

ECONOMIC MEASUREMENTS OF SOCIAL AND INTANGIBLE ASSETS: WHERE DOES ROMANIA STAND AT SUSTAINABLE DEVELOPMENT?

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Abstract

Sustainable economic development, no matter the geographical area it is applied to, relates to improving living standards and incorporates a new focus and challenge for the economy: the measurement of intangible and social assets. This article aims to present Romania's ranking among other countries. First of all, it analyses the rationale for measuring social aspects, in the context of the emerging new economy. The essential point here is that investing in intangibles produces more welfare on long term and improves labour productivity, creating a more competitive and knowledge based economy and society. Secondly, several indices are presented and the ranking for Romania is analysed, in order to provide a systematic view and debate upon the importance of social and intangible assets and their ways of measurement at a country level.

We consider that our study's results are just a starting point for possible future theoretical and empirical investigations. This paper seeks to develop in Romania a framework of understanding the value of social and intangible assets and their importance for sustainable development. We appreciate that such a study could be a quite useful approach for both the academic and business communities in our country.

Keywords: knowledge economy, intangible assets, sustainable development, economic development, globalisation

JEL Classification: A12, A13, F01, F02, J24

1. Introduction

National economies are in a continuous transformation, influenced by globalization and structural change. The focus of this paper is to explore the importance of social and intangible assets and present Romania's position among other countries. The first chapter introduces the rationale for creating a knowledge-based economy and society, referring to the theoretical concepts of the new economy and knowledge economy. Based on this understanding, the second chapter

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explores the main reasons for analysing such assets, referring to practical applications for companies and economies. These relate to the creation of competitive advantage and sustainability. The third chapter introduces three main indicators that are of relevance to our study: the Global Competitiveness Index, the Knowledge Economy Index and the Human Development Index, debating on Romania's rankings and methodology of calculation for each of them.

The paper concludes with a statement for the importance of measuring social aspects over time, in order to provide sustainability and competitiveness on the long run. It also presents a set of recommendations for further improvements, based on the analysis resulted from index's measurements.

2. Theoretical rationale for a knowledge-based economy and society

The globalisation process has been an important changes driver in the context of economic development. "Through its increased mobility of capital, workers, goods and services, globalisation is changing the rules by which the economy has been governed during much of the post-war era" [Pike et al., (2006)].

Our society is constantly changing at an increasing speed. We talk more and more about the New Economy or about *Knowledge Economy* which is characterized by a number of factors different from those that characterized the traditional economy.

Some of these features may be referred to as computerization, changing technologies, increasing uncertainty, sustainability, globalization and application of new knowledge. The quality and uniqueness of the knowledge component has become the most important source that someone may have in order to gain a competitive advantage.

The New Economy is developing a global network society where information and communication technologies (ICT) are reshaping communication both within and between organizations. Growing interest on intangible assets is closely related to the development of knowledge society and the undeniable importance of new knowledge-based workers [Porter, (1998)]. In this context, many authors discuss the importance of a firm to survive, highlighting the importance of human and social capital performance within the organization [Kogut & Zander, (1996), Pfeffer, (2002)]. Concepts such as intangible assets, intellectual capital, knowledge creation, basic skills and innovation, are now a centre stage in explaining economic assets that create continuous value to an organization, in exchange for financial and physical resources and gains [Barney, (1991), Ulrich, (1998)].

In a broader perspective, the term knowledge society refers to any society where knowledge is the primary production resource instead of capital or labor. A knowledge society creates, shares and uses knowledge for the prosperity and welfare of the people who belong to it.

Also, lately, the emerging concept of the "new economy" was revealed as a new approach of the economic science. A segment of economists consider that modern economies are dynamic and adaptive systems rather than closed systems struggling

for equilibrium (as they were considered for a long time). Among the strongest supporters is Kenneth Arrow, Nobel laureate and one of the first initiators of the modern neo-classical model and Brian Arthur of the Santa Fe Institute. [Dinu Marin, (2006)].

The specific complexity of the modern economic environment has led some authors to advocate a new approach for the classical economy, and that is for a dynamic and adaptive system. Thus sometimes economists who are studying the new economy have been called “complexity economists”.

In the new economy and knowledge society, intangible assets such as knowledge and information and knowledge management became the new core competencies. Quash, professor at London School of Economics, says that we are in a world that emphasizes the economic value of intangible assets. We are dealing with “cognitive domains” in which ideas are worth billions, while the products still cost less.

In Peter Drucker's vision, the future relies on other key success factors: “the traditional factors of production - land, labour and capital - have not disappeared. But they have become secondary” [Peter F. Drucker, (1993)].

