

UNDERSTANDING UNIVERSITY INTELLECTUAL CAPITAL

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ABSTRACT: Universities have long life cycles compared with many other social institutions due to their intellectual capital. Although intellectual capital represents the heart and mind of any university, its essence is not well understood even today when research in this new field is rather advanced. The purpose of this paper is to examine critically the research performed so far in the field of intellectual capital and to reveal the sources of its misunderstandings. In essence, intellectual capital represents the nonmonetary and nonphysical assets of any organization, fact for which it is not evaluated and not introduced into the financial reports. The intangible nature of intellectual capital creates serious problems in its evaluation and reporting. The critical analysis performed shows three major causes: 1) metaphors used for understanding knowledge and intellectual capital are still very simple and influenced by the Newtonian logic; 2) intellectual capital is strongly nonlinear and cannot be evaluated by using linear metrics; and 3) the model used for intellectual capital is flawed. Beyond these shortcomings there are some specific limitations generated by the higher education legislation.

KEYWORDS: human capital, intellectual capital, knowledge, relational capital, structural capital, university

1. INTRODUCTION

The concept of *intellectual capital* is a semantic extension of the economic concept of *capital*, and it has been developed almost simultaneously by several authors about two decades ago [1], [2], [3], [4], [5]. The first models developed for intellectual capital were “Intangible Asset Monitor” [5] and “Skandia Intellectual Capital Navigator” [2]. In these pioneering models, intellectual capital is conceived as *a stock* based on the metaphor of tangible assets, and having as a source domain the economic concept of *capital*. These models reflect a static, deterministic and linear thinking [6], [7]. A new perspective came with the use of the metaphor *stocks and flows* [8]: “*The concept of intellectual capital stocks and flows creates an interesting new perspective on organizations. We can describe organizations as a dynamic system of financial, tangible, and intangible stocks and flows*”. Further developments have been brought by Andriessen [8] and Viedma [9] with their strategic views. However, the concept of intellectual capital remained within the Newtonian logic and a very simple model which is not able to express the complexity of the real academic processes.

The purpose of this paper is to analyse critically the concept of intellectual capital and to show how it can be applied in the case of universities. There are several studies performed for the European universities intellectual capital [10], [11], [12], but results demonstrate some misunderstandings of the essence of this concept and of the way of being used for evaluating the university performance.

2. THE STANDARD INTELLECTUAL MODEL

The standard or canonical intellectual capital model is one that has got a dominant acceptance in the research field. It is considered by many authors as an axiomatic model. It is based on the initial models proposed by Sveiby [5] and Edvinsson & Malone [2], and the general definition of intellectual capital formulated by Roos et al. [13]: “*Intellectual capital can be defined as all nonmonetary and nonphysical resources that are fully controlled by the organization and that contributes to the organization’s value creation*”. The structure of the canonical model of the intellectual capital is given by the following three fundamental entities: human capital, structural capital, and customer or relational capital (figure 1).

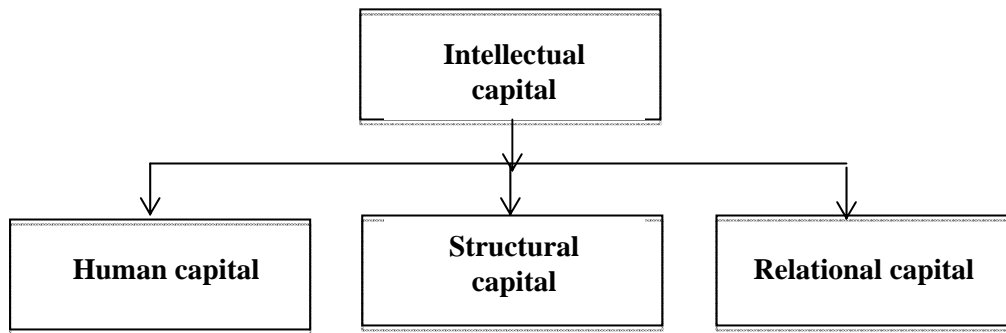


Figure 1. The canonical model of the intellectual capital

Human capital is defined as the knowledge that employees take with them when they leave the organization. It includes the knowledge, skills, experiences and abilities of people. Some of this knowledge is unique to the individual, some may be generic. Examples are innovation capacity, creativity, know-how and previous experience, teamwork capacity, employee flexibility, motivation, satisfaction and learning capacity [14], [15].

Structural capital is defined as the knowledge that remains within the organization when all employee leave for home. It comprises the organizational routines, procedures, systems, cultures, databases and organizational culture [14], [15]. Structural capital reflects the legislation on which the whole organization functions in the social and economic environment.

Relational capital is defined as all resources linked to the external relationships of the firm, with customers, suppliers or R&D partners. Some examples of these resources: image, brands, customer loyalty, customer satisfaction, commercial power, negotiating power [14], [15].

This canonical model has been accepted by many researchers because is very simple and intuitive. However, the model has some shortcomings which generated some wrong interpretation and evaluation of the intellectual capital. Among these shortcomings two are more important: a) the basic entities of the model (i.e. human capital, structural capital, and relational capital) are not completely independent ones, fact for which their evaluation leads to some overlap; b) the model is built on the metaphor of stocks and flows which induces in evaluation methods the Newtonian logic, with its linear thinking. Also, this model considers knowledge to be only explicit and tacit, which leads mainly to rational knowledge.

