

INTELLECTUAL CAPITAL, THE MAIN DRIVER FOR SUCCESSFUL BUSINESSES

Ramona TODERICIU¹, Alexandra STANIT²

”Lucian Blaga” University of Sibiu

Abstract

Knowledge and management are key areas for most organizations today, particularly for those that are knowledge intensive. In this context, implementing knowledge management involves more than implementation of IT tools, involves changes in the organizational structure, culture and processes, and the first step in transforming a company into a company knowledge-intensive it is to become aware of the knowledge they hold, materialized in intellectual capital. The purpose of this paper is to perform a comparative analysis of the main pillars of intellectual by identifying key dimension of human capital indicators, in European Union’s member companies, pointing out Romania’s case, for indicating the directions that a successful business follow by performing a proper intellectual capital policy.

Keywords: knowledge, intellectual capital, successful business

JEL classification: O34

1. Introduction

Intellectual capital is often defined as a dynamic system of intangible resource and activities that underpin the sustainable competitive advantage of organizations. This definition seems to contain the whole essence of intellectual capital and giving us a complete picture both in conceptually and practically. Its reliable measurement has become a key area of research for practitioners and researchers since the ‘90s.

The importance of intellectual capital in the current economy and knowledge society, become the new core of economic development as the impact of financial assets and the impact of lower net fixed assets is supported

¹ *Ph.D. Professor, “Lucian Blaga” University of Sibiu, ramona.todericiu@ulbsibiu.ro*

² *PhD Assistant professor, “Lucian Blaga” University of Sibiu, alexandra.stanit@ulbsibiu.ro*

by knowledge. The problem for accounting intellectual capital is one topical, because we can not deny the value that it gives the company, by excluding it totally intellectual capital can not be counted because it is an asset generated internally, and its value is very often considered irrelevant. But often, intellectual capital is responsible for a favorable growth of a business.

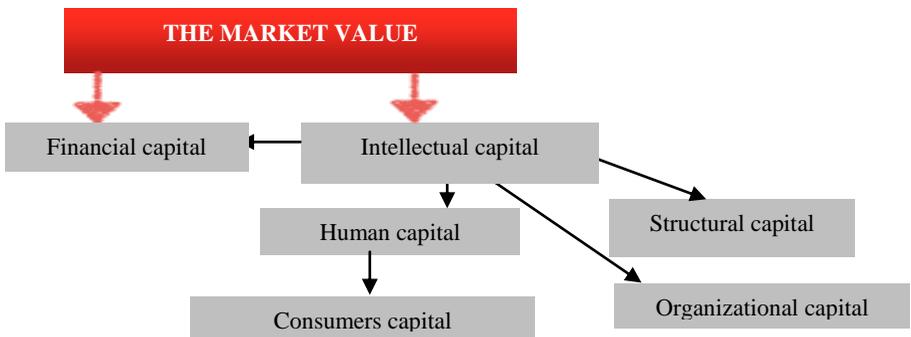
2. Overview of Intellectual Capital

2.1. Relevant definitions of Intellectual Capital

The concept of intellectual capital was solidly defined and argued for the first time by Thomas A. Stewart (Stewart, T. A. 2007), one of the editors of the famous American magazine "Fortune". Basically, it is the sum of everything we know about every employee in a company and can be used in developing its competitive capacity. There are many definitions of intellectual capital, but it is a vague concept to define, because its boundaries are not well defined and interact with the concept of human capital. In terms of composition brainpower, it is seen from several perspectives, the most famous of them:

- Leif Edvinsson's model, concluded that both financial capital and the intellectual part of the market value of a company's is made up of human capital and structural capital.

