

THE CONCEPT OF KNOWLEDGE-BASED ORGANIZATION WITHIN THE PRESENT ECONOMIC ENVIRONMENT

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***Abstract:** Knowledge as a strategic resource for the economic activity (entrepreneurial resource) has gained major importance within the present society. The study attempts to define the main dimensions of a knowledge-based organization or, in a wider acceptance, based on intangible assets, according to the international practice and literature; at the same time, the study emphasizes the perspective of this concept for the economic environment. The main conclusion of the study is that the economic entities which value knowledge as a strategic resource are best suited to reach success, efficiency or a competitive advantage within the present globally connected economic environment. As a result, the volume and, more importantly, the quality of the investments in intangible assets have a direct impact on the performance of an economic entity.*

***Keywords:** intangible assets, intellectual capital, knowledge-based organization*

I. Introduction

Within the present economic environment, maximizing the value of a business in time remains the main objective of any entrepreneur. The economic entities (enterprises, firms, companies, organizations etc.) attempt to efficiently combine the available resources – tangible and intangible – in order to produce or sell the goods or services, with the main target of gaining an important part of the market concomitantly with increasing profitability.

However, competitiveness is no longer exclusively or even to a great extent dependent on an economic entity's formal competences and tangible assets. The intangible assets or intellectual competences – defined

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as knowledge in general – have nowadays a more important role in the production process of any economic entity, in producing new goods and services and, even more important, in creating a new type of relationship with the client, mutually beneficial for the client and for the seller. Knowledge is a strategic resource for any economic activity, and the current progress in the field of science and technology certainly proves the role of knowledge in the global economy. National economies are, from this point of view, increasingly integrated into the global economy, through the international flows of goods and services, investments, people and ideas.

The economic entity is conceived today as an institution that integrates knowledge, this notion of “integration” including the knowledge creation, management, use and transfer.

For certain industries, such as the high technology ones, knowledge could be more valuable than natural resources or tangible assets (such as real estates). The more or rather the best information held, as well as the best usage of intangible assets, the bigger the success or efficiency of an economic entity. This statement seems to prove the current role of knowledge/intangible assets.

A summary assessment of the international literature leads to the following relevant conclusions:

- Numerous definitions of the intangible assets have been framed or developed over time, depending on the different theoretical approaches;
- A multitude of terms could be interchangeably used to designate what is usually understood as non-tangible assets: “intangible assets”; “intellectual property”, “intellectual capital”, “intellectual assets”, “knowledge capital”, “knowledge based assets”.

II. Intangible assets – conceptual delimitations

II.1. Definitions of intangible assets/goods

The international literature operates with a series of intangible assets’ definitions, depending on the goal of every research or study.

- A comprehensive definition refers to intangible asset as a claim to future benefits that does not have a physical or financial embodiment, or alternatively, all the elements of an economic entity which exist alongside with monetary or tangible assets¹.

¹ Baruch Lev, *Intangibles - Management, Measurement, and Reporting*, Brookings Institution Press, Washington, D.C., 2001, p. 5, <http://www.stern.nyu.edu>.

➤ In a wider sense, the intangible assets are defined as non-physical sources of future potential benefits, belonging to an economic entity, which were acquired through an exchange or were internally produced with identifiable costs, have a finite lifespan, have a market value different from that of the holder and are owned and controlled by the economic entity².

➤ Intangible assets are seen as invisible assets that include the employee competence, the internal and the external structure of an economic entity³.

➤ Intangible assets are nonphysical factors that contribute to, or are used in, the production of goods or provision of services or that are expected to generate future productive benefits to the individuals or firms that control their use⁴.

At the same time, the literature on the subject abounds in operational definitions that refer to the “intellectual capital”:

➤ The intellectual capital includes a series of activities, from capturing, coding and disseminating information, to acquiring new competencies through training and development, to re-engineering business processes⁵.

➤ The intellectual capital is the sum of everything everybody in a company knows that gives it a competitive edge; in other words, it is intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth⁶.

➤ The intellectual capital is the possession of the knowledge, applied experience, organizational technology, customer relationships and professional skills that provide an economic entity with a competitive edge in the market⁷.

