

# The Enterprise' Performance in the Knowledge Based Society

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**Abstract.** As in the traditional enterprise, the performance of the enterprises in the knowledge based society is expressed through the same well-known financial indicators: return on equity, the profit margin, return on assets, gross margin, asset turnover, inventory turnover, the collection period, days' sales in cash, payable period, fixed-asset turnover, balance sheet ratios, coverage ratios, market value leverage ratios, liquidity ratios, return on invested capital and many others. But, the differences that appear are in the way of acquiring at this performance in the enterprises. The actual knowledge based society is promoting the methods and models of the rational management that will lead to performance acquiring by the enterprises. Although as a first step, the reference to financial character as income statement, balance sheet, schedules to a balance sheet started to include references to the brain capital that is considered the success key in the businesses. In this paper I intend to present the effects on enterprise' financial performance of the main components of the brain capital: the human capital characterised through the employees' competences and skills; organizational capital that defines the internal structures of the enterprises, inclusively the informatics structure and social capital, related to the enterprise relations with thirds (investors, banks, customers, suppliers etc.). The brain capital mustn't be looked as a present vogue but as a necessity of its consideration and evaluation thus to the old economic-financial rules used in decision making to be added and the knowledge/information decision.

**Keywords:** enterprise' performance, knowledge based society, ICTs, brain capital, social capital

## 1. Introduction

Since Lisbon and Stockholm, a major ambition of European policy is to turn Europe into the leading knowledge society in the world. Knowledge is assumed to be the main driving force for economic growth, for increasing the quality of life of European citizens and for increasing of the *enterprise' performance*. As knowledge building has now become the key concern, it is not surprising that investments in human capital are considered to be of crucial importance.

At the corporate level, competitive positions may be achieved both through a process of cost reduction, obtained through process innovation, and an increase of revenue per employee, thanks to product innovation. The effects of information and communication technologies (ICTs) on enterprises' competitiveness do not only regard process innovation, but also influence product innovation, by stimulating product differentiation, the development of new market niches, and by allowing directly the implementation of new technological products and services.

## 2. The performance in the modern enterprise

The performance in the modern enterprise may be defined as a competitiveness state achieved through a level for efficacy and productivity that is assuring a sustainable position on the market.

As in the traditional enterprise, the performance of the enterprises in the information society is expressed through the same well-known financial indicators: return on equity, the profit margin, return on assets, gross margin, asset turnover, inventory turnover, the collection period, days' sales in cash, payable period, fixed-asset turnover, balance sheet ratios, coverage ratios, market value leverage ratios, liquidity ratios, return on invested capital and many others. But, the differences that appear are in the way of acquiring at this performance in the enterprises.

The modalities of information communication in the knowledge based society lead to taking decisions in useful time that assure and raise the enterprise performance. Today, the Internet is one of the most used sources of information. Thus, the investment interest of the enterprises is straightening more to information and communication technology.

Also, the achieving of the performances by the enterprises is not based only to the technical-economic criteria of reducing at the production costs (especially at the material costs) and of the purchasing of the performing equipments that assure the decreasing costs. A great importance is assigned to the human factor – human intelligence – that through their knowledge contribute towards the obtaining of the performance by the enterprises into a great measure.

In the same time, the enterprise of the future is considered as a complex mechanism in which are producing decisive removals over the performances<sup>1</sup> as:

- the essential orientation of the supply towards the satisfaction of the market demand, of the requests formulated by the beneficiaries of the goods or services;
- adaptability based on permanently innovation;
- internal structures that may award a higher flexibility for organization;
- minimization of the number of hierarchic levels;
- a great importance is accorded to the satisfaction of the employees thus they are working with pleasure and are devoted to the enterprise etc.

The actual information society is promoting the methods and models of the rational management that will lead to performance acquiring by the enterprises. Although as a first step, the reference to financial character as income statement, balance sheet, schedules to a balance sheet started to include references to the brain capital that is considered the success key in the businesses.