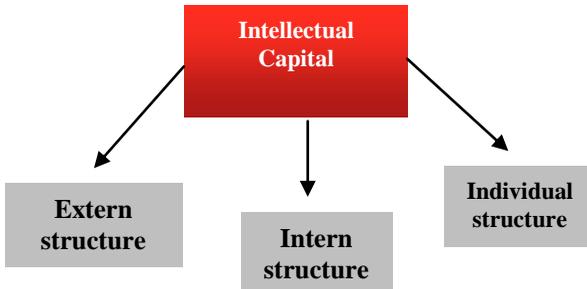
Figure 1: L. Edvinsson's Intellectual capital model



Source: Autor creation based on Edvinsson's intellectula capital model

- Sveiby defines human capital components in the internal structure, consisting of company management and training measures at company level, the external structure is composed of the company's customers and individual components consisting of education, training and personal improvement.

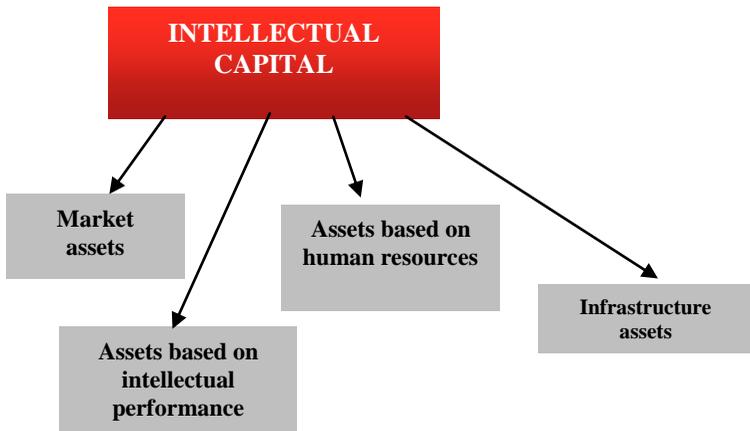
Figure 2: Sveiby Intellectual capital model



Source: Autor creation based on Sveiby's intellectual capital model

- The model according to "The technology broker' IC" based is on the idea that market assets, the components of intellectual capital, are intellectual property based on specific human resource and infrastructure assets.

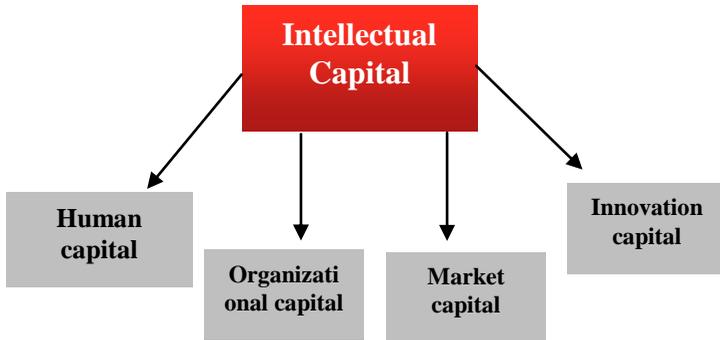
Figure 3: "The technology broker'IC" model



Source: Autor creation based on "the technology broker'IC" model

- The M.A.G.I.C. (Measuring and Accounting Intellectual Capital) appeared in the European MAGIC project, which aimed to develop a methodology for intellectual capital, but also a reliable measurement.

Figure 4: “The M.A.G.I.C.” model



Source: Autor creation based on MAGIC model

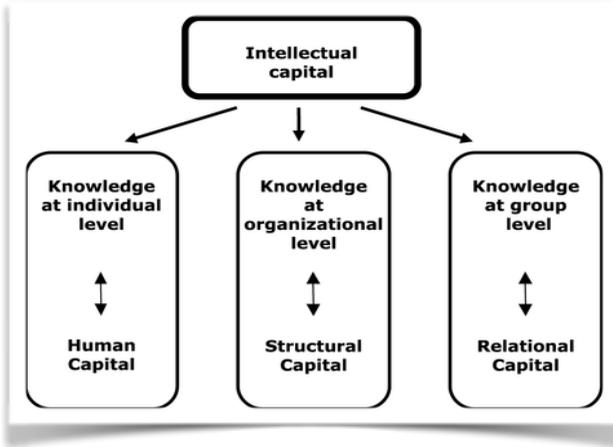
The meaning behind the term intellectual capital can be interpreted in economic terms, in terms of management, making reference to how the company is run, its customers or the readiness of employees. From an accounting perspective, the term intellectual capital is often equated with the term intangible asset.

