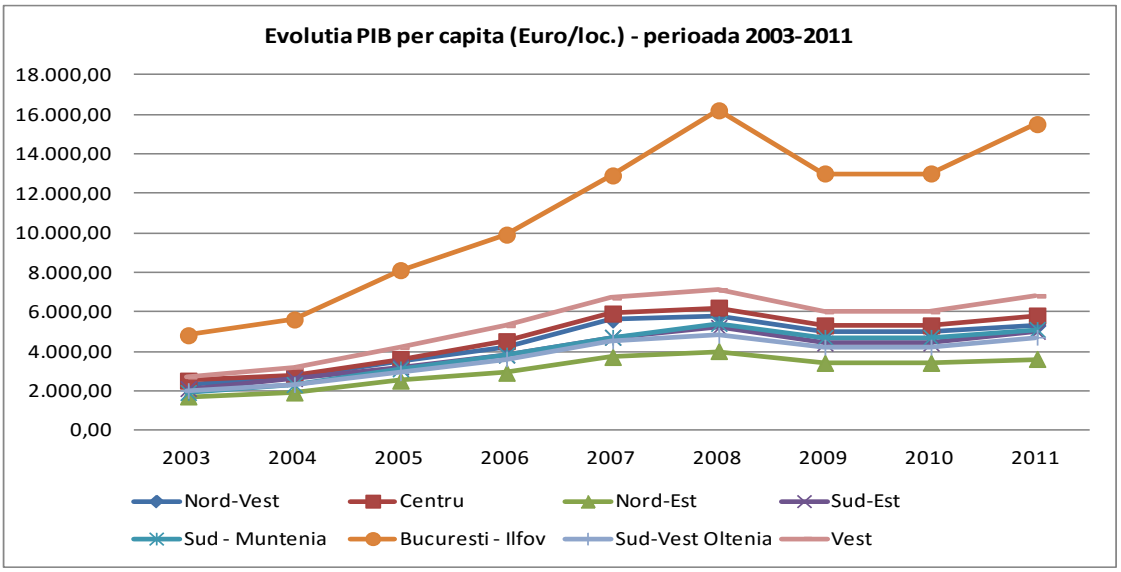
	2003	2004	2005	2006	2007	2008	2009	2010	2011
North-West	2.300	2.700	3.500	4.200	5.600	5.800	5.000	5.000	5.300
Centre	2.500	2.800	3.600	4.500	5.900	6.200	5.300	5.300	5.800
North-East	1.700	1.900	2.500	2.900	3.700	4.000	3.400	3.400	3.600
South-East	2.100	2.600	3.200	3.800	4.700	5.200	4.400	4.400	5.000
South – Muntenia	1.900	2.300	3.100	3.800	4.700	5.400	4.700	4.700	5.100
Bucharest - Ilfov	4.800	5.600	8.100	9.900	12.900	16.200	13.000	13.000	15.500

South - West Oltenia	2.000	2.300	2.900	3.600	4.500	4.800	4.200	4.200	4.700
West	2.700	3.200	4.200	5.300	6.700	7.100	6.000	6.000	6.800
National average	2212,5	2587,5	3450	4225	5387,5	6112,5	5125	5125	6475

Source: Eurostat, http://appsso.eurostat.ec.europa.eu/nui/setupDownloads.do

In the period 2003-2011, the inequalities kept expanding in most regions, the largest growth rate of per capita GDP being recorded in Bucharest-Ilfov (the richest region). Besides Bucharest-Ilfov region, only the South - Muntenia region made progresses in reducing the gap towards the national average. All the other regions recorded decreases, the lowest growth rate of the indicator being in the North-East region (Figure 1).

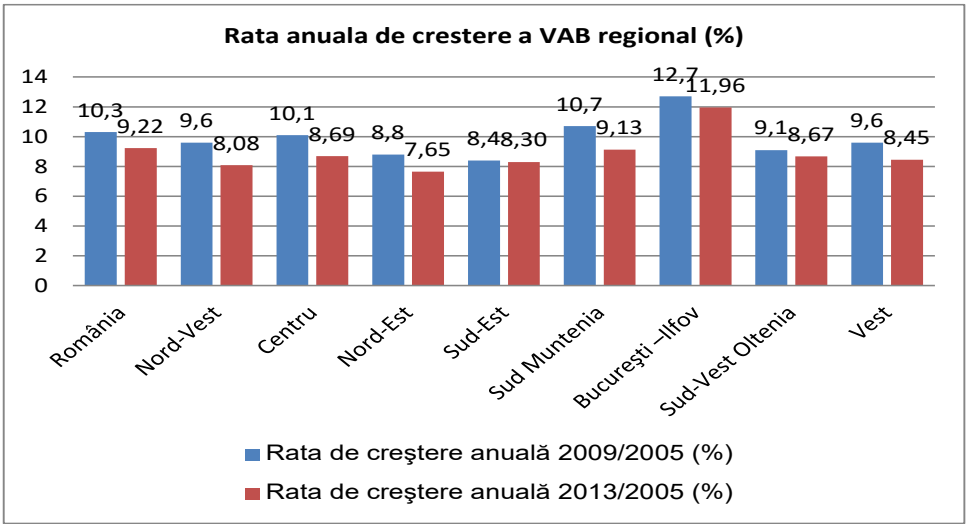
Figure 1: The evolution of regional per capita GDP in the period 2003-2011



Source: Eurostat, http://appsso.eurostat.ec.europa.eu/nui/setupDownloads.do

A detailed image of the regional level performances is also given by the gross value added (GVA) - Bucharest-Ilfov region reflects the highest annual growth rate (Figure 2).

Figure 2: The annual growth rate of the regional GVA (%)



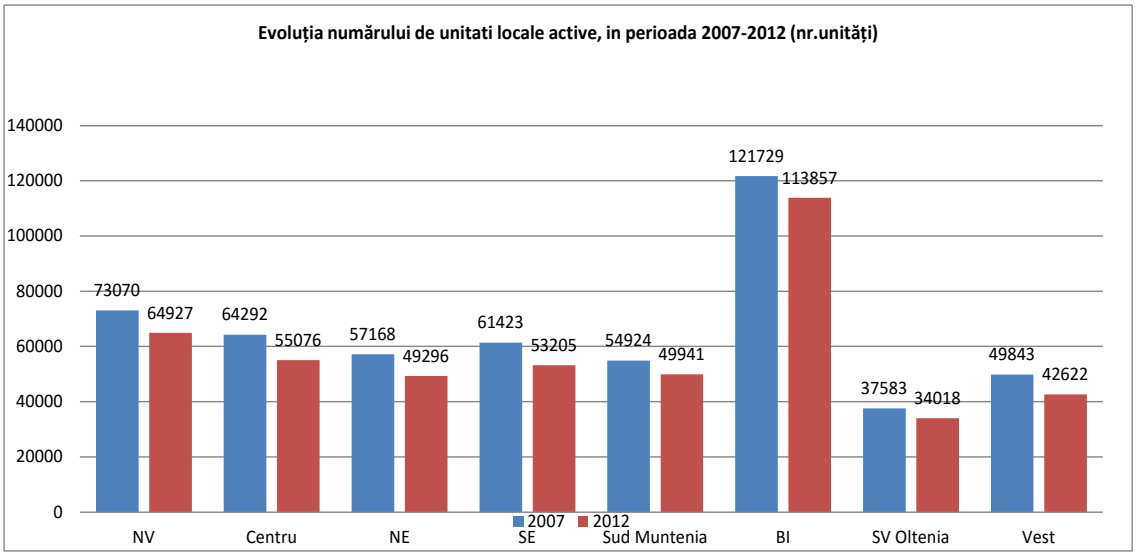
Source: Own calculations

In the above figure it can be noticed that all regions recorded different growth rates for the two periods analysed: over the 2005-2009 period, the growth rates were superior to those recorded for the 2005-2013 period, this fact showing the negative influence of the global economic crisis, which affected all the regions. It can also be seen that the least developed region – North-East – also had the most important GVA decrease (from 8,8% to 7,65%).

A analysis of the competitiveness of development regions in Romania can also be made with the help of other indicators: Number and density of enterprises, Direct foreign investments, Research and innovation, Employment, Basic infrastructure, Transport infrastructure.

In the year 2012, the total number of active local units was 462942, their highest rate being recorded in Bucharest-Ilfov region (24,59% of the total), followed by the North-West region (14,01%) and Centre (11,9%). The last place was occupied by the South-West Oltenia region, with only 7,36% from the total of the units. Compared with the first year of Romania's integration into the European Union, it is found that the number of active local units recorded a global decrease of 10,9%, which might mean a decrease of the appetite for small local investments. By regions it is found the same tendency of reduction of the business sector's share. Figure 3 shows the evolution of the number of active local units al a regional level, in the period 2007-2012.

Figure 3: The evolution of the number of active local units at a regional level, in the period 2007-2011

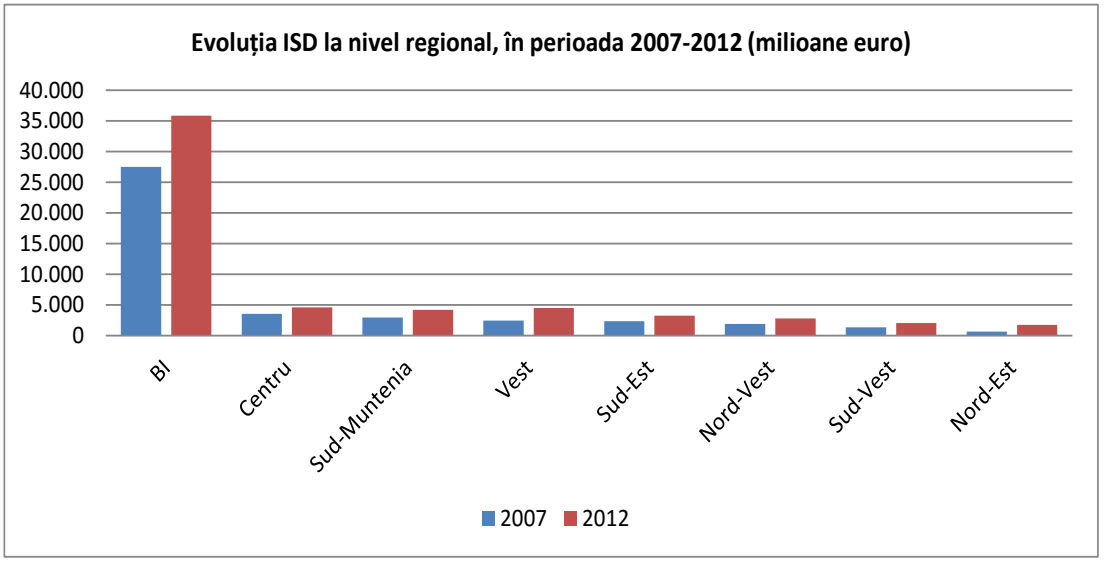


Source: Own processing

Direct foreign investments (DFI) hold an important role in the development of Romania's economy, for all sectors and domains of activity, but especially for those with a large value added. In the period 2007-2012, Romania has attracted direct foreign investments in the amount of 59.12 billion Euros. In this period, Romania's integration into the European Union left its mark on the increase of local attractiveness, considering that Bucharest-Ilfov region attracted 60,65% from the total DFI. This percent is mainly due to the fact that the branches of the main foreign companies are located in Bucharest-Ilfov region.

In the year 2012, Romania ranked in the first places among the european countries with the highest attractiveness for foreign investments. At national level, besides Bucharest-Ilfov region, the Centre and West regions also attracted the attention of foreign investors (Figure 4).

Figure 4: DFI evolution at regional level, in the period 2007-2012



Source: Own processing

According to a study made by European Attractiveness Survey - 2014 and named "Europe - back in game", Romania ranked in sixth position at European level in the attractiveness for direct foreign investments (DFI) top. Also, it occupies the third place in Central and Eastern Europe, after Poland and Czech Republic, overtaking Hungary.

One of the current objectives of the 2020 Strategy is to stimulate the intelligent growth by supporting sustainable investments in research-development. In the year 2012, in the research-development activity were involved about 42674 employees, most of them in Bucharest-Ilfov region, followed at great distance by North-East and North-West. In relation with the number of employed population, the number of employees in RD at national level is 49.8 employees at 10000 employees. Most regions record values under the national average, due to their concentration in Bucharest-Ilfov region (176,8 employees at 10000 employees) (Table 2).

Table 2: Main indicators corresponding to the Research-Development domain in the year 2012

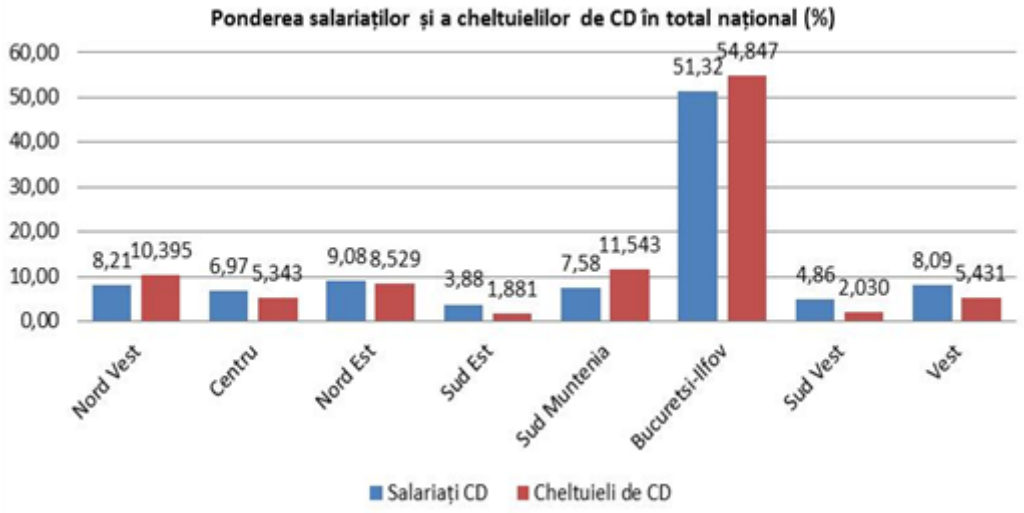
	Employees in RD	Employees in RD at 10000 employed population	RD expenditure
North West	**3503**	**29,5**	**298616**
Centre	**2973**	**28,6**	**153494**
North East	**3876**	**31,6**	**245015**
South East	**1655**	**16,4**	**54049**
South Muntenia	**3236**	**27,4**	**331591**

Bucharest-Ilfov	**21902**	**176,8**	**1575613**
South West	**2076**	**24,5**	**58321**
West	**3453**	**41,3**	**156029**
Romania	**42674**	**49,8**	**2872728**

Source: Romania Statistical yearbook, 2013, INS, Bucharest

Figure 5 shows that Bucharest-Ilfov region bundles the largest part of the research-development activity in Romania: over 51% of the employees in RD and over 54% of the total corresponding expenditure. The differences are extremely large in this field, which leads to rethinking the process of supporting this sector at national level, by the creation of equal opportunities and of an infrastructure corresponding to this priority field in the light of the 2020 Strategy (Figure 5).

Figure 5: The RD employees and expenditure ratio in the national total, in the year 2012 (%)



Source: Data from Romania Statistical yearbook processing, 2013, INS, Bucharest

At national level, the ratio of the population who frequently uses the internet amounted, in the year 2011, at 37%, almost double compared to the year 2008. Although the evolution is spectacular, still, Romania is far behind the Community level (68%). The disparities are maintained in this field also, Bucharest-Ilfov region being in the first place at using Internet, but also having the lowest annual growth rate (Table 3).

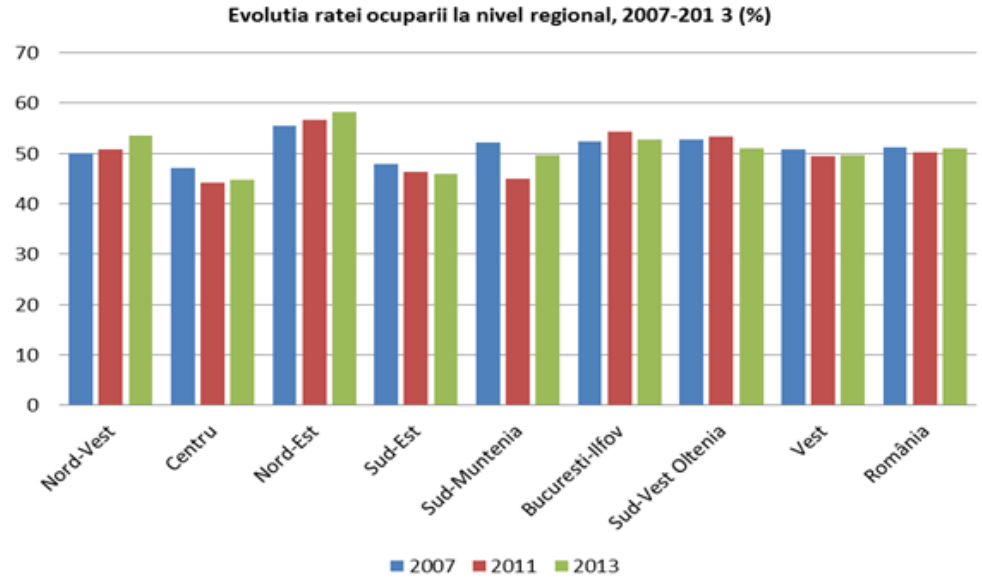
Table 3: Ratio of the persons who frequently use the internet (%)

	2008	2011	The annual growth rate
North West	**25**	**34**	**10,2**
Centre	**22**	**36**	**16,4**
North East	**22**	**35**	**15,5**
South East	**27**	**36**	**9,6**
South Muntenia	**23**	**34**	**13,0**
Bucharest-Ilfov	**44**	**55**	**7,4**
South West	**24**	**33**	**10,6**
West	**29**	**40**	**10,7**
Romania	18	**37**	14,4

Source: Eurostat

The ageing of the population and the migration phenomenon recorded at national and regional level determined significant changes in the structure of the labour force in the last two decades. Thus, the young population recorded a dramatic decrease tendency - from 31,7 % in the year 1990 to 20,8 % in the year 2010 – while the number of old people increased after 1990, reaching 14,9 % in the year 2010. In the year 2013, about 51,1% of Romania's active population was employed, relatively constant with the year 2007. The highest employment rate was recorded in the North East region (58,3%), followed by the North West region (53,5%). The last place is hold by the Centre region (44,8%) (Figure 6).

Figure 6: Evolution of the employment rate at regional level, 2007-2013 (%)



Source: Romania Statistical yearbook 2007-2012, INS, Bucharest

The basic regional infrastructure is different from one region to another, but also within the same region, which proves a generalized situation at territorial level.

Thus, in the year 2011 (according to „The inquiry on family budgets"), a quarter of Romania's population lived in inadequate conditions – the ratio is significantly larger in rural areas (39.5%) compared to urban areas (8,4 %) – half of these persons living in absolute poverty; 1,6 % from the rural population lived in households without proper heating; 71,7 % from the rural population has no access to hot water, respectively to a bath or shower. The most deprived regions from this perspective are South Muntenia and North East (Table 4). The basic infrastructure – sewage and running water – is still limited, the level of connection to the regional and national systems being considered too low for a member State of the EU.

Table 4: Access to basic utilities, for regions, 2011

Region	Number of households	Water supply inside the house	Sewage system	Electricity	Heating
Romania	8.450.942	66,7%	65,1%	96,6%	44,4%
North-West	1.095.108	73,2%	71,8%	96,7%	44,0%
Centre	988.473	77,1%	74,7%	96,8%	49,5%
North-East	1.365.695	51,5%	39,9%	95,4%	34,4%
South-East	1.055.642	63,1%	61,0%	96,3%	42,3%
South-Muntenia	1.294.536	56,0%	54,4%	96,9%	31,6%
Bucharest-Ilfov	946.119	93,7%	93,4%	98,0%	86,2%
South-West Oltenia	922.529	49,5%	47,8%	96,5%	29,8%
West	782.840	81,3%	79,9%	97,1%	47,1%

Source: Census data year 2011, preliminary results

The poor development of the transport infrastructure represents an obstacle to the development of small and medium cities and villages, at regional and inter-regional level. In the past years, it is found an increase of the number of highway kilometres, yet the transports infrastructure does not rise to the requirements of sustainable mobility for goods and persons. This situation also affects other related fields, by isolating some areas and negatively influencing the local/regional development (Table 5).

Table 5: The roads condition at regional level, by road types (km), 2012

Region	Public roads	Modernised roads	Highways
TOTAL	84185	27665	644
North-West	12554	3340	52

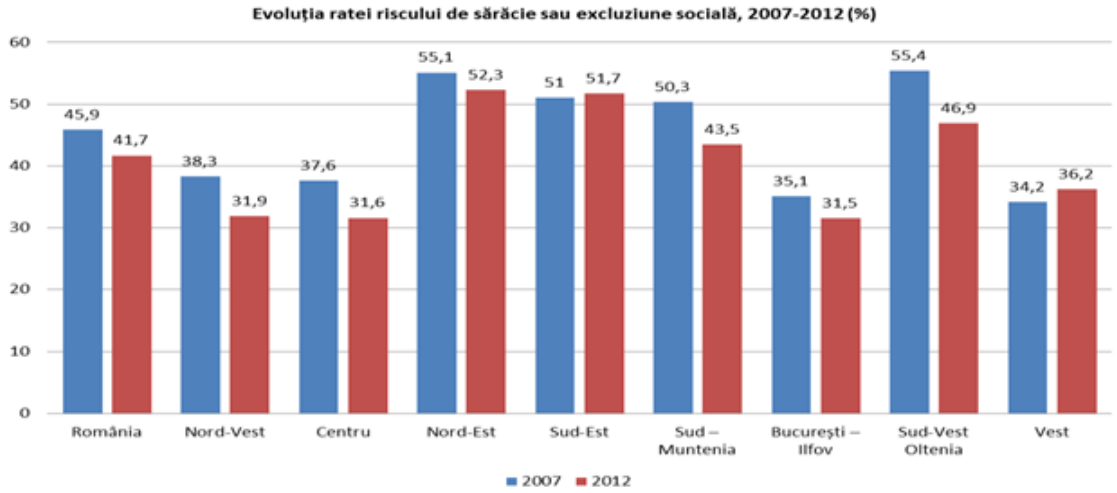
Centre	11179	3884	55
North-East	14062	4653	
South-East	11016	3165	74
South-Muntenia	12750	4471	258
Bucharest-Ilfov	916	764	75
South-West Oltenia	11178	3839	
West	10530	3549	130

Source: Romania Statistical yearbook 2007-2012, INS, Bucharest, Tempo database

Social aspects and aspects regarding inclusion at regional level

The analysis at regional level regarding the poverty or social exclusion risk shows that here are certain inequalities between regions, the most affected being South West Oltenia (55,4%) and North East (55,1%). Between the two analysed periods it is found a certain progress regarding the reduction of inequalities in most regions. Although the West region is a well developed one, it is found a slight increase of the poverty risk (year 2012 compared with the year 2007) (Figure 7).

Figure 7 : The evolution of the poverty or social exclusion risk ratio (%)



Source: Data from Romania Statistical yearbook processing, INS, Bucharest

Regarding the strategy of Romania's regional development, this has to fall within the orientations and tendencies promoted by the European Union. Its successful application depends not only of ensuring the necessary financial support, but also of the way in which it deals with "behavioural challenges": participation, communication, mentalities, attitudes.

The gap Romania has towards Europe can be overcome in the next period by observing the European principle of subsidiarity and by using more efficiently the existent resources (local resources, government funds and European programmes). The launching of the regionalisation process and the continuation of the administrative decentralisation are two of the most important objectives, acting in the direction of territorial and administrative reorganisation and of public administration reform (through decentralisation and simplification of legislation).

The reduction of the imbalances existing between the regions, the correlation of the different sectoral government policies at the regions level, the stimulation of regional and local initiatives would lead to the modernisation of the Romanian society in its entirety. Thus, the local public administration, the regional development experts and the civil society should be involved in a common project – regionalisation – in order for Romania to adapt to the global realities.

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Issues of geothermal and biomass energy efficiency in agriculture, industry, transports and domestic consumption

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Abstract: *Increasing energy efficiency should be a concern for both the firm managers and any leader at any level, given that energy efficiency significantly reduce production costs. An important aspect of this is the use of renewable energy sources, in different types of activities, depending on the possibilities to produce it on favorable terms, to supply at relatively low costs and to efficiently consume it both in the producing units and the households. A skilful and powerful leader will seek and support, through its influence, all the means that determine the reduction of the production costs and obtain a profit as high as possible. Wider use of renewable energy promotes concern for the environment through clean energy, for reducing pollution and for facilitate, in some cases, even the increase of the production with the same costs or lower costs. In agriculture, industry, transports and household consumption, a high importance presents the geothermal energy and the biomass as source of energy.*

Keywords: energy efficiency, geothermal energy, biomass, bio-fuel, energy production, energy, biological agriculture

JEL Classification: D21, D24, L26, L94, M11, M14, Q42, Q47

1. Introduction

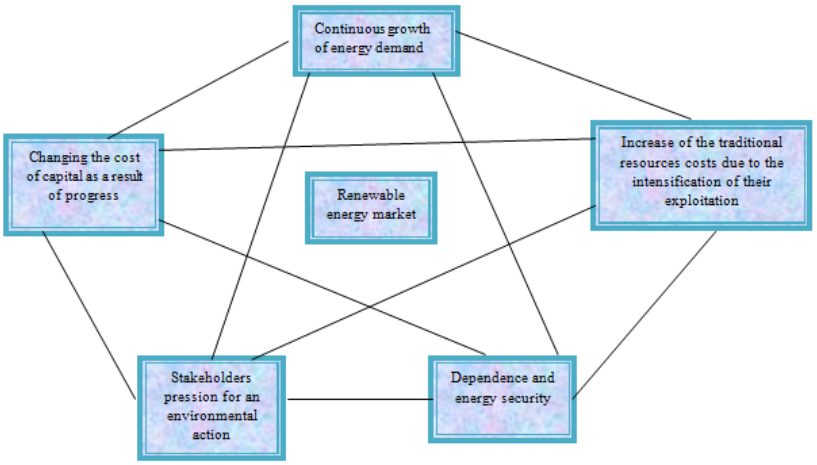
Increasing energy efficiency is a very important objective of the sustainable development, is a prerequisite for reducing the negative impacts on the environment of the energy production and consumption. Achieving energy efficiency implies, in all the countries, to produce a bigger amount of clean energy and to increase the number of transactions with such energy, thus reducing carbon dioxide emissions.

As outlined in the "Energy Strategy of Romania during 2007-2020 updated for 2011-2020", "The overall objective of the energy sector is satisfying the energy needs both now and in the medium and long term at prices as low as possible, suitable for a modern market economy and a decent standard of living, in terms of quality, food safety, respecting the principles of sustainable development. " The same document stresses as targets for increasing energy efficiency in agriculture: "increase of the efficiency and use of biofuels on agricultural machines; development of the energy crops in order to produce biofuels such as for the production of electricity and heat; increasing energy efficiency of the irrigations. ... .. Biomass fuel is the main rural fuel and it is used mainly for space heating, for water heating and for cooking. Biomass covers about 7% of primary energy demand and 50% of Romania's renewable resource potential. For the geothermal energy that can be used for space heating and water heating, the main potential for use is in the rural areas - houses, greenhouses, aquaculture, milk pasteurization – in locations located at distances up to 35 km from the place of extraction".