➤ The intellectual capital is the totality of the hidden assets of an economic entity not fully captured on the balance sheet, and thus

² *Ibidem*.

³ Sveiby K. E., *The New Organisational Wealth – Managing and Measuring Knowledge-based Assets*, Berrett-Koehler, San Francisco, CA. Upton, 2001, pp. 2-5.

⁴ Blair M. M., Wallman S. M. H., *Unseen Wealth – Report of the Brookings Task Force on Intangibles*, The Brookings Institution, Washington, DC., 2001, pp. 9- 10.

⁵ Bontis N., *There’s a Price on Your Head: Managing Intellectual Capital Strategically*”, “Ivey Business Journal”, Summer 1996, Vol. 60, No. 4, pp. 40-47.

⁶ Stewart T. A., *Intellectual Capital: The New Wealth of Organizations*, Currency Doubleday, New York, NY, 1997, pp. xix-xx.

⁷ Edvinsson L., Malone M. S., *Intellectual Capital: Realizing your Company’s True Value by Finding Its Hidden Brainpower*, HarperCollins Publishers, New York, NY, 1997, p. 3 și urm.

including both what is in the heads of organizational members, and what is left in the company when they leave⁸.

➤ The intellectual capital refers to combined intangible assets which enable a company to function, consisting of market assets, intellectual property assets, human-centred assets and infrastructure assets⁹.

➤ The intellectual capital includes all kinds of intangibles, either formally owned or used, or informally deployed and mobilized and it is more than simply the sum of the human, structural and relational resources of an economic entity, including the mode of using these resources in order to create value¹⁰.

➤ Intangible fixed assets are the intangible economic assets which are exposed to monetary evaluation and could be subject to economic transactions either individually, or as a part of an economic entity. The intangible assets are purchased for being used in the production process, being classified in the following two categories:

- Patents, copyright agreements, trade marks or intellectual property;
- Real situations, properties or relationships, such as clients' portfolio, reputation, clients' loyalty, the economic entity's organizational structure and its specialty within the production field, the scientific or technical knowledge. The existence of these elements, in specific commercial and production conditions, grant the entity a bigger value as compared to the value assigned to its individual assets¹¹.

From the above mentioned definitions it results that the main aspects of the intangible assets are:

- their intangible, non-physical nature;
- their involvement in potential economic transactions;
- they are subjects to financial evaluation and accounting;
- they contribute to the increase and development of the economic entity;
- they are combined with other assets (tangible and/or intangible) in the production, trade and entrepreneurial processes;

⁸ Roos G., Roos J., Dragonetti N., Edvinsson L., *Intellectual Capital: Navigating in the New Business Landscape*, New York University Press, New York, NY, 1997.

⁹ Brooking A., *Intellectual Capital*, International Thomson Business Press, London, 1998, pp. 12-16.

¹⁰ *Guidelines for Managing and Reporting on Intangibles*, TSER Programme, MERITUM, Tucson, AZ, 2002, p. 11.

¹¹ *Study on the Measurement of Intangible Assets and Associated Reporting Practices*, prepared for the Commission of the European Communities Enterprise Directorate General, April 2003, p. 15 și urm.

- the investment in intangible assets is made aiming at future economic benefits.

An operative definition of the intangible assets includes the category of identifiable, non-monetary assets, without a physical substance, specific to capital and intellectual property, which include knowledge related to the results of the research-development activity (materialized in concept studies, scientific reports, special papers, documentations, patents for inventions, license certificates etc.), brands or registered trade-marks, commercial and industrial secrets, advertising, software, property rights, licenses, training and education activities etc.¹²

II.2. Categories and types of intangible assets

A series of approaches have tried to classify the intangible assets depending on their objective (analysis, assessment, protection etc.), both at micro and macro level. The ultimate goal of such approaches is to identify a generally, or at least widely accepted, system of classification.