2.2. Components of Intellectual Capital:

Based on intellectual capital formula, as sum between human capital, structural and relational capital, many authors propose to measure the following qualitative indicators:

- human capital - people's power, improving skills, staff stability, improving the capacity of individuals and groups;
- structure capital: ITC penetration, technology production, philosophy and business process, organizational structure, intellectual property;
- relational capital: customer base, customer loyalty, market proximity, sales effectiveness, vendors, networking with other market players.

After an analysis of the most important conceptualizations of brainpower and the variables of the three components of intellectual capital, Martín-de-Castro identifies the following dimensions and variables. (Martín-de-Castro, G., Delgado-Verde, M., López-Sáez, P., & Navas-López, J. E., 2011))



Source: <http://aer.forhe.ro/ro/capital-intelectual>

Thus, *human capital* has three dimensions: knowledge (knowledge) - formal, specific training, development and experience of staff skills - individual learning, collaborative teamwork, sharing individual knowledge through communication, know-how and leadership CPC and behaviors - patterns, paradigms, sense of belonging, self-motivation, job satisfaction, flexibility and creativity.

Structural capital is developed on the following dimensions and variables: technological capital - research and development efforts on infrastructure, technological, intellectual and industrial property.

Organizational capital comprises organizational culture, values and attitudes shared on telecommunications and information capabilities and organizational design.

3. The challenge of measuring Intellectual Capital

Measuring intellectual capital and knowledge management is not reflected in most cases, in the monetary records, corporate financial accounting, reporting is voluntary rather than mandatory. As such, there is a huge difference between reporting arrangements used by companies and typology of indicators reported.

Intellectual capital measurement, although brought to the attention numerous scientific studies, is quite controversial. Thus, any assessment methodology can be, in some respects, challenged. However, practitioners and international organizations constantly seeking new ways to improve.

3.1. Direct methods of measuring intellectual capital

On measuring intellectual capital, some authors (Guthrie, J., Ricceri, F., & Dumay, J. 2012), consider that the reporting and counting may refer to: the size and development of knowledge following resources: employee skills, customer relations, financial relations and information technology and communication.

Direct methods of measuring intellectual capital are designed to identify its direct elements, giving them a monetary estimated value. The most important methods of this type are method-Weighted Technology Broker and Patents Citation. Broker Technology method determines a final indicator that expresses the value of intellectual capital in monetary expression, considering that it has four components: market assets (trademarks, contracts, customers, licenses, etc.), human-centered assets (knowledge and skills of employees) and infrastructure-related assets (technologies, methodologies and processes that determine the proper functioning of the organization).

Gordon Petrash, proposed six steps for measuring intellectual capital (Method Patents Citation-Weighteddeva) defining the role of knowledge in business; assess all these assets in order to keep them, develop, sell or abandon; correlation of company development strategies based on knowledge assets; the allocation of investments in areas with significant gaps; classification / ranking based on knowledge asset portfolio company; redefining asset portfolio and then rebuilding cycle consisting of the steps above.

This model identifies the impact that expenditures have on the creation and development of intellectual capital using the following indicators: the share of spending for development in turnover, number of patents, income

relative to expenses for research and development, the cost of maintenance of a patent based on turnover, the cost of a project based on its receipts.

3.2. Methods based on scores

Method Skandia Navigator is one of the most popular method based on scores. It was proposed by Leif Edvinsson along with a team of experts from the Swedish company Skandia.

By conducting an evaluation exercise, it reached the following structure brainpower:

Human intellectual capital = Capital + Structural Capital

Structural capital = Capital + Capital Organizational client related organizational capital + capital = Capital Innovation Process

This method is subjective because it can be applied only if the company which has been developed.

Another method is based on the scores being called Knowledge Capital Scoreboard, and is Professor's Baruch Lev invention (Lev, B., 2000). This method measures the impact of knowledge based on company profits. It is very important for any organization to clarify its intellectual capital structure to obtain an advantageous strategic positions.