To define the energy efficiency, it starts from the concept of energy intensity, which represents at the level of each country, the ratio of energy consumption to GDP. Energy efficiency expresses the ability of the new technologies to reduce the energy intensity. The importance of this challenge is illustrated by the global world investment made for renewable energy, which, for example in 2012, there were 244 bln. dollars, the highest increases corresponding to countries like China, South Africa, Morocco, Mexico, Chile and Kenya.

The importance and the role of the renewable energy are illustrated in the particularly suggestive scheme of C. Sesto:

Chart 1. C. Sesto scheme regarding the renewable energy market



Source: D. de Vincenzo, P. Morelli, G. Spinelli, L. Scarpelli – Geografia economica, McGraw Hill Companies Inc., Milano, 2010

2. Literature Review

The authors H. Gupta, S. Roy, emphasizes in the book „Geothermal Energy: An Alternative Resource for the 21st Century" (2007), which is an interdisciplinary approach between geology, geophysics and engineering, all the aspects regarding the geothermal energy resources, their exploitation and their development. The authors are presenting some geothermal resource models and exploration and production technology. The book describes, also the importance of bringing potable water to high-demand areas such as the tropical regions.

„Geothermal Energy: Renewable Energy and the Environment" by W. Glassley describes the geothermal energy uses in the history and highlights that a restriction arising from the fact that it can be exploited only in areas where there are adequate natural conditions. The modern technologies allow the use of more resources directly, especially for applications such as modular power generation and home heating. The author explores the reserves and resources of geothermal energy, the technological modalities to explore them and to use them in the production and consumption and also the possible improvements for the future. There are also presented the consequences on the environment and the economic aspects. These ideas show that this resource of energy can be very important and can replace a big quantity of fossil fuels.

Ernst Huenges, the author of „Geothermal Energy Systems: Exploration, Development, and Utilization" presents the restrictions for the economic and environmental utilization of geothermal technology. Because of this, the book is important both for the scientists and managers, from the research field and the political field regarding the instruments that an enterprise or a state can use in order to optimize the use of the geothermal energy.

„Biodiesel: Growing A New Energy Economy„ by Greg Pahl presents the background of the Biodiesel story and its use and benefits in the energy production. The book has four sections - "Biodiesel Basics", "Biodiesel around the World", "Biodiesel in the United States", and "Biodiesel in the Future". "Biodiesel Basics" is a history of the first diesel engine and of the different uses of the biomass. The various types of crops that can be used to produce biodiesel are rapeseed, sunflowers and soy beans. The following parts, "Biodiesel around the Word", "Biodiesel in the United States" and "Biodiesel in the future" refers to the history and the development of the bio-fuel development in the world and in U.S.A. and to the forecasts regarding the use of bio-fuels in the future.

The "Action Plan for bio-energy / biomass of Central Region 2014 - 2020", the Agency for the Center Regional Development, underlines the importance of biomass energy and its role in the economic activities. The European Commission Directive for bio-fuels for transports are provided "setting national targets for the market share of bio-fuels; obligation to use bio-fuels; implement a system to certify compliance with the standards of bio-fuels. In order to stimulate the supply of raw materials, it is important to reforming the Common Agricultural Policy (CAP), which introduces an" aid for energy crops." It will be fund also an information campaign on the priorities for energy crops and prospects for exploiting them. As currently about one third of the annual growth

of E.U. forests remains unused, it is considered that the wood can become very important, and the EU will review the impact of the energy use of wood and forest residues. The European Commission also points out that a number of animal sub-products that do not serve at the human consumption are increasingly used for biomass energy production. The European Commission will "also give special attention to the adoption of European standards for solid biomass fuels in order to facilitate the trade, to develop the markets and to increase the consumer's confidence. The European Commission encourages the development of the action plans at national and regional level to assess the biomass. In the same document are presented the most important economic subjects that should contribute to the development and implementation of the action plan for bio-energy / biomass. These have almost the same importance and weights in the total: county councils, local authorities, universities and research institutes, regional development agencies, followed by local energy agencies, Prefectures, decentralized institutions of central government, education and training providers, industrial enterprises and forests owners. They also defined the main obstacles in the development of biomass use: lack of funding sources (28%), insufficient subsidies (10%), insufficient quantity of available biomass (7%), lack or inaccessibility of appropriate technologies for obtaining biomass (24%), reluctance of the population and the industrial consumers towards this type of resource (10%), law (7%), other (14%).

3. Geothermal energy

Geothermal energy is a renewable and alternative energy form that can be used in combination with one of the other traditional forms of energy. This sector has developed especially after the oil crisis of 1973. Today it represents about 1% of the world's energy production and it represents, as average, about 15-20% of the total energy production of the countries that produce it. This field is in a continuous growth, increasing by an average annual rate of 3 - 7%.

Geothermal energy relies on the use of natural heat emitted from Earth. This heat comes mainly from the natural decomposition of chemical elements such as uranium, thorium, potassium, sulfur, mercury, arsenic. It can also come from volcanic and tectonic energy.

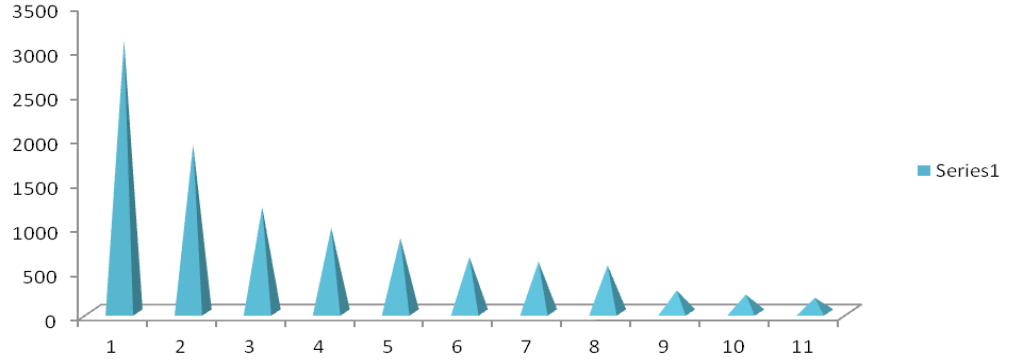
The heat from these processes can be used in two different ways: either to use the heat directly for heating or to use it in the electricity production. The oldest method of use it for heating dates from 2.300 years ago and it is the first hot pool (in China). The first industrial use of the geothermal energy was when it was used to extract boric acid from mud volcanoes in 1827 in Italy, in Larderello (Tuscany). The first use of the geothermal energy for the electricity production was in 1904, also in Larderello (Tuscany, Italy). Subsequently, many countries have switched to the exploitation of geothermal energy, on the first places in the world being the U.S.A., Iceland and France. Nowadays, the largest geothermal complex in the world is still in Italy, at Monte Amiata, with a power of 1.400MW. In Europe, the largest exploitation place of geothermal energy is the Eastern Hungarian Plain.

Using geothermal energy to electrical purposes relates primarily to heat buildings and industrial objectives with pumps and power plants. In this area, on the first places

in Europe in 2009 were Sweden, Germany, Finland, France and Austria.

In 2010, there were, worldwide, geothermal plants in 24 countries, and compared with 2005 the global production capacity increased by 20%. The countries with the largest installed capacity in MW, in 2010 were: U.S.A. (3086), Philippines (1904), Indonesia (1197), Mexico (958), Italy (843), New Zealand (628), Iceland (575), Japan (536), Iran (250), El Salvador (204) Kenya (167). These countries have also the highest share in the world production of geothermal energy. It is believed that, globally, in this field, for the near future, particularly high potential have the countries in East Africa (Eritrea, Ethiopia, Djibouti, Kenya, Uganda and Zambia).

Chart 2. Installed capacity in MW

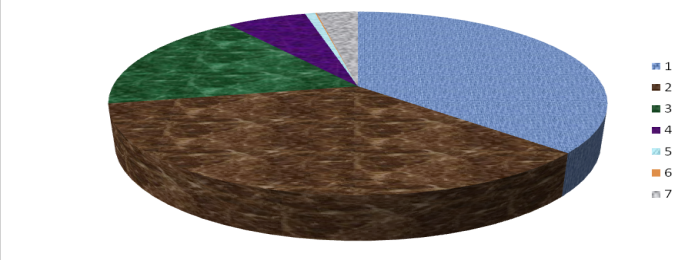


1 =United States of America, 2 = Philippines, 3 = Indonesia, 4 = Mexico, 5 = Italy, 6 = New Zealand, 7 = Iceland, 8 = Japan, 9 =Iran, 10 = El Salvador, 11= Kenya

Source: Processed by author

In 2010, it was considered that, depending on the installed power, geothermal potential for non-electrical uses, as the average in Europe is: 36.5% for heating and cooling ambient, 35.5% for balneology, 17.7% for greenhouses, 6.2% for aquaculture, 0.8% for industry, 0.1% for dehydration of agricultural products and 3.2% for other uses.

Chart 3. European averages of geothermal potential for non-electrical uses



1 = heating and cooling ambient, 2 = balneology, 3 = greenhouses, 4 = aquaculture, 5 = industry, 6 = dehydration of agricultural products, 7 = other uses

Source: Processed by author

Romania is considered to be the third country in Europe with geothermal potential, after Greece and Italy. The areas with the highest potential in our country are considered to be Banat and West Apuseni Mountains, where the exploitation is performed on the increasingly wider scale. Since the temperatures of the thermal waters are not very high, even in the areas with high potential, the geothermal energy cannot replace all the other forms of energy, but can complement them. A very good example is the town Beius, where local leaders have seen fit to try a new and bold project – the full heating of the houses using the geothermal energy. Although the project which started in the years 1995 - 1996 had some interruptions and produced many noise and visual pollution, especially until the conclusion of the works, and its total value was 20 million, now it is considered a success and a good example to follow. Geothermal resources are widely used in Bihor County, particularly in the area of residence Oradea and in Timis County. In Oradea there is the Transgex, the first company in Romania that uses the geothermal energy to produce electricity, from Electrica Transilvania Nord.

Geothermal energy can be used, besides heating, primarily in the agriculture but also in the industry, with many uses that an informed and courageous leader can successfully exploit: heating greenhouses where vegetables and flowers are grown, drying crops, heating water from fish farms, industrial milk pasteurizing, providing domestic hot water.

In agriculture, the main use of the geothermal energy is for heating greenhouses where vegetables and flowers are grown. The advantage is that these greenhouses have a much lower consumption than those heated with gas. The hot water is pumped by pumps to the greenhouses. This procedure significantly reduces the carbon dioxide emissions. These emissions can be reduced up to 10% of the amount of those that results from the other forms of heating, thus achieving at a biological agriculture that protects nature. Although them require some significantly higher investments than the greenhouses which are heated with gas, their efficiency is 3 times higher. In addition to its principal use for heating, geothermal energy may also be used to control the humidity of the greenhouse's air and to achieve an optimum speed of the air movement. An important element in increasing the efficiency is the greenhouses wall insulation. The glass walls, allow the penetration of a larger amount of light, but they have not so high insulating properties as the plastic walls. Building plastic walls can greatly reduce the energy consumption, which is very important because these costs can reach up to 35% of the total costs of the greenhouses that grow vegetables and flowers.

Also in agriculture, an important use of the geothermal energy is in the process of breeding. A good and informed leader knows that he can improve the long breeding process by creating temperatures which can be controlled. To heat a farm for growing animals the energy consumption is lower than for a greenhouse, about a half of it. At the same time, it improves the health conditions of the animals, the hot water being used for washing, sterilizing and dehumidification and for cleaning the waste. In the pools where fish are bred, is even more evident the importance of maintaining optimal temperatures, thereby allowing the production cycle

intensification and the growth of exotic species of fish. Some countries consider very important the growth of the microalgae such as Spirulina, which are used in the pharmaceutical industry.

Other possible uses of geothermal energy are: in industry - water supply, in balneology, for heating the soil, for the mushroom cultivation, for thawing frozen fish, for drying the organic matters - greens, hay and wool -, for drying agricultural products and for preserving food, fish and timber, for the evaporation in the sugar refining process, for the sugar crystallization, for the alumina production, for the paper production, for pools heating.

The main advantages a leader who promotes the use of renewable energy needs to know are: it is a form of clean energy, it is environmentally friendly; it is not polluting; the wastes can be recycled; it is safe; it is always available without interruption in supply, independently of day-night cycles and weather conditions; the maintenance costs are much lower than for other types of power plants.

The main disadvantages includes: it can be used only in limited areas which are the areas where there is water with a very high temperature; the exploitation reduces the altitude of the soil; commissioning of a geothermal plant requires high costs; the geothermal plants produce a pretty nasty odor vapor and noise, creating a noise pollution and also a visually pollution through the form of the tubes network of considerable size; the studies to determine drill sites and drilling itself are also quite costly as working with high temperature water and steam; the distribution network construction, the acquisition and the installation of monitoring and control systems also implies high costs; after a few months of starting their operation, cool rocks can become ineffective; the thermal waters, after they are used, are discharged into rivers, polluting them because of the high temperatures and increased salt content; the possibilities to conserve this form of energy are reduced as the conservation requires repumping which, in turn, requires a relatively high consumption of energy from other sources.

4. Energy from biomass

The biomass energy is a renewable and alternative energy form that uses biological materials as raw materials derived from plants or animal materials, household waste etc. It can be used either directly by combustion or can be converted into biodiesel and bio-ethanol. The production of bio-fuels can be done by thermal, chemical or biochemical methods, sometimes requiring mixing biomass with petroleum or diesel. Bio-fuels can be used for heating or transports. The biogas methanol is used directly to produce energy. The conversion of biomass to fuel means the conversion to liquid, solid or gaseous fuels that can be used for producing electricity or as auto fuel. The transformation is done by mechanical, thermal or biological methods. Mechanical processes are advantageous because it keeps the nature of biomass - producing bales, pellets, chopping, pressing. Combustion and gasification processes presumed thermal heat production and can have the aim to produce liquid or gaseous fuels. The biological methods include fermentation and digestion, based on the microbes and enzymes, and resulting solid or gaseous fuels.

The most important source of biomass energy production is the wood, the residues resulted from its processing being called

the "black liquor". Forestry waste is generally used for the thermal energy production. Besides wood, other sources of biomass energy are: plants from agriculture (wheat, barley, rye, oats, corn, sunflower, peas, beans, rapeseed, soybean, tobacco, fruit trees and vines), fish or aquaculture. Biomass may also result from household waste. Of them, whether they are collected in urban or rural areas, it is estimated that nearly half can be used as biomass. Currently biomass energy accounts for about 15% of primary energy sources worldwide. In developing countries, biomass energy use is more common and larger, biomass is available in larger quantities than other energy sources, thereby providing up to 38% of total energy consumption of these countries. Biomass energy sector is becoming increasingly important in developed countries. For example, given the significant resources that benefit U.S.A. - wood and ethanol from corn - it is expected that biomass energy will be the largest source of non-hydro energy by 2020. Another country on first places in the world is Brazil, which produces energy based on sugar cane and one of the European countries with tradition in this area is Finland. World leader in the production of biodiesel is Germany.

It is expected that by 2020 biomass energy will be two times more expensive than natural gas, a little more expensive than nuclear and cheaper than photovoltaic solar energy, which must be very important information for the leaders that want to use the possibility of exploitation of the biomass energy sector.

Romania's potential in terms of energy from biomass is considered to be quite high. So far, there were been spent in this area about 70 million euro. Romita Green Energy Company wants to invest 41 million euro in the near future in biomass power plants with the capacity of 10 MW electricity power and of 19 MW thermal power. In Cluj County, the Austrian Schweighofer Holzindustrie already operated a 22 MW plant along with other plants in Sebes, Radauti, Siret and Comanesti. Another firm that invests in biomass energy is BioElectrica Transylvania. From the records available at Transelectrica results that from the total of the energy used for lighting, 35 MW are produced from biomass, agricultural waste and forestry. KDF Energy Company from Bucharest has proposed to allocate 11 million euro to build a biomass power plant of 413 MW in Valcea County, at Horezu.

Table 1. Energy productivity of the main varieties of plants

Dry materials production (tons/hectare)	Cultures	Equivalent production of oil (liters/hectare)
30	sorghum, reed, mischantus	12.000
20	peas, sunflower, hemp, grain, rush, willow, poplar, eucalyptus	8.000
10	rape, buckwheat, acacia	1.000

Source: Energy Management Agency of Maramures

In our country, woody biomass has been used since ancient times for heating and preparing food. Use it as firewood is not very efficient because it has very low yields (about 20%) and, in addition, pollute the environment. The use of some more efficient boilers, with yields of at least 75%, it would greatly reduce the negative effects. For this, however, would need state support, through national and regional programs. The state's role covers both producers and consumers. Regarding the consumers, it is important to mention the role of the state (art. 5, Consumer Code). "The state aims at: the protection of consumers against the risk of purchasing a product or a service are likely to prejudice the life, health or safety or affect their rights and interests; promotion and protection of economic interests of consumers; consumer access to comprehensive, accurate and precise on the essential characteristics of products and services, so the decision to be taken in connection therewith to better meet their needs; consumer education; effective consumer compensation; helping consumers or other groups or organizations representative to organize, to make their views in decision-making processes concerning them; to promote international cooperation in the field of consumer protection and participation in the rapid exchange of information; prevent and combat by all means, unfair trade practices and service delivery, including financial that may affect the economic interests of consumers." (A. N. Gheorghe, C. Spasici, D.S. Arjoca, "Consumption Law", Hamangiu Publishing House, Bucharest 2012).

Another element that demonstrates the importance of the state involvement in this area is the launch and the operation of the National Program "Green House" in 2010 and 2011 which illustrated the preference and the interests of domestic consumers to switch to new energy technologies, including biomass, to produce heat and hot water. The operation of the program was short, the main causes being the reduced fund financing and the bureaucracy in the assessing applications process. Another brake on expanding the use of biomass energy in Romania is the too high prices charged by most manufacturers of biomass, especially of pellets and briquettes. The excessively high level of the prices is explained by the fact that the manufacturers, even if they fail to sell their products on the domestic internal market, know that they have the sales ensured by the exports on the foreign markets. This is due to the fact that the energy produced from biomass - mainly pellets - is the only alternative in our country for the traditional energy based on strategic resource exploitation, primarily to the natural gas. The differences between the prices of natural gas are very high. In Romania the gas is twice cheaper than in other European developed countries as Germany, Austria and Italy.

It provides that in Romania, until 2015, the biomass power plants will provide 210 MW of the total energy production. The development of this area is slower than wind energy and solar energy, even if our country has great potential due to the large agricultural areas and those occupied by forests for biomass and biogas, to the industrial and municipal waste. Biomass energy production is now rewarded with two green certificates and the production that uses the resulting gases is rewarded with 1 green certificate. For those using energy crops or forestry waste is added another green certificate.

The main advantages that a good leader needs to know in order to promote the use

of biomass energy are: the materials that are used are biodegradable; it is reducing the time for the waste storage, thus decreasing the storage costs; the biomass burning produces less carbon dioxide than the combustion of coal or gas; the biomass energy production plants can be placed in the proximity of the biomass energy consumers, in which case the shipping costs are very low; because biomass power plants works like thermal power plants, they can provide electricity; they produce economic benefits, but also social benefits; unlike other forms of renewable energy, biomass-based energy can be stored easily as it involves actually fuel storage; production may be changed, it may be reduced or increased according to the needs and desires of the manufacturer; because it requires less sophisticated technology, these plants are cheaper; investments recovery period is not very long, being between 5 and 12 years; the energy efficiency is higher than for other energy sources; currently, there are some possibilities to reduce significantly the negative side effects by the introduction in the production of new and more efficient technologies, especially in the combustion process.

The main disadvantages faced by those that are using the biomass energy are: in the process of burning plants emit into the atmosphere an amount of carbon dioxide approximately equal to that they absorb during their growth, which contribute to the greenhouse effect; the power plants based on biomass emit, during the combustion, nitrogen oxide and sulfur; large areas are needed for starting material cultures as the energy density is relatively low; there are voices saying that there are used such big areas of land to power machines and equipment instead to provide food for people; logistics problems may arise in the supply of the needed raw materials because the production requires large amounts of raw materials; the fuel storage needs large spaces; when the biomass plants are not placed in the proximity of the consumption places, transporting them becomes very expensive because the bio-fuels require large transport means; the crops that are the base for the biomass are using chemical fertilizers which are produced by consuming energy based on strategic resources (oil and gas); the fuel conversion requires a relatively high energy, which makes the production of this field efficient rather on a large scale; on the other hand, however, large-scale production has negative effects on the environment, determines some risks associated with the existing technologies and therefore appear the public health risks; waste recycling requires the use of large amounts of water; even if the production in a year is not dependent on the variation of the natural conditions or on the day-night cycles as is the case of solar energy, however, the production cannot be considered constant from an year to another because it depends on the annual agricultural production, which is depending in turn on the weather conditions and on other economic and non-economic elements; a negative collateral consequence is that the rise of the demand for agricultural products used in the biomass energy production, determined an increase of the prices for the agricultural products, mainly in the less developed countries; another side effect is the loss of biodiversity and the increase of the soil erosion; the visual pollution occurs by affecting aesthetics especially in rural areas; the production of the biomass energy faces in many countries with the shortages legal regulations, who do not sufficiently promote

the use of this energy source; the immaturity of the management system that is not open to this new possibility.

6. Conclusions

In presenting the advantages and disadvantages of renewable geothermal and biomass based energy results several important conclusions for all the leaders at all levels, given the fact that our country have to reduce the energy consumption per unit of GDP achieved, which means the increase of the energy efficiency. Romania must rely more than ever on the renewable energy, which will increase the food safety, will be more environmentally friendly by being a clean form of energy and will reduce the country's dependence on energy imports. In "The Romanian Energy Strategy for 2007-2020 updated for 2011-2020" is underlined the important role of the use of bio-fuels in the transports and in agriculture, to power the agricultural machinery, and the importance of developing energy crops. The focus is also on energy consumption efficiency in the agricultural works, such as irrigations. Biomass fuel, being the main fuel in the rural areas covers about 7% of the primary energy demand and about a half of Romania's renewable resource potential.

The rural environment is very important also for the geothermal energy, mainly used for space and water heating because of the localization. The main potential for use is in the rural areas. Both forms of

energy, geothermal and biomass, have both advantages and disadvantages. A good manager and a good leader should know them and should decide to use one of these forms only where they are efficient, where this can be done with low costs and without affect too much the environment, aiming to reduce at minimum the economic, social or any other kind negative side effects.

A further analysis of this topic, it might consider concrete case studies conducted primarily in rural areas but also in urban areas, from economic subjects who have the conditions for the possibility of using geothermal energy and biomass-based energy, the state intervention analysis including some legislative measures and the measures which aim to stimulate the scientific research in order to improve the technologies which are used in the production, the forecasts of the energy consumption per unit of GDP, the study of the international energy prices evolution, the possibility of reducing the country's dependence on the imports in this sector.

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Risk taking and income inequality

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Abstract: *Individuals in a society often have different degrees of aversion about risk. When individuals with equal skills take risky activities with a high potential for profit, such as the establishment of a large business, some associations fail, others not. The presence of successful and unsuccessful collaborations in a society results in economic inequality, even when all individuals are identical in terms of level and field of education, the decisive factor is taking calculated risks or not. I will present in this paper the results of a study that I conducted in March 2014 related to influence of taking risks involved in opening a business as well as flexibility and adaptability on labor market.*

Keywords: entrepreneurship, risk taking, flexibility, adaptability

Introduction

Given the influencing factors identified in the literature review that cause maintaining and increasing income inequalities, I decided to perform a research by applying a questionnaire to a sample of respondents to identify a pattern of income inequalities between them and effects generated by it at those people level that records a wide range of revenue, come from different social backgrounds and have different educational backgrounds.

As such, the purpose of this research was to analyze the socio-economic situation

of a target group of 498 people (269 employees and 229 contractors) which records revenue in Bucharest, to analyze the causes of income inequalities and the effects of those inequalities. In this paper I will present only the results related to risk taking influence on income inequality.

The assumptions from which I started in making this research and were based on a analysis of a consistent specialized literature dedicated to generating factors of inequality of income related to risk taking were as follows:

- as the behavior of the labor market is more flexible / adaptable, the individual income will be higher;
- as the behavior of individuals is more oriented towards entrepreneurship, the revenues are greater;

To test these hypotheses, we used the questionnaire questions regarding:

- mobility / labor market behavior - to see how flexible / adaptable person is questioned, behavior in the labor market;
- determining entrepreneurial behavior - to observe certain risks to obtain higher income generated by a business;
- value attitudes of individuals - to see if there is a connection between the desired and the current occupation, identify certain risks and to obtain higher incomes.

Results of the study

Average earnings of employees is of 1,657 lei, while the ***entrepreneurs*** is 5490 lei, 3.3 times higher than for the first category. Given the descriptive analysis of income environments for employees and contractors (Table 1) we observe that the **median**[1] income for employees is 1,500 lei and 3,500 lei entrepreneurs, i.e. a difference of 2.33 times higher for entrepreneurs.

[1] Given that the responses provided by the target group meet extreme values also (very small or very large), we could consider that the median is a better approximation of central tendency of income values for the sample on which the questionnaire was applied.

Table 1 - Descriptive analysis of income environments for employees and contractors

employees income		entrepreneurs income	
Mean	1657,416357	Mean	5489,694323
Standard Error	53,81258144	Standard Error	481,0130353
Median	1500	Median	3500
Mode	1500	Mode	3000
Standard Deviation	882,5919583	Standard Deviation	7279,048062
Sample Variance	778968,5648	Sample Variance	52984540,7
Kurtosis	4,460005244	Kurtosis	31,92156865
Skewness	1,825176663	Skewness	5,042622361
Range	5500	Range	65200
Minimum	500	Minimum	800
Maximum	6000	Maximum	66000
Sum	445845	Sum	1257140
Count	269	Count	229

When asked about the possibility of opening a business, of employees respondents aged 21-25 years, 60% were thought to start a business, but reasons that prevented this approach were lack of business ideas for 38 % of them and lack of necessary funds for 35%. Average income earned by these[2] respondents is 1499.4 lei.

The respondents aged between 26-30 years situation is similar in intent to open a business (56.36% of them were thought to open a business), but the main reason that prevented to take this step was for 50.91% of them the lack of funds (resulting from processing the heading ‚other reasons'). These respondents have obtained an average income of 1892.55 lei.

If we look at the average income of the two age ranges, we can say that gaining experience in domain and / or seniority, are factors that contribute to higher revenues (in the case of two intervals being about an increase of 26%).

Also, with age it seems that the main problem that prevents employees to start a business there is not lack of business ideas but lack of funds go first for starting a business. This lack of funds may be due to several causes both subjective and objective of which the most important are:

- Gains are relatively small and do not allow saving considerable sums required to start a business,
- Lack of any financial help from parents given that 58% of employees in both age ranges come from families who were living at the same level with most families in the community,
- Failure or potential difficulties due to low incomes in accessing bank credit;
- Lack of desire / motivation to assume the risk that it involves opening a business, given that 61% of employees in the first age range (21-25 years) and 53% in the range 26 to 30 years say they prefer a safe workplace, but less well paid than one insecure but better paid.

The largest share of entrepreneurs surveyed (21.83%) were aged between 26-30 years and recorded an average income of 5473 lei, almost 3 times higher than employees in the same age range. This may be due to both financial support and education received from parents (given that over 60% of them come from families at least wealthier than the majority of families in the community, 6% came from the richest families) and desire / motivation to assume the risks involved in running a business, because 72% of entrepreneurs are in the age range mentioned above do not agree with the statement that they prefer a safe workplace but less well paid than one uncertain but better paid.