Such a classification scheme is the one proposed by the Intangibles Research Center at New York University, *Vincent Ross Institute of Accounting Research*, which includes¹³:

- Goodwill/the prestige (the value of the company, brand etc.);
- Advantageous relationships with government and covenants not to compete;
- The intellectual capital:
 - Trade secrets, internally generated computer software, drawings, other patented technology;
 - Intellectual property including patents, tradenames, trademarks, copyrights existing pursuant to legal system;
 - Brand equity;
 - Brands attracting market share;
- Other marketing capabilities including advertising:
 - Structural capital;
 - Human resources (assembled workforce of employee), training and employee contract relations;

¹² Zaman Gheorghe, Gherasim Zenovic, *Evaluarea capitalului natural și a bunurilor intangibile, domenii majore ale educației pentru dezvoltarea durabilă*, Buletinul AGIR, Supliment 2/2010.

¹³ Baruch Lev, *op. cit.*

- The leadership;
- Organizational innovation capacity (to commercialization stage);
- Organizational learning capacity;
 - Leaseholds;
 - Franchises;
 - Licenses;
 - Mineral rights;
 - Customer equity:
- Customer databases;
- Customer loyalty and satisfaction;
 - Distribution relationships and agreements.

In its turn, EUROSTAT, in its *Second European Report on Science & Technology Indicators 1997*¹⁴, has identified ten classes of intangible investments:

- Research & Development;
- Acquisition of intellectual property rights – patents and licenses;
- Acquisition of industrial property right;
- Advertising and other marketing activities;
- Acquisition and processing of information;
- Acquisition of software;
- Reorganization of the management of an organization;
- Reorganization of the accounting system of an enterprise;
- Means designed to deal with the adoption of changes in legal, fiscal, social and economic government policies;
- Other investments for the innovation of products or services of an economic entity.

In 2001, EUROSTAT has developed a new classification, in association with national statistics institutes¹⁵, by which it proposed to group the indicators of intangible investments into four main domains:

¹⁴ *The Second European Report on Science & Technology Indicators 1997*, EUROSTAT, <http://cordis.europa.eu/indicators/publications.htm>.

¹⁵ Statistic activities related to the intangible economy, <http://www.ll-a.fr/intangibles/statistics.htm>.

Classification of intangible investments' indicators (EUROSTAT 2001)

Domains	Groups of indicators
Technology Domain	<ul style="list-style-type: none"> ➤ Information Technology and Communications (ICT) Infrastructure; ➤ Internet Infrastructure; ➤ Digitisation; ➤ Virtualisation; ➤ Multimedia; ➤ Internet users; ➤ Internet penetration.
Industry Domain	<ul style="list-style-type: none"> ➤ ICT production and trade indicators; ➤ Knowledge Capital Indicators; ➤ Industry Performance Indicators; ➤ Inter-enterprise alliances indicators; ➤ New Business Organisational Types Indicators.
Economy Domain	<ul style="list-style-type: none"> ➤ Production indicators; ➤ Economic Performance indicators; ➤ Foreign Trade Indicators; ➤ Foreign Investment Indicators; ➤ Internet Economy Indicators; ➤ Business Indicators; ➤ Deregulation Indicators; ➤ Information Production & Diffusion indicators; ➤ Price and Wage Indicators.
Social Domain	<ul style="list-style-type: none"> ➤ Economic and social demography indicators; ➤ Lifelong learning/training indicators; ➤ Living standards and lifestyles indicators; ➤ Cultural indicators; ➤ Social inequality indicators; ➤ Technology penetration indicators; ➤ Internet penetration indicators; ➤ Time use.

Concluding the ideas presented above, one could assert that the intangible assets could be divided into three sub-categories: intellectual property, individually/separately identifiable intangible assets and non-separable intangible assets/goodwill¹⁶:

¹⁶ *Study on the Measurement of Intangible Assets and Associated Reporting Practices.*

Sub-categories of intangible assets

Intellectual property	Separately identifiable intangible assets	Goodwill (Non-separable intangible assets ("Goodwill"))
Eg.: Intangible assets subjected to legal or contractual rights: patents, trademarks, designs, licenses, copyrights, film rights, mastheads etc.	Eg.: Information systems, networks, administrative structures and processes, technical knowledge and market information, human capital (embodied in a codified form), brands, equipments, trade secrets, internally generated software systems, drawings etc.	Eg.: Prior intangible investments embodied in organizations, management expertise, geographic position, monopoly market niche etc.