4. Intellectual Capital and it's role in business development and success

In the current economy more and more managers are fighting the financial crisis, trying to find all kinds of solutions to increase company value and importance of intellectual capital and its components are very important and even vital for certain companies. This new era of technology, new inventions and innovation has a major impact on the strategies, objectives and goals of many companies, so many researchers in the field of economic concern intellectual capital as a reliable source of increasing the value of companies.

According to Edvinsson, the market value of the company is given by its intellectual capital, which in terms of the model created by him, consists of:

* Human capital represented by tacit or explicit knowledge that people have, like the ability to generate knowledge that is useful to the organization's mission and includes values and attitudes, skills and know-how, philosophy and culture;

* Organization capital representing the combination of explicit knowledge and tacit formal and informal in an efficient and effective structure and develop organizational activity of the company, which includes culture (tacit knowledge and informal), the structure (explicit knowledge and formal) and organizational learning (renewal processes on tacit knowledge and explicit, formal and informal);

* Structural capital is defined as a set of powers and infrastructure support elements of human capital;

As can be seen, the intellectual capital through its forms conditional on the performance of the organization and the relationship between intellectual capital and organizational performance leads to establishment of a new career development trajectories, based on the acquisition of a portfolio as fully competent. Professional career development must enroll in a map of knowledge within the organization. This map is very valuable to the organization as comprising networks of knowledge that is created between employees and the manner in which they are organized around production.

Performance of an organization can be approached in terms of effectiveness and efficiency. They acquire new content for the knowledge-based organization, under the influence of several factors, which mainly are based on quality and valences of human capital of the organization.

These factors include:

-High knowledge in the firm;

-Increased share and the importance of quantifiable inputs represented tacit knowledge;

- Converting a portion of external stakeholders in components and / or participant in the intellectual capital of the company;

- Ecological environment of the company is an essential element of inputs and outputs knowledge-based company.

Companies realize that to remain competitive, they need to properly manage their intellectual resources and capabilities. To this end, many organizations have initiated a number of projects and programs based on knowledge management.

4.1. Objective and Methodology

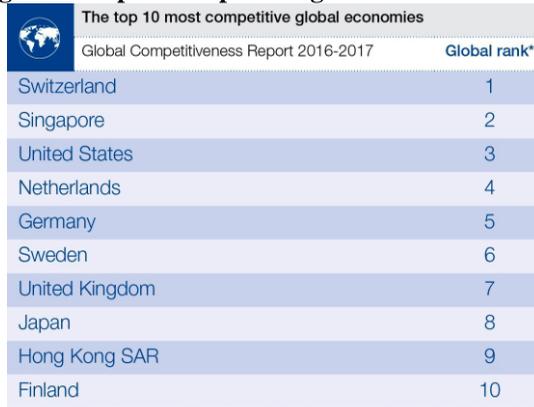
The purpose of this paper is to perform a comparative analysis of the main pillars of intellectual capital based on the World Economic Forum (2016-2017) reports, by identifying key dimension of human capital

indicators, in European Union's member companies, pointing out Romania's case, by indicating the directions for successful businesses by performing a proper intellectual capital policy.

4.2. Data analysis

According to the latest edition of the Global Competitiveness Report published in September 2016 by the World Economic Forum, for economies to accelerate innovation efforts will be crucial to maintain current levels of prosperity, and Europe can expect high returns from focusing its resources on nurturing its talent. The top 10 most competitive global economies, indicates a global rank in which Switzerland take first place, followed by Singapore and United States. Germany is at the middle of the group, ranked 5 and Finland is the last on the global classament.

Figure 6: Top 10 competitive global economies



The top 10 most competitive global economies	
Global Competitiveness Report 2016-2017	Global rank*
Switzerland	1
Singapore	2
United States	3
Netherlands	4
Germany	5
Sweden	6
United Kingdom	7
Japan	8
Hong Kong SAR	9
Finland	10

Source: The Global Competitiveness Report 2016-2017
*2016-2017 rank out of 138 economies.