If we look at the corroboration of employees' field of study and correspondence of present occupation with profession / specialization obtained at the last form of education, in processing the data reveals that 52.7% of employees trained in economic occupy a suitable job of the training they have and obtained income of 1953 lei, and those who have not found or preferred a different job of the specialization they own obtained an income of 1529 lei, average 27% less than first.

It is interesting to note that the income gap is even greater among workers with preparation in technical domain, who have found a suitable job of the specialization acquired (only 37.3% of them) and have earned

[2] Resulting from the processing of responses under the heading Other reason Question What prevented you start a business so far?

an average of 2086 lei and those who occupies a position different from specialization acquired and obtained an average income of 1441 lei, 45% less than the first category.

Gender inequalities are kept for employees graduates of the two fields whether or not they have a proper occupation of the profession obtained. The male graduated employees in the economic, working on a suitable job of the preparation obtained, earn an average of 2167 lei, while women in the same classification obtain 1825 lei. If they does not occupy a position suitable of their training in economics, average salary is 1692 lei for men and 1400 lei for women.

For employees with technical training, the situation is this: men working in their field of study earn on average 2110 lei while women receive 1,500 lei, and if graduated specialization does not match current occupation, men earn on average 1611 lei while women 1259 lei.

One exception makes that even in entrepreneurs cases the gender inequalities exist for all 3 majority domains of education and training, whether or not they correspond with the needs of the business or activity performed as a freelancer.

Men entrepreneurs with training in the field of economic studies that lead a business that match with the specialization, earn an average of 5192 lei compared to 3522 lei as women entrepreneurs get and those who manage a business in a different field of specialization owned, obtain an average income of 7265 lei compared to women entrepreneurs in the same situation that have recorded an average gain of 2949 lei.

Women entrepreneurs with technical training and managing a business in accordance with this area earn an average of 4350 lei and men recorded an average income of 3914 lei, while men entrepreneur who run a business in another area obtained an average income of 4275 lei and women in the same category earn on average 4,000 lei.

Training in law brings men entrepreneurs engaged in an activity in the same area, an average gain of 15,330 lei and women entrepreneurs in the same category income of 6400 lei, while the specialization for different activities, men earned on average 7783 and women earned 3067 lei.

We can see that graduated men entrepreneurs in the economic and technical domains record higher earnings administering business unrelated to last specialization in education obtained, and at the women entrepreneurs things are totally opposite. We can also observe that for entrepreneurs with training in law, both women and men who manage a business in the same field earns about two times more than those who work in a different domain.

Workplace that the questioned graduates occupy today not corresponds to the last profession or specialization obtained through education for more than half of the respondents both employees (51.67%) and entrepreneurs (54.59%).

This data can lead us to the conclusion that there is no synchronization / compatibility between the skills resulted on completion a form of education (high / medium) and skills required by the labor market, on one hand (companies, public institutions, NGOs) and on the other hand unstable economic environment created outplacement premises of a large number of employees, or the ability to assume the risks involved in starting a business.

For employees, the average wage of all respondents whose occupation specialization

corresponds to the latter form of education is 1890 lei, for employed men 2,041 lei and for women employed 1748 lei. Employees who do not have a proper job specialization obtained, earn an average of 1440 lei: salaried men – 1610 lei and salaried women – 1314 lei.

For the entrepreneurs, average revenues of all respondents whose occupation specialization corresponds to the latter type of education is of 5849 lei, 6225 lei for men entrepreneurs and for female entrepreneurs is 5270 lei. Entrepreneurs who do not have a proper job specialization obtained earn on average 5191 lei, 6115 lei for me entrepreneurs and 3430 lei for women entrepreneurs.

From the point of view of mobility for higher gain, moving to another county for a higher gain are less likely from their point of view for both employees and contractors. This situation is represented in the following tables:

Table 2 – Regarding moving in another big town:

Another county ?	No	Yes, for few weeks	Yes, for few months	Yes, for few years	Yes, for entire life
Employees%	**75,5**	**7,5**	**7**	**5**	**5**
Average income employees – Lei	**1658**	**1399**	**1480**	**1806**	**2097**
Entrepreneurs%	**79**	**6**	**7**	**3,5**	**4,5**
Average income entrepreneurs –Lei	**5738**	**7136**	**4050**	**2925**	**3780**

Table 3 - În privința plecării în alt oraş mare:

Another big town ?	No	Yes, for few weeks	Yes, for few months	Yes, for few years	Yes, for entire life
Employees%	**71**	**3**	**12**	**7**	**7**
Average income employees – Lei	**1686**	**1675**	**1322**	**1583**	**2041**
Entrepreneurs%	**74**	**8**	**8**	**5**	**5**
Average income entrepreneurs –Lei	**5844**	**6023**	**4656**	**3225**	**3225**

Table 4 Regarding moving in E.U.:

In EU ?	No	Yes, for few weeks	Yes, for few months	Yes, for few years	Yes, for entire life
Employees%	**44**	**-**	**16,4**	**23,4**	**14,5**
Average income employees – Lei	**1616**	**-**	**1605**	**1620**	**1859**
Entrepreneurs%	**56**	**-**	**13,5**	**16**	**7**
Average income entrepreneurs –Lei	**5913**	**-**	**5410**	**4040**	**3039**

Table 5 – Regarding moving in a neighboring country?

In a neighboring country ?	No	Yes, for few weeks	Yes, for few months	Yes, for few years	Yes, for entire life
Employees%	**65**	**-**	**13**	**13**	**7**
Average income employees – Lei	**1668**	**-**	**1469**	**1493**	**2066**
Entrepreneurs%	**74**	**-**	**9**	**10,5**	**5,5**
Average income entrepreneurs –Lei	**5669**	**-**	**6685**	**4787,5**	**2750**

Table 6 - Regarding moving in a distant country (SUA, Canada, other)?

In a distant country (SUA, Canada, other)?	No	Yes, for few weeks	Yes, for few months	Yes, for few years	Yes, for entire life
Employees%	**49,4**	**-**	**10,4**	**19**	**19**
Average income employees – Lei	**1593**	**-**	**1933**	**1561**	**1843**
Entrepreneurs%	**53**	**-**	**10**	**21,4**	**13,5**
Average income entrepreneurs –Lei	**5882**	**-**	**6732**	**5437**	**3490**

From Tables 2,3,4,5 and 6 we see that generally desired locations by employees and entrepreneurs who are willing to mobility for better earnings are distant countries (USA, Canada, other) and EU, followed by a neighbor country and then a big city or moving to another county in Romania.

We can observe both for employees and entrepreneurs, the highest percentage of people who are willing to mobility earn below the overall average. We can also notice that employees are more willing to mobility than entrepreneurs in search of better paid jobs.

Questions related to attitudes of individuals to observe the value of a link between certain risks for obtaining higher income, responses are shown in Tables 7 and 8.

Table 7 – Entrepreneurs agree the following:

	Agree percentage	Average income
a. I prefer a safe workplace but less well paid than one insecure but better paid	35,4	5904
b. To get a better job I would be willing to work in another town	38,4	4673
c. To get a better job I would be willing to work in another country	54,8	4794
d. To get a better job I would be willing to change my occupation	62	4456

Table 8 – Employees agree the following:

	Agree percentage	Average income
a. I prefer a safe workplace but less well paid than one insecure but better paid	48,3	1539
b. To get a better job I would be willing to work in another town	37,5	1612
c. To get a better job I would be willing to work in another country	60	1660
d. To get a better job I would be willing to change my occupation	69,5	1536

The analysis of data processed and summarized in Tables 7 and 8 we can draw the following conclusions:

- the percentage of employees who prefer a safe workplace but less well paid than one insecure but better paid is higher than for entrepreneurs, despite the fact that the average income of these employees is below average for all employees, while entrepreneurs that agree with this statement recorded higher average incomes than the average for all respondents entrepreneurs;
- the statement ,,To have a better job I would be willing to work in another place'', agreements percentage difference between employees and contractors is less than one percent (0.9%) but the employees who are willing to this type of mobility earn 2.5% less

than the average, while entrepreneurs willing earn 15% less;

- in case of willingness to work abroad, employees are more willing to this kind of mobility (60% of employees agree compared to 54.8% of entrepreneurs) and also it can be seen that employees who are willing to this type of mobility earn as the average of all employees, while entrepreneurs willing to work in another country earn 13% less than the average total surveyed entrepreneurs;
- regarding change of occupation for a better income, employees are most interested in the idea (agreement 69.5% versus 62% for entrepreneurs), but employees who are willing to this kind of mobility earn 7% less than average, while entrepreneurs willing to this change earn 19% less;

Conclusions:

Risk-taking of opening and managing a business rewards entrepreneurs surveyed with an average gain of 5490 lei compared to 1657 lei for the employees, i.e. 3.3 times higher.

Regarding the field of study graduated / developing, average income entrepreneurs with economic and technical training recorded are about three times higher than the employees with same training and entrepreneurs with law training earn on average almost 5 times more than employees with the same training.

Analyzing the connection between the education background of employees (economic, in this case) and correspondence to the current occupation or profession specializing in education last obtained, the processing of data reveals that those who hold jobs in domain they studied, 27% have higher revenues than those occupying a post inappropriate to the training they have.

For employees (skilled in technical), the income gap is even greater (an increase of 45%) between technically qualified employees working under specialization obtained and employees who occupy a position different from the specialization they have.

In terms of mobility in the labor market to achieve a higher income, despite the fact that at first sight workers are more inclined towards mobility, entrepreneurs who agree with this type of mobility, earn considerably less (13-19%) than their overall average, unlike employees willing to these types of securities that earn 2.5 -7% less than the average income of the employees surveyed. This ties in perfectly with the greater percentage of employees than for entrepreneurs who prefer a safe workplace but less well paid than one insecure but better paid. From this we can conclude that entrepreneurs are generally more oriented towards taking various risks involved in achieving higher incomes.

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Using wind and solar renewable energy by enterprises and consumers in terms of the energy management

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Abstract: *More and more leaders realize that the wider use of renewable energy brings many benefits on long-term, both for the enterprises and for the whole society in the process of developing the smart grids. One of the continuing concerns of any leader at any level must be the energy efficiency growth for all the users, individuals or legal entities. A good corporate leader supports a wider use of the renewable energy because thereby he promotes the care for the environment through the clean energy, the green economy idea in general, which will create him a positive image in the community and he will be considered a good representative of "corporate social responsibility", by reducing the social ethical implications of strategies adopted. The more there will be more leaders who will promote the idea of production and use of alternative and renewable energy will be required also a greater involvement of the state in the use of the economic policy instruments in order to increase the investments in the infrastructure, to encourage the innovations in this field and to establish the regulations guiding of the specific markets mechanisms and the responsibilities and roles of each economic subject.*

Keywords: renewable energy, energy efficiency, wind energy, solar energy, hydropower, energy potential, energy consumption

JEL Classification: D21, D24, L26, L94, M11, M14, Q42, Q47

1. Introduction

The sustainable economic development requires increasing the energy efficiency that provides the prerequisites for reducing the negative impacts of energy production and consumption on the environment and requires increasing the investment in scientific research in this field, promoting measures to stimulate innovation process. Achieving energy efficiency implies for each country to produce a bigger amount of clean energy and to increase the number of transactions with such energy, thus reducing carbon dioxide emissions.

According to a recent study on different types of consumers, energy losses of all the energy consumption in Romania are between 30-35% in industry and between 40-50% for buildings. The European Union established, as an important objective to be achieved for all countries by 31 December 2020, 1.5% savings each year for the energy sales to the final consumers. After this stage, the next stage in the European Union will be to stimulate the competition in the energy sector, to encourage the development of the national support programs in order to reduce the energy consumption, the wider use of the green energy, to encourage in particular solar and wind energy production where natural conditions are necessary and where they are effective.

In order to increase the energy efficiency, an important role has the consumption decreasing, which refers both to industrial producers, domestic consumers and Government. Among the measures that can lead to reducing the total energy consumption, the most effective are: purchasing an advanced fixed capital for the automations, improving the production methods in industry, using some light bulbs including for the street lighting and insulations. The advantages of such measures have also side good effects. Inside the housing, it provides an increased level of the comfort because the inside of the houses is warmer in winter and cooler in summer. Similarly, the leaders which demonstrate social responsibility may introduce some measures for energy saving in their offices. The isolation of the office buildings, the economic lighting and the use of some less energy consumer devices, thus releasing less heat, can significantly reduce indoor heat and the necessity of the air conditioners, which are great energy consumers, with beneficial effects on the human health of the employees.

To introduce some effective measures widely to the entire national economy, the state must establish proper government policies to decide a maximum level of the energy consumption, which cannot be exceeded and thus stimulates the energy efficiency. Also, the state leaders must promote the green industry, must encourage the economic policies for producing innovations in reducing energy consumption, must improve the already used technology in order to reduce the energy waste which are containing numerous heavy metal residues and chemicals toxic, must reduce to the lowest possible level the grants in the areas that have a negative impact on the environment.

In the total quality management, an increasingly important area is the energy management, which involves the realization by every manager of an annual energy audit, the financial analysis of the investments in this field, the determination of sources funding in order to increase the energy efficiency.

A manager leader should encourage the conduct of all employees in efficient energy

management, to develop interest in this matter, to ensure security of supply, to introduce monitoring systems of the energy consumption, thereby reducing the energy consumption and the corresponding costs. Besides increasing the market competitiveness, they are obtained, as side effects, social benefits and the care for the environment.

2. Literature Review

The "National Geographic" Review underlines the benefits of wind energy that does not pollute any water or air and has been a spectacular development, 4 times increasing of the production in the period 2000 - 2006. In addition, „since the wind is free, operational costs are nearly zero once a turbine is erected. Mass production and technology advances are making turbines cheaper, and many governments offer tax incentives to spur wind-energy development." The same magazine emphasizes that although many people believe that visual pollution produced by wind turbines is very high, yet „The slowly rotating blades can also kill birds and bats, but not nearly as many as cars, power lines, and high-rise buildings do."

The "Global Wind Energy Outlook" presents three estimates of the wind energy industry: out to 2020, 2030 and up to 2050. „The scenarios compare the International Energy Agency's central scenario from its World Energy Outlook with a 'Moderate' and 'Advanced' scenario, detailing how the global wind industry might deliver in terms of global electricity supply, CO2 emission savings, employment, cost reductions, and investment. "Wind power has become the least cost option when adding new capacity to the grid in an increasing number of markets, and prices continue to fall", said the Steve Sawyer, CEO of GWEC. "Given the urgency to cut down CO2 emissions and continued reliance on imported fossil fuels, wind power's pivotal role in the world's future energy supply is assured." The power sector is responsible for more than 40% of all carbon dioxide emissions from burning fossil fuels, and about 25% of our total greenhouse gas emissions. Wind power's scalability and its speed of deployment makes it an ideal technology to bring about the early emissions reductions which are required if we are to keep the window open for keeping global mean temperature rise to 2^0C or less above pre-industrial levels.

In his book, "Wind Power .Revised edition: Renewable Energy from Home, farm and Business", Paul Gipe explains how to include the commercial-scale wind turbines of all sizes in distributed applications and underlines, by studying Germany and Denmark cases, the role of the small communities of consumers in the increasing of the social responsibility regarding the use of the clean energy."In community wind, farmers, small businesses, and groups of community-minded citizens band together to develop-for profit--"their" wind resources. The paper analyzes also the advantages and the disadvantages of using each possible technology used to produce the wind energy, from viewpoint of reducing the consumption, but also from a financial perspective.

The authors of "Sun, Wind and Light. Architectural Design Strategies", GZ Brown and Mark Dekay, underline some particularly interesting aspect to the relationship between "form and energy" through the design of an architecture for building that meets the objectives of the "sustainable design", that

"applies the latest passive energy and lighting design research organizes information by architectural elements". The book focuses on the impact sun and wind can have on the architectural design. "It provides real insight into the issues involved in passively cooling and heating homes. Developed for rapid use during schematic design, this book clarifies relationships between form and energy and gives designers tools for designing sustainably.

"Wind Energy Fundamentals, Resource Analysis and Economics" by Sathiajith Mathew is a technical approach concerning wind energy conversion, an economic analyze of the aspects of using this type of resource.

In the solar energy field, must be mentioned the book "Solar Water Heating: A Comprehensive Guide to Solar Water and Space Heating Systems (Mother Earth News Wiser Living Series)" by Bob Ramlow and Benjamin Nusz, which begins with a history of using the solar energy at the dawn of the humanity, initially for heating and continues with the modern forms of solar energy systems, energy conservation and energy savings. The authors present the financial - economic aspects of the solar water and space heating systems, including the possibility to reduce the long-term costs.

"Solar Revolution: The Economic Transformation of the Global Energy Industry" by Travis Bradford demonstrates, on the basis of mathematical models, that it results a significant increase in the production and the consumption of the solar energy in the next twenty years and it will become the cheapest and the best form of energy. The author shows that the use of photovoltaic panels is a widely adopted solution in countries like Japan, Germany and Southwest America, the role of state subsidies being very important.

The Information Centre of the European Commission, EUROPE DIRECT, IASI course, "Wind Energy Outlook, Challenges, European Policies." presents concrete issues related to investment and costs for the wind turbines. "Besides the cost of the turbine, which is 74-82% of the total investment, other significant costs include those on foundation (20-25% of the rest), associated electrical installations (10 -15% of the rest), adaptation and connection to the national grid (35 -45% of the rest)."

3. The most important issues in the renewable energy production and consumption

Especially after 2006, in Romania, began the development of both production and consumption of energy from renewable sources. An important element was the modernization of the legislation and the fact that more and more leaders are aware and acknowledge that the wider use of renewable energy bring many long-term benefits, both for the enterprises and the whole society, in the formation and the development of smart grids for the society. An important role has the continuous concern for the energy efficiency, for all users, individuals or legal entities.

Another reason why a good firm leader supports the use of renewable energy is that thereby he actually promotes his concern for the environment through the clean energy, the general principles of the green economy, which certainly will improve his image in the community and he will be considered a good representative of the "Social Corporate Responsibility". He demonstrates that he is reducing the ethical social implications of the

strategies adopted by the company that he is managing.

The more there will be more leaders who will promote the idea of production and use of alternative and renewable energy will be required also a greater involvement of the state through the economic policy instruments in order to grow the investments in the infrastructure, to encourage the innovations in this field and to establish guiding regulations for the specific markets mechanisms and to establish the responsibilities and the roles of each economic subjects involved

Of course, all these regulations and developments must be consistent with all the regional development policies, provisions and E.U. economic legislation. In our country, the most important Romanian laws in this field are the 220/2008 Law on green certificates and the 123/2012 Law on energy and natural gas. According to the 220/2008 Law, the renewable energy producers receive subsidies from the state as green certificates, which are paid by all traders, producers and consumers. Because of the importance of both production and consumption, should be considered the consumer protection provided by the Consumer Code. "According to art. 1 of Law no. 296/2004, the Consumer Code regulates the legal relations created between economic operators and consumers on the purchase of products and services, including financial services, providing the necessary access to products and services, completes and accurate information about their essential characteristics thereof, defenses and ensures the rights and interests of consumers against abusive practices, their participation in decision-making foundation and its interest as consumers." (A. N. Gheorghe, C. Spasici, D.S. Arjoca, "Consumption Law", Hamangiu Publishing House, Bucharest 2012).

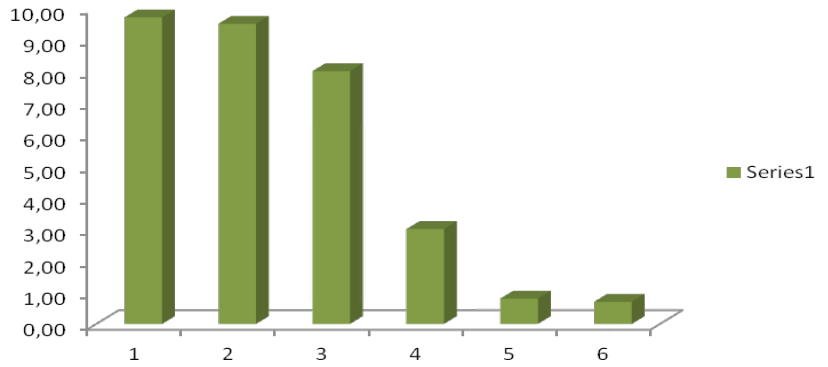
The E.U. has set a goal to be achieved by 2020 by our country: 20% of the total final energy consumption of the country must be provided by the renewable energy sources. According to A.N.R.E. (the National Regulatory Authority for Energy), this objective has been achieved in early 2014. The mandatory share purchase by the green energy remained, however, at 11.1%. In August 2014, the total production of renewable energy was 4470 MW, from which 2800 MW came from wind parks, 1234 MW came from solar parks, 570 MW from small hydro centrals and 100 MW from biomass energy. Moreover, it was also envisaged that by 2020 our country must increase the energy efficiency by 20%, which means also to have as final objective the limitation of the energy consumption at 30.32 million tep (tones of oil equivalent) by 2020.

Energy efficiency implies that the countries have to produce a bigger amount of clean energy and to increase the number of transactions with it, which leads to reduce the carbon dioxide emissions. In order to increase the energy efficiency, an important role has the decrease of the consumption. In recent years, the average energy consumption in the E.U. consisted of: 40% building consumption and 20% energy consumption for lighting - which requires the rehabilitation of buildings and the use of the energy saving light bulbs.

Romania currently consumes 2,5 times more energy per unit of GDP than the average of the E.U. countries. It has been estimated that only through energy efficiency measures, our country would save between 5 and 7 billion euro. According to the forecasts made recently in Romania, in 2020, the final national primary energy consumption

will reach 31,9 million tep (tons of oil equivalent), representing an 50% increase compared to 2010. The largest energy consumption in 2020 will be recorded in the industry with 9,7 million tep, followed by the residential sector with 9,5 million tep, transport and telecommunications with 8,0 million tep, services with 3,0 million tep, agriculture with 0, 8 million tep and constructions with 0,7 million tep.

Chart 1. Forecast of the final national primary energy consumption in Romania in 2020



1 = industry,
2 = residential sector,
3 = transport and telecommunications,
4 = services,
5 = agriculture
6 = constructions

Source: Processed by author

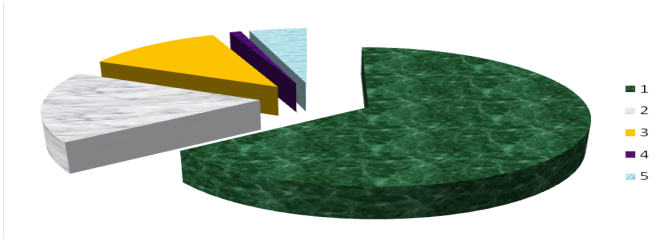
One of the issues that are affecting this area, given the high consumption of the residential sector, is that over 12% of energy consumers in Romania are in the category of social charges payers. The total consumption points in our country are 8868 million, of which only 351,968 are non-household consumers. From these data, it appears that a major concern is to streamline the energy consumption also at the level of the end-users and not only in the industrial companies that are using it as working capital.

The "Energy Strategy of Romania for 2007-2020 updated for 2011-2020" establishes as overall objective the "providing the energy needs, both now and in the medium and long term, at a price as low as suitable, adapted to a modern market economy and to a decent standard of living, in terms of quality, food safety and respecting the principles of sustainable development." Safety concerns mainly providing a modern transport infrastructure with an adequate level of protection, limiting the imports and diversifying the energy sources. The Energy Strategy specifies the steps that should be taken in order to increase the competitiveness in this sector, as the basis of its rapid progress including: "development of competitive markets for electricity, natural gas, oil, uranium, granting green certificates, certificates for the gas greenhouse effect emissions and energy services; liberalization of energy transit and ensuring permanent non-discriminatory access of the market participants to transmissions, distributions and international interconnections; further restructuring and privatization, especially on the stock market, for the sectors of electricity, heat and gas."

The limited and reduced quantities of available fossil fuel and the decreasing trend of the domestic output increases the country's dependence on imports of primary energy and shows that in Romania the renewable energy sources are essential.

The most important types of renewable clean energy are: wind, solar, biomass and geothermal energy. According to the renewable energy map, the potential of Romania is: 65% bio-energy based on biomass, 17% wind energy, 12% solar energy, 4% small hydropower energy, 1% voltaic energy, 1% geothermal energy.

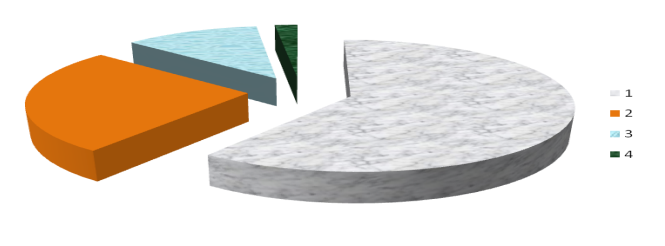
Chart 2. The potential of Romania, according to the renewable energy map



1 = biomass, 2 = wind, 3 = solar, 4 = geothermal, 5 = other forms
Source: Processed by author

The present production, however, is not in accordance with the map of the potential, since, for example, in August 2014, most of the renewable energy produced in Romania was: wind energy 62%, photovoltaic parks 27%, small hydroelectric energy 12% and biomass energy 2%.

Chart 3. The production of the renewable energy in Romania (August 2014)



1 = wind energy, 2 = solar photovoltaic energy, 3 = small hydroelectric energy, 4 = biomass energy
Source: Processed by author

4. Wind energy

In the last 10 years, wind energy currently has the highest annual growth rate worldwide: 30%.

It can be considered that wind energy has been used at a small scale, since Antiquity, for the transformation of wind energy into mechanical energy. The first windmills operated in Persia, more than 2000 years ago. They were introduced in Europe in the XII Century in England and France. These mills were mainly used to grind grain

and other agricultural products, but also for making paper and paints for painting.

Currently, the kinetic energy of the wind is converted to electricity by wind turbines that produce between 50-60 KW (the micro power stations) and between 2-3 MW for the highest power stations. In general, the maximum diameter of the turbines is up to 20 m. The ordinary wind turbines produces between 500 - 1500 KW.

The available studies provided that the potential of worldwide wind energy can provide 5 times the current energy consumption. This, however, would require sacrifice more than 12% of the surface area of Earth in order to cover it with turbines, returning an average about 6 turbines per km2.

The countries that currently have the largest installed capacity are those that are having an adequate speed of the wind for longer periods during each year, such as China, USA, Germany, Spain, India, Italy, France, UK, Canada, Denmark. Even in those countries with the highest potential to produce wind energy, it is estimated that the turbines produces at maximum 8 months in a year. In E.U. countries, the average share of wind energy in total domestic energy consumption was 5,3% in 2012, the countries with the highest consumption being Denmark (23%), Spain (8%), Germany (6%). In our country the consumption was 3,0% in the same year.

In Romania, through an effective management, were attracted numerous foreign investors in wind energy, the main companies being: CEZ from Czech Republic, Energias de Portugal from Portugal, ENEL from Italy and Iberdrola Renovables from Spain. It should be noted in particular the investment made by Monsson Group, a leading European producer of wind energy. In Romania, this Monsson Group has installed wind turbines totaling 100 MW and has sold 850 MW projects to other foreign companies in the field. The Group also provides consultancy for the companies that are producing wind energy and includes Emon Company which is specialized in electricity infrastructure. For countries like Germany and Romania, due to their specific natural conditions, the Group has implemented the Monsson GE Wind Power Up program, which is a software that is installed on the turbines (at Monsson Mireasa II, Galbiori, Silistea II) that allows them to measure, via the Internet industry, tens of thousands of data every second, thus adapting the operation of wind turbines to the concrete conditions specific to that place.