Sapienza & Korsgaard (1996) in the procedural justice theory suggests that firm's perceptions about others' performance may be influenced not only by actual performance but also by relational factors. The possibility that positive affect moderates the influence of actual performance on perceived performance may shed light on one anomalous: they observed a *negative* relationship between goodwill trust and knowledge acquisition for start-ups in their key customer relationships<sup>2</sup>.

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<sup>1</sup> Oprean, D., Oprean, V. B. - *Valorificarea capitalului intelectual*, Tribuna Economica, 2006;

<sup>2</sup> De Clercq, D., Sapienza, H. J. - *Effects of Relational Capital and Commitment on Venture Capitalists' Perception of Portfolio Enterprise Performance*, Proceedings of the First Specialized Research Workshop on Managing Growth: The Role of Private Equity, European Communities, 2005, pag. 142-164;

In addition to financial capital, new investors should be able to provide endorsement, social capital, and knowledge. Investors, for their part, should search for portfolio companies whose business objectives can be reconciled to be reasonable by both the investor and the investee<sup>1</sup>.

At the corporate level, competitive positions may be achieved both through a process of cost reduction, obtained through process innovation, and an increase of revenue per employee, thanks to product innovation. The effects of ICTs on firms' competitiveness do not only regard process innovation, but also influence product innovation, by stimulating product differentiation, the development of new market niches, and by allowing directly the implementation of new technological products and services<sup>2</sup>.

### 3. The brain capital – components

Maintaining or increasing the level of total capital – including man-made, natural, human and social capital – is essential for sustainable development. Investments in the different forms of capital affect economic growth and sustainable development, although in some cases this relation is only evident in the longer term. Investment in research and development has generated new technologies and led to more efficient use of existing resources<sup>3</sup>.

In the specialty literature, there are many definitions of the brain capital: knowledge, information, intellectual property, the experience that can be used for creating value (Stewart. P., 1998), the knowledge that can be changed into value (Edvinsson L., 1996), the knowledge and the capacity to know of a social group, as a enterprise, an intellectual community or a professional association (Mouritsen J., 2001) or the brain capital includes the factors creators of value that are not included in the traditional balance sheet, but are of a special importance for the long term profitability of the enterprise (in accordance with the appreciation of the Intellectual Capital Sweden AB Institute)<sup>4</sup>.

Unconventionally, the base for intangible values development of the brain capital for any enterprise is constituted by: dialogue and communication, collaboration and cooperation, responsibility and competence, authority and trust in values promoting, respect and loyalty.

The brain capital mustn't be looked as a present vogue but as a necessity of its consideration and evaluation thus to the old economic-financial rules used in decision making to be added and the knowledge/information decision.

The devotion and development of the brain capital is determined by: the practice of the economic intelligence, the amplitude of the competition context, the profound social changes, the development of enterprise culture as well as the numerous technical and technological changes<sup>5</sup>.

The main components of the brain capital are: the **human capital** characterised through the employees' competences and skills; **organizational capital** that defines the internal structures of the enterprises, inclusively the informatics structure and **social capital**, related to the enterprise relations with thirds (investors, banks, customers, suppliers etc.), sometimes named – *relational capital*.

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<sup>1</sup> Mäkelä, M. M., Maula, M. V. J. - *Cross-Border Venture Capital and New Venture Internationalization: An Isomorphism Perspective*, Proceedings of the First Specialized Research Workshop on Managing Growth: The Role of Private Equity, European Communities, 2005;

<sup>2</sup> Van Bavel, R., Punie, Y., Burgelman, J. C., Tuomi, I., Clements, B. - *ICTs and Social Capital in the Knowledge Society*, Report on a Joint DG JRC/DG Employment Workshop IPTS, Sevilla, 3-4 November 2003, European Communities, 2004;

<sup>3</sup> *Working Together Towards Sustainable Development*. The OECD Experience, OECD, 2002;

<sup>4</sup> Oprean, D., Oprean, V. B. - *Valorificarea capitalului intelectual*, Tribuna Economica, 2006;

<sup>5</sup> Oprean, D., Oprean, V. B. - *Valorificarea capitalului intelectual*, Tribuna Economica, 2006;

*Human capital, institutions and social capital* are now all recognised as significant factors of growth. They have largely been studied separately, and although they present sufficient common characteristics to be conceptualised as one main category distinct from physical capital, it can still be more important to focus on the links between their specific sub-categories. Direct links with income can be spurious, as there appears to be a "web of associations" between the sub-categories, which would benefit from further empirical investigation<sup>1</sup>.