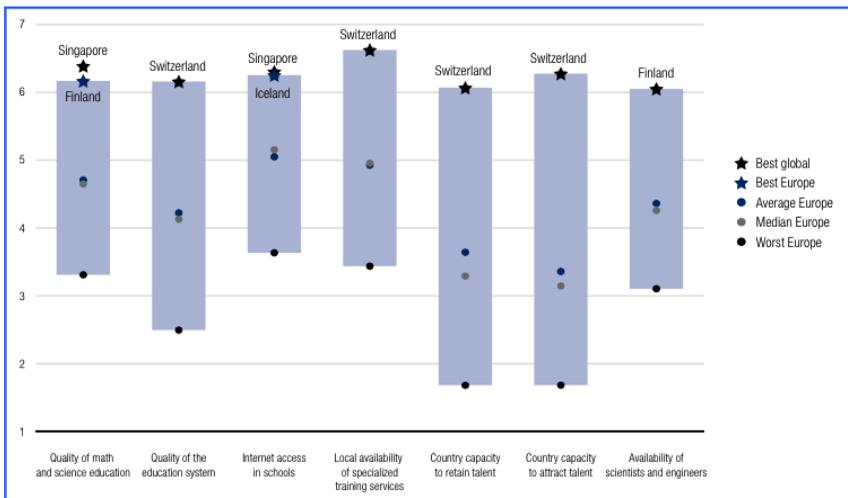
Source: <https://www.weforum.org/agenda/2015/09/the-worlds-top-10-most-competitive-economies/>

The figure presented by the The Global Competitiveness Report 2016-2017, presents 7 important indicators for reporting the human capital. As it can be seen the major problems appear not among the basic education indicators, but for math and science education. In acheaving a vibrant European knowledge economy, one of the most important challenge is the

achieving and retaining the international talent. In this case, Europe, as a region, has a very low score, although Switzerland owns the top global score at this point.

The most attractive country for talent is still the United Kingdom, yet the Br-exit vote has created significant uncertainty. There are many other european countries that also seem to be losing appeal, France, for exemple compared to last year, drops score for the “attract and retain talent” indicators.

Figure 7: Main indicators in reporting the human capital



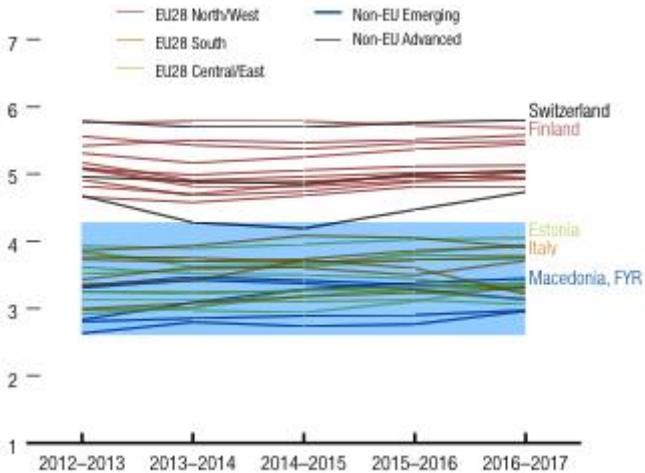
Source: World Economic Forum - The Global Competitiveness Report 2016-2017

Figure 7 shown below shows that the region’s countries are clearly divided, with a significant gap between the innovation assessment for Northern and Western European countries versus Central, Eastern, and Southern European ones. Although this gap has been a persistent challenge, there are some recent encouraging signs of convergence in certain dimensions.

To capture these developments, the suggested education and skills pillar measures both the quantity and quality of skills and the training that today’s workers possess, as well as the level of education and skills of tomorrow’s workforce, with particular emphasis on the use of ICTs in school

and the style of teaching. Measuring the skills of the current and future workforce together captures the dynamics of the workforce's skill set in each country, tracking whether the level of human capital is increasing or declining.