This program has determined the increase of the turbines yields to one fifth of the initial value, increasing the annual production of wind energy by up to 5%. At the end of 2012 in our country already existed over 1.000 wind turbines, which contributed to increase the employment by creating over 1.000 new jobs. The most favorable areas for the development of the wind energy production in Romania are Dobrogea and Podisul Central Moldovenesc.

When a leader faces the choice of the optimal production, based on the possible variants of combining the production factors, in terms of wind energy he must know and compare the advantages and the disadvantages of its use.

Among the most important advantages are that it is a form of clean energy and because it does not burn fuels there are no emissions of pollutants and greenhouse gases, no waste is produced, production costs per unit of energy produced are small, which is an

important element of cost reduction and also the costs for a possible shutdown are small.

The most important disadvantages are that the resource on which wind energy is produced is limited to some certain potentially appropriate areas and certain times of the year, the production is not constant, which creates difficulties in the consumption, the production causes a very high noise pollution, for some people creates a considerable visual pollution and not least, it affect the ecosystems.

5. Solar energy

Solar energy is 10.000 times powerful than all the forms of energy used today. It can be used in different ways to produce electricity. Most common way is to use photovoltaic cells and it's conversion into thermal energy for direct heating of buildings or to trigger heat pumps. The potential of solar energy on Earth is extremely high, so if it could be concentrated collected, it would be the most important energy source of mankind.

Energy efficiency of the solar panels is not very high, ranging between 12% - 20%, depending on their quality, but it is great if it is considered in relation to the amount of energy from other types of sources that can be saved by using solar energy. For example, a house which is equipped with solar panels saves over 50% of the energy normally used. There are also solar thermal panels, which are built to heat fluids. They are very heavy, so they cannot be placed on the roof, but only on the ground, near the houses.

Also, there are plants that can convert the stored heat from the sun into electricity. These plants are not widely used because their efficiency is very low and the production is relatively low compared to the costs of maintenance and given the disadvantage that the production is not continuous.

Among the more special uses, it is interesting to note the contribution of solar energy in rail and marine. Examples of this are the launch in Europe, between Paris and Amsterdam, of the first high speed train powered by solar energy produced by solar panels mounted on its surface and the launch of the solar boats that are quieter than the others. The first solar boat was produced in Britain in 1975 and now due to the advantages that they present, are produced on a large scale. Solar energy can also be used via LEDs in traffic signs or for the lighting of the rural areas based on the accumulation of energy in batteries. Although in the latter case the profits are very low, there is a favorable ratio between costs and social benefits. One of the areas of the world where solar energy is widely used in heating homes is the rural areas of Sub-Saharan Africa.

Among the world countries with the highest energy production based on photovoltaic panels are: U.S.A., India, China, Germany, France, Ukraine, Canada, Italy. The largest thermal solar plants in the world are in the U.S.A. and Spain. In Europe, the country with the largest production of solar energy is Germany, being favored by legislative regulations that allow those who produce an excess of solar energy to resell at the same price per KWh to other energy consumers. In 2011, in terms of consumption, solar energy provides 3% of all the electricity produced in Germany and 3,2% in Italy.

In Romania, households are also favored by legislation, which requires that they may sell the surplus product to other electricity consumers. This provision may be

exploited by the leaders of small businesses who may have in this a diversified source of gain or by the public institutions for public objectives such is the example of Comuna Cornu.

Another positive element which can be used to by an open-minded leader is that the banking system in our country allows the access to credit facilities for those who develop alternative energy industries.

Solar energy potential of our country is located in particular in the Black Sea, where the average of the sunshine is 2.300 hours per year. In these circumstances it can produce a maximum of 1.600 KWh/m2/year, the national average being 1.250 kWh /m2/year.

The national solar energy consumption in the country increased especially in the luxury residential areas. In some localities, the state wanted to encourage consumption by providing facilities through the "Green House" Program. All the constructions must comply certain conditions concerning the height and the orientation of some parts of the roof to the south in order to capture better the energy of sunlight.

Romania is considered, according to a survey conducted during 2013 as having great potential in renewable energy, ranking ahead of countries like Poland, Turkey, Spain and Austria. Of the 40 countries surveyed, Romania's rank is 10 and on solar energy Romania in on the 24th place.

One of the main foreign investors in the field is TerniEnergia, an Italian company that wants to install six solar parks in the areas Lugoj and Buziaş, with a total capacity of 5.5 MWp.

As the main advantage of solar energy production and consumption, in addition to the possibility of installing plants near the places of consumption and relatively low cost, is that the depreciation of such installation is less than for other forms of energy, being less than 5 years. In Romania, this branch is favored by the fact that the authorization process is greatly simplified compared to other forms of energy and to other states and the investments are more advantageous supported.

As main disadvantage it can be mentioned that the solar energy is not concentrated, and convert it into other forms of energy is difficult. Production is discontinuous, since that cannot be achieved overnight and what the output achieved during the day cannot be accumulated in large quantities. In addition, an indirect disadvantage stems from the fact that the production of solar panels themselves, it consumes a lot of energy from non-renewable sources, mainly coal, which makes the production of solar energy remain at a lower level compared to the energy consumption.

6. Conclusions

From the Romania's energy strategy for 2007-2020 updated for 2011-2020, results that in 2008 the total final consumption of electricity in our country was 41.775 GWh, of which 43.363 GWh in the industry, 842 GWh constructions, 1.401 GWh in transport, 10 .040 GWh in the household, 555 GWh in agriculture and 6.432 in services.

The same strategy presents the advantages and disadvantages of the renewable energy, especially wind energy and solar energy. Romania must rely more than until now on renewable energy, which will increase food safety, will be more environmentally friendly by being clean forms of energy and

will reduce the country's dependence on the energy imports. In order to increase the energy efficiency the state must take some important measures such as: "to use the financial instruments for energy savings, including energy performance contracts that provide for delivery of measurable energy savings; to purchase new equipments and technologies taking into account the priority of energy efficiency specifications; to accelerate the execution of rigorous energy audits at the level of the industrial consumers, public and residential buildings, audits certified by competent bodies, followed by measures able to reduce the energy consumption.

The national potential for energy savings, reducing energy losses, is estimated at 27-35% of primary energy resources - industry 20-25%, buildings 40-50%, transport 35-0%). "These measures should be applied differentiated by types of business - industrial producers, farmers, carriers, households and the public sector. An important role has the modernization of the networks for the energy transport, which are currently characterized by a high degree of wear and turning them into intelligent grids, the increase of the competition in the sector, ensuring the environmental protection and sustainable economic development overall.

A further analysis of this topic, it might consider some concrete case studies conducted at operators of different territories with different conditions in terms of the possibility of using some form of renewable energy, the analysis of the state intervention, the role of the law system and of the possible negotiations between the directly involved actors, the forecasts of energy consumption, energy demand and energy supply, based on the data available up to now, even the influence of the culture on how to implement the energy-saving strategies.

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Leadership, Culture and Organizational Change

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Abstract: *An effective leadership, an evolutionary organizational culture and permanent connection to change may ensure a company's success within an ever more dynamic competitive environment. The scientific approach of this paper is in line with theoretical and applied research in the field by the presentation of the connections existing among leadership, organizational culture and organizational change. The paper highlights the triad "vision – motivation – momentum", the mission and the defining coordinates of leadership, the complementarity "new – tradition" in organizational culture, the stages of the change management process and the role of managers and leaders in the preparation and implementation of change projects. Leadership is essential in building and developing an appropriate cultural model, which, in its turn, is an important vector of organizational change processes in modern companies.*

Keywords: leadership, organizational culture, organizational change, managers, leaders.
JEL Classification: M10, M12, M14.

1. Introduction

Leadership is an activity with a strong creative interpersonal dimension and which involves the initiation and propagation of change almost at all times. Managers and leaders, as key actors of change processes, have to develop constantly the companies that they lead [6].

As a process, leadership represents the action of the leader based on different sources of power and a specific set of skills, directed towards influencing the members of a group so that their activity would be aimed at the achievement of the company's objectives [7].

Leadership plays a crucial role in creating and maintaining an evolutionary, change-oriented organizational culture.

The organizational culture has a major impact on the economic performance of an organization, representing one of the main ways of achieving operational excellence. Excellent organizations are those which, through appropriate strategies, with an outstanding leadership, an organizational culture and a tradition of value, manage to thrive against competitors, to successfully face the adversity of the economic environment and to exploit its opportunities with high efficiency [12].

In the current period, the change constitutes a source for obtaining competitive advantage and hence the core of a business development. Organizational culture and the change which the management team wishes to make within a company are under the influence of cause and effect relation. A successful cultural model represents more than a management tool or an immediate solution, being a way of life [3].

In many companies, change is not seen as a continuous process but as an event that will happen at a time, under the impulse of impact factors determined by the business environment. In this respect, a new managerial and leadership mentality concerning change is necessary and it has to be gradually induced to employees by means of an effective leadership and within an adequate cultural model, so that they pass from simply accepting the change to initiating it.

2. Approaches to Leadership

In specialized literature, there are numerous approaches to leadership.

Max Landsberg, who has gained international recognition as an authority in coaching and professional development, finds that the essence of leadership is the ability to create a vision, motivation and momentum in a group of people. Therefore, the leaders of organizations have to create and maintain this triad [6].

Vision is a positive image of what the organization could become and it shows, at the same time, the path that it has to follow in order to achieve the objectives arising from the mission and, implicitly, the desired performance. The leader has to crystallize a vision that is also shared by the members of the organization. For this purpose, it is important for the leaders to be creative, innovative and to translate their ideas into exciting, logical and achievable images and actions.

Motivation is an essential component of leadership. It is important that the managers and leaders of organizations take into account aspects such as customizing motivational elements, ensuring a stable balance relationship between tasks, competences and responsibilities, so that the employees successfully carry out the objectives incumbent upon them,

combining adequately the material rewards with the moral and spiritual rewards, and also granting such rewards in a progressive system, so as to maintain an organizational climate conducive to the achievement of operational excellence.

The momentum necessary for the implementation of organizational development projects is another important component of leadership. A leader has to be able to convey his vision to others, to be a good communicator and to convince the human resources that his proposals are viable and can improve the processes and activities of the organization.

In J. Adair's vision, the leadership mission may be structured on the following coordinates [1,2]:

- planning (collection of available information, defining groups, objectives and tasks, establishing a feasible plan);
- preparation (informing team, distribution of tasks, defining team standards);
- control (maintaining team standards, achieving the goals, orientation toward adopting decisions and toward actions to implement them);
- encouragement (expressing approval of individual contributions, creating team spirit, settling disputes);
- information (presentation of the plan and of the tasks assigned to the human resources, summarizing ideas and suggestions);
- assessment (checking the feasibility of ideas, knowledge testing, group performance analysis and providing support for self-evaluation).

Management involves forecasting, organization, coordination, training and control-evaluation processes and activities. The analysis of the coordinates defining J. Adair's approach shows that management and leadership are intertwined. Basically, leadership involves management processes, with more emphasis laid on their human side.

Leadership takes into account the human dimension of management, in the involvement process of the human resources by the leader. The content, expression and effectiveness of leadership depend mainly on the native qualities of the leader, his general, professional and managerial training, as well as on the managerial situation in which the leader is or which he is facing [4].

An effective leadership incurs the fulfillment of two essential roles [7]:

- a charismatic role (the leader designs a better future for his subordinates, gives them strength and inspires them);
- an architectural role (the leader takes into account aspects related to vision, strategy of the organization, control-evaluation systems and the rewarding of the employees).

The two roles complement each other. Thus, the architectural role of the leader is materialized in the proper implementation of strategies, policies and structures that enable him to fulfill his charismatic role (vision on the future, giving strength and inspiring the members of the organization) [7].

Jack Welch, former president and chief executive officer of the company General Electric, finds that there is a series of leadership secrets, of which we mention [15]:

- approaching change as an opportunity which, if realized, will enable the organization to achieve more

competitiveness;

- facing reality by permanent adaptation of business strategies and swift action;
- treating human resources with respect, giving them more trust and freedom;
- creating a system of values that reflects the vision, culture and objectives of the organization;
- building an organizational culture based on the continuous training of human resources;
- encouraging the exchange of ideas within the organization by setting up regular meetings and by rewarding the employees who come up with new ideas and translate them into best practices;
- promoting three secrets within the company – swiftness, simplicity and self-confidence – enabling it to adapt to changes that occur in the business environment;
- involvement all human resources in processes and activities, and focusing on the improvement of intra departmental and interdepartmental communication;
- handling with priority the aspects related to the quality of processes, products and services of the organization, as the main source for obtaining competitive advantage;
- ongoing monitoring of customer reactions to the initiatives shown by the organization to offer new products and services.

3. Organizational culture

In our opinion, organizational culture is an important variable for organizational changes. Through their abilities, managers and leaders have to inspire their employees with a feeling of affiliation to the cultural model of the firm and also to remunerate those that, through behavior, sustain the implementation of change.

Thomas J. Peters and Robert H. Waterman [11] have defined culture as being "a dominant and coherent set of values shared by the members of the organization, induced by symbolic means". The same authors consider that a cultural model is the result of the efforts made by managers in orientating human resources in the "spirit of an excellent service".

In E. H. Schein's [14] vision, organizational culture represents a distinctive aspect of the way an organization is working, shaping both its economic performance and its stakeholders perceptions from the surrounding environment. Culture is a background made up by fundamental conceptions developed by an organization, as it learns how to confront problems of adaptation to the external environment and also of internal integration.

In conformity with Ch.B. Dygert and R.A. Jacobs [3], organizational culture implies rituals, symbols and stories associated to a category of people, offering an image over the people's values and beliefs, over the things important for them and the reasons behind this choice.

Professors Ovidiu Nicolescu and Ion Verboncu [10] define organizational culture as a set of values, beliefs, aspirations, expectations and behaviors outlined in the course of time in each organization that

are predominant inside it and directly and indirectly condition its functionality and performance.

Organizational culture represents, alongside competencies and resources, a defining element of the firm and it influences its strategic options, and, implicitly, the type of adopted strategy.

The conservation or the change of organizational culture represents a strategic decision of a company. Peter F. Drucker considered that is advisable for a firm to resort to the change of inefficient behaviors and procedures and not to the change of the organizational culture as a whole. Therefore, it is important for management to create and maintain a balance between stability and change in the company's organizational culture.

C.B. Dygert and R.A. Jacobs appreciated that a high level of trust of the employees, the proven personal integrity of them and the assumption of principle of fate shared by all the employees of the firm, constitutes the base of creating and maintaining this equilibrium.

Under the circumstances of contemporary dynamism, it is mandatory for an organization to be permanently connected to the changes registered in the professional environment. For being competitive, a company must promote an organizational culture in which old practices are enhanced and, at the same time, tradition is cultivated.

It is essential that managers and leaders understand and then induce to their employees that the relationship between new and tradition is not an antagonist report, but a complementary one. A successful organizational culture is the one that promotes organizational change, without eliminating the systems of values created and cultivated in time, because they ensure cultural identity to the organization.

4. Organizational change

The change management process, as any managerial process, contains three main phases: forecasting, operational and final measurement and interpretation of results.

The first phase, in which a forecasting management and leadership is manifested, involves setting the objectives, identifying the resources and defining strategic options through which the objectives can be achieved, given the resources of the organization.

The operational phase of the change management process, in which an operative management and leadership is carried out, includes four steps:

- determination and delimitation of activities;
- distribution of activities on organizational subunits;
- coordination organizational processes and activities;
- involvement of human resources in processes and activities.
- The third phase, the measurement and interpretation of results, in which the management and leadership are post-operative, essentially consists of:
- control of processes and activities;
- assessing the performance by comparison with the level of forecast objectives;
- identifying the causes of the deviations;
- initiating corrective measures to improve processes and activities in the next managerial cycle.

Organizational change implies the application of managerial and leadership

methods and techniques that will lead to achieving the objectives imposed by the new strategic orientation of the company.

Managerial and leadership practices aim at connecting human resources and organizational activities, as well as at setting-up rules and principles to govern the firm's work processes. If the employees are not motivated to carry out their tasks or they do not understand the ratio between their objectives and the firm's ones, this might result in a "system of incoherence" that has to be analyzed and solved for the firm to be successful in the change initiative [16].

Rogers and Byham [13] suggest that the positions in a firm must be design so that the tasks, competencies and circumscribed responsibilities to be congruent with the new organizational strategy.

Organizational change, as an important step in the strategic management process, corresponds with a new, fundamental and radical orientation, concerning the possibilities in which the organization will develop its activity, having essential implications over the behavior of all its members [8]. Launching a process of change supposes to understand the necessity of change, to express a desire for change, the accumulation of knowledge, as well as developing the abilities necessary to implement change [9].

Rosabeth Moss Kanter, Management Professor at Harvard Business School, considers that managers have two major tasks: to solve the problem of present time and to prepare for the future. To fulfill the second task, managers posses the best "strategic weapon of the informational era", the change-adept organization [5].

The involvement of human resources in the organizational change processes must become a way of life. Any change aims at eliminating a difference. In most organizations, the difference that has to be eliminated through change is the one between the present efficaciousness and the expectations based on previous experience or current standards in the field.

In a change-adept organization, the difference is the one between the present efficacy and the organization's possibilities. Therefore, the change-adept organizations are future-oriented, and the managers working in such an organization have a proactive strategic vision in approaching business. This managerial vision is reflected in the firm's human resources behavior that must manifest the same involvement both in organizational projects and change projects.

In our opinion, investing in education and coaching human resources in the continuous learning process are fundamental coordinates of the change-adept organization. It is essential that managers and leaders, through their strategic vision, induce to their employees the feeling that change is necessary and to impose them a pro-change and pro-learning attitude. In this way, a stimulating, dynamic and favorable organizational climate is created. Such a climate ensures operational excellence, with benefic effects on a medium and long term, in the sphere of firm competitiveness.

5. Conclusions

Essence of leadership is the ability to create a vision, motivation and momentum in a group of people. Leaders of organizations have to create and maintain this triad.

An effective leadership incurs the fulfillment of two essential roles: a charismatic role and an architectural role. The two roles complement each other. The architectural

role of the leader is materialized in the proper implementation of strategies, policies and structures that enable him to fulfill his charismatic role.

Leadership takes into account the human dimension of management, in the involvement process of the human resources by the leader. The content, expression and effectiveness of leadership depend mainly on the native qualities of the leader, his general, professional and managerial training, as well as on the managerial situation in which the leader is or which he is facing.

Leadership is essential in building and developing an appropriate cultural model, which, in its turn, is an important vector of organizational change processes in modern companies.

Leaders have to be able to convey their vision to others, to be a good communicators and to convince the human resources that their proposals are viable and can improve the processes and activities of the organization.

Through their abilities, managers and leaders have to inspire their employees with a feeling of affiliation to the cultural model of the firm and also to remunerate those that, through behavior, sustain the implementation of change.

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The Involvement of Rural Entrepreneurship In The Regional Development

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Abstract: *The aims of the present paper are to emphasize the importance of the rural entrepreneurship involvement in the regional development and to analyse the results of a research regarding the cooperation between the stakeholders of the local and regional development. A set of two hypotheses has been tested by using the data of a sociological survey focused on entrepreneurship and on the potential entrepreneurs from the rural area, belonging to five development regions. The results of our research highlight that the relationships between the rural area business environment and the other actors involved in the regional development (local public authorities, professional associations, institutions centred on regional development) are influenced by the framework of organisation and cooperation with the local business environment.*

Key words: entrepreneurship, potential entrepreneurs, public administration, regional development

JEL classification: P25; M13; R58

Introduction

In the past decades, regional development has been a permanent source of interest among researchers and policymakers all over the world (Nijkamp, 2009). The importance of entrepreneurship in the development of the national regional economies has been recognized largely in the specialty literature (Tamasy , 2006). Entrepreneurship represents a lever, for both the economic growth of a region and national development. It also has a great impact on life quality (Braun, Diensberg , 2007). Basically, the success of regional development is the result of the capabilities of the interested parties (local authorities, NGO, entrepreneurs) in exploiting the local resources (e.g., financial resources, natural resources, social and human capital), through institutions, communities (e.g., entrepreneurship, cultural identity) and facilitating direct foreign investments (Pezzini , 2003).

As rural areas have to deal with particular challenges, governments and policy makers should focus their efforts in order to help these areas to successfully face them. In this respect, the following specific issues are often identified: "First, employment opportunities in primary industries (largely agriculture) are declining. Second, out–migration of young people, along with in-migration of retirees in some places, has led to significant ageing of the population. Finally, most rural areas have difficulty establishing the necessary critical mass of facilities, producer services and investments to support economic development, so that entrepreneurs have difficulty starting up enterprises in the area." (OECD, 2005, p. 4). On the other hand, new opportunities have increasingly emerged such as the possibilities of creating and developing diversified agro-industries and rural tourism or of launching information technology networks. Therefore, promoting, supporting and strengthening entrepreneurship in the rural areas is needed in order to serve various local needs. However, "policy initiatives aimed at encouraging the formation and growth of enterprises in rural areas need to take into account of the distinctive challenges facing these areas" (Smallbone, 2003, p. 5) related to the characteristics of the business environment and of rural populations.

Regional development refers to the general effort made to reduce regional disparities by supporting various economic activities in regions (OECD, 2011). Many researchers state that entrepreneurship constitutes an important driving force behind regional development. Why? Without any doubt, entrepreneurship plays a multiple role in the rural areas. It represents a major source for employment (Labrianidis, 2003), generates incomes for both public and private sectors, and therefore contributes to local and regional development (Baptista, Escaria, Madruga, 2005).

Having as a starting point the above discussion, several questions arise regarding the functionality of some institutions centered on regional development, their degree of involvement, rural entrepreneurship involvement in projects of regional development. These are:

a. To what extent are entrepreneurs consulted regarding regional development programmes ?

b. Are entrepreneurs from rural areas willing to get involved in the development of a larger area than their place of residence?

c. How do entrepreneurs and potential entrepreneurs feel the development

gap between Western countries and their homeland?

The aims of the present paper are to emphasize the importance of the rural entrepreneurship involvement in the regional development and to analyse the results of a research regarding the cooperation between the stakeholders of the local and regional development. A set of two hypotheses has been tested by using the data of a sociological survey focused on entrepreneurship and on the potential entrepreneurs from the rural area, belonging to five development regions.

Our paper is structured as follows. The second chapter of the paper is dealing with the research methodology. The analysis of the results is presented in the third chapter. The paper ends with conclusions.

2. Research methodology

In order to answer the above mentioned questions, the following two hypothesis were formulated:

I1. If there is an organized framework for the regional development, those with entrepreneurship intentions will want to get involved in projects of that structure.

I2. If entrepreneurs are consulted, then their wish to involve in regional development will be greater.

The present study involved a survey on four distinct development regions: South-Muntenia, South-West, North-West and West. Number of respondents: 1,448 over 18 years old. Table 1 shows the distribution of the respondents' sample.

Table no 1: Distribution of respondents according to region and entrepreneurship status

	Entrepreneurship Status		
Development region	Employer/ free entrepreneur	potential entrepreneur	Calculus basis: number of respondents
South-Muntenia	24.5%	75.5%	554
Southd-West	17.6%	82.4%	279
North-West	19.9%	80.1%	337
West	25.9%	74.1%	278
Average on the 4 regions	22.4%	77.6%	1,448
Calculus basis: number of respondents	324	1124	1,448

The universe of the research has been made up of people interested in utilizing European funds and who participated in the Conference of the Young Managers National Foundation that was held in February – April 2011. The conferences were published in the local and national mass-media being supported by a national network of consultants who informed people about the conference venues in the 4 development regions. Local public authorities also supported the organization of the conferences. The selection technique of the research respondents was random. Thus, the sample is representative

for entrepreneurs and potential entrepreneurs who are interested in the European financing opportunities, error is + / - 2.6% at a reliable level of 95%.

The interview took place face to face in a special place, especially created to allow the confidentiality of the answers.

3. Analysis of the results of the research

I1. A first hypothesis is about the relationship between Intercommunity Development Association and the wish to get involved in regional development of the people who have entrepreneurial skills in this form of association (I1. If thre is an IDA, those who have entrepreneurial skills will want to get involved in regional development projects.

In order to analyze this relationship we have to see to how extent these associations are present in the regional development. Practically, over a quarter of the respondents in our survey, entrepreneurs and potential said that their towns/communities are part of an IDA. (see Table no. 2)

Table no.2. Is your town part of an IDA? (%)

	Entrepreneurs	Potential entrepreneurs
Yes	25,1	27,2
No	19,2	11,6
I do not know	55,8	61,2
Total	100,0	100,0
Calculation basis	339	1188

The majority of the entrepreneurs would involve in projects that are centred on the development of the regions where they live. (see Table no.3)

Table no.3 The wish to involve entrepreneurs or potential entrepreneurs in regional development projects, according to IDA at the level of communities where entrepreneurs live

Would you get involved in regional development projects ?	Respondents from towns with IDA		Respondents from towns without IDA	
	entrepreneur	potential entrepreneur	entrepreneur	potential entrepreneur
Yes	56	55	49	45
No	28	31	36	35
I do not know	16	14	15	20
Total	100	100	100	100
Number for calculation basis	85	323	65	138

Using the chi-square test, we see a significant statistic value and that there is a clear opinion about the connection between the existence of an IDA activity and the wish to involve entrepreneurs in developing the regions where they live. It is interesting to point out that potential entrepreneurs would involve in regional development no matter there is an IDA or there is not any.

I2. A second correlation within the study is the relationship to consult the entrepreneurship spirit by IDA for the projects in progress and their intention to get involved in projects that go beyond the boundaries of their community. (See Table no 4)

*Table no.4. Level of funds development through IDA (%)**

Was it developed through IDA funds?	Respondent entrepreneur	Respondent potential entrepreneur
Yes	51.8	64.1
No	20	18.9
I do not know	28.2	17
Total	100	100
Number calculation basis	85	323

**Questions are addressed to subjects who are from IDA communities.*

If more than half of the entrepreneurs are aware of projects developed through IDA, only 30-32% of the respondents have been consulted as part of these projects. Practically, 13-17 % of the entrepreneurs and potential entrepreneurs have been consulted about the projects centered on the towns and communities where they live. (see Table no. 5)

*Table no.5. Level of local entrepreneur consulting on IDA projects (%)**

	Respondent entrepreneur	Respondent potential entrepreneur
Yes	32	30
No	68	70
Total	100	100
Calculation basis	44	207
Number of total respondents per sample	339	1188

**Questions are addressed to those subjects who live in towns/communities where there is an Intercommunity Development Association and said that funds were allocated through IDA.*

The results show that those who own a firm would involve in regional development projects to a larger extent than starting a new firm (see Table no.6).

Table no.6 Relationship between consulting the entrepreneurs and the desire to get involved in regional development projects

		Would you get involved in projects centred on the development of an area larger than your residence town?			Total
		Yes	No	I do not know	
The subject was consulted in the IDA projects	Entrepreneur	64.3%	28.6%	7.1%	100.0%
	Potential entrepreneur	75.8%	17.7%	6.5%	100.0%

Chi-Square Test shows a significant correlation between the status of a potential entrepreneur and the wish to get involved in projects that go beyond their residence town. With the entrepreneurs there is no such significant correlation.

An important item in explaining the relationship between entrepreneurship and regional development is connected to the way in which the gap between different regions in Romania and Western Europe is understood. To this question, the entrepreneurs indicated as a main reason the more favourable legislation from West Europe countries but potential entrepreneurs think that it is rather a communication problem with those interested in regional development than legislation.

Significant statistic values, according to the chi-square test, expelaining the development gap between our regions and those from Western Europe are for the entrepreneurs willing to involve in regional development: more favourable legislation, higher skilled employees from the West European countries and support from different economic organizations (chamber of commerce, employers associations, etc.).