III. The knowledge-based organization - dimensions

As in the case of intangible assets (knowledge), there are numerous definitions of the knowledge-based organization in the literature on the subject. A comprehensive definition would be one that integrates four dimensions, given the fact that, according to its author, "the degree to which knowledge is an integral part of a company is defined not by what the company sells but by what it does and how it is organized"¹⁷. The essential four dimensions of the knowledge-based organization are:

1. **The process** - "knowledge sharing and creation" - includes the activities taking place inside the organization, some of them directly connected with making a product or selling a product or a service, others auxiliary, yet equally important.

From this point of view, a knowledge-based organization is focused on two interconnected processes, which support the basic activities, respectively: "the effective application of existing knowledge and the creation of new knowledge"¹⁸, by this trying to achieve:

- the knowledge transfer at horizontal and vertical level, in order to ensure that any information or knowledge from one sector of the organization is applied to activities in other sectors;
- the knowledge transfer over time, in order to ensure that the company benefits from previous experiences;

¹⁷ Zack Michael H., *Rethinking the Knowledge-Based Organization*, „MIT Sloan Management Review“, Summer 2003, Vol. 44, No. 4, pp. 67-71.

¹⁸ Zack Michael H., *Developing a Knowledge Strategy*, „California Management Review“, Spring 1999, No. 41, pp. 125-145.

- the collaboration between employees, inter- and intra-departments, in order to ensure the knowledge creation;
- the offering of opportunities and incentives for experimentation and learning.

2. **The place** - “knowledge boundaries” - refers to the boundaries of an organization; for sharing or creating knowledge, the boundaries that could go beyond the traditional legal boundaries.

In the present society, the creation and transfer of knowledge are no longer contiguous by the traditional physical and legal limits of an organization. On the contrary, knowledge is often produced and transmitted as a result of or in the process of interaction with a series of entities, from clients to suppliers, from partners to competitors. From this perspective, the knowledge-based organization is an ensemble of individuals and “supporting resources” that create and apply knowledge through a continuous process of interaction.

3. **The purpose** - “knowledge strategy” - is related to any organization’s mission and strategy, as well as the way it intends to mutually profitable serve its clients.

The knowledge-based organization starts from the premise that one of its strategic resources, if not the only one, is knowledge. Such a vision should be accompanied or supported by a process of knowledge management. Therefore, the knowledge-based management refers to the process through which organizations generate value by exploiting or capitalizing the intangible/intellectual assets.

4. **The perspective** - “vision of knowledge” - refers to the global vision and culture of an organization, which influence and constrain the decisions and actions of an organization.

A knowledge-based organization applies this resource - the knowledge - in every aspect of its activity: the organizational layout (“how it organizes”), the activity of production (“what it makes”), the location and proximity (“where it locates”), the human resources (“whom it hires”), the relationship with the clients (“how it relates to customers”), the brand image (“the image it projects”), the nature of its competition etc. through a continuous process of learning, adjustments and readjustment. From this point of view, the knowledge-based organization is not exclusively oriented towards selling products or services, but towards exploiting knowledge (for example, through offering knowledge on how to use a product, instead of simply selling that product).

IV. The transfer of knowledge – conceptual delimitations

Although it is unanimously recognized that the technological progress and innovation plays an essential role in the economic development of every country, within the current global economic environment equally important is also the transfer of technology, by this also meaning the adoption, adaptation and assimilation of new technologies.

In general, authors mention three essential aspects of an “innovation-based growth strategy”¹⁹:

1. a developed technological infrastructure (including the educational system, the network of research organizations, the legislative framework which protects the intellectual property and offers incentives for creativity and technology transfer);

2. a set of policies focused on capabilities in the field of technology and science;

3. and a coordinated action of policies and governmental institutions.

As the development of a proper technological infrastructure requires the allocation of considerable resources, a more efficient strategy of economic growth for the less developed countries could be based on the transfer and assimilation of the existent technologies. Moreover, the creation of new knowledge or technology requires also a great investment of time²⁰, and not only of financial or material resources.