Knowledge, unlike labour, land and capital is an asset that becomes more valuable on the extent of its use. The more used, the knowledge becomes more effective and efficient. Karl Erik Sveiby states that in the new economy, knowledge has four characteristics: knowledge is tacit, is oriented towards action, is based on rules and changes constantly. Knowledge becomes the only resource really relevant today. “The new economy requires a rethinking of the theory of production factors. Knowledge is key component of the system of modern economic and social development. Dissemination of innovation and leading-edge technologies will play a key role in accelerating the importance of knowing the context of globalization” [Karl Erik Sveiby, (1997)].

3. Intangible assets – generators of sustainable competitive advantage and convergence

The new economy involves giving a greater interest to the so-called knowledge society, the employees (who are the holders of knowledge), intellectual capital, intangible assets and learning organizations. A failure to value intangible assets into companies' management and control systems in a systemized way makes sustainable management impossible and endangers the achievement of any company's economic, social, and ecological goals in today's knowledge-based economy.

Without the intangible assets perspective (especially for management and accountability), companies may take the risk of destroying their own core substance for the purpose of optimizing short term financial results. By involuntarily destroying essential intangible assets, they put their value creation and potential for the future at risk.

We see sustainability and intangible assets as two sides of the same coin: intangible assets require a focus on sustainability; whilst sustainability requires the propagation and use of intangible assets. As the Romanian market moves away from a manufacturing-based economy towards a technology-and-innovation driven one, intangible asset investments are becoming vital to economic growth and sustainability.

The E.U. sustainable development strategy promotes “the creation of a prosperous, innovative, rigorous, competitive and eco-efficient economy, which supplies high life standards and fully qualitative employment opportunities throughout the EU” [Council of the European Union, (2006)], thus also emphasising the economic and intangible aspects as important for a sustainable development.

In consequence, sustainable competitive advantage is a central point, if not to say *the core* of both the national and corporate strategy. It allows maintenance and improvement of the company's competitive position in the market and enables the business to survive competitors for a long period of time. Quantitative and qualitative fundamental change in competition requires organizational changes to an unprecedented level. Current sustainable competitive advantage must be built on the organizational capabilities and must be constantly reinvented.

People are key aspects for the evolution of value and *co-creation* of products and services that add value. Their distinctive capabilities are the basis of the competitive advantage. According to the new resource-based perspective of a company, competitive advantage is achieved by continuous developing existing resources and creating new resources and capabilities in response to constantly changing market conditions. Among these resources and capabilities in the new economy, knowledge is the most important value creation asset.

The opportunity to support the organization's competitive advantage is determined by two kinds of capabilities: distinctive capabilities and reproducible capabilities and their unique combination to create synergy [Michael Armstrong, (2004)].

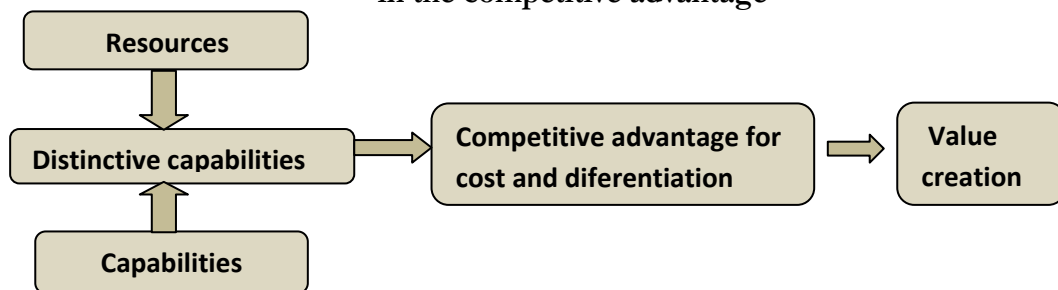
The capabilities are defined as follows:

➤ Distinctive capabilities - are characteristics of the organization that may not be copied by competitors or may be replicated but with great difficulty. They represent the basis of the sustainable competitive advantage.

➤ Reproducible capabilities - are those that can be purchased by competitors and thus can not be a source of competitive advantage. Many financial capabilities, technical and marketing are included in this category.

Therefore, the key point for competitive advantage relies on the manager's or decision maker's ability to choose the pattern or pathway that leads to the creation of value, and not the so-called “destruction of value”, defined by Warren Buffet as a result of irrational policies [Heller R, (2001)]. In practice, a combination of resources and capabilities is needed for value creation, as highlighted by Figure no. 1 below.

Fig. no.1. Combining the resource based approach and theories regarding the positioning in the competitive advantage



Source: *Intangible assets and intellectual capital key assets for convergence* (Bucharest, Suci Christina, 2008).