Those who possess entrepreneurial spirit and do not want to get involved in regional development projects think that the gap is mainly due to communication infrastructure with those interested in developing the region where they live. (see Table no.7)

Table no.6 Why regions from West European countries are more developed than Romanian regions? (question with alternative pre-coded answers)

Alternative answers	**Entrepreneurs**	**Potential entrepreneurs**
There is a different type of economy and society	0.0	0.2
Local authority employees are much better prepared professionally	9.1	7.1
Local authority employees have a different attitude	12.1	12.5
There are economic organizations (chamber of commerce, employers associations, etc.) which are much more involved in regional development	13.3	13.8

They possess a communication infrastructure more efficient to communicate with those interested in regional development (information and communication via Internet about all issues, exchange of information between institutions/companies/authorities is more easily made due to infrastructure)	14.5	22.4
Institutions, authorities and companies are consulted regarding regional development	4.1	4.3
A more favourable legislation framework	26.8	19.8
Another reason. What?	.6	.4
I do not know	19.5	19.6
Total	100.0	100.0
Number of calculation basis	339	1,188

Conclusions

The two hypothesis formulated herein have been validated. The results offered by the subjects of our study have shown the importance of creating an institutional framework for the regional development projects. On the other hand, if entrepreneurs are consulted in the ADI developed projects, they will tend to a larger extent to get involved in the development of the region where they carry out their activity. Hinders in regional development are in the view of the entrepreneurs: lack of a more favorable legislation, a more friendly attitude of the local administration employees. Another important issue in the equation of regional development is that of economic organizations that are meant to boost entrepreneurs' activity.

This research, though limited through its scope, represents a starting point to develop the relationship between entrepreneurship and regional development in the budget year exercise 2014 – 2020. Results obtained can be work hypothesis for a research on larger samples abroad and in Romania.

Acknowledgement

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The Impact Of The Economic Crisis On Human Resource In Romania

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Abstract: *The shock wave of the economic crisis touched all aspects of economic, social and political life, has overturned the value systems and has disrupted the daily life of human resources.*

The lack of expectations, of a safe and legal income, insufficient jobs and undervalued human capital have generated such human resources developments that, in the future, will turn against those who now don't have a coherent policy in this area.

The purpose of this paper is to pull a warning signal about the erosion of the recovery opportunities of a very special resource which, unlike others, is endowed with reactive qualities and decision power over their own developments. Without a framework for its development, the quality human resource leaves Romania while the other part of it survives as it can. All these situations are beginning to be passed on to new generations, some abandoned any form of struggle, giving up hope, education, evolution, and some being ready to find a position outside the country.

The question that remains is: who will build the future of this country and what 'nationality' will have this?

Key words: human resource, human capital, labor market, unemployment, employment
JEL Classification: J210, J240, I250

1. Introduction

(1) What matter does the paper cover?

The purpose of this paper is to present the impact of the economic crisis on human resource in Romania, impact analyzed through the negative effects of economic crisis on the environment in which human resource acts as social and biological being.

(2) Why is the studied matter important?

The issue is important because the human resource is the only resource whose renewal potential (a limited one) can help counteract the effects of the economic crisis. It is also the only one able to act proactive and not just reactive and only able to coordinate the process of exiting the crisis. By its quality depends on its existence but also the welfare of the entire nation.

(3) How does the author intend to answer to this matter?

The paper captures the impact of the economic crisis on human resource, addressing these developments both quantitatively and qualitatively. Topics like the level and the structure of unemployment and employment, migration and the black labor market, the extent of damage to human capital are useful tools to outline an overview of the economic crisis on human resource in Romania.

(4) What is the relation between the paper and the already existent specialized literature?

The topic addressed in the paper is one that concerned many authors. The existing studies in this area will support our approach and will be summarized in the literature review section.

2. Literature review

Depending on the economic sectors that have been affected by economic crisis the link between labor supply and labor demand has been shorted and it generated a wide range of consequences both at the macroeconomic and microeconomic level. The crisis had a direct impact on temporary employment in that in most countries, during the first phase of the crisis, temporary workers were the first to lose their jobs, whereas in the second phase of the crisis new jobs were for a large part created on a temporary basis. Part-time employment, on the other hand, continued to grow throughout the crisis. Individuals with low educational levels and young workers were particularly affected by unemployment, but also by subsequent increases in temporary employment and the still ongoing increase in part-time employment. Moreover, the countries disproportionately affected by the crisis not only saw unemployment rising but also, for the most part, saw further growth in part-time employment.(Leschke, 2012) The labor market in Romania has suffered significantly from the effects of recession and in March 2010 it reached the highest unemployment rate in the last 20 years. (Leoveanu, 2013)

Natural consequence of this evolution is providing to the labor market hardly absorbed human resources in the absence of flexible employment strategies both in the labor market and the HRM. The bigger the gap between job requirements and professional training of the unemployed labor resources the less are the chances of integrating these on the labor market.

Defining and measuring mismatch rigorously is important especially because the policies that can address the different types of mismatch are potentially very different. For example, any intervention that improves the efficiency of the matching process, such as job search counselling or relocation

assistance for either firms or workers, has the potential to reduce aggregate and/or geographical mismatch but may do very little for qualification mismatch. At the same time, when qualification or skill mismatch are due to shortages on either sides of the market improving the efficiency of the process that allocates workers to jobs may have little impact. (Pellizzari & Fichen, 2013) The global crisis is pushing companies to stretch their financial resources to buffer the effects of limited income as a result of the sharp decline in the demand of their products and services. Efficiency is the key to the survival of any company in this kind of economic condition. Running the company at the least possible cost should be the priority of management. In order to achieve that, companies must keep a pool of competent employees that will help the organization in pushing their sales, expanding their market, innovating new products and in keeping the operations efficient as possible. (Ozlem, 2012)

During a crisis period, the role of an HR Manager gains more importance within the organization as they align together with the company's altered key objectives that stem from crisis management planning and implementation plans. (Vösa, 2010)

During the crisis, more than ever, human resource must be human capital for surviving and the political decision factor must keep it inside the border of the country by offering a motivation to stay. If this is the case of Romania will see in the following section of the paper.

3. Paper Content

Human resource in Romania, as well as around the world, was the target of the economic crisis effects triggered in 2007-2008. Financial imbalances that have generated economic crisis often cast in the last place the human resource in the preoccupations of official bodies empowered to manage this phenomenon.

The irony is that, sooner or later, Romania will realize that the human resource itself is one that holds solutions to the crisis. But not just any human resource could do this but one that has the necessary ability and training to find a solution. To what extent is it prepared to respond to such economic circumstances will be the subject of a future research.

In the following we'll try to present how much and from how many directions the economic crisis has affected the human resource. For doing this we'll approach both quantitatively and qualitatively the effects of economic crisis.

I. The effects of economic crisis on human resource. A quantitative approach.

One of the European Union main tasks is the increase of the employment, use the full potential of the human resource, in order to assure increasingly income, better working and living conditions, higher living standards, higher quality of life. This is also one of the fundamentals of the EU constitution. The knowledge of various angles of the current structure of the workforce is needed to identify stocks of increasing employment and the differences between the various structural elements to implement the most appropriate measures to increase the future overall economic efficiency. (Albu et all, 2012)

Almost 5 years after the global financial crisis, the global employment situation

remains uneven. There are encouraging signs of recovery, which started to materialize in some countries in 2010, but global labor market indicators have still not recovered to their pre-crisis levels. In emerging and developing economies, labor markets have started to recover – in some cases quite rapidly. Yet, even these countries face the challenge of ensuring that enough decent jobs are created to accommodate the strong growth in the working-age population. (ILO 2013)

Labor markets have been affected by the slower-than-projected economic recovery. Employment growth slowed down in 2013 across most regions, leading to a further upward revision of unemployment rates. Global employment grew by a mere 1.4 per cent in 2013 – broadly unchanged from 2012, but lower than in any year of the pre-crisis decade. The largest slowdowns occurred in Central and South-Eastern Europe and CIS, Latin America and the Caribbean and South-East Asia and the Pacific. (ILO, 2014)

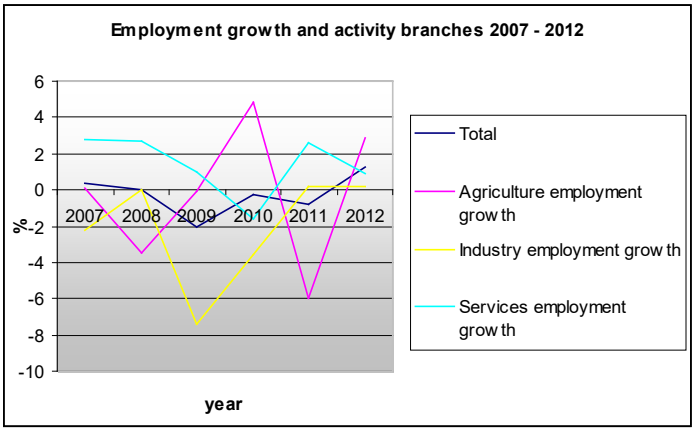
The Romanian labor market of the last 20 years has been strongly influenced by economic, political and social transformation. After eight years of rapid economic growth and impressive poverty reduction, the shock wave of the global financial and economic crisis has highlighted the imbalances and vulnerability of the Romanian economy, characterized by poor economic management and a long list of unfinished reforms. (Stanculescu et all, 2011)

According to the European Commission over a third of people in Greece (45%), Latvia (42%), Lithuania (37%), Bulgaria (36%), Romania (36%), and Hungary (34%) say that their household ran out of funds. Only in Romania, Estonia and Latvia do fewer people think that their financial situation will deteriorate (with no change in Finland). In five EU countries, a majority of respondents thinks that 1 in 3 of their fellow citizens is poor: Hungary (68%), Lithuania (64%), Bulgaria (61%), Greece (61%) and Romania (59%). At individual country level, the results show that, in six Member States, at least one person in three reports that their household ran out of money during the previous year: Greece (45%), Latvia (42%), Lithuania (37%), Bulgaria (36%), Romania (36%), and Hungary (34%). (European Commission 2012)

Sure, the human resource of Romania has its share of optimism (for example, in five Member States, at least 20% of respondents say that they expect their financial position to improve over the next 12 months: Estonia (32%), Lithuania (29%), Romania (25%), Sweden (24%) and Latvia (21%). (European Commission 2012) but beyond that, the problems faced are quite real and serious.

Employment & unemployment trend

If in 2007 the total employment rate stood at 58.8%, in 2012 it reached 59, 5%, unvarying significantly between 2007 and 2012. Increasing employment in agriculture has registered important fluctuation between 2008 and 2010 from -3.5% to 4.8%. This evolution is not surprising because all other economic fields generated human resources who could not find a job. Both for industry and services the evolution of employment in the same period stood on a downward trend. But 2011 has changed this situation; the level of employment in agriculture has decreased considerably. The least affected was the services sector that recorded a negative growth in 2010.



Source: Eurostat

In 2010 and 2012 the refuge seems to had been the agriculture but even in this sector there were problems generated by the small size of the property and the lack of funding. Another solution that has been found by human resource in Romania was to become self-employed. According to EUROSTAT about a third of the total workforce is made up of self-employed, Romania being the second after Greece in the EU in this regard.

In fact, if we look at the evolution of self-employed, we can realize that, about one year after the start of the crisis, the only way to make part of the employment was to become self-employed. Between 2009 and 2010, the employment growth in this category was 2.2 percentage points.

Another noteworthy aspect is the evolution of the black labor market. The black market employment is a phenomenon present in most societies. However, depending on specific factors, the dimension can vary considerably. According to a POSDRU programme, by speaking with participants in the study, it appears closely linked to the economic downturn in recent years. Although it was practiced before the economic crisis, this had a strong amplifying effect on the phenomenon. (POSDRU, 2013) For example, the value of fines for breaching the law in the field of labor relations in 2011 amounted over 125.545 million lei (about 30 million euro), of which 105.373 million lei (about 25 million euro) only for undeclared work. In 2012 in Romania were about 1.45 million "black" employees, representing approximately 23% of all employees in the economy. (Fiscal Council, 2012) In fact, this phenomenon has accompanied ascending the Romanian economy ever since 1990.

The final Report of the Fiscal Council of Romania highlights very well the evolution of this phenomenon:

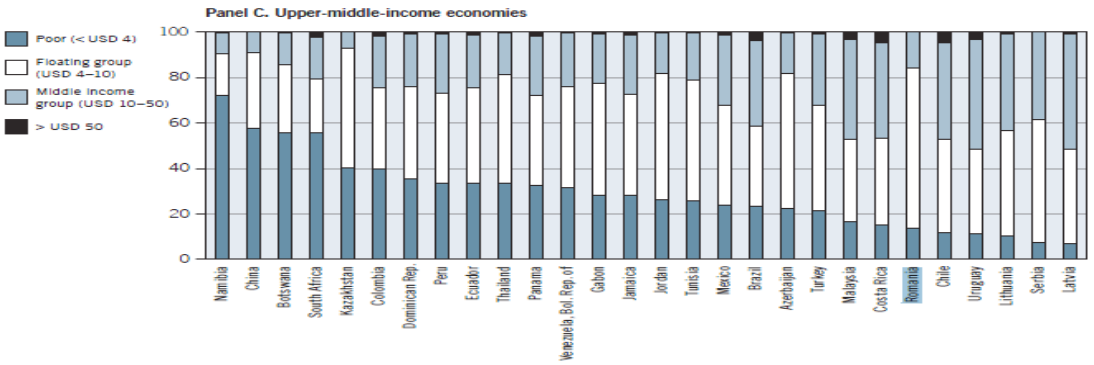
	2006	2007	2008	2009	2010	2011	2012
Black Economy workers (number)	1093	1008	998	1177	1395	1449	1445
Black Economy workers (% in total workers)	17.7	16.3	15.8	18.9	23.0	23.5	23.2

Source: Fiscal Council, Romania, Final Report, 2012

This development has negative consequences for the living standards of the black market workers, for their dignity and their physical and mental security. They are exposing at all sorts of risks, risks eroding steadily, sometimes to the cancellation, the dignity of human resources and ultimately its existence. The fluctuations to which the human resource is exposed on the black labor market do not allow an existential term plan, but only a temporary one, that help on short term and often wasted the human resource.

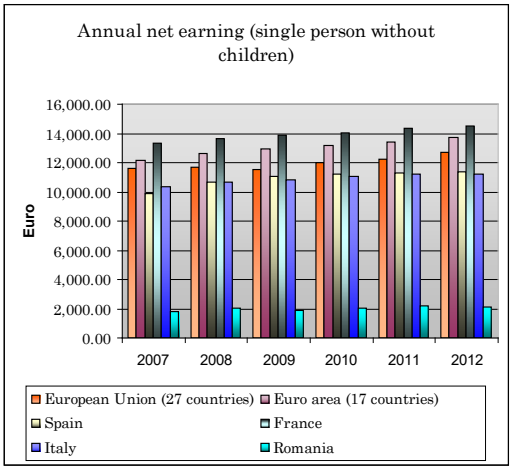
Moreover, the data provided by the World of work report 2013 reveal the financial insecurity that touched a huge percentage of the population of Romania in 2010. The percentage of those who fluctuated between low and middle level of the income was very high. More than 60% of the population was in this situation and one of the the main causes of this trend was the "option" of human resource to work on the black market.

Incidence of different income groups in emerging and developing economies, selected economies, 2010 (percentage)



Source: World of work report 2013, page 37

The constant falling of the incomes of the employed in this period has turned both unemployed and a part of the employed population to look for a job abroad.



Source: Eurostat

As it can be seen from the chart above annual net average income in Romania is well below that existing in countries like Spain, Italy, France, countries chosen mainly by the Romanians who had hoped to have a decent life abroad. Between 2009 and 2010, approximately 26.2% of all households were characterized by the existence of migrants. Departure rate is slightly underestimated because, according to the research methodology, in households with returning people were not recorded data on potential migrants who have not yet returned home. Therefore, existing data do not allow determining the rate of departures for households with returned people. (Stanculescu et all, 2011) Black labor market strongly supported by the economic crisis and characterized by insecurity and low income resulted in the emergence of this phenomenon as an outlet for the hope of Romanians.

Another indicator, relevant for the purpose of the paper, is the evolution of unemployment that highlights the challenges the human resource facing. Significant in this regard we find the evolution of long-term unemployment that affects profoundly the living standard of human resource in this situation, and more importantly, its ability to adapt to changes having place in the economy. Eurostat data shows a significant share of it in total unemployment, and, moreover, an increasing trend of this share since 2009.

	2007	2008	2009	2010	2011	2012	2013
Unemployment rate (%)	6.4	5.8	6.9	7.3	7.4	7.0	7.2
Long term unemployment in % of unemployment	50	41.3	31.6	34.9	41.9	45.3	-

Source: EUROSTAT

II. The effects of economic crisis on human resources. A qualitative approach.

If until now we have presented more quantitative aspects of the economic crisis, in what it follows we will focus on some qualitative aspects of the economic crisis effects.

Thus, it is interesting to present to what extent, what we mean by human capital, has been affected by the economic crisis.

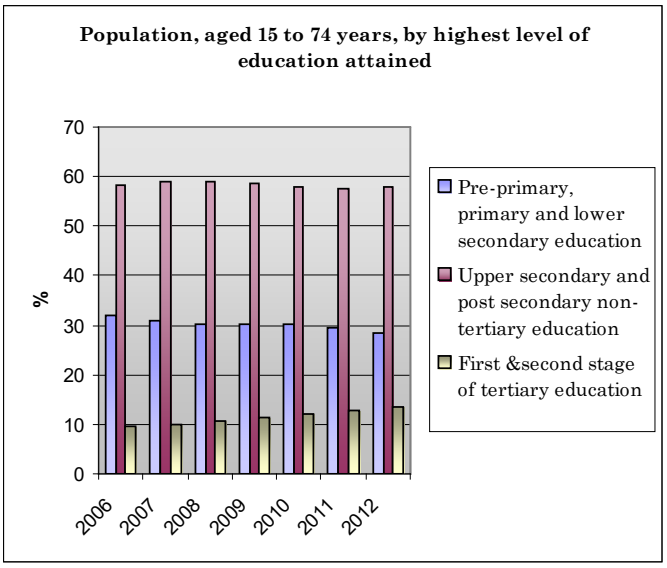
But, what is the human capital? According to Kehinde and Ogunnaike the human capital is that intangible factor of the production that brings human intellect, skills and competences in the production and provision of goods and services. It is that human capability and productivity engendered through knowledge and skills acquired from education, training and experience and facilitated by an enabling environment. Human capital is the stock of accumulated expertise that values a workers' productivity. It is the result of the past investment in workers. It enhances their productivity and thus their current and future in comes. (…) In any country there can be no meaningful economic growth without adequate human and natural resources. (Kehinde & Ogunnaike, 2011)

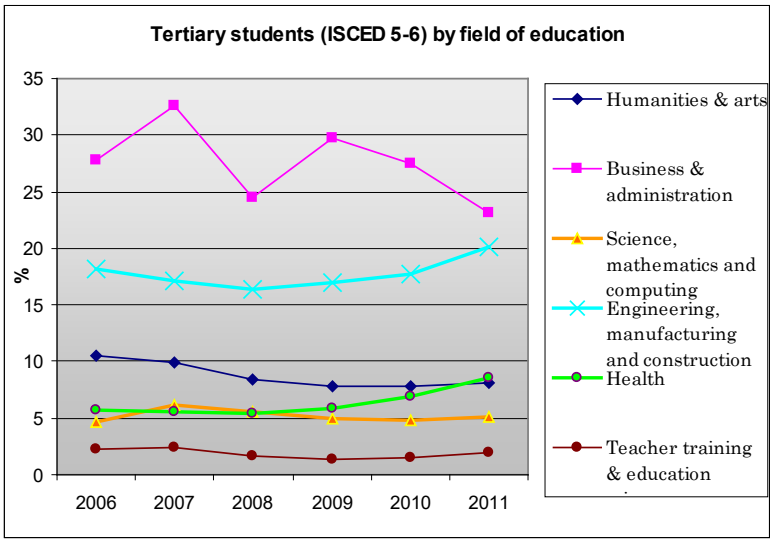
In the spirit of those presented, in the following we'll show the evolution of indicators that are, in the authors' opinion, relevant to the analysis.

First is relevant to present human resource structure aged 15-74 years depending

on the level of education achieved. Eurostat data shows a downward trend in the number of human resources included in the category Pre-primary, primary and lower secondary education, Upper secondary and post-secondary non-tertiary education while for those who have completed some form of higher education the trend was upward.

There have been also changes in the options of human resource regarding the tuition. In the past six years the share of students enrolled in the Health and Engineering has raised, meanwhile those in the business & administration category has fluctuated very much and, finally, recorded a considerable decrease in 2011.





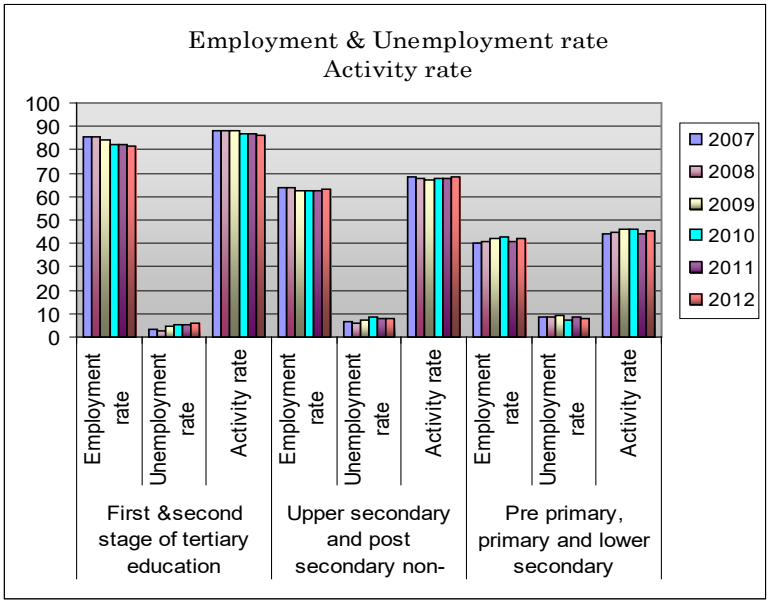
Source: EUROSTAT and author calculation

The situation can be interpreted as positive, the number of students showing greater concern of human resources for the quality of their professional training. But it is prudent to continue the analysis to obtain the relevant conclusions.

The second issue on which we will focus are employment and unemployment indicators from the perspective of educational level of those affected.

Activity rate, employment rate and unemployment rate are presented in the following graph considering the qualitative aspect of labor market and economic development in Romania.

As can be seen, for labor resources located in pre-primary, primary and lower secondary category, both, employment and activity rates, recorded a slightly upward trend, with few exceptions. The unemployment rate for this group fluctuated very little reaching the minimum in 2010. For those in upper secondary and post secondary non tertiary education unemployment rate peaked in 2010 (8.3%) and then began to diminish. Employment rate and activity rate for this category also recorded a minimum in 2010 but then began to increase.



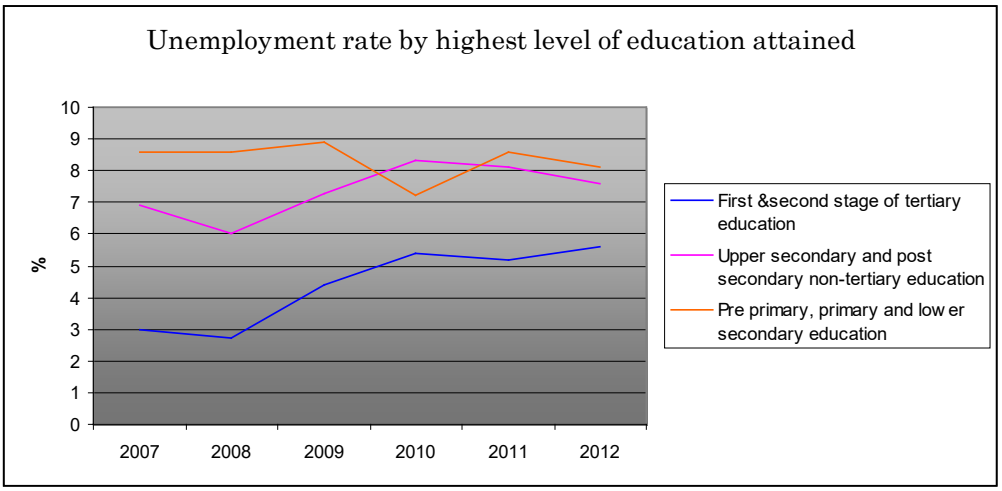
Source: EUROSTAT

Not the same situation can be observed for the category that is the most linked to what we mean by human capital (without considering all labor resources included here as authentic human capital).

Employment rate and the activity rate of those in first & secondary stage of tertiary education category showed a steady decrease in the period considered, from 85.8% to 81.4% for the employment rate and from 88.4% to 86.2% for the activity rate.

Along with these developments, the unemployment rate for this group was the only one that has maintained its upward trend after 2011. Lack of jobs for people with superior training can be attributed to the economic

crisis but rising unemployment for this category for such a long period of time generates a loss of human capital that Romania cannot afford it. The lack of a coherent strategy at national level to determine the capitalization of high level trained human resource will bring Romania in the state in which it cannot apply measures aimed to put the economy on a path of recovery. If the time will continue to pass without any measure in this respect, in Romania will not remain capable people, intellectually, physically and financially, to do this. The educational system, especially at the higher level, is trying to adapt to the labor market demands, but, if the conditions offered to human resource are poor, this will still prefer getting diplomas and certificates in the country (which means big spending for Romanian state) and finding a job abroad.



Source: EUROSTAT and author calculation

For the picture to be complete it is necessary to present official available jobs as they are submitted by National Agency for Employment (NAE).

According to the results of the economic statements of economic agents on job vacancies, in the National Agency for Employment (NAE) official records are registered 10 218 jobs, on February 19, 2014.

At national level, people with higher education are offered 1175 jobs while for people with secondary education, vocational education and unskilled are available 9043 jobs from which 13% for unskilled workers. (NAE, 2014). Of all the jobs offered to higher education graduates more than a third are offered to engineers while for those who attended medical field there is no available job. That given an increasingly number of students opts for higher studies in health. The trend regarding medical graduates is to leave the country and finding jobs abroad. Romania will only spend money preparing these students but will have no benefit from them. It is another proof of financial and human waste. Also, the large number of jobs provided for unqualified people discourages the human resources to invest in its human capital and to find a job on Romanian labor market.

Human resource situation in Romania is a difficult one but this is not only due to the economic crisis but primarily to a lack of valuing it through programs designed to highlight it and to keep it within the country.

Losses are not only quantifiable and their analysis and prevention involve political will. Until then, the human resource in general, the labor one especially, will try to find a way that will ensure their living, more or less decent, more or less legally.

5. Conclusions/Discussions and implications

Conclusions drawn from the data presented so far are:

1. Human resource in Romania, although deeply affected by the economic crisis tried to find a solution for exiting the crisis by its own;

2. Human resource revenue has fluctuated a lot, and do not allow the long time organization of life;

3. A percentage increasingly larger of those affected by unemployment cannot enter the labor market in a reasonable time so they lose their ability to work efficiently.

4. Approximately one in four employees has a job on the black market

5. Human capital is not encouraged nor supported. Consequently, those who can understand and help overcome the economic crisis are either marginalized, emigrate or simply remain inactive.