Figure 8: Innovation pillar for Europe (2012 - 2017)



Source: World Economic Forum - The Global Competitiveness Report 2016-2017

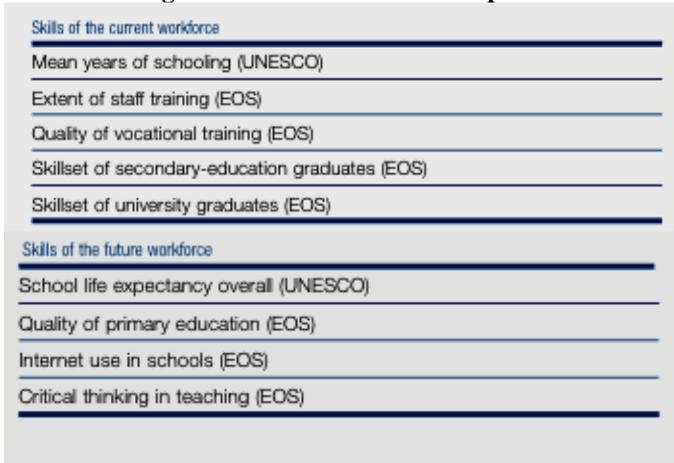
Even the most advanced countries today could quickly lose their human capital advantage if their education systems fail to increase the quantity and quality of skills of their future professionals and entrepreneurs. Similarly, developing countries could see their investments in education generate decreasing returns if they do not manage to update curricula and teaching styles. Table 1 shows the structure of the education and skills pillar.

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If we analyze the results obtained after taking the data offered by the W.E.F. – Global Competitiveness Index 2016-2017 and Human Capital Index, a look of perspective on the position of our country on the 12 pillars shows a rank 62 out of 138 countries under discussion. Currently, the Global

Competitiveness Index, Romania has a score of 4.3 out of 7, one ascending trend. The best runners are the pillars for Macroeconomic environment and health and primary education.

Figure 9: Education and skills pillar



Source: World Economic Forum - The Global Competitiveness Report 2016-2017

The figure below shows the evolution of Romania for the 12 pillars in the period 2012-2016, including projections for 2017.

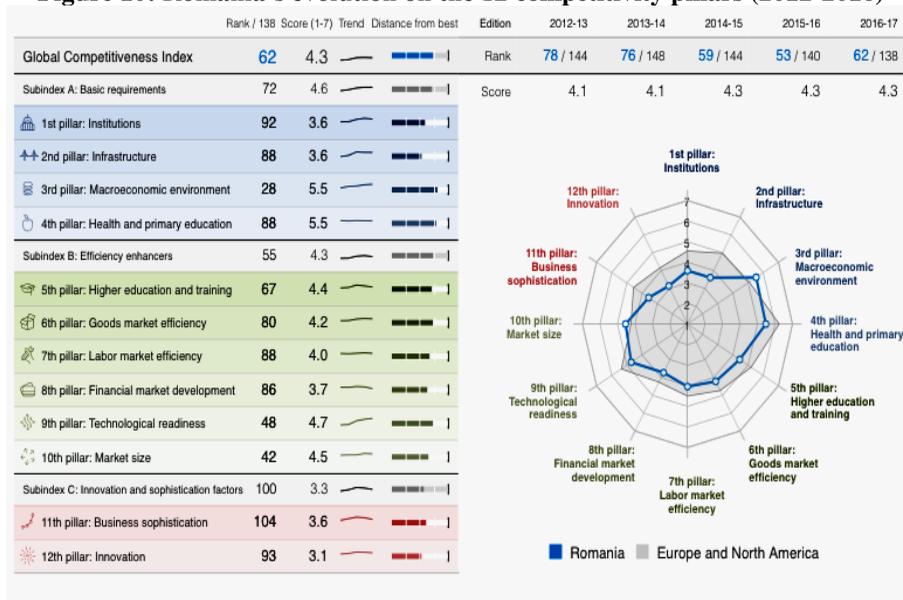
So it can be seen that our country was ranked best in the period 2014-2015, the best places occupied during 2015-2016, ranking 53 of 140 countries. We believe that each of discussing issues are affecting the development and success of a business, so we found of great interest to present some of the data generated by the World Economic Forum Report on the most problematic factors for companies in Romania.