To illustrate the concept of sustainable competitive advantage, it is necessary to appeal to a broad vision that should combine the resources approach with the approach based on the positioning of advantage. Amplifying the importance of intellectual capital reflects an increased dependence on intangible assets of organizations [Michael E. Porter, (1998)].

As the workforce becomes more “global”, value employees and employers are increasingly investing in themselves. This can protect and enhance core competencies. Experts in knowledge are called at an increasingly level to work with individuals in an organization to identify key knowledge assets. To allow increased power is necessary to measure people-centered human resource assets.

We have seen so far the theoretical and practical rationale for analysing the social and intangible assets. They help a company, country and the society to focus on sustainability aspects and lead to the creation of value, which is one of the most important variables for prosperity and success in the new economy. The next section will introduce different rankings for our country relating to three main composite indicators for measurements of the so-called *soft* aspects of an economy.

4. Measuring social and intangible assets

Early since 1990, several indicators that go beyond purely traditional economic measurements, such as a country’s GDP per capita, GNI or PPP have been developed. We shall analyse Romania’s position for three major indicators: the Global Competitiveness Index, the Knowledge Economy Index and the Human Development Index. These three were chosen as they incorporate a broader definition of the wellbeing of a society and economy and all of them include quantifiable measures of innovation and people’s skills.

4.1. The Global Competitiveness Index – Romania's position

Romania is included in assessments related to global competitiveness, based on the Global Competitiveness Report of 2009 - 2010, prepared by the World Economic Forum. The report includes the global competitiveness index, calculated for 133 countries, using data from the year 2008 as a base for estimations. The ranking that the World Economic Forum makes through the Global Competitiveness Report 2009 - 2010 distinguishes three stages of development:

- first, based mostly on endowment with factors,
- second mostly based on efficiency,
- third, based on innovation.

From this perspective, it is considered that Romania is in the transition phase from phase two to phase three of development, ranked 64, which puts us almost at the middle. (Table no. 1)

Table no.1 The Global Competitiveness Index 2009 – 2010

Country/economy	Overall Index		Basic requirements (phase I)		Efficiency enhancers (phase II)		Innovation factors (phase III)	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Switzerland	1	5,60	3	5,28	3	5,39	3	5,68
United States	2	5,59	28	5,23	1	5,66	1	5,71
Singapore	3	5,55	2	5,99	2	5,61	10	5,15
Sweden	4	5,51	5	5,96	7	5,31	4	5,53
Denmark	5	5,46	4	5,98	6	5,36	7	5,28
Romania	64	4,11	86	4,10	49	4,25	75	3,44
Latvia	68	4,06	60	4,45	51	4,21	86	3,36
Grece	71	4,04	56	4,49	57	4,13	66	3,59
Bulgaria	76	4,02	80	4,13	62	4,08	89	3,29

Source: *The Global Competitiveness Report 2009 – 2010* (World Economic Forum, 2010).

Compared to previous years, when Romania ranked last among the EU member states, this year three EU countries are located under our country as the general level of competitiveness index illustrates in the table. The present situation also provides an opportunity to strengthen economic fundamentals and overall competitiveness in order to put growth on a sustainable footing and prevent future crises.

Since 1998, the OECD (Organization for Economic Cooperation and Development) and the World Bank have cooperated in their activities to create a knowledge-based economy (knowledge for development) and help countries in transition move further to the innovation stage.

The index is calculated from 113 variables, organized into 12 pillars, with each pillar representing an area considered as an important determinant of competitiveness: institutions; infrastructure; macroeconomic stability; health and primary education; higher education and training; goods market efficiency; labour market efficiency; financial market sophistication; technological readiness; market size; business sophistication and innovation.

Relating to Romania's situation as a transition country to the third category of development, as described by the index terminology, Carl Dahlman, Program Manager at the Knowledge for Development in the World Bank Institute stated: "To benefit from the knowledge revolution, concrete strategies are needed to satisfy the four pillars of knowledge economy." [Alberto Rodriguez, Carl Dahlmann (2007)].

The four pillars he refers to relate to institutions, education, information and firms:

- an institutional and economic framework to promote efficient use of knowledge;
- an educated and gifted population to create and use knowledge;
- a dynamic infrastructure for information;
- an effective system of innovation within firms and research centers that can satisfy new needs of the people.

In short, there is no doubt that intangible assets are of main importance for a country's performance. As shown by the data from the Competitiveness Index and the declarations of the specialists from the World Bank Institute of Development, there is a high input that companies and people can make for the economy as a whole. In this respect, Romania has still got some work to do in terms of creating the infrastructure and encouraging research and knowledge spillovers. However, given the current context of the crisis, for the future years we may still expect a drawback in this sense.