The entire from the above make up a clear picture of the impact of the economic crisis on human resources in Romania. Legal financial sources to support life are increasingly fewer and frail while black market absorbs increasingly more and more labor resources without alternatives. Highly qualified human resource is more looking towards countries that can provide decent working and life conditions (even if they themselves are going through financial difficulties) and this situation will soon generate an acute shortage of specialists able to restart the social and economic engine in Romania. All this is happening, while a part of the younger generations have quit the fight for their future and the other part loads the social costs of Romania preparing their departure to other horizons. But, this is also a topic of a future research that will address the question, to what extent the young generation can / want and try to develop the Romanian economy and society and to what extent the Romanian State has a strategy in this regard.

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The effects of income inequality

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Abstract: *Over time have been addressed many possible effects arising from inequalities of income. Criticism for each of these effects were immediate, most of them claiming that the selection of samples used to demonstrate the assumptions made were „carefully" selected in order to achieve the target and that there is not a direct relationship between income inequality (their increment) and these effects.*

Of the many effects that income inequalities have, identified in the literature, this paper will analyze three of them, namely: economic growth, human capital and social cohesion.

Keywords: income inequality, social cohesion, economic growth, human capital

Introduction

Inequality is one of the critical factors impacting the progress of a process of development in a society. Other factors also have an impact, such as health and education level of the population; scientific and technological development; competitive economic system, value chains, production networks and business units to which they belong; environmental protection; degree of social cohesion; effectiveness and transparency in the

management of public affairs. The impact of all these factors on development is felt in all countries and regions, but with particularities of each set of national and / or regional circumstances.

Influencing factors of income inequality previously presented influence and condition each other. It is not always clear which is the cause or effect, because relationships can evolve according to circumstances arising and, therefore, as well as the specific importance of each factor acquired in the evolution of society.

1. Income inequality and economic growth

Contemporary global economy is characterized by the fact that there are large inequalities of income by the current economic liberal paradox. There are many developing countries which records high levels of economic growth, but still have high income division in terms of income inequality.

Income inequality is a difference which arises because of large divisions in personal economic and non-economic income of people. Economic growth is assumed to occur when individuals use their resources and rearranges / recombine it in ways that make them more valuable (generates added value). Recombination processes of resources must be innovative to support the economic growth rate. Growth is essential to increase economic income for participants. The problem I want to analyze is if income inequality is necessary to achieve economic growth or undermine it.

Todaro[1] made four arguments according to which a higher level of equality for developing countries could be a prerequisite for a sustainable economic growth. Thus, inequality would lead to: non-productive investments of the rich, a lower level of human capital of the poor, the consumption among the poor based on local goods and a rejection of the politics of the masses (ordinary citizens).

Starting from an endogenous growth model in which human capital endowment is considered heterogeneous and capital markets are considered imperfect, Aghion, Caroli and Garcia-Penalosa[2] argue that there are at least three reasons why inequality has a nevatively direct impact on growth, namely: reduces investment opportunities, reduces borrowers incentives, generates macroeconomic volatility.

In the same context, Knowles[3] highlighted four ways in which inequality can harm economic growth. The first argument is that an unequal income distribution will create pressure in terms of redistribution and therefore will reduce growth. The second argument is that inequality may lead to social and political instability, which will reduce investment and growth. On the other hand, inequality may lead to a reduction of investment in human capital and hence to a reduction in growth. The last argument refers to the effect that inequality has on fertility

[1] Todaro, M. P., Economic Development (6th ed.), London: Longman, 1997, p. 151

[2] Aghion, F.; Caroli, E.; Garcia-Penalosa, C., Inequality and Economic Growth: The Perspective of the New Growth Theories, Journal of Economic Literature, Vol. 37, No.4, 1999, pp.. 1615-1660

[3] Knowles, S., Inequality and Economic Growth: The Empirical Relationship Reconsidered in the Light of Comparable Data, University of Otago, 2001, p. 26-27. – disponibil la http://otago.ourarchive.ac.nz/bitstream/handle/10523/1079/DP0105.pdf?sequence=3&isAllowed=y – accesat la 20.08.2014

change which may also lead to a decrease in investment in human capital, with negative effects on growth.

Arguments to the effect that redistributive policies can support growth by reducing inequality, are not new. According to the model of growth presented by Su[4] , if inequality is seen as a negative factor for social institutions (and the environment), then the elasticity of production factors substitution in developed and developing countries will increase, causing a decrease in aggregate production and a slowdown in economic growth in all countries.

According to Banerjee & Duflo[5] , opportunities for economic growth do not automatically translate into real growth. According to them, when the economy grows, people with high income are experiencing an inequality decline, while the opposite is the case for low-income people. The belief that investors should be encouraged by government incentives to save is less convincing because developed nations spend billions of taxpayers' money to rescue financial institutions led by the elite. Redistributive policies such as education subsidizing in order to invest in human capital can have very good results for economic growth and reducing income inequality.

Technological and mass export of developing countries can only provide higher returns for educated and skilled people. He also argued that technology has completed the tasks performed by skilled workers such as financial sectors, while in some cases replaced unskilled work in factories, mines etc.

By investing in human capital countries can enjoy a more equitable economic growth. There are other benefits of equal societies. Japan is considered one of the most egalitarian societies, people having a long life, crime is low and there are low levels of violence. Kay[6] argues that deaths among men of working age are uncommon in egalitarian countries such as Sweden, than in less egalitarian countries such as England or Wales. An egalitarian society brings with it less social stress for both rich and poor. It also creates a suitable environment to attract foreign investment.

Another approach to inequality is given by Sen[7] who considers that income inequality may differ substantially from inequality on other relevant issues such as welfare, freedom and different aspects of quality of life. He claims that should not be made an identification of economic inequality with income inequality, without taking into account the neglect deprivation of unemployment, sickness, lack of education and social exclusion.

The positive effects that come with an egalitarian society are some that each country should aim, but the reality is that countries that engage in massive social programs are well developed and rich countries (eg Scandinavia). A government may allocate

[4] Su, Q., Factor Movement and Economic Growth, Working Paper, Institute of Management, Humboldt University of Berlin, 2001, p. 16-21 – disponibil la http://www.econbiz.de/archiv/b/hub/management/inequality.pdf - accesat la 15.09.2013

[5] Banerjee, V. A.; Duflo, E., Inequality and Growth: What Can the Data Say?, 2003, p. 2-3 -disponibil la: http://www.budgetspeechcompetition.co.za/download_files/UG_Article%203.pdf – accesat la 15.09.2013

[6] Kay, J., Financial Times. The benefits of equality, 2009 [Online]. Disponibil la: http://www.ft.com/cms/s/0/3a901490-15b9-11de-b9a9-0000779fd2ac.html

[7] Sen, Amartya, Dezvoltarea ca libertate, Editura Economică, București, 2004, pag. 20

funds for these programs but, in general, the effects will be short-term and this will inevitably put the economy in the way of destruction. The alternative to this is to promote policies that will reduce long-term income equality and ensure that the country maintain sustainable growth levels. The objective of governments should be pursuing sustainable long-term positive effects. Income inequality is necessary in some way for economic growth and redistributive policies are a short term solution, causing economic distortions and may leave an inefficient economy.

2. Income inequality and human capital

According to the dictionary of poverty[8] , "human capital consists of educational capital (skills acquired by individuals in training school, but also outside it) and biological capital (physical abilities of individuals, synthesized mostly by health) ".

The relationship between education and labor productivity growth is base of "human capital theory" initiated by Becker in 1964, which assumes that education and professional training are the main source of future income.

According to the theory of human capital wage differences can be explained based on different investments in education, made by individuals.

Human capital can be acquired before entering the labor market through school years or over working life due to continuing training. Investing in education can be regarded as any investment: individuals accept "to sacrifice" today, if in the future this will bring additional income. "Sacrifices" can be seen both in the form of direct costs (eg tuition costs) and the form of indirect or opportunity costs (the amount of money that an individual would have obtained if they had not invested in education). Depending on the expected costs and income levels, an individual can invest more or less in education.

Among the factors that influence an individual's opportunity to invest in education we can include:

- Skills of individuals - positively influencing the duration of studies and reduce the cost of education;

- The family - which directly affects the duration of studies through several channels. Firstly the transmission of knowledge from one generation to another and secondly through social relations that they have;

- Financial situation of the family from which the individual comes - a good financial situation will positively influence the duration of the studies, however a precarious situation will cause dropouts.

Income inequality has a strong tendency over generations and is regularly transmitted from parents to children. A "disadvantageous family heirloom" usually affects negatively the opportunities of children in terms of both the education and future earnings. For example, when children are selected in different schools, depending on their ability and merit (often related to their socio-economic status) and there is no mobility between these schools, the family becomes extremely important.

The exclusion in education can occur both in access to education, quality of education, or results of this process and can have a cumulative effect lasting negative consequences. Education systems that separate

[8] www.iccv.ro/romana/dictionar/dictionar.htm - accesat la 12.10.2013

pupils and students in that way, do nothing but reinforce existing inequalities rather than solve them.

With regard to training opportunities, Fischer and Kmec[9] found that living in neighborhoods with a lower socio-economic status reduces the ability of parents to convert their human capital in positive education results for their children.

Ioannides and Loury[10] emphasizes the idea that there is a well-established international consensus that social networks affect job opportunities, but there is also evidence that group differences exists in both the ability to use these networks and utility of networks itself. There are also a number of studies showing that these differences affect average group wages and influence levels of inequality.

Campbell[11] suggests that an increase in the extent of economic inequality in the United States over the past decades has intergenerational effects with broad social implications. Thus, increasing family income and wealth inequality leads to greater dispersion in the level of education, primarily because those who benefit from a lower part of the distribution of education achieve a level of education below average.

When the disadvantage caused by human capital "inherited" is compounded by the racial disadvantage, the effect is even greater, and the racial gap in education becomes larger.

Because the success on labor market is often related to academic achievement, the result of extending disparities in access to education will probably be a further increase in income inequality. Thus, the cycle of disadvantages that we have already seen is likely to be further increased if there are not adopted policies to counter or at least to mitigate the effects of growing economic disparities.

A potential productive route would be to provide greater resources to improve school education at all levels of schooling. Tuition subsidies to encourage secondary schooling may be another solution. Tuition costs are significantly and negatively associated with high school completion and enrollment suggests that subsidies are likely to be more effective if young people and their parents are informed about it during the high school years, long before reaching the point of deciding whether or not to apply for college.

Another factor that expresses strong impact on the level of education attained by an individual is the education level of the parents. Studies show that socio-cultural structures reproduce, so the current educational structure will depend on the past, people from educated families tending to become more trained and vice versa. Also entail an increase in the average level of school education, the trend is determined by cultural modernization, technological progress, increased quality of life and level of aspirations etc.

[9] Fischer, M; Kmec, J. A., Neighborhood Socio-economic Conditions as Moderators of Family Resource Transmission: High School Completion among at-Risk Youth, Sociological Perspectives, Volume 47, No. 4, 2004, pp. 507-527.

[10] Ioannides, Y.M; Loury, L.D., Job Information Networks, Neighbourhood Effects, and Inequality, Journal of Economic Literature, Volume 42, No. 4, 2004, pp. 1056-1093.

[11] Campbell, Mary; Haveman,Robert; Sandefur, Gary; Wolfe, Barbara, Economic inequality and educational attainment across a generation, 2005 disponibil la http://www.irp.wisc.edu/publications/focus/pdfs/foc233b.pdf

3. The influence of income inequality on social cohesion

When Henry Ford began his career in automobile construction, he paid his employees a salary double than the competition. This infuriated competitors who wanted to know the motivation of this gesture. Ford's answer was very blunt: "I want my employees to be able to buy the cars they produce" (as a side effect, the quality of Ford cars dramatically improved). This is a lesson that managers with "unjustified" large salaries have completely forgotten about.

Social cohesion is a characteristic of a society based on social connections and relationships between social units and individuals, groups, associations and between teritorial units. Sociologist Emile Durkheim was the first to use the concept of social cohesion. He believed that social cohesion is a future order of society and defined it as interdependence characterized by loyalty and solidarity among members of society. Issues often referred to in the description of social cohesion are: strengthening social relationships, shared values and existence of a common way of interpreting, living a common identity and a sense of community and trust among community members.

Social cohesion is a characteristic of the social environment, characteristic that favors development, equitable economic growth. This is based on what is defined as social capital, ie norms, networks and other forms of social relations and implies people's confidence that their common shares will benefit in the long term, even if short term entail losses. More specifically, social cohesion implies avoiding deepening inequality and social exclusion, strengthening feelings of trust and confidence and spirit of cooperation, building transparent institutions, accountable and flexible to manage risks and rewards.

In addition to affecting levels of trust and civic engagement, inequalities in society, proved to be highly correlated with crime rates. Economic inequality affects crime through psychosocial processes that influence social interactions, cultural norms, values and behavior. They can be affected by inequality, by social status, social support, community cohesion, self-esteem, sense of control over one's life, loneliness, tension, anxiety, confidence, and depression.

Most studies that have examined the relationship between crime and inequality have focused on homicides - since homicides are almost identical defined in all nations and jurisdictions. These studies show that the trends for violence are more common in societies where income differences are larger. The research was conducted comparing developed countries with less developed countries, and by studying different regions within countries.

Elgar and Aitken[12] analyzed how income inequality leads to an increase in crime. In the 33 countries analyzed, they found some statistical links to prove the link between inequality growth and increasing crime. According to the results found, the correlation between income inequality and trust was 0.64, and between inequality and homicide 0.8. They found no link for tending of more egalitarian societies to increase spending on health and education.

They concluded that "companies which record large differences in income and low

[12] Elgar, Frank J; Aitken, Nicole, Income inequality, trust and homicide in 33 countries, European Journal of Public Health. 2010, pp.1 Disponibil la: http://eurpub.oxfordjournals.org/content/early/2010/06/04/ eurpub.ckq068.full.pdf +html

levels of confidence can deprive society's ability to inhibit violence and creating a safer community."

Gilligan[13] , who, as a prison psychiatrist, examined issues of violent men, argues that inequality makes people more sensitive to the experiences of inferiority, such as a lack of respect, lack of confidence and humility - situations that are among the most common causes triggering violence

Daly, Wilson and Vasdev[14] found that among US states and Canadian provinces there is a tenfold difference between homicide rates relative to the degree of inequality. They estimated that about half of all changes in homicide rates can be explained by differences in levels of inequality present in each province or state.

Lederman, Fajnzylber, Loayza[15] found a similar relationship worldwide. They used changes in various measures in the Deininger-Squire data inequalities to predict changes in the offenses of murder and robbery in 20 industrialized countries and 19 middle-income countries between 1965 and 1994. To measure these changes they used average levels of inequality and crime for different periods (because not all countries had data for all 6 possible periods) of 5 years in each country. They found a strong relationship in these countries between trends in inequality, homicide and robbery. This relationship has been confirmed regardless of the way in which the inequalityis measured. They also found a strong correlation between policy measures of violent crime in successive periods of five years.

Richard G. Wilkinson and Kate Pickett's[16] research have also presented evidence that both social cohesion and health problems of the population are higher in countries or jurisdictions where economic inequality is higher. They point out, for example, that crime, mental health problems and teenage pregnancies recorded are lower in countries like Japan and Finland (or in general the Nordic countries) compared to countries with a higher degree of inequality, as for example USA and Great Britain.

Wilkinson, Kawachi and Kennedy[17] showed an inverse relation between income inequality and social cohesion. In countries where there is a greater equality, it is more likely that people trust each other, social measures suggests greater community involvement, and homicide rates are considerably lower.

Eric Uslaner and Mitchell Brown[18] showed that there is a high correlation between the trust that citizens have in society

[13] Gilligan, J., Preventing Violence, Thames and Hudson: London, 2001, pag .12-15

[14] Daly, Martin; Wilson, Margo; Vasdev, Shawn, Income inequality and homicide rates in Canada and the United States, Canadian Journal of Criminology, April 2001, pp. 219-236

[15] Lederman, Daniel; Fajnzylber, Pablo; Loayza, Norman, Inequality and Violent Crime, Journal of Law and Economics, Vol. 45, No. 1, Part 1 May 01, 2002, pag. 2-4

[16] Wilkinson, Richard G.; Pickett, Kate, The Spirit Level: Why More Equal Societies Almost Always Do Better, Penguin, 2009, pag. 15-18

[17] Wilkinson, Richard G.; lchiro Kawachi; Bruce P. Kennedy, Mortality, the social environment, crime and violence, Sociology of Health and Illness 1998, 20, pag. 578-597;

[18] Uslaner, Eric.; Mitchell, Brown, Inequality, Trust, and Civic Engagement, American Politics Research, , Sage Publications ,Vol. 33 No. 6, Noiembrie 2005, pag. 868-894

and the degree of equality / inequality of income.

Other studies[19] have also found that people from different countries or regions with high levels of inequality tend to be less confident in state institutions and politicians. Low confidence can make voters more skeptical about promises that health will be improved through public spending.

If the Meltzer-Richard[20] hypothesis is correct, greater economic inequality among voters should make median voters more likely to support government spending on health and education.

Alesina, Baqir and Easterly[21] shows that the average public property for members of the community will decrease when the heterogeneity increases. If income inequality makes voters preferences more heterogeneous, this could reduce government spending on health. In addition, increasing economic inequality may permit the rich to afford the purchase of a larger political influence that could lead to reductions in government spending on health and education. Schwabish[22] used transnational data to show that a greater distance between the 9th and 5th decile of the income from the market, determines the rich to increasingly support less public spending. However, the mechanisms that determine this relationship are not clarified.

Low confidence can be also linked to friendship groups or smaller social networks that are associated with mortality of more advanced age specific.

While the vast majority of research in this area confirms the link between income inequality and violent crime, the evidence presented have their opponents. Neumayer[23] is one of the scientists who question the link between inequality and violent crime (homicide and robbery). He recognizes that this relationship is widely accepted among academics and international agencies, including the World Health Organization and the World Bank. But using data from the international database of income inequality (http://www.wider.unu.edu/research/Database/en_GB/database) he suggests that there is no link between income inequality and robberies. He argues that this is evidence that "effects / country specific elements" influence inequality and crime, such as for example - cultural differences. However, such effects

[19] Alesina, A. ; Ferrara, E., Who trusts others?, Journal of Public Economics, Volume 85, No.2, pag. 207-234.

[20] Meltzer, A.; Richard, S., A Rational Theory of the Size of Government, Journal of Political Economy, Volume 89, No. 5, 1981, pag. 914- 927

[21] Alesina, A.; Baqir, R.; Easterly, W., Public Goods and Ethnic Divisions, Quarterly Journal of Economics, ,Volume 114, No. 4, 1999, pag. 1243-1284.

[22] Schwabish, J.; Smeeding, T.M., Osberg, L., Income Distribution and Social Expenditures: A Cross-National Perspective, 2004, pag. 32-34 – disponibil online la http://www.russellsage.org/sites/all/files/u4/Schwabish,%20Eriksen,%20Marchand,%20Smeeding,%20%26%20Osberg_Income%20Distribution%20%26%20Social%20Expenditures.pdf – accesat la 12-10.2014

[23] Neumayer, Eric, Inequality and violent crime: evidence from data on robbery and violent theft, Journal of Peace Research. 2005, vol. 42, pag.101-112

have been taken into account by Fajnzylber, Daly and other researchers mentioned above. Another explanation of Neumeyer's findings could be that he analyzed more the robberies problem rather than a homicide, and these types of offenses have different relationships to inequality. In addition, data related to robberies are well known to be less reliable than data related to homicides, especially for international comparisons because of different definitions and interpretations of these offenses that each state have.

Conclusions

The diversity of income sources make social policy of income domain one particularly complex. Economic inequalities between individuals or states are inherent, as - under certain conditions - is inherent in their emphasis. Studies on the evolution of income inequality have identified their downward trend during the "gold" of the welfare state. With the start of the reform process of social protection systems, due to the focus on enhancing individuals' responsibility to ensure their own wellbeing, income inequalities in society began to widen.

Social policy income must retain the role of national economic growth factor and shall not restrict (through inadequate support) future development. With this in mind, it is necessary that redistributive social protection, achieved through financial support, to be harmonized with the distributive, achieved by regulations to stimulate innovative capacity (entrepreneurial), work motivation and professional development.

Directions adjustment redistribution should consider providing a social minimum, to be completed with facilities that encourage individuals to be concerned with achieving revenue consistent with the possibilities, but also their expectations, while promoting private insurance . In social policy of income, tax system is assigned to a distinct role designed to reward the efforts of self, and personal development made by individuals.

An divided economy (society) tends not to provide equal opportunities to individuals that compose it, cleavages (seen in many facets: financial potential, social status, etc.) are becoming more meaningful; such, a person is born in a family with a low living standards (in conjunction with, for example, a below-average educational level of the family) has fewer opportunities - theoretically on - to exploit the true potential to a person enjoying an existential context on the opposite to previous illustration.

Trust between people is higher in countries with less inequality and statistics measuring their involvement in community life and social capital shows similar relationships. Economic inequalities contribute to division of society and social corrosion. They adversely affect the quality of social relations in a society.

To fight against inequality, an individual outside the richest quintile should educate themselve become more competitive on the labor market (if owns necessary resources) but must be supported by policy factors, political representation of interests of the majority of citizens.

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21. **Wilkinson, Richard G.; lchiro Kawachi; Bruce P. Kennedy**, *Mortality, the social environment, crime and violence*, Sociology of Health and Illness, no. 20, 1998

22. **Wilkinson, Richard G.; Pickett, Kate**, *The Spirit Level: Why More Equal Societies Almost Always Do Better*, Penguin, 2009

23. www.iccv.ro

Of academics and professionals: The difference is in the pay

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Abstract: *University professors, on the one hand, and professionals, such as doctors and lawyers on the other hand share many things in common, yet they are also different in key aspects. One of the most important differences lies the nature of the incentives and motivation to which they respond. This paper claims that turning academics into regular professionals would have far-reaching consequences from a wider social perspective. Emphasizing monetary rewards at the expense of intrinsic drivers would most likely change the nature and structure of the academic output.*

Keywords*:* academia, monetary incentives, peer-production, public goods

JEL Classification: H44, I23, L33, M52

1. Introduction

In 2012, Philip Altbach, director of the Center for International Higher Education at Boston College edited a book of readings called "Paying the Professoriate: A Global Comparison of Compensation and Contracts." The volume could not have come at a better moment. It provides an international comparison of salaries in twenty-eight countries, across a wide variety of universities. Some of the findings are enlightening, although not surprising. In lesser developed countries, such as Armenia, Russia, and China, academics earn a very low pay and are compelled to rely on moonlighting in order to significantly supplement their income. In some cases, salaries are so dismal that university professors need to more than double their pay just to make ends meet. Even in countries in which pay is relatively more substantial, academics hold a second job, such as consulting or even something totally unrelated to their academic credentials. Obviously there is a brain drain from countries such as India, China, Russia, and others to countries, such as Canada, the United States, Germany, Australia, and similar. But the most damming finding appears the fact that salaries in academia lag behind the pay received by other professionals, such as lawyers, medical doctors, counselors, psychologists, engineers, and architects. This appears true across the board, including developed countries. Even academics who teach and research in law, business, or engineering tend to be underpaid relative to those who actually practice law, business, or engineering.

The authors of the volume on academic pay consider that the viability of the education systems is contingent on the ability to recruit talented and capable academics. It stands to reason that in order to produce high quality research and scholarly work, one has to rely on outstanding talent. In order to have competent and well-rounded graduates, able to function as engaged, productive, and responsible citizens, one has to ensure excellence in teaching. This obviously requires the best and the brightest of academics.

In Canada and the United States, business schools are already paying a market differential to attract professors to teach disciplines such as Finance, Accounting, Marketing, Management and Human Resources. Business professors are invariably paid more than they counterparts teaching English Literature, Philosophy, or History. In accounting, starting salaries for young and inexperienced assistant professors routinely edge above $100,000/year; yet, it is increasingly difficult to find qualified accounting graduates holding a doctorate and willing to engage in a career of teaching and research. Accountants can easily double this amount by taking a job with an accounting firm, or any other successful corporation.

Philip Altbach seems to conclude that by underpaying university professors relative to other professionals, one is jeopardizing the health and viability of the higher education system as a whole. The entire analysis and discussion that leads towards this conclusion is predicated on the assumption that academia is yet another form of professional activity. This begs the question of whether academics are indeed professionals, and if their activity and pay should be compared to those of other professionals.

This paper claims that academics are quite different from most professional categories, although they are many common characteristics. The desire to compare

academic pay to those of other professionals is humanly understandable, yet trying to turn academics into regular professionals would have far-reaching consequences from a wider social perspective. Emphasizing monetary rewards at the expense of intrinsic drivers would most likely attract the "best and the brightest," but it would also change the nature and structure of the academic output. The next section compares and contrasts the characteristics of universities and those of professional organizations. Section three discusses in more detail the implications of turning academics into professionals, and section four concludes.

2. Of academics and professionals

Professional organizations bear significant resemblance to universities, however, they are quite distinct from them in many key aspects (Table 1).Professionals are highly educated and skilled individuals who deliver a specialized service at market prices. In a vast majority of cases their skills are transferable from one institution to another. The output, although intangible is generally a good destined for private consumption. An attorney representing a client in a divorce proceeding, a plastic surgeon performing a face lift, or an architect producing the blueprints of a new condo building represent classic examples.

Because the economic output of professional organizations is sold at a price, subject to supply and demand, it is relatively easy to perform a cost benefit analysis, and economic performance metrics are relatively straightforward to use and interpret. Professionals represent strategic assets for the organizations that employ them; this is why the governance structure of these organizations is rather flat. While social status and reputation probably represent important drivers for medical doctors, lawyers, engineers, and architects, monetary rewards are also very important in motivating their work.

Table 1. A comparative analysis of academics and professionals.

	Academics	**Professionals**
Skills	Specialized and general	Specialized & transferable
Education	Graduate and post-graduate	Undergraduate and graduate
Human capital	Strategic asset	Strategic asset
Output	Intangible, mostly public goods	Intangible, mostly private goods
Incentives	Social status & intrinsic rewards	Social status & monetary rewards
Economic paradigm	Peer-production, outside the market	Supply and demand, within the market

Unlike most professional organizations, academia is to a great extent a peer-production network delivering mainly intangible public goods. Universities have been the pioneers of the knowledge economy. The economic output of universities is manifested in several discernible ways [Valsan and Sproule (2008)]:

(i) Creation of knowledge. Without a doubt, knowledge is largely responsible for bringing about significant social and economic change [Romer (1986) and (1990)]. While knowledge has always been the main catalyst of economic and social endeavors, it has increasingly become the main ingredient and output of the socio-economic process.

(ii) Investment in social capital. The creation of objective knowledge and its dissemination play a paramount role in maintaining the coherence of our system of social and cultural organization. The open society needs engaged citizens, sharing common values, who are aware of their their socio-economic environment, and are able to make responsible choices [Veblen (1918), Popper (1945), Hayek (1960), Kamens (1988), Milligan et al. (2004)]

(iii) Investment in human capital. The output of higher education has a private component, in the form of increased earning power of graduates; and a wider social component, in the form of increased productivity and economic growth for society at large [Romer (1986) and (1990)]. Ashenfelter and Rouse (2000) contend that the relationship between (higher) education and earning power is arguably one of the best-documented in economics.

(iv) Signal of quality: The degree granted by universities signal that graduates have undergone a systematic process of evaluation consistent with widely accepted quality assurance standards. The ultimate beneficiaries are the graduates themselves who can claim credible quality; potential employers who can differentiate among potential candidates; and society at large who benefits from a better allocation of human capital.

The bulk of the academic output cannot be traded in the market at prices that reflect supply and demand. The main private good component of university output is the enhanced earning power of graduates. Knowledge and social capital are public goods by excellence.