The concept of *human capital* is particularly salient in employment policies. Human capital can be defined as the skills, knowledge and competencies that enable individuals to improve their socio-economic position and their personal wellbeing. In a knowledge society investments in human capital are seen as crucial for increasing *productivity, competitiveness and innovation* and on a micro-level, to improve the position of individuals on the labour market and the quality of their work<sup>2</sup>, aspects that improve the performance of an enterprise.

In the last decades the skills and capabilities of workers have been increasingly defined in terms of *ICT-competencies* (technical, informational and communicative skills) – the basis of the *organizational capital*. The ability to use ICTs is no longer just important for workers in the ICT-sector, but has become fundamental for the everyday working practices of virtually all European citizens. The skills needed here are not only technical, but - more importantly – informational: skills that enable individuals to find, process and interpret information in useful ways. The conclusion that ICTs have a fundamental impact on human capital building and knowledge creation is therefore now more or less undisputed<sup>3</sup>.

Quan Haase & Wellman (2002) have identified a number of different ways in which the effects of the Internet on social capital can be hypothesised:

- the Internet *transforms* social capital, that means the Internet provides a cheap and simple way to build relationships with others on the basis of shared interests, not hindered by the limitations of time and space;
- the Internet *diminishes* social capital, that means the Internet draws employees or organizations away from real-life contacts with business partners or other organizations;
- the Internet *supplements* social capital, that means the Internet is just another means of communication to facilitate existing social or business relationships<sup>4</sup>.

The concept of *social capital* theory injected a new and strong challenge to the prevailing theories of economic growth. However, an important limitation of social capital is that the impact on economic performance is not unambiguous. This is because of the encompassing nature of social capital. In particular, the same social capital that can promote preservation of the status quo may also serve as a barrier to change and entrepreneurship. Entrepreneurship capital is a specific type of social capital and refers to the capacity of a society to generate entrepreneurial activity. In particular, we suggest that a high endowment of entrepreneurship capital has a positive impact on regional economic performance. "Whereas physical capital refers to physical objects and human capital refers to the properties of individuals, social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them<sup>5</sup>.

<sup>1</sup> Piazza-Georgi B., "The role of human and social capital in growth: Extending our understanding," Cambridge Journal of Economics, 26, (4): 2002;

<sup>2</sup> Frissen, V. - ICTs, *Civil Society and Global/Local trends in Civic Participation*, Paper prepared for IPTS (DG JRC) via the ESTO Network For a Workshop on ICTs and Social Capital in the Knowledge Society Sevilla, 2003;

<sup>3</sup> Frissen, V. - ICTs, *Civil Society and Global/Local trends in Civic Participation*, Paper prepared for IPTS (DG JRC) via the ESTO Network For a Workshop on ICTs and Social Capital in the Knowledge Society Sevilla, 2003;

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<sup>5</sup> Audretsch, D. B., Keilbach, M. - *Entrepreneurship capital and regional growth*, The Annals of Regional Sciences, DOI: 10.1007/s00168-005-0246-9, Springer-Verlag, 2005

According to the European Committee and the European Investment Bank (EIB) the endowment of social capital in the form of business culture and shared norms of behaviour is of particular importance for regional development. "The need, in sum, is for a long term strategy which addresses simultaneously the many aspects of the problem of a lack of competitiveness and attempt to build up the social capital of a region in parallel with its physical infrastructure, the skills of its work force and its productive base". Research on the relationship between social capital and regional economic development in the EU can have consequences for the allocation of the structural funds. At the moment, there is too little known about social capital, its functions and the impact on economic growth to formulate clear policy implications<sup>1</sup>.

Thus, *social capital* refers to the structural, relational, and cognitive dimensions of the network of social relationships or links that comprise a given firm's set of transactions or possible transactions. Sustainable development is requiring continued growth in the social capital. The OECD define social capital as "networks together with shared norms, values and understandings that facilitate co-operation within and among groups"<sup>2</sup>. Economic growth and income/wealth equity are arguably even more fundamental measures of social capital.