4.2. The Knowledge Economy Index – Romania's position

The Knowledge Economy Index (KEI) is a very important tool in our research showing what are the indicators and the current state of a country's convergence towards a knowledge based economy. The index takes into account whether the environment is conducive for knowledge to be used effectively for economic development. It is an aggregate index that represents the overall level of development of a country or region towards the Knowledge Economy [World Bank, (2010)].

The KEI is calculated based on the average of the normalized performance scores of a country or region on all 4 pillars related to the knowledge economy: economic incentive and institutional regime, education and human resources, the innovation system and Information and Communication Technology. (on a scale of 0 to 10 relative to other countries in the comparison group; where 10 represents the score for the top performers and 0 the worst for the laggards).

In comparison to what the Competitiveness Index includes as variables (the official rankings and mostly technical aspects of the economy and market system), the KEI index refers to several qualitative aspects in its measurement (especially interesting are the patents, education enrolment and journals).

Romania positions itself somewhere at the middle also, having a score of 6,43 in 2009 which shows a good improvement in comparison to the 5,48 score it had in 1995. Compared to other EU countries, Romania's overall score is very low. However, in opposition to the situation from previous years measurements, our country has steadily grown for all index's components. The results for Romania are shown in Table no. 2 below.

Table no. 2 Knowledge Economy Index, 1995, 2008 and 2009

Country	Knowledge Economy Index (KEI)			Economic Incentive and Institutional Regime			Innovation			Education			Information and Communication Technology (ICT)		
	2009	2008	1995	2009	2008	1995	2009	2008	1995	2009	2008	1995	2009	2008	1995
Netherlands	9.35	9.30	9.49	9.22	9.18	9.50	9.45	9.47	9.52	9.21	9.21	9.68	9.52	9.32	9.24
Spain	8.28	8.21	8.27	8.60	8.58	8.61	8.14	8.13	8.22	8.33	8.32	8.54	8.07	7.81	7.71
Slovenia	8.15	8.27	8.01	8.10	8.11	7.96	8.31	8.31	7.82	8.31	8.26	7.85	7.88	8.42	8.41
Portugal	7.61	7.56	7.87	8.42	8.44	8.63	7.41	7.42	7.36	6.95	6.87	7.45	7.66	7.50	8.02
Slovakia	7.47	7.44	6.94	7.78	7.99	6.38	6.89	6.85	7.02	7.26	7.21	7.16	7.95	7.70	7.18
Poland	7.41	7.52	6.69	7.48	7.39	5.84	7.03	6.91	6.08	8.02	8.82	8.14	7.09	6.95	6.71
Romania	6.43	6.18	5.48	6.98	6.87	5.73	5.74	5.65	4.75	6.47	6.04	6.20	6.55	6.16	n/a

Source: *Knowledge for Development database* (World Bank statistics, 2010).

To better understand in which areas our country still needs improvements as resulted from the calculations of the KEI, we shall detail the composition of each pillar. The Economic Incentive and Institutional Regime takes into account the following:

- tariff & nontariff barriers;
- regulatory quality;
- rule of law.

The Education and Human Resources pillar comprises:

- adult literacy rate;
- secondary enrolment;
- and tertiary enrolment.

The Innovation System holds as variables:

- royalty and license fees payments and receipts;
- patent applications granted by the US Patent and Trademark Office;
- scientific and technical journal articles.

The fourth pillar, Information and Communication Technology, comprises:

- telephones per 1,000 people;

- computers per 1,000 people;
- internet users per 10,000 people.

In 2009, the KEI for Romania is over the world's average (6.43 as against 5.95), the only pillar with a lower score than the world's average being innovation (5.74 as against 8.11). With a KEI in the 6-7 interval, Romania has a medium performance among the EU member states.

The results also confirm the leading position of Denmark and Finland which are, according to various international statistics (e.g. WEF, IMD), among world's leaders in terms of economic competitiveness as well.

Overall, with significant improvements in all four pillars, Romania has markedly improved in the past few years, jumping an impressive 14 spots to rank 48 in 2008 in terms of the KEI, which is a large progress in the rankings among all countries since 1995.

4.3. The Human Development Index – Romania's position

The HDI provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and gross enrolment in education) and having a decent standard of living (measured by purchasing power parity, PPP, income)[United Nations Development Programme, (2009)].

The index provides a broadened prism for viewing human progress and the complex relationship between income and well-being.