Universities operate to a great degree outside financial and product markets. They raise financial capital from taxpayers, donors, and students, and human/academic capital from academics and other scholars. The constituencies who benefit from their output include, but are not limited to: students, graduates, the academic community, businesses, not-for-profit organizations, taxpayers, and others. Students and academics engage in both public and private consumption.

Universities deal with easy to quantify immediate financial costs but with economic results that are vague and distant into the future. Because economic results are so hard to ascertain, measuring economic performance is very problematic. There are very few objective metrics of operating and economic performance, if any. Human capital represents the main strategic asset of academia. Unlike in the case of a majority of

for-profit corporations, strategic assets cannot exist on their own, independently from the providers of capital. The technological core of the university cannot be divested and sold piecemeal on the market.

Since an overwhelming portion of the academic economic output is made of intangible, public goods, and the main strategic resource is human capital, the more efficient form of activity is peer production – that is, self-organized collaboration outside the market.

3. Should academics be treated and paid like other professionals?

Academics have always complained about relatively low pay. The aforementioned book lends more credibility to their claims. In many countries, university professors actively lobby for higher pay. In professional schools, such as business, medicine, engineering, and law, the lure of high paying professional jobs have forced many universities to pay market differentials, as already indicated above.

Moreover, universities have increasingly moved to embrace academic capitalism – a concept centered on market transactions, performance metrics, and competitive pay.

The ascension of performance metrics and quality assurance standards in higher education is hailed not only by professors, but by administrators as well, for it legitimizes control over university resources and more generous compensation packages.

Nowadays, top university managers increasingly require the perks and lifestyle traditionally reserved for top corporate executives [Valsan and Sproule (2008) and (2010)]. Both in Canada and the United States, some university presidents earn like Fortune 500 CEOs. By the early 2000, five university presidents in the United States already earned over $1 million, with a median compensation for the job $360,000 . In Canada's public university sector, administrator's pay is lagging somewhat behind that of their American counterparts; yet, faculty unions wield formidable strength and push academic salaries up year after year. However, academics are chasing a moving target, because doctors', engineers', and lawyers' pay is edging even higher.

There is no denying that academia is already undergoing a transformation process destined to make it more like a professional organization. This is done by (i) moving from peer evaluation of performance based on trust to "objective" performance metrics; and (ii) increasing emphasis on monetary compensation at the expense of intrinsic motivation. The important question here is whether this metamorphosis is warranted. The current paper argues that moving to a profession-like paradigm represents a fundamental change with profound implications for the social and economic nature of the modern university. This in turn has far-reaching consequences for society at large.

To the extent to which measuring teaching performance relies on teaching questionnaires and satisfaction surveys, the quality of the economic signal represented by the degree granted by the university might become diluted. There is a perverse incentive for both professors and students to collude and reward each other in the classroom at the expense of the education process [Valsan and Sproule (2008) and (2010)]. However, teaching performance based on "objective" metrics and research measured in funding,

grants, and industry profits allow administrators to gain more control over how academics are compensated. A gradual switch towards monetary compensation would impact the motivation of academics already in the system and attract a different profile of university professors, that is, those who are more interested in monetary rewards.

Yerkes and Dodson (1908), and Ariely, Gneezy, Loewenstein, and Mazar, (2005) argue that "excessive incentives could undermine task performance," although the motivation might remain unchanged. Vohs, Mead, and Goode (2006) show that significant monetary rewards bring about "a self – sufficient orientation," and make people less willing to cooperate. It is obviously hard to preserve the motivation for collective action when the monetary incentive cancels the intrinsic willingness to participate in creating the public good. Moreover, mentioning monetary payment is often sufficient to switch the perceived relationship from a social-market relationship (in which intrinsic motivation is the core) to a money-market relationship [Heyman and Ariely (2004)]. Once a social relationship converted into a market relationship, there is no room for coming back [Gneezy and Rustichini, (2000)].

The most significant results of this re-orientation towards top-talent sensitive to top-pay is to emphasize the private component of the academic output. Universities would no longer invest in social capital and create objective knowledge, freely available to all; they would rather focus on enhancing the earning power of a select social strata, thus creating proprietary knowledge to be used by corporations in delivering private goods to an increasingly monopolistic market.

Intangible public goods are hard to measure and ascertain. Delivering them relies on trust, and the good will of economic agents (i.e., academics in this case), which in turn rest on a strong intrinsic motivation that extends well beyond monetary rewards or administrative penalties. A more professional-like university would turn away those motivated by intrinsic rewards – precisely the profile willing and able to deliver public goods.

4. Concluding remarks

University professors on the one hand, and professionals, such as doctors and lawyers on the other hand, share many things in common, yet they are also different in key aspects. One of the most important differences are the economic paradigm and the nature of the motivation.

Traditionally, academics are part of a vast peer-production network, operating outside the market; academics are driven by intrinsic motives to deliver mostly public goods. Turning them into regular professionals requires, among other things, emphasizing "objective" performance metrics to legitimize a significant monetary compensation package. While this might attract "the best and the brightest," it might also change the whole economic paradigm. Switching from individuals primarily motivated by intrinsic rewards to individuals primarily motivated by money might decrease the total economic output of the university and modify its structure.

Appealing to extrinsic rewards would motivate those seeking higher pay, and hence would likely boost the private component of the output. Turning away those motivated

by intrinsic rewards, that is, those willing to produce outside the market and share with others, would reduce the public good component. Since the latter traditionally represents the bulk of what universities do, it is conceivable that the total economic output might eventually decrease. The re-orientation of academic output from public to private goods is not inherently better or worse; it would only require that universities be treated like profit centers from a fiscal perspective; and that tenure – one of the pillars of the current academic establishment, destined to nurture and protect academic freedom and intrinsic motivation – be called into question, for it would appear it no longer serves any useful purpose. The only question to be asked here is whether such a re-orientation is merely desirable from a wider social perspective.

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Leadership Development

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Abstract: *This paper aims at rendering the main characteristics distinguishing leaders from common individuals, as well as from managers, while identifying the progressive steps and the key elements needed for leader development. Learning how to lead oneself is a prerequisite for leading others, but without continuous training, coaching or mentoring, and above all, without effective experience, individuals will never get to become real leaders.*

Keywords: leader development, planned experience, action learning, coaching, mentoring
JEL Classification: M10, M12

1. Overview on leader development

What does leader development mean? It essentially refers to the extension of the capabilities and competences of individuals so as to effectively impact, in a positive way, by their behaviour and role playing, on the convergence of the entire organization to a common goal: success.

The issue of leader development gave rise, over time, to many disputes as for the efficiency of such an action, given the largely spread conception that true leaders rather emerge due to innate qualities of people than to acquired ones. It is generally accepted that being a good leader is indestructibly related to some pre-existing characteristics such

as courage, spirit of initiative, responsibility, capacity of persuasion, creativity, sociability, dedication and so on, but no one can contest that these ones can be cultivated by living and acting. Besides, other leader specific elements like self-awareness, self-control, self-motivation or strategic thinking or acting are mainly generated by adequate and continuous training. This is the reason why various educational programmes have been put in place in order to develop the knowledge, abilities and skills necessary to prepare veritable leaders.

2. From common individuals… to distinguished leaders

A leader is a person capable to exert influence on others by power of personal example, acting as a sort of a model that the latter feels comfortable following in order to achieve both the organisational and their own goals. Therefore, a future leader shall come to "possess", beyond the managerial-specific qualities, a series of other ones, most appreciated by people, turning himself/herself into what others would like to be.

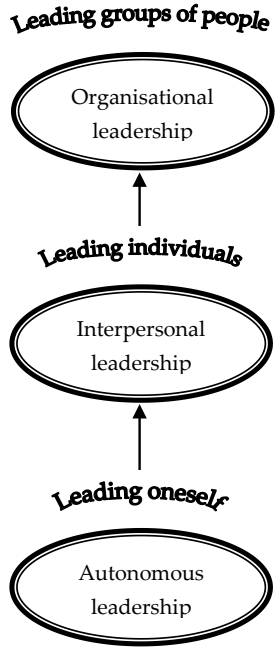
From this perspective, the road an individual shall pass in order to become a good leader encompasses at least three important stages (Figure 1), revealed hereinafter:

- *Leading oneself* -> emerging leaders. A first step for such an individual is to be his/her own leader, meaning to feel self-satisfied and self-aware and to have clearly defined vision, values, beliefs and goals. This means to have the tools necessary to master himself/herself and his/her own activities and actions and to perform a sort of autonomous leadership.

- *Leading other individuals* -> probation leaders. A second step is to be able to lead other individuals, that is, beside the above-mentioned, to know how to actively listen, communicate, negotiate with, persuade or organise the same. At this stage, it is essential to have the instruments necessary to master the activities and actions of other individuals and to practice an interpersonal leadership.

- *Leading groups of people* -> executive leaders. The third step is to be able to lead a group of people, going from a restrained one to an entire organisation, in other words to have more particular characteristics like strategic attitude, openness to change and to intercultural approach, capacity to maintain a stable environment and solid relationships and so on. This is the moment when the individual should be able to master the activities and actions of many people working altogether ,exercising the organisational leadership.

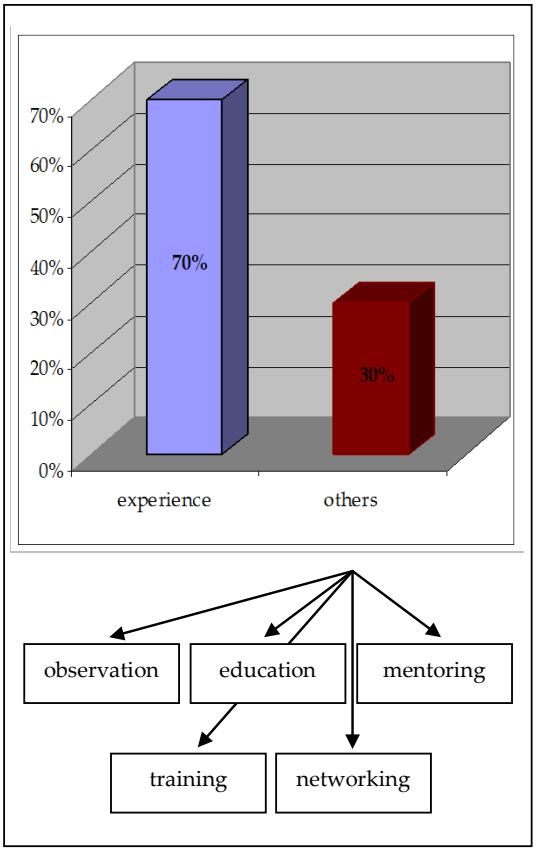
Figure 1



3. Tips to develop leaders

The previous section rendered the steps individuals should take in order to become leaders. At each stage, the future leaders develop the already acquired knowledge, skills and capabilities and acquire new ones, all this pushing them forward. Everything gathered in their way to organisational leadership is considered, according to the literature, to be mainly due, about 70%, to experience, the rest of 30% coming from observation, education, mentoring, training, networking and others (Figure 2).

Figure 2



Observation starts from early life: first we see our parents, then our teachers and later our chiefs acting as leaders and guiding us, and this makes us create models and try to imitate the behaviour of the same.

Education helps us understanding and analysing what we observe, discerning what is useful to retain from others' behaviours and experiences, acquiring knowledge and developing ourselves as persons and as future professionals.

Mentoring indicates us the right direction, the ways to find solutions to career issues, provides us with the opportunity to think about career options and progress.

Training is the core of apprenticeships, determining us to acquire vocational knowledge and skills relating to specific competencies and having as purpose to improve our capability and performance.

Networking is the source for the exchange of information or services with other individuals, groups, or institutions, helping us in cultivating productive employment or business relationships.

Experience makes us effectively learning by doing. We get experience by living, by interacting with other people, by acting. We become professionally experienced while working in our field of activity. We are able to become true leaders in time, after being just leaders, by exercising our capacity to turn into professional models for our followers.

As we can see, observation, education, mentoring, training or networking form the foundation on which the career of the future leader is build, however experience, especially the organisational one, seems to be the icing on the cake that pushes the individual towards the position of a veritable leader.

Yet, how can we take as much benefits as possible from experience? The 3 D-actions could help enhancing the abilities of a good leader:

- Discover:
  - the needs of the people you are working with
  - the needs of the whole organisation
  - the strengths and weaknesses of the internal environment
  - the threats and opportunities provided by the external environment
- Design:
  - the optimum activities, actions and tasks to be performed and their timing
  - the best methods to effectively solve problems
  - the most appropriate ways to avoid and/or annihilate conflicts
  - the modality to make people freely following you without constraint
  - the adequate incentives able to render the people you are working with increasingly efficient
- Develop:
  - new strategies for strengthening and/or improving the market position of your organisation
  - a network of sustainable relationships with the organisation stakeholders
  - an organisational culture to which the people your are working with would be willing to adhere

When speaking about leader development, we usually think about the steps an individual should take and the efforts the same should make in order to become a true leader. And it is normal for that individual to be the most interested of all in getting there. Yet, there is also another entity which should manifest interest in such respect: the organisation where the said individual performs. Any organisation attempts to be successful, to be on top in its field of activity, but this cannot be achieved without competitive people coordinating it.

Therefore, organisations, aware that current leaders would not stay around forever, have to endeavour to permanently identify capable individuals and to help the best of them turning into remarkable leaders, this supposing the use of several instruments, such as the following:

- involving individuals into in-house and/or external courses
- organising workshops and training sessions for the same
- coaching, counselling and mentoring individuals
- challenging individuals to take part in action learning
- providing individuals with planned experience by job observation and/or swaps
- making individuals play roles and simulate situations

By combining their qualities, education, training and experience, accumulated in time, with the focussed formation process provided on spot, through various means, by the organisation, individuals might be ready to become leaders, but only by experiencing as leaders, they will be finally able to distinguish themselves as true leaders.

4. Conclusions

The study puts into evidence the long and complex road an individual should pass in order to become a true leader, meaning a person with veritable qualities, able to persuade others to follow him/her, by the power

of example. Leaders develop in time, both in their own environment, by observation, education, mentoring, training, networking or experience, passing from leading oneself to leading other individuals, and in the organisational one, through specific courses, workshops, coaching, counselling, action learning, job swabs, role playing and so on, ending by leading groups of people.

Yet, becoming a leader is not the end of the road, as a leader needs to continuously develop, to acquire more knowledge, to improve himself/herself, and this is mainly related to his/her openness for discovering issues impacting on the organisation, for designing patterns to provide the well-being of the same or for developing appropriate organisational culture and strategies.

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Sony vs. Apple - iPod launching, a case study of leadership and innovation

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Abstract: *In 1979, Sony launched a portable Walkman range. For nearly a quarter of century, the Sony Walkman was the undisputed market leader and Sony was considered a top innovative company. Then, in 2001, Apple decided to launch the iPod, a new portable player. About 80% of the iPod technical components (e.g. memory, storage media) were produced by various companies within the Sony group. In 2004, iPod sales overtake Sony Walkman globally and become the new market leader in portable players. How was this possible? Theoretically, Sony held all conditions for launching the new generation of portable players, but instead, a new company – Apple – completely changed the market.*

Key words: Apple, Sony, technology, leadership, innovation

1.Introduction

Innovation can be defined as all the scientific, technological, organizational, financial, and commercial activities necessary to create, implement, and market new or improved products or processes (OECD, 1997).

This paper underline that innovation could appear in any company, not necessary the one that has all the prerequisites to provide a new innovation. Two very different firms, Sony and Apple Computer, are used as case study illustrations. In 1979, Sony launched a portable Walkman range. For nearly a quarter of century, the Sony Walkman was the undisputed market leader and Sony was considered a top innovative company. Then, in 2001, Apple decided to launch the iPod, a new portable player. About 80% of the iPod technical components (e.g. memory, storage media) were produced by various companies within the Sony group. In 2004, iPod sales overtake Sony Walkman globally and become the new market leader in portable players. How was this possible? Theoretically, Sony held all conditions for launching the new generation of portable players, but instead, a new company – Apple – completely changed the market. Innovation does not proceed through logical deduction, but rather is the result of an excellent organizational cooperation.

The companies' competitive success is relying upon the effective management of innovation. This is the reason that innovation has been the object of considerable academic study from a variety of perspectives.

2.Approaches to innovation

Maybe the most well-known concept of an innovator belongs to Schumpeter (1911; 1939). Schumpeter's entrepreneur introduces "new combinations" – new products, production methods, markets, sources of supply, or industrial combinations – shaking the economy out of its previous equilibrium through a process Schumpeter termed "creative destruction". Perhaps Kirzner best described the market impact of Schumpeter's entrepreneur when he wrote: "…for Schumpeter the essence of entrepreneurship is the ability to break away from routine, to destroy existing structures, to move the system away from the even, circular flow of equilibrium" (1973).

Schumpeter also distinguished between five different types of innovation: new products, new methods of production, new sources of supply, the exploitation of new markets and new ways to organize business. The focus of our paper is the first type: product innovation. The term 'product innovation' has been used to characterize the occurrence of new or improved goods and services.

As Nonaka and Kenney (Nonaka, Kenney, 1991) noticed, to remain competitive, "any firm must constantly be creating new strategies, new products, and new ways of manufacturing, distributing and selling. The constant reexamination, reconceptualization and reorganization are necessary—and this requires the constant discussion within the companies. The newly created information in this discussions must then be diffused throughout the firm, setting off further innovations. This diffusion within the firm is important because it allows the firm to reap more of the benefits of its newly created information."

From this point, there is only a short distance till what we call "collaborative innovation".

The collaborative innovation is seen as a social construct used to describe the teams

of self-motivated people with a collective vision, willing to collaborate in achieving a common goal by sharing ideas, information, and work.

According to Adner (2012) "the need for collaborative innovation has defined progress since the Industrial Revolution—the light bulb on its own was a miraculous invention but needed the development of the electric power network to turn it into a profitable innovation. What has changed is the way the collaboration is organized. The shift toward innovation ecosystems follows a historical trend toward greater complexity and interaction that has characterized the rise of the modern economy."

The struggle for innovation is perhaps at its highest in the high-tech industry. High-tech companies have to face the continuous technological evolution, fast moving competitors and new, innovative start-ups. Product life cycles are short, and success requires constant innovation.

Despite the large interest in the academic and business environment, the innovative behavior in organizations is still relatively underdeveloped. (Wolfe, 1994) He presents a comprehensive literature review of the innovation literature. Organizational competitiveness and effectiveness, organization cooperation have been described as extremely important for innovation, by a large number of papers. Another author (Smith, 2010) looks at the policy implications of viewing innovation as a systemic phenomenon. He provided an overview of conceptual approaches used in the recent literature on innovation systems, as well as some learning and technological knowledge at the firm-level, and explored the ways in which different theoretical approaches affect our understanding of innovation processes. This discussion focuses on the contrast between 'systems' models of learning and the concepts of knowledge which underpin the current 'mainstream' rationale for public policy in this area.

The literature includes a vast amount of research on innovation.

This paper aims at increasing the knowledge of innovation by presenting characteristics of management approaches of two case companies. These companies operate in leading industries and develop their products on a very competitive market. Special attention is paid to differences in the cooperation and management approaches between the case companies. Sometimes, the companies forget that the goal of collaboration is not collaboration itself, but results, and do not impose discipline on cooperation. Collaboration distills more than a decade of field-tested research into a disciplined approach that helps managers separate good collaboration opportunities from bad ones. Collaboration was for Apple the key used to have tremendous innovation, while Sony failed to use the companies' capabilities in order to keep the leadership in its field. The complexity of the innovation process is difficult to manage, explain and study, but also to presents problems for the development of a generalized model. The construction of a generalized innovation model is still, difficult, because there appear to be a number of different types of innovation processes.

3.Sony's Walkman vs. Apple's iPod

Sony is a Japanese multinational conglomerate corporation, focused on the electronics (TV, Gaming Consoles), game, entertainment and financial services sectors.

The company is one of the leading manufacturers of electronic products for the consumer and professional markets, ranking 87th on the 2012 list of Fortune Global 500 and 102th on the 2014 list of Fortune Global 500.

Sony Corporation is the electronics business unit and the parent company of the Sony Group, which is engaged in business through its four operating segments – Electronics (including video games, network services and medical business), Motion pictures, Music and Financial Services. These make Sony one of the most comprehensive entertainment companies in the world. Sony is among the Worldwide Top 20 Semiconductor Sales Leaders and third-largest television manufacturer in the world, after Samsung Electronics and LG Electronics. Sony was founded in 1946, when Masaru Ibuka started an electronics shop in a department store building in Tokyo and rapidly expanded. The first Sony-branded product, the TR-55 transistor radio, appeared in 1955. This is just the first of many products that proved to influence the market. Another Sony's product, Sony's TR-63 radio was a very influential product, the new industry of consumer microelectronics. Sony's transistor radios had a huge success in the world. Over the years, Sony expanded into new businesses. Their strategy was to obtain the convergence between film, music, and digital electronics via the Internet.

In 1978, Sony created the prototype for a product that would become a worldwide hit. The prototype was built by audio-division engineer Nobutoshi Kihara for Sony co-founder Masaru Ibuka, who wanted to be able to listen to operas during his frequent trans-Pacific plane trips. Therefore, in 1979, the 'Walkman' was introduced in the Japanese market, in the form of the world's first portable music player using the compact cassette format, selling out its entire stock of 30,000 units within the first three months.

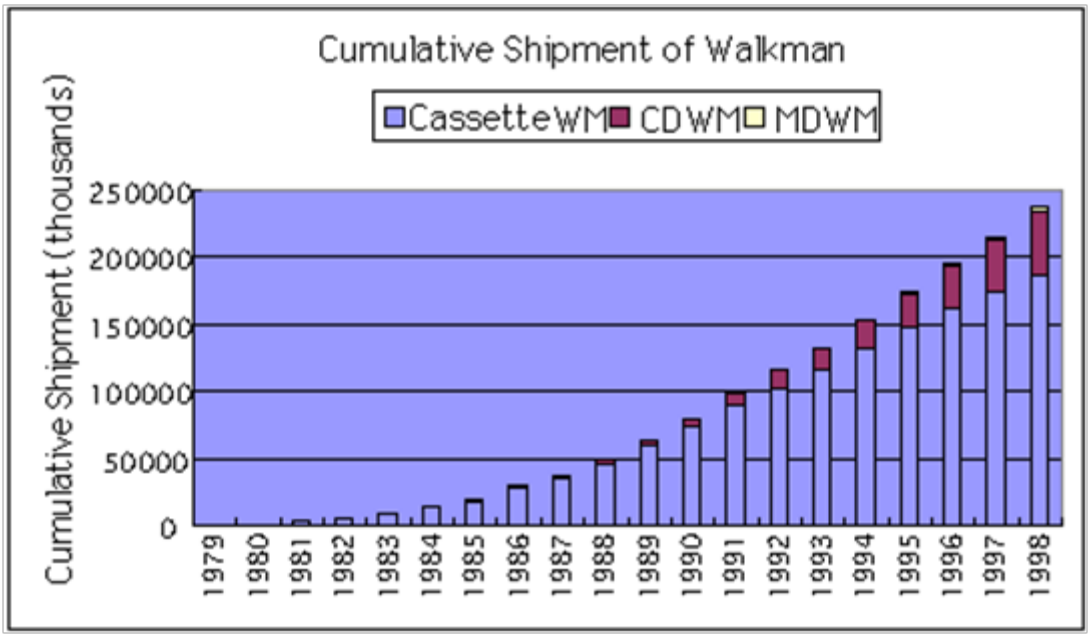
Figure 1: Sony Walkman WM-2, the best-selling model, with plastic battery case and belt clip (1981)

Source: Wikipedia

It is common knowledge now that Sony changed the way people listen and consume music, when introduced the Walkman in 1979. The Walkman allowed people to carry music with them and listen to music through lightweight headphones. Before the Walkman was introduced, music could only be enjoyed through a stereo system at home or a car audio system. But portable tape recorders had existed for decades, so the device was not particularly advanced from technological point of view. The Walkman was created by

eliminating the record function and a speaker from a conventional cassette tape recorder and instead equipping it with stereo circuits and a stereo headphone terminal. The novelty was the marketing approach: Walkman was not promoted to professional journalists, like most portable tape recorders were at the time, but to ordinary young consumers. Since its introduction, Sony has produced many Walkman models and millions of consumers enjoyed the product, making the Walkman a culture icon and a social phenomenon. For example, two months after the launch of the first Walkman model, known as 'TPS-L2', Walkman became extremely popular and the sales exploded.

Figure 2: Cumulative Shipment of Walkman, 1979-1999



(http://www.sony.net/SonyInfo/News/Press_Archive/199907/99-059/)

For a decade after its launch, Sony's Walkman hold the supremacy not only on the Japanese market, but also worldwide. But later, in the late 1990s, the cassettes as the favored music delivery format have been replaced by the compact discs and the digital mp3 files.

During the years, Sony has expanded its Walkman brand by launching new models incorporating CDs, video, MP3 and other. In 2010, three decades and more than 220 million units, Sony has stopped selling its Walkman cassette player in Japan, admitting the gadget could not keep up in the digital age.

Figure 3: Trends of disruption – the case of portable music player(Islam & Ozcan, 2012)

Period	Disruptive Technology	Disrupted Technology	Notes
1970s	**Sony Walkman Cassette Player**	Boom box (Ghetto Blaster)	*In the late 1970s, the boom box was quite popular among the younger generation. Companies were competing on who could produce the loudest product or the biggest product. In 1979, Sony introduced the first portable cassette player and it became very popular in a short time and disrupted boom box players*
Late 1980s and 1990s	**The Discman and Portable CD Players**	Sony Walkman Cassette Player	*In 1984, Sony introduced the world's first portable CD player. This invention accelerated the spread of the CD usage. Following this invention other large companies started producing portable CD players which in time disrupted the cassette player market*
1990s and 2000s onwards	**iPod and Other Digital Players**	Portable CD Players	*In the late 1990s, many companies started introducing flash memory based digital audio players. However, most players were bulky in size, had low storage capacity and low battery life. In 2001, Apple introduced their first iPod model and in 2003 they introduced their online music store iTunes. In a short time, iPod became very popular as Apple was the first company who offered customers a legal whole package product. The new way of online music purchase and the quality of iPods disrupted portable CD players and became the leader of the digital audio player market*

Apple Inc. is an American multinational corporation, which designs, develops, and sells consumer electronics, computer software, online services, and personal computers. Its best-known hardware products are the Mac line of computers, the iPod media player, the iPhone smartphone, and the iPad tablet computer. Its online services include iCloud, iTunes Store, and App Store. Apple was founded by Steve Jobs, Steve Wozniak, and Ronald Wayne on April 1, 1976, to develop and sell personal computers. It was incorporated as Apple Computer, Inc. on January 3, 1977, and was renamed as Apple Inc. on January 9, 2007, to reflect its shifted focus towards consumer electronics. Apple ranked 15th in the Top Forbes 500 Companies, 2014 edition.

Apple is a worldwide known information technology company and smartphone and mobile phone maker. As of 2014, Apple employs 72,800 permanent full-time employees, maintains 425 retail stores in fourteen countries, and operates the online Apple Store and iTunes Store, the latter of which is the world's largest music retailer.

One of the most influential Apple's products was the iPod.

The first generation of iPod was released in 2001. The major innovation of the iPod was its small size achieved by using a 1.8" hard drive compared to the 2.5" drives common to players at that time. The capacity of the first generation iPod ranged from 5G to 10 Gigabytes. More than 100,000 iPods were sold before the end of 2001, leading Apple becoming a major player in the music industry. Also, the iPod's success prepared the way for the iTunes music store and the iPhone. The iPod is a line of portable media players and multi-purpose pocket computers designed and marketed by Apple Inc. The most recent iPod redesigns were announced in 2012. There are three current versions of the iPod: the ultra-compact iPod Shuffle, the compact iPod Nano and the touchscreen iPod Touch.