As shown in the figure, the top ranked indicators are: access to financing, inefficient government Bureaucracy, tax rates, while less problematic aspects are: government instability, inflation, foreign currency regulations.

Regarding Pillar 5, the highest scores for Romania is obtained at quality of the education system, quality of management schools, extend training of staff. These aspects represent positive signs that indicate the

superiority of human resources training, performance management and achieving higher education.

Figure 10: Romania's evolution on the 12 competitiveness pillars (2012-2016)



Source: World Economic Forum - The Global Competitiveness Report 2016-2017

Figure 11: Pillar 5: Higher education and training

5th pillar: Higher education and training	67	4.4	
5.01 Secondary education enrollment rate gross %	63	94.8	
5.02 Tertiary education enrollment rate gross %	50	53.2	
5.03 Quality of the education system	121	2.8	
5.04 Quality of math and science education	32	4.7	
5.05 Quality of management schools	121	3.4	
5.06 Internet access in schools	44	4.8	
5.07 Local availability of specialized training services	99	3.9	
5.08 Extent of staff training	103	3.5	

Source: World Economic Forum - The Global Competitiveness Report 2016-2017

Preparation and training of human resources is a primary aspect that our country must take it into account, because only a well trained resource can bring successful business performance regardless of particular domains.

Figure 12: Business sophistication and Innovation pillar

 11th pillar: Business sophistication	104	3.6	
11.01 Local supplier quantity	112	4.0	
11.02 Local supplier quality	72	4.3	
11.03 State of cluster development	104	3.2	
11.04 Nature of competitive advantage	118	2.7	
11.05 Value chain breadth	96	3.5	
11.06 Control of international distribution	115	3.0	
11.07 Production process sophistication	97	3.4	
11.08 Extent of marketing	100	4.1	
11.09 Willingness to delegate authority	79	3.6	
 12th pillar: Innovation	93	3.1	
12.01 Capacity for innovation	80	4.0	
12.02 Quality of scientific research institutions	71	3.8	
12.03 Company spending on R&D	111	2.8	
12.04 University-industry collaboration in R&D	80	3.3	
12.05 Gov't procurement of advanced tech. products	134	2.3	
12.06 Availability of scientists and engineers	60	4.1	
12.07 PCT patent applications applications/million pop.	52	3.4	

Source: World Economic Forum - The Global Competitiveness Report 2016-2017

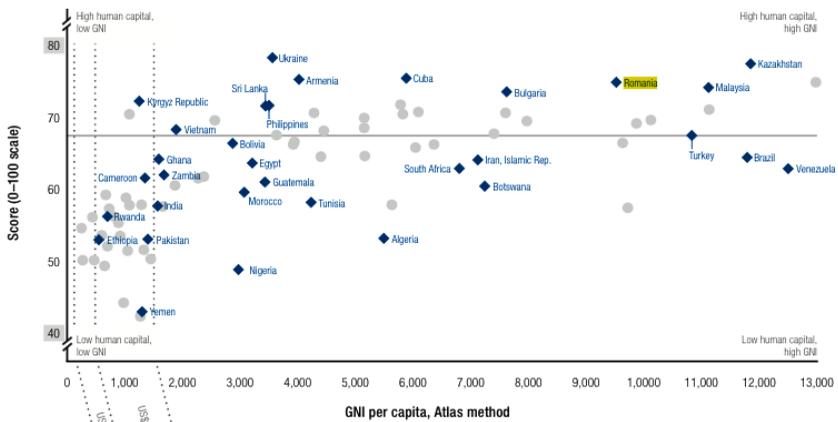
Business sophistication is another aspect of interest for the present work, both in terms of business development and success and the prospect of growing a high standard for the intellectual capital, which is currently represented by its components in the pillar 11.