Table no. 3 Human Development Index 2009

HDI value	Life expectancy at birth (years)	Adult literacy rate (% ages 15 and above)	Combined gross enrolment ratio (%)	GDP per capita (PPP US\$)
1. Norway (0.971)	1. Japan (82.7)	1. Georgia (100.0)	1. Australia (114.2)	1. Liechtenstein (85,382)
61. Bulgaria (0.840)	74. Nicaragua (72.7)	30. Cyprus (97.7)	58. Philippines (79.6)	62. Argentina (13,238)
62. Saint Kitts and Nevis (0.838)	75. Saudi Arabia (72.7)	31. Argentina (97.6)	59. Mongolia (79.2)	63. Turkey (12,955)
63. Romania (0.837)	76. Romania (72.5)	32. Romania (97.6)	60. Romania (79.2)	64. Romania (12,369)
64. Trinidad and Tobago (0.837)	77. Jordan (72.4)	33. Mongolia (97.3)	61. Colombia (79.0)	65. Venezuela (12,156)
65. Montenegro (0.834)	78. Dominican Republic (72.4)	34. Israel (97.1)	62. Jordan (78.7)	66. Montenegro (11,699)
182. Niger (0.340)	176. Afghanistan (43.6)	151. Mali (26.2)	177. Djibouti (25.5)	181. Congo (298)

Source: *Human Development Report 2009* (United Nations Development Programme, 2009).

Compared to previous years measurements, Romania was ranked 63 out of the 182 countries measured. (Table no. 3) Note: the data used as a baseline are those from 1990 to 2007, but the report was published in 2009.

Between 1990 and 2007, Romania's HDI rose by 0.37% annually from 0.786 to 0.837. This positions Romania among the countries with a high HDI. According to the report, scores in all regions have increased progressively over the years, although all have experienced periods of slower growth or even reversals. The highest growth rate was registered between 2006 and 2007.

In terms of health status, Romania is positioned with 17 places lower than the average, according to Human Development Report, document published by the United Nations Development Programme that comprises a analysis made on 182 UN member countries. At the E.U. level Romania is similar in what concerns, the structure of development, with Bulgaria, Poland and Hungary.

Poland and Hungary rank higher development (41, 43 respectively) than those for Bulgaria (61) and Romania (63). However, their profiles are very similar in development strategies.

Countries like Romania (placed between positions 1-70) are included in the category countries with a high human development, those in the 71-155 in the countries with medium and the rest have low human development. For Romania, life expectancy at birth increased from 71.9 years to 72.5 years and GDP per capita in purchasing power parity, is at 12,369 dollars. Literacy rate was in 2007, 97.6 percent and the rate of schooling of 79.2 percent from 76.8 percent in the previous report.

Bulgaria is in front of Romania, being ranked 60, and Slovenia, with an index of 0.929, is the state of Central Europe best placed in the UNDP rankings, occupying position 29, followed by Czech Republic - 36, Estonia, Poland, Slovakia and Hungary, which takes place from 40-43, with indexes between 0.883 and 0.879.

5. Conclusion

In the third millennium, the organizations worldwide and in Romania as well, must focus on encouraging investments in intangible resources, with the consideration of individual contributions within an organization. As the workforce becomes more “global”, valuable employees and employers should increasingly invest in themselves in order to protect and enhance core competencies and increase the stock of human intelligence through the development of new processes and technologies.

In this context, the factors that influence our lives could be translated as a transition to offering equal importance to economy, environment and society and becoming aware that investments in humans are a main source for a more sustainable economy.

As one of the main conclusions from this paper we see that there is a direct relationship between human capital and firm productivity: employees with high level of training are characterized by a better health status and are the direct source of

innovation, creativity, and therefore competitiveness. Investments in human capital benefit both individuals and society through increased productivity and better organization of economic activity. In the same time, the competitive advantage of a company, public institution or economy and society as a whole, becomes sustainable through the creation of value.

National and local policies in the country play a critical role in allowing optimal human development outcomes both for those who choose to relocate in order to improve living condition and for those who are forced by conflict, environmental degradation or other reasons.

In the same time, the analysis of Romania's positioning among other countries, especially those from the EU, indicates an overall trend of growth in innovation activity. However, there is room for several improvements to be made, especially for infrastructure and technology. Although our country has been registering satisfactory statistics (especially for Human Development), the Competitiveness and Knowledge Economy Indexs show there is room for improvement. In the same time, we must admit that compared to countries such as Norway, France or the United Kingdom, who have long had opportunities and power, it is at least understandable that our country needs to invest more. However, overall, our country has shown an improvement trend for all indexes, thus, in the future the motivational factor for improvement should be sustained, it is the main way to demonstrate our European competitors the value of our people.

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