Figure 4: Various iPod models

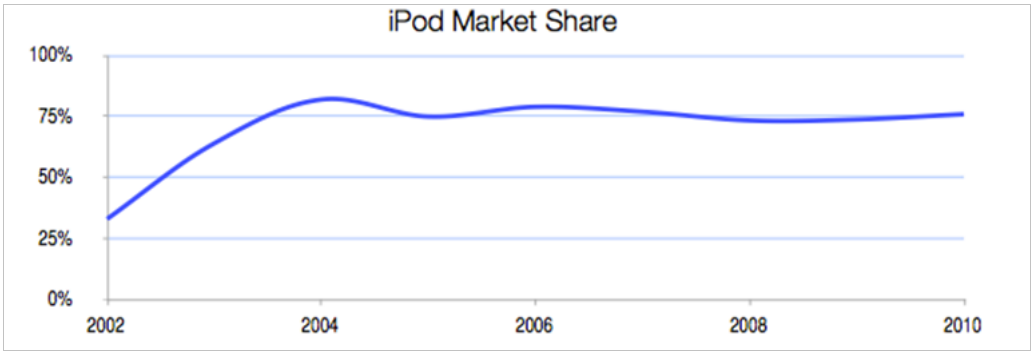
Source: Wikipedia

Like other digital music players, iPods can serve as external data storage devices. Storage capacity varies by model, ranging from 2 GB for the iPod Shuffle to 160 GB for the iPod Classic. Apple's iTunes software (and other alternative software) can be used to transfer music, photos, videos, games, contact information, e-mail settings, Web bookmarks, and calendars, to the devices supporting these features from computers using certain versions of Apple Macintosh and Microsoft Windows operating systems.

Before the release of iOS 5, the iPod branding was used for the media player included with the iPhone and iPad, a combination of the Music and Videos apps on the iPod Touch. As of iOS 5, separate apps named "Music" and "Videos" are standardized across all iOS-powered products.

Beginning with the introduction of the iPod in 2001, Apple has had an uninterrupted string of success in the consumer electronics segment, even then during the middle of 2010, iPhone sales overtook those of the iPod.

Figure 5 : iPod market share for portable player devices



(http://stratechery.com/2010/apple-innovators-dilemma/)

Maybe in the '70s, the Walkman changed the world, but in 2003, Sony struggled with the new powerful competitor – Apple's iPod. Apple was about to earn this market, but Sony still believed that they should be the leader of the market, due the history and the past successes. After all, Sony invented the concept of listening music anytime, anywhere. But the new comer iPod was easier to use, more fashionable, good looking and used the Apple iTunes software, allowing consumers to use the music from their own computers.

What was changed, then?

According to Davenport (2006), the speed of technological change has a great impact on the three-phase sequence from value creation to value capture to value sustainability. Innovation is now the driver of new companies' capabilities. But the Sony and Apple story shows that sometimes, the innovation arise from the company who at least expect, and not from the leader company. What makes Sony to lose the chance to launch first the new generation of music listening devices?

This case study shows that the internal cooperation is the key.

4.Innovation as a result of organizational cooperation

In his book Collaboration, the author Morten Hansen (2009) aim at what many leaders inherently know: in today's competitive environment, companywide collaboration is an imperative for successful strategy execution. Yet the sought-after synergies are rarely, if ever, realized. In fact, most cross-unit collaborative efforts end up wasting time, money, and resources. This is the case of Sony in the early 2000, when they failed to innovate the Walkman, allowing Apple to gain the market with the iPod. Managers should avoid the costly bad collaboration and instead start getting the results through disciplined collaboration.

Collaboration is defined (according to Hansen, 2009) as taking place when people from different units work together in cross-unit teams on a common task or provide significant help to each other. It can be joint work between units or a one-way collaboration, as when one unit provides advice to another.

Also, Morten (2009) used the concept of complex knowledge to explain the role of weak ties in sharing knowledge across organization subunits in a multiunit organization. "Having weak inter-unit ties speeds up projects when knowledge is not complex but slows them down when the knowledge to be transferred is highly complex." This has deep implications on product innovation. Sometimes, companies are able to benefit from knowledge residing in other parts of the company while others are not. The core premise of this concept is that a proper understanding of effective inter-unit knowledge sharing in a multiunit firm requires a joint consideration of relatedness in knowledge content among business units and the network of lateral inter-unit relations that enables task units to access related knowledge.

"Bad cooperation is worse than lack of cooperation." Morten wrote.

The same felt also Sony when tried to achieve cooperation between its electronics, music and film divisions, aiming to stop the iPod fulminant ascension on the market, in the years 2000. Sony believed at that time that they have all the conditions for fighting iPod with a new product. After all, they had

hardware, software and they had already a winning product – Walkman. They initiated a new project called Connect. But what Sony lacked was a culture of cooperation. Their units was encouraged during years to be in competition on to each other, instead of cooperating. The competition spirit helped Sony in the past while developing Walkman and PlayStation, need to be mentioned. Connect needed cooperation between five Sony's divisions, and Sony was not prepared for this approach. Each division had the own idea about the next product and they developed products that competed each other. Finally, Connect was launched in 2004, it was not successful on the market and has been withdrawn in 2007.

In the meantime, the iPod sales evolved from 125.000 pieces until 2002 to 100.000.000. pieces until April 2007.

Of course, the battle between Sony and Apple was not given exclusively on cooperation. They have many other strengths: the great design capabilities of Apple, their software knowledge, and Sony is involved in electronics and music in the same time. But, if the two companies would have achieved a good cooperation, the battle could have a different and.

5. Conclusions: toward a new theory of collaborative innovation

Apple proved that was able to benefit from knowledge residing in different parts of the company, through an excellent leadership, while Sony was not. The core conclusion is that a proper understanding of effective inter-unit knowledge sharing in a multiunit firm could lead to more innovation.

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IBM - a century of leadership in technology

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Abstract: *Established in 1911, IBM is an example of leadership in technology. IBM has been linked since the beginning of computing, being the company that invented the tabs (forerunner of the current computer). In 2012, IBM ranked No. 2 in the U.S. in terms of number of employees (435,000 worldwide, 100,000 in the United States). IT vertical market is characterized by a very important contribution to innovation and, therefore, the rankings are very dynamic field. IBM was able to create a value system in the organization and also a leadership system, thus managing to retain its leading position in the market.*

Key words: IBM, technology, leadership

1.Introduction

Google, Apple and Facebook attract all eyes in the tech audience lately, but the ease of using the latest technologies is mainly due to IBM, the American IT giant that recently celebrated 100 years of life. Automated gestures for us, like saving a file on our laptops, withdrawing money from cash machines and even scanning goods we bought are all due to IBM. More than that, we simply cannot refrain from asking ourselves what would Google be without the PC or how would Groupon look like without the bar code.

IBM launched the magnetic hard drive during 1956. It also launched the removable disk during 1971 and the bar code during 1960, plus the processing systems that allow ATM transactions. At the same time, IBM also created the magnetic tape technology that is still used today for magnetic cards.

For a large chunk of the twentieth century, IBM was the raw model of a dominant paternalistic corporation. Also IBM was among the first companies that granted its employees paid leaves of absence and life insurances. The corporate giant set "socialization clubs" for the employees several generations before Google started to offer massage sessions and free meals.

According to a recent study carried out within the US boundaries, only 13 percent of the companies succeed in getting over the ten years of activity threshold. According to another study, only 16 companies of those alive by the end of 1911 (the year when IBM was founded) are still alive. One century of outstanding activity stands as proof for leadership and values maintained and transferred for more than four generations. Even more, it proves an outstanding appetite for change. IBM invented the Personal Computer (PC), but gave it up when the personal computer became a commodity and couldn't generate added value anymore. After giving up its PC business, the company was able to completely reinvent itself, as today IBM mainly targets the software and services business area.

This paper highlights the most important moments in the IBM history.

2.Milestones from IBM history of leadership

2.1. The Watson era

Over the past century IBM has transformed the way we record, compute and process information – changing forever business, science, engineering, government, and leisure. Far more than any other firm, IBM created the IT revolution. Its history includes punch card tabulation, entrance into computing, and the transformative IBM hardware (IBM 650, IBM 1401, System/360) and software (FORTRAN, SABRE, IMS) that changed the world.

By the beginning of its life, IBM manufactured weighing machines, cheese slicing devices and machines that could read card stored data, an important element for what would eventually IBM mean. Today such machineries may seem completely worthless, but they represented true sophisticated technologies for that era.

In the beginnings, the human force behind the company was Thomas J Watson Sr., a very demanding manager that standardized everything, from the employees' dressing code at work to their creativity.

Thomas John Watson Sr. (1874-1956) was the company's president that put IBM on a continuous growth path between 1914 and 1956, when the company became an

international business force. Watson developed a management brand and a unique culture within IBM, thus changing it into an extremely effective organization that operated computing machinery based on punched cards. Watson condensed his management philosophy with a single-word motto: "THINK". Actually, on June 6th, 1935, the motto became the first US registered trademark for IBM, described as "periodical publications". The IBM name was trademarked only fourteen years later. A biographical story published in 1940 said that "the word is shown on walls in every single room inside IBM. Each employee has a notebook with the word THINK labeled on it, where he or she writes down ideas. All the consumables, matches and documents are THINK labeled. Employees even receive a monthly magazine called "Think"".

On of Watson's favorite and famous quotes was "All the problems of the world could be settled easily, if men were only willing to think." THINK remains even today an important element of IBM's culture. The motto was also used during the marketing campaigns carried out by the company to promote its notebook line of products, IBM ThinkPad.

Watson understood that one of his most important tasks as manager was to link all the components within the organization between themselves, not just operationally, but also as a common set of beliefs and processes.

We speak today of this aspect as being "corporate culture", the way Professor Edgar Schein (MIT Sloan School) defined as " a set of basic tacit assumptions about how the world is and ought to be that is shared by a set of people and determines their perceptions, thoughts, feelings and, to some degree, their overt behavior."

Today Watson is seen as the first organizational leader that convincingly and knowingly took steps toward generating a culture within his company.

THINK may have been the main idea, yet it made only for an aspect of IBM culture. The company developed over years and official set of so-called Basic Beliefs that were conceived to guide employees in behavioral terms:

- Respect for the individual
- Best worldwide services for customers
- Excellence

Standing itself truthful to principles like continuous reviewing and placing great importance on basic beliefs, by the end of 2003, IBM reviewed and reformulated its basic values.

"We believe an organization will stand out only if it is willing to take on seemingly impossible tasks," Thomas J. Watson Jr. explained to a Columbia University audience in 1962. Those "who set out to do what others say cannot be done are the ones who make the discoveries, produce the inventions, and move the world ahead."

Another leader of IBM was Thomas J. Watson Jr. Thomas J. Watson Jr. was chairman and chief executive officer during IBM's most booming period of growth. He led the company from the age of mechanical tabulators and typewriters into the computer era.

During his leadership, IBM grew from a medium-sized business to one of the dozen largest industrial corporations in the world. When Mr. Watson became CEO in 1956, IBM employed 72,500 people and had a gross income of $892 million. When he stepped down in 1971, employees numbered more than 270,000 and gross revenue was $8.3 billion. Fortune magazine once called him "the

greatest capitalist who ever lived."

Thomas Watson Sr. and Thomas Watson Jr. pointed IBM toward the computer age, as IBM machinery were used everywhere where computing was needed, from banking transactions to space launches. WWII meant a boom for the company, which used significant resources to keep its dominant share on the market.

2.2. The Sixties

By the end of 1960's, the American corporation was the only Top 10 Fortune 500 high-tech company, as a result of up to USD 5 billion in investments made for developing a wide range of computers to be used for the development of companies.

On April 7th, 1964, Thomas Watson Jr., IBM CEO, officially launched the System/360 mainframe line of computers, and said, during a press conference, that "the product means the beginning of a new generation, not only for computers, but also for business, academic and governmental applications." And he was right. Market pundits now say that System/360 represent one of the most important industrial achievements. During the following five decades, the 360 off springs – mainframe computers, like IBM zEnterprise now – made possible the code bar creation, ATMs, electronic trades, online ticket bookings, weather modelling and other inventions that changed the world we live in. Over 70 percent of the data belonging to an organization is currently stored on mainframes. Likewise, some 71 percent of the Fortune 500 companies are operating their business via a mainframe computer.

The 1964 IBM System/360 computer opened up the mainframe age. At the time it was the largest private investment made by a company for technological development. It was a huge effort IBM made during the sixties in order to find solutions for a paradigm shift related to data and information processing inside companies. This is one of our company's characteristics, as every time we see a need emerging, we allocate important resources for the trends with high potential of (re)generating significant values for the society we live in. After more than 50 years, mainframes are today a perfectly viable platform, which is widely used with significant results.

As we try to describe the mainframes in figures, we should mention:

- 92 out of Top 100 banks in the world use the mainframe for supplying customers with at-your-fingertip financial;

- 23 out of Top 25 trade companies in the world use the mainframe for ensuring the delivery of client customized services;

- 9 out of Top 10 insurers in the world use mainframe based cloud in order to save their customers money;

- more than 225 states and local administrations worldwide count on the mainframe for supporting police and firefighting departments, waste collection, hospital and public parks management.

2.3. The 70s and the 80s

During the 1970s and the 1980s, IBM had become the preferred supplier of computers for a large number of leader companies in the world. It reached an outstanding market share of some 60 percent. The company designed its computers according to standards developed internally. Consequently, the machines were incompatible with computers

manufactured by others. IBM offered big, fast and reliable computers that performed tasks unknown for any other equipment: maintaining accountancy logs, billing and market bordereaux writing. Such large computing operations were performed by autonomous and stand-alone units set into special insulated and acclimatized rooms. They were called central units. Although capital expenditures for such equipment were quite large – they stood, for example, at over GBP 1 million for a medium size computer – IBM clients were achieving substantial levels of savings in terms of the number of computers used, their reliability and the data processing speed. Yet, above all, a call for IBM services meant cutting down the risks taken by customers: "Nobody has ever been fired for buying an IBM computer". Thus, IBM dominated the market and reached some 60 percent of profits from selling central units.

As the years went by, a large percent of small sized computers became worldwide integrated to such an extent that IBM had no more a realistic view upon the profitability of computer components market: for example, the company took first measures to separate its AS/400 medium size computers manufacturing division only by 1993. In order to apply such measures, IBM had to make changes inside its enterprise culture and, at the same time, invent whole new control and reporting systems. By 1994, IBM was so satisfied with the success registered by the AS/400 range of computers that it began expanding the specialization process upon other product ranges worldwide.

Considering itself as a large company, IBM worked according to a stability policy in terms of shareholder dividends. It also had in place well defined staff and professional development procedures. For example, IBM took pride in the fact that it never forcefully licensed its employees. Mirroring the dominant position of the company on the global electronic equipment market, IBM culture was portrayed by lack of formality and absolute trust in the company's capabilities and internal resources.

2.4. The personal computer market development

By the end of the 70s and the 80s, the worldwide computer market witnessed a distinctive parallel evolution, as personal small size computers were created, with names like Osborne, Commodore and Sinclair. Unlike previous years, IBM kept an arrogant technical distance. It also adopted a vision where the personal computer market was very small, while such devices would never reach a stage where they could solve problems central processing units were solving. Some of these small computing devices were built based on microprocessors and common data processing alghoritms. Although none of these had the ability to solve any of the complex computing tasks of the central processing units, the personal computer market witnessed a fast development – with percentages reaching more than 100 percent for certain periods of time. By the end of the 1970s, IBM finally noticed the trend and decided to launch its own personal computer on the market.

As the internal operational structure of the company was too big, too slow and too integrated, IBM chose to found a wholly separated and new subsidiary for manufacturing and selling its first personal computer. More than that, IBM decided not to use its

own microprocessors and operating systems, chosing instead to buy such components from a large American microprocessor manufacturer, Intel, and, accordingly, from an American unknown software programming company called Microsoft. IBM encouraged both Intel and Microsoft to develop their products according to standards, as it considered that through standardization at the worldwide level it will provide the best service both for the suppliers and for PC buyers. IBM was proud of becoming the worldwide refference standard for both the niche market and for the larger central processing units market. The "IBM compatible" mark become the accustomary standard for most PCs, excepting the Apple manufactured devices.

During the 80s, when the company began facing dramatic changes within the technological environment, doubled by red tape stiffling innovation, IBM entered a downward path. By 1981, the company launched its personal computer, which only registered market success once IBM called Microsoft, a start-up company at the time, for hekp in terms of software. Shortly afterwards, IBM found itself captive inside a market it created, as the company completely depended upon Intel for processing units and upon Microsoft for software. Consequently, the company became vulnerable once the PC industry began to expand explosively. The technology inside the PC was more important than the wrapping, and IBM had no intellectual property rights for the inside of its own machines. Even more, the development of smaller computers that roughly performed the same tasks as IBM computers considerably thinned IBM's main source of income. Subsequently, the company was forced to go into massive layoffs.

2.5. The 90s

By mid 1990s, IBM found itself on the brink of a crash. Corporate strategy is important, as it approaches major and fundamental issues, which influence the future of the organizations. When an organization makes serious mistakes in terms of corporate strategy, it will stand consequences, thus risking, perhaps, even its own survival. With a correct strategy, the organization fully benefits from its outcomes. The corporate strategy refers to the whole organization. It covers all areas and functions of the economic entity by taking over best practices registered with every component and combining them to generate something larger than their sum (Lynch, 2006). IBM enjoyed a certain level of success, but was slow and full of red tape in terms of involving the organization as a whole into strategic decision making.

Between 1991 and 1993, IBM, as the world's largest computer manufacturer, suffered net losses amounting to billions of USD – one of the most important corporate profit crisis ever registered. Still, IBM continued benefit from an excellent reputation, to hold a dominant market share, to have exquisite personnel policies and reliable products (perhaps among the most innovative), to nurture close relationships with governments in different parts of the world, to issue responsible community policies on local and national levels, to register a sound financial position and to invest extensively in modern manufacturing facilities worldwide. Its main problem largely came from a corporate strategy failure.

2.6. The technologic progress

During the above mention period of time, world economies had minor influence

upon such evolution. The computer markets were essentially fueled by innovation, new ideas and changes to the extent that they were not influenced by individual national economic difficulties.

The competitors saw that the IBM-compatible standardization contributed to the market expansion. Yet, sales continued to grow also due to technological progress, aggressive marketing promotions and the emergence of low manufacturing cost economies like Taiwan and Singapore. Added to that, innovative companies like Sun Microsystems identified ways to expand small computers capabilities, by means of inventing workstations and computer networks. Microprocessors became more powerful, while software programs became more sophisticated. By mid 1980s, personal computers began to perform tasks previously performed only by smaller size central processing units.

2.7. Marketing and services innovations

During the 1980s, personal computers became more reliable. Consequently, IBM's quality and reliability brand began losing importance. Personal computers could now be sold, deployed and maintained without resourcing to IBM's vast and expensive service structure. They could be even sold via postal orders, with technical support granted by specialized operators – an innovation that belongs to Dell Computers. Such dedicated companies had smaller costs than IBM suppliers, with less overhead expenses, while offering the same quality like IBM. Due to their smaller size, they could also react faster at market shifts.

IBM and other computer manufacturers continued to use their funds for attributing trademarks to their products. Accordingly, their suppliers began to spend considerable amounts of money on such items.

By the beginning of the 1990s, IBM's dominance gradually began to soften. We should mention here that other computer manufacturers, like Olivetti from Italy, DEC from the United States and Bull from France, were more severely affected than IBM. All these companies rushed into issuing new corporate strategies. Yet, by the end of the 1990s, many of them continued to be confused.

At the same time, the profits registered by the two above mentioned IBM main suppliers soared. Intel and Microsoft channeled profits generated by the cooperation with IBM and other manufacturers into developing their own branded technologies – like the "Pentium" processor Intel launched by 1993, or the "Windows" operating system launched by Microsoft. By the end of the 1980s, they reached a stage where they dominated the global software programs market. Both suppliers spent huge amounts of money from their marketing funds in order to get trademarks for their products sold worldwide.

2.8. The Gerstner era. IBM, a practical model for the "re-engineering" theory

The way IBM reorganized itself after events that took place during the 1990s may be seen as one the the company's greatest achievements. The red tape mad IBM a corporation unable to cope with competition. This is the reason why a new CEO from outside the company, who had no idea about IBM's organizational culture, was brought in during 1993 with a special aim to recovery.

According to Slater (1999), "when Lou Gerstner arrived as IBM's newest CEO in 1993 - after what The New York Times called <<the most vividly watched talent search in the history of American business>> - the world's premier corporation was hemorrhaging money and teetered on the verge of breakup. Now, Lou Gerstner - whom Fortune lauded as <a sharp, even brilliant, energetic man who thrives on overhauling corporate cultures> - faced the challenge of his lifetime: Reviving a dying IBM. Saving Big Blue is the spellbinding saga of how, true to his legend, Lou Gerstner rolled up his sleeves, dug in, and resurrected IBM from and all-but-certain death into a textbook example of corporate turnaround wizardry. "

As the new CEO for IBM, he began his work by cutting down both prices and the number of employees. Out of the 406,000 employees IBM had in 1985, Gerstner fired some 150,000 during the 1990s. However, the new CEO "heroically" opposed attempts to split the corporation and chose to focus instead on services like data storage and technical support.

It was a risky move for a company that created the PC industry, but IBM eventually succeeded to recover and soon became the world's largest supplier of technological services. With incomes around USD 100 billion, IBM currently is number 35 on Forbes 500 index (for 2014).

2.9. Changing the business model –steps toward the establishment of a knowledge-based organization

Business model innovation is difficult, but it can be done. Rethinking process, place, purpose and perspective is a daunting but achievable goal. Managers who want to turn their companies into knowledge-based organizations need to focus on several key actions, such as: RETHINK THE BUSINESS MODEL. IBM is one great example is that. IBM saw the need for innovation in its business model and effectively reinvented it. In the 1960s and 1970s, IBM was a large, successful, well managed company. But by January of 1993, the company was in need of a new approach. That month, IBM announced what was then the largest loss in US corporate history. Soon after that announcement, IBM fired its chief executive officer and brought in the first outside CEO the company had ever had in its history, Lou Gerstner. IBM's business-model innovation was the result and the solution for the financial crisis they faced during those years.

According to Chesbrough "Once IBM realized that it had to change its business model, it began a fervent hunt for new revenue sources. One experiment was to offer IBM's semiconductor lines to act as a foundry for other companies' products. This brought in new revenue and increased the utilization rate of IBM's equipment and facilities. IBM's need to generate greater profits also led it to rethink its whole approach to managing its patents and technology. The company was able to raise hundreds of millions of dollars a year by licensing its intellectual property. However, the most successful experiment was the discovery that IBM's expertise could be the basis for a services business, taking care of customers' IT needs. More than half of the company's revenue in 2006 came from its IBM Global Services arm, a business that didn't exist 15 years earlier." (Chesbrough, 2007).

2.10. The Palmisano era

Joining IBM in 1973, Samuel J. Palmisano was president and chief executive officer of IBM until 2012. Palmisano was appointed president and chief operating officer (COO) effective in October 2000. He was promoted to CEO in March 2002, while retaining the title of president, and named chairman effective in 2003. Palmisano's mandate was to move into new unique businesses with high profit margins and potential for innovation. This included purchasing PricewaterhouseCoopers Consulting in 2002, so that IBM could go beyond selling computers and software. PwC's consultancy business was absorbed into IBM Global Business Services, increasing the size and capabilities of IBM's growing consulting practice. During his tenure the company also acquired 25 software companies that specialized in data mining and analytics. Palmisano also prepared the company for cloud computing, originally known inside IBM as on-demand computing, where the center of innovation would be services and software, delivered over the Internet from data centers and connecting to PCs and other devices.

Palmisano also led the sale of the PC group to Lenovo which closed in 2005. The move was controversial inside IBM at the time, as it had been the inventor of the personal computer in the 1980s, and the PC was one of the few products from the company that was widely used by the masses and created strong brand recognition for IBM.

Palmisano focused intently on getting out of "low-margin businesses that were fading," (Palmisano's interview) and not surprisingly, the outfit's personal computer business was first on the chopping block. Although it fell behind rivals during the 1990s, that division helped to drive sales of other IBM products in corporate accounts, and its purchasing power helped lower the cost of components for larger IBM offerings like mainframes and servers. However to Palmisano, moving to new high-margin businesses meant exiting low-margin businesses like PC manufacturing. Beside this, PC manufacturing was becoming commoditized and offered few opportunities for innovation.

In 2008, he launched IBM's Smarter Planet initiative which applies computer intelligence to create more efficient systems for numerous applications including utility grids and traffic management. It took five years but Palmisano was vindicated from 2010 onwards as the Post-PC era of technology took hold, with smartphones and tablet computers supplanting PCs as the primary computing devices of choice. Also recognizing that drives were becoming a commodity, he sold off IBM's disk drive business to Hitachi and then signed a five-year deal to buy Hitachi drives. Palmisano once said that he felt the "hub of innovation would shift to services and software."

2.11. The transformation

IBM currently undergoes a transformational phase, as reflected by the investments the company announced for the Watson supercomputer, the basic platform for the new cognitive IT era. Outstanding for the new era is the intelligence computing and the cognitive development of technology, which learned self-evolution based on initial information and data accumulated. The new era will have an important impact upon the whole industry. The investments announced

for Watson are boosted by the fact that we entered the Big Data age. The speed of data accumulation significantly increased, while over 80 percent of the data is still unstructured. A technological platform to face such a challenge was needed. Investments made by IBM in recent years for new intelligence computing, big data and cloud computing technologies development or acquisition reach over USD 10 billion. Continuous investments made in R&D allowed IBM to become the company that registered the most technological patents for the last 21 years.

The technologic shift was followed by a shift in the way the market is approached. Companies are giving up discussions related to technology as currently the main important issue at hand is not related to the technology itself, but to the reason behind implementing it.

We could mention the important financial investments made by IBM during the last four years:

• USD 1.2 billion – for expanding the SoftLayer cloud infrastructure;

• USD 1 billion – for developing Bluemix, a Platform-as-a-Service facility;

• USD 1 billion – for launching the Watson Group;

• USD 7 billion – for acquiring 17 cloud companies (Aspera and Cloudant among them) beginning with 2010.

Huge amounts of data were generated for the last years. Data is generated from different sources: sensors, RFID networks, mobile devices, Web portals, social media, etc. Under the circumstances, it is increasingly important for companies to be able to extract value from such a data "mountain" that year after year becomes higher and larger. Data content will become the most valuable resource of the humankind in the future. And the data volumes stored by people are both increasingly valuable and mostly free of charge. One has to learn how to monetize value out of structured data and especially out of unstructured data. The latest solutions that IBM announced help to extract needed useful knowledge out of such huge amounts of data in order to increase competitiveness.

Conclusions

Imagine a technology that works so well, you aren't even aware it is used. The information technology means also the technology "behind the scenes", being currently as relevant and important for daily operations as it was some fifty years ago. Beginning with ATMs and moving on toward medical offices and to the traffic light networks or police departments, the information technology stands out as one of the most important innovations that influence/determine almost every detail of our daily lives. Even that we talk about the cloud or mainframes, or more consumer-like technology such as a tablet or a mobile device, the technology generated a real revolution in terms of business and computing and is continuing to influence the consumers.

The secret of longeviv IBM existence is due, among other things, to the outstanding leadership of many influential people working for IBM, during this century.

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