The importance of investments in *social capital* in order to realise the ambition of a knowledge society is less widely acknowledged. Nevertheless there is a growing awareness that human capital is built and acquired *in a social context*: within the social networks of family life, local communities, schools and the workplace, and within the networks and organisations of the civil society. It is also assumed that social networks and civic communities contribute to economic welfare by providing trust and confidence, social responsibility and individual/social welfare<sup>3</sup>.

The literature has been used to identify the capabilities<sup>4</sup> needed to innovate for competitive purposes:

- ***the capability to discover new or unknown options*** that is divided in: the capability to think independently for developing diverse skills and the capacity to innovate that supposed the invention of new products, processes, skills or indeed business models; the capability to think inventively that is crucial for innovation directed to finding new solutions to problems. Companies should seek to arrange for these capabilities in collaborative innovation teams;
- ***the capability to collaborate in highly diverse teams***, including local actors that is referring to: capability to create and maintain trust that supposed to commit to a common cause that involves the exchange and development of information and knowledge across teams or networks and includes the capacity to act with discretion, consistency between words and deeds, frequent and rich communication, fair and transparent decisions, etc.;
- ***the networking capability*** that involves an ability to communicate across the specialized language created by different bodies of knowledge and to co-ordinate. A enterprise striving to innovate needs managers with highly developed networks and networking skills, with willingness and ability to follow-up in their own organization on recommended changes, with capability to be able to deal with the stress of compromising with stakeholders over values or processes, while at the same time trying to gain commitment in their home organizations for the outcomes of negotiations, with capabilities to form and maintain strong relationships often discussed as social capital, increase productivity, creativity, the speed of learning and innovation and with capabilities to facilitate change at all levels both

<sup>1</sup> Beugelsdijk, S., Van Schaik, T. - Social Capital and Regional Economic Growth, Paper submitted to ERSA, Jyvaskila, 2003, pag.

<sup>2</sup> Hughes, B. B., Johnston, P. D. - *Sustainable futures: policies for global development*, Futures 37 (2005), 813-831;

<sup>3</sup> Frissen, V. - ICTs, *Civil Society and Global/Local trends in Civic Participation*, Paper prepared for IPTS (DG JRC) via the ESTO Network For a Workshop on ICTs and Social Capital in the Knowledge Society Sevilla, 2003;

<sup>4</sup> Van Kleef, J.A.G., Roome, N.J. - *Developing capabilities and competence for sustainable business management as innovation: a research agenda*, Journal of Cleaner Production 15 (2007) 38-51;

inside and outside the enterprise that is matched by strong teamwork capabilities and capabilities to communicate with customers and people outside a enterprise on various organizational levels. Researchers have found that the personal contact networks of founders and employees are the basis for developing a young firm's exchange relationships<sup>1</sup>.

Related to the most important dimension of the social capital – *relational capital* is defined by Clercq and Sapienza as the extent to which exchange involves trust, social interaction, and shared norms or goals that together constitute the *quality* of the relationship. Trust involves each party's confidence in the goodwill of the other. Social interaction reflects the *strength* or closeness of social relationships between the venture capital firms' and portfolio companies. And goal congruence pertains to the extent to which venture capital companies' and portfolio companies share similar goals and values regarding their relationship. They consider that the three dimensions of relational capital primarily enhance actual performance (and ultimately perceived performance) by increasing the *amount* as well as the *quality* of communication between the venture capital firms' and portfolio companies. The underlying rationale is that the breadth and depth of knowledge exchange between the two parties improves the venture capital firms' understandings of the portfolio companies operations and needs<sup>2</sup>.

#### 4. Indicators related to human resources development

The responsibility of the economic sphere for the reproduction of human capital through reinvestment in health and training, the reproduction of social capital e.g. through applying taxes and levies to finance systems of social security or the modernization of administrative structures, the protection and regeneration of the environment through raising corresponding levies and complying with stipulations of environmental law is being put in second place behind the dominant issue of the choice of location of capital. The present system of national accounts, such as the calculation of gross net product, fails to consider changes in environmental assets, human capital or social capital<sup>3</sup>.