Tree top ranked in this chapter are: nature of competitive advantage, control of internal distribution, local supplier quantity. The last pillar, the pillar 12, entitled “Innovation”, indicates for Romania the highest score for the indicator *government procurement of advanced tech. products, company spending on R & D and capacity for innovation*, all presenting an uptrend.

The Human Capital Index for 2016 indicates within the lower-middle income group (countries with a GNI per capita between US\$1,046 and US\$4,125), six out of 33 countries covered by the Index score above 70%, 14 countries score in the 60% to 70% range and 13 have not crossed the 60% threshold. The figure above displays the correlation between GNI per capita

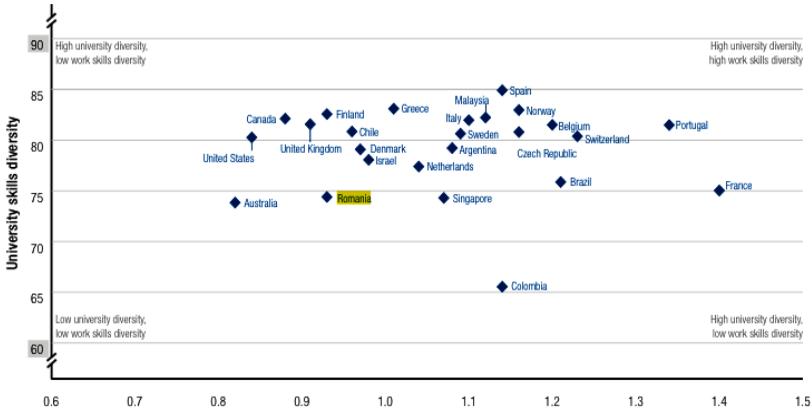
levels and performance on the Human Capital Index. For example, Australia (18) and Estonia (15) are practically tied in their human capital outcomes but record very different GNI per capita levels. Conversely, despite very similar GNI per capita levels, Ghana (84) significantly outperforms Nigeria (127), indicating that human capital investment and planning can make a difference to a nation's human capital endowment regardless of where it falls on the global income scale (WEF, 2016).

Figure 13: Relationship between GNI per capita and the Human Capital Index 2016, low and middle-income countries



Source: World Economic Forum - Human Capital Index 2016 and World Bank.

Figure 14: Workplace Skills diversity



Source: World Economic Forum - Human Capital Index 2016

According to Human Capital Index 2016, we find that— based on LinkedIn’s membership profiles— countries such as France (17) and Switzerland (3) have access to a considerably more diversified skills pool in their workforce than Romania (38) or the United Kingdom (19).(WEF, 2016)

The Human Capital Index shows that LinkedIn has more than 430 million members which use this platform for upgrading their professional life, and more than 150,000 skills phrases are reported on the platform. The company has also grouped 35,000 standardized skills creating and using a modern big data algorithms. So using this formula, LinkedIn has created a unique measurement of workplace skills diversity for this Human Capital Index 2016. (WEF, 2016)

6. Conclusions

In conclusion, knowledge is often the advantage that a company can have over competitors, and this knowledge is derived from intellectual capital. As we have seen, intellectual capital is used to create the company a competitive advantage, especially when it comes to tacit knowledge, only asset that the company that created it can be used constructively, but not only. We live in a time when physical things do not have as much significance, with an emphasis on knowledge. It is important for every company to invest in the creation of intellectual capital, both through human capital by means of training and development of managers and to implement structural capital. We

can see how big companies prefer to recruit people than average and to form the company. Attempting an expansion at the company level through intellectual capital, shows a greater involvement from the economic entities to increase their market value, but also to become market leaders.

We can conclude that this study, along with an analysis of representative variables of intellectual capital in companies from EU countries allows the identification of strategic directions, forward, Romania, to mitigate the negative effects of the economic crisis. At the level of the EU states is the need to develop intellectual capital as it is emphasized by the Europe 2020 strategy, which has set as target a 40% of people aged between 30 and 34 years old have completed graduate or equivalent.

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