For an economy which has not sufficient resources for major investments in the creation of new knowledge/technology, the benefits of the technological progress could be materialized through transfer, through the assimilation and adaptation of the existent technologies. And there are authors who assert that the main objective of any economic entity (firm, organization etc.) is rather that of putting into practice the existent knowledge than that of creating new knowledge²¹.

¹⁹ Koh Winston T.H., Poh Kam Wong, *Competing at the Frontier: The Changing Role of Technology Policy in Singapore's Economic Strategy*, “Technological Forecasting and Social Change”, Vol. 72, Issue 3 (2005), pp. 255-285,

<http://portal.jnu.edu.cn/publish/uploadFile/2970/eWebEditor/20100701065643139.pdf>

²⁰ Carlile Paul R., *Transferring, Translating, and Transforming: An Integrative Framework for Managing Knowledge across Boundaries*, “Organization Science”, Vol. 15, No. 5 (Sep. - Oct., 2004), INFORMS Stable, pp. 555-568, <http://www.jstor.org/stable/30034757>.

²¹ Grant Robert M., *Toward a Knowledge-Based Theory of the Firm*, “Strategic Management Journal”, Vol. 17, Special Issue: “Knowledge and the Firm” (Winter, 1996), John Wiley & Sons, pp. 109-122, <http://www.jstor.org/stable/2486994>.

One could assert that an economic entity/organization trying to be competitive on the market should rather adopt a “knowledge-seeking strategy” than a “knowledge-creating strategy”²², meaning that the entity would endeavor to capitalize on every opportunities occurring both from inside (within the entity), and from outside (from other entities). At a more general level, the flows of knowledge (technology, ideas, information etc.) within or between states or economies could have important consequences for productivity and for innovation.

At the same time, the internal technology transfer (intra-entity) is as important as the external one (inter-entities). For example, researchers estimate that only 20 percent of knowledge is learned or assimilated from outside the region of origin and only 9 percent is learned or assimilated from outside the country of origin²³.

The internal knowledge flows are a key determinant of “gaining power”²⁴, or, in other words, of gaining a competitive advantage on the market. The knowledge transfer at the internal level requires both a formal hierarchical structure (for centralizing and structuring the information), and informal relationships (in the form of social interaction), as coordination mechanisms²⁵.

The problem of knowledge transfer intra-entity is, perhaps, even more critical than that of inter-entities²⁶, given the fact that the entities’ advantage (micro level) as compared to the economies’ advantage (macro level) consists precisely in the better use (including through transfer) of the knowledge possessed by individuals and groups from inside the entity

²² Martin Xavier, R. Salomon, *Knowledge, Transfer Capacity and Its Implications for the Theory of the Multinational Corporation*, “Journal of International Business Studies”, Vol. 34, No. 4 (Jul., 2003), Palgrave Macmillan Journals, pp. 356-373, <http://www.jstor.org/stable/3557180>.

²³ Peri Giovanni, *Determinants of Knowledge Flows and Their Effect on Innovation*, “The Review of Economics and Statistics”, Vol. 87, No. 2 (May, 2005), The MIT Press Stable, pp. 308-322, <http://www.jstor.org/stable/40042905>.

²⁴ Mudambi Ram, Pietro Navarra, *Is Knowledge Power? Knowledge Flows, Subsidiary Power and Rent-Seeking within MNCs*, “Journal of International Business Studies”, Vol. 35, No. 5 (Sep., 2004), Palgrave Macmillan Journals, pp. 385-406, <http://www.jstor.org/stable/3875201>.

²⁵ Tsai Wenpin, *Social Structure of "Coopetition" within a Multiunit Organization: Coordination, Competition, and Intraorganizational Knowledge Sharing*, “Organization Science”, Vol. 13, No. 2 (Mar. - Apr., 2002), INFORMS Stable, pp. 179-190, <http://www.jstor.org/stable/3085992>.

²⁶ Grant Robert M., *op. cit.*

(which could be in the form of information – for example *who knows what* – or in the form of *know how* – for example how to arrange a research team)²⁷.