For each category of the brain capital, some indicators for evaluation and appreciation can be identified and used. These indicators are recovering in the creation and utilisation of the complex decisional models for effective application of the knowledge and competences management. For example, the average ratio for the employees' qualification is relevant over the way of use to the manpower through their comparison with the working complexity rate. Thus, if the qualification ratio is higher than working complexity ratio, then the qualified manpower is used for performing the minor workings, while the opposite situation is showing an unsuitable qualification with the workings complexity.

In the same time, we are appreciating that on the base of the traditional accounting standards and methodologies there are developed effective methods and processes for identifying and using of the brain capital. The study of the aggregate dynamic of an enterprise and of the indicators related to using of the intangible capital and of the assets, may offer important information regarding to the medium term intention of the human resources administration and management.

There are used other relevant indicators in the appreciation of the way of using of the human resources as: number of years of length of service / number of years of occupation of the place

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<sup>2</sup> De Clercq, D., Sapienza, H. J. - *Effects of Relational Capital and Commitment on Venture Capitalists' Perception of Portfolio Enterprise Performance*, Proceedings of the First Specialized Research Workshop on Managing Growth: The Role of Private Equity, European Communities, 2005, pag. 142-164;

<sup>3</sup> Burger, D. - *The political and social dimension of sustainable development*, GTZ;

of work; employees number with higher or medium education / total number of employees; value added on employee; the cost share of the employees preparation in the total human resources costs, etc.

The indicators relative to the human resources can be calculated and used on the base of the financial-accounting information on enterprise functions and activities. For example, for research and development may be relevant indicators as: the specialists share in the total number of the employees; the ended projects value / the total value of the research-development costs; the estimated value from patents (innovations) / turnover, etc.

Thus, result that is difficult the global evaluation of the performed work, needful for a fair remuneration, incentives and stimulation of the employee in the rising of the efficiency and performances of the enterprise.

## 5. Models for measuring of the brain capital

In the first turn, there is necessary for having a fair appreciation, the selection of the significant indicators with an impact on the appreciation correctness and formulation of a decisional model that will reflect the realities. A model for measuring of the global value to the brain capital was stated in the Scandia Enterprise. In accordance with this model, the brain capital of the enterprise results through the multiplying of the optimal value of the brain capital expressed in monetary units with the using ratio of the brain capital. This way of evaluation is global and insignificant in the measuring of the individual and collective effort of the employees.

The working stages of an evaluation of the individual and collective activity of the employees<sup>1</sup> are:

- the selection of the representing and relevant indicators for each category of places of work or employees;
- the establishing of a standardized or wished level for each selected indicator;
- the grouping of the indicators in decisional criteria for maximization, if we wish a higher value, expressing its utility for the enterprise and for minimization in the opposite case;
- the building of the relative indicators for coordination through the reporting of the resulted level from the economic-financial statements to the standardized or wished maximization criteria, and through the calculation of the inverse reports for minimization criteria;
- the establishing of a coefficient or a relative importance note for each criteria, in the existing context;
- the building of the global ratio of the performed work by each employee or collective, through the multiplying of the reports with the coefficients or a relative importance notes of each criteria and then the results adding.

Through the comparison and index hierarchy, the managers have the possibility to appreciate much objectively the work for each employee and for each collective and on this base, to elaborate the stimulating and effective administration politics of the brain capital for employees' cohesion and development of enterprise culture. In the automatic treatment of the dates, the presented algorithm can be easy programmed using an organizational matrix where the elements to represent the values of the decisional criteria selected on employees.

## Conclusions

In conclusion, it is possible to start a real process for implementing of the concepts and precepts related to the knowledge and competences management. In a knowledge society

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investments in human capital are seen as crucial for increasing productivity, competitiveness and innovation and on a micro-level, to improve the position of individuals on the labour market and the quality of their work, aspects that improve the performance of an enterprise.

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13. \*\*\* *Working Together Towards Sustainable Development. The OECD Experience*, OECD, 2002.