3. THE NEW STRUCTURE OF THE INTELLECTUAL CAPITAL

Bratianu demonstrated that by changing the knowledge metaphor of *stocks and flows* with the *energy metaphor* a new theory can be developed about knowledge and intellectual capital understanding [16], [17], [18]. The new model has been called the entropic intellectual capital [19]: “*The entropic model is able to describe and explain complex irreversible processes that are specific to evolving organizations in a synergetic perspective. Their evolution is time oriented and driven by the leadership vision. Elaborating and implementing strategies leads to irreversible changes that aim at achieving a sustainable competitive advantage, in a turbulent business environment*”. The main advantage of this new perspective is the multifield theory of organizational knowledge, according to which we define three fundamental fields of knowledge: rational knowledge, emotional knowledge and spiritual knowledge. That leads to the idea that we can define as building blocks three new entities for the organizational intellectual capital: rational intellectual capital (RIC), emotional intellectual capital (EIC), and spiritual intellectual capital (SIC). Also, the introduction of the concept of *integrator* changes the structure of the organizational intellectual capital. As defined by Bratianu [20], “*An integrator is a powerful field of forces capable of combining two or more elements into a new entity, based on interdependence and synergy. These elements may have a physical or virtual nature, and they must possess the capacity of interacting in a controlled way*”. An illustration

of the new structure of the intellectual capital based on these new ideas is presented in Figure 2.

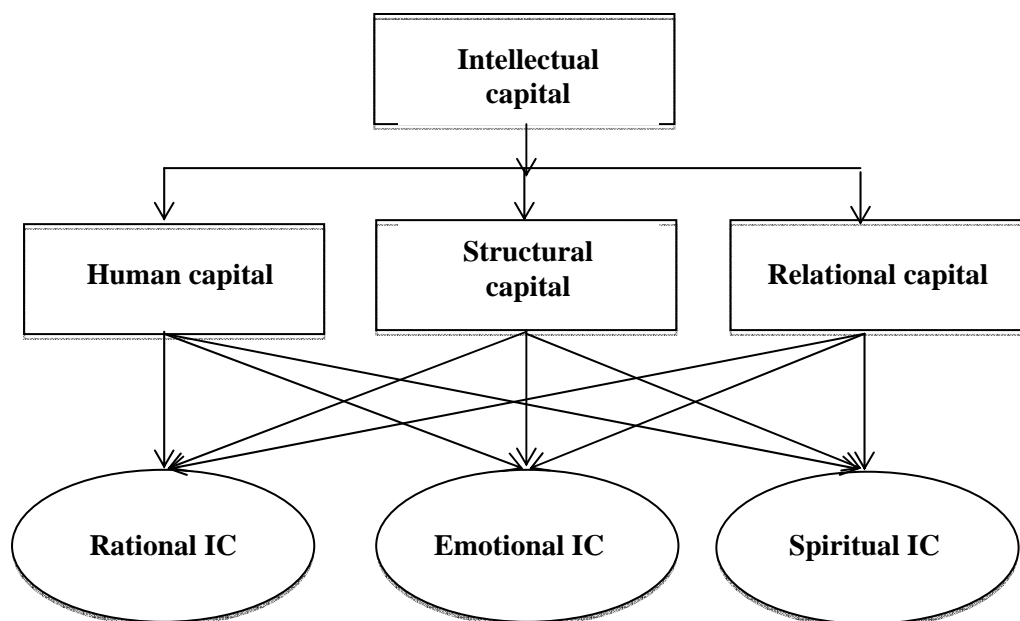


Figure 2. The new structure of the intellectual capital (IC)

Figure 2 shows that initial entities (i.e. human capital, structural capital, and spiritual capital) are not independent since each of them contains rational knowledge, emotional knowledge and spiritual knowledge. Thus, we assume that based on these fields of knowledge we may define as basic building blocks of the intellectual capital: rational intellectual capital, emotional intellectual capital and spiritual intellectual capital. Having in mind this new structure, where human capital, structural capital and relational capital represent a meta-level of the whole structure we can understand more easily that the Gordian knot of the university intellectual capital is represented by the structural capital [12]. It is made by the most important nonlinear integrators: management, leadership, and organizational culture. University management and leadership is by definition a real problem whenever people involved in the university positions are elected based on the democratic vote. They may be very good professors in their field of expertise, but they lack in most of cases the knowledge and skills required by an efficient management [21]. That means that people elected in such a way are poor integrators and cannot transform efficiently the potential intellectual capital into operational intellectual capital.

That is one of the many paradoxes of the Romanian universities. They have very good professors, researchers and students which means a high level of the potential intellectual capital. Since academic management and leadership are poor integrators, only a small part of this potential is transformed actually in operational intellectual capital of the university, which leads finally to a low level of academic performance and no competitive advantage. From figure 2 we also understand that only by considering all forms of intellectual capital (i.e. rational, emotional, and spiritual) we can have a successful academic leadership and a high percentage of the potential intellectual capital transformed into operational intellectual capital. An illustration of the whole process is presented in figure 3.

The new entropic model shows that integrators have a dynamic role which is beyond the concept of structural intellectual capital since they: a) provide an integration process of all the fundamental fields of knowledge, which is a nonlinear process; b) provide a transformation of

the potential IC into an operational IC, a process that is entropic; and c) provide stimulation of organizational learning as a means of renewal the potential IC of the organization. But all these processes may happen if and only if the academic leadership is supported by an adequate vision and spirituality.