In spite of the multitude of theories and definitions regarding the knowledge and the way of using or transmitting (transferring) knowledge, they all have a common denominator: they all stress the importance of knowledge and the necessity to possess knowledge for any economic entity²⁸.

V. Conclusions

The intellectual capital or the knowledge capital, materialized through skills, information, experience, routines and organizational systems, the innovation infrastructure etc. constitute a major source of surplus value not only for economic entities, but also for entire nations.

The knowledge based organization implies a “more democratic” vision of the economic entity, where each employee performs different activities, thus learning different things regarding the process of transforming the *inputs* into *outputs*. Such an organization requires an environment where employees at all levels become independent agents, undertake responsibilities, experiment, make mistakes and learn in the continuous process of improving the performance of the economic entity²⁹. In the knowledge-based organization, managers are no longer rule-makers, and the employees are no longer rule-followers, such as the economic entities are not exclusively based on tangible resources; on the contrary, the economic entities must be conceived as long-term alliances between independent knowledge creating entities, be they individuals, teams, or other organizations³⁰.

It is almost a truism to assert that every company performing in the current economic environment is “based” on knowledge. Knowledge

²⁷ Kogut Bruce, Udo Zander, *Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology*, *Organization Science*, Vol. 3, No. 3, Focused Issue: Management of Technology (Aug., 1992), INFORMS, pp. 383-397, <http://www.jstor.org/stable/2635279>.

²⁸ Foss Nicolai J., Knowledge-Based Approaches to the Theory of the Firm: Some Critical Comments, *Organization Science*, Vol. 7, No. 5 (Sep. - Oct., 1996), INFORMS, pp. 470-476, <http://www.jstor.org/stable/2635285>.

²⁹ Spender J.-C., *Making Knowledge the Basis of a Dynamic Theory of the Firm*, “Strategic Management Journal”, Vol. 17, Special Issue: “Knowledge and the Firm” (Winter, 1996), John Wiley & Sons, pp. 45-62, <http://www.jstor.org/stable/2486990>.

³⁰ *Ibidem*.

certainly is an important resource of any economic entity and numerous such economic entities have adopted the concept of knowledge-based organization. Many authors appreciate knowledge as “the key economic resource” and “the dominant – and perhaps even the only – source of comparative advantage” and constant higher performance³¹.

Within the present economic environment, the performance of an economic entity depends to an increasingly great extent on the volume and quality of their investments in intangible assets. At the same time, the performance of an economic entity is linked to the creation and implicitly the selling of unprecedented, innovative goods or services.

The investments in intangible assets demonstrate their importance in the current economic environment. For example, in the USA, in 1982, of every 100 USD invested in stocks of manufacturers and mining companies on average 62.3 USD were spent on tangible assets (such as land, plant, machinery, equipment and inventories). In 1992, only 37.9 USD out of every 100 USD invested into stocks was spent on tangible assets, and more than half of the investment went on acquisition of intangible assets³². In 2000, the annual total investments of US corporation in intangible assets reached one billion USD, equaling the value of manufactures investments in physical assets (mainly real estates, plants, equipments), amounting to 1.1 billion USD³³. At present it is very possible that the value of investments in intangible assets would greatly exceed the value of investments in physical assets.

Such a situation gave birth to new forms of competition and, simultaneously, of cooperation between economic entities and even nations. And, as T. A. Stewart pointed out, “information and knowledge are the thermonuclear competitive weapons of our time. Knowledge is more valuable and more powerful than natural resources, big factories, or fat bankrolls. In industry after industry, success comes to the companies that have the best information or wield it most effectively – not necessarily the companies with the most muscle”³⁴.

³¹ Drucker F. Peter, *Managing in a Time of Great Change*, Harvard Business School Publishing Corporation: Boston, Massachusetts, 2009, p. 229.

³² Stewart T. A., *Intellectual Capital*, New York: Doubleday Dell, 1997, p. 33.

³³ Baruch Lev, *Intangible Assets: Concepts and Measurements*, “Encyclopedia of Social Measurement”, Vol. 2, 2005, New York: Elsevier Inc., p. 299.

³⁴ Stewart T. A., *Intellectual Capital*, p. 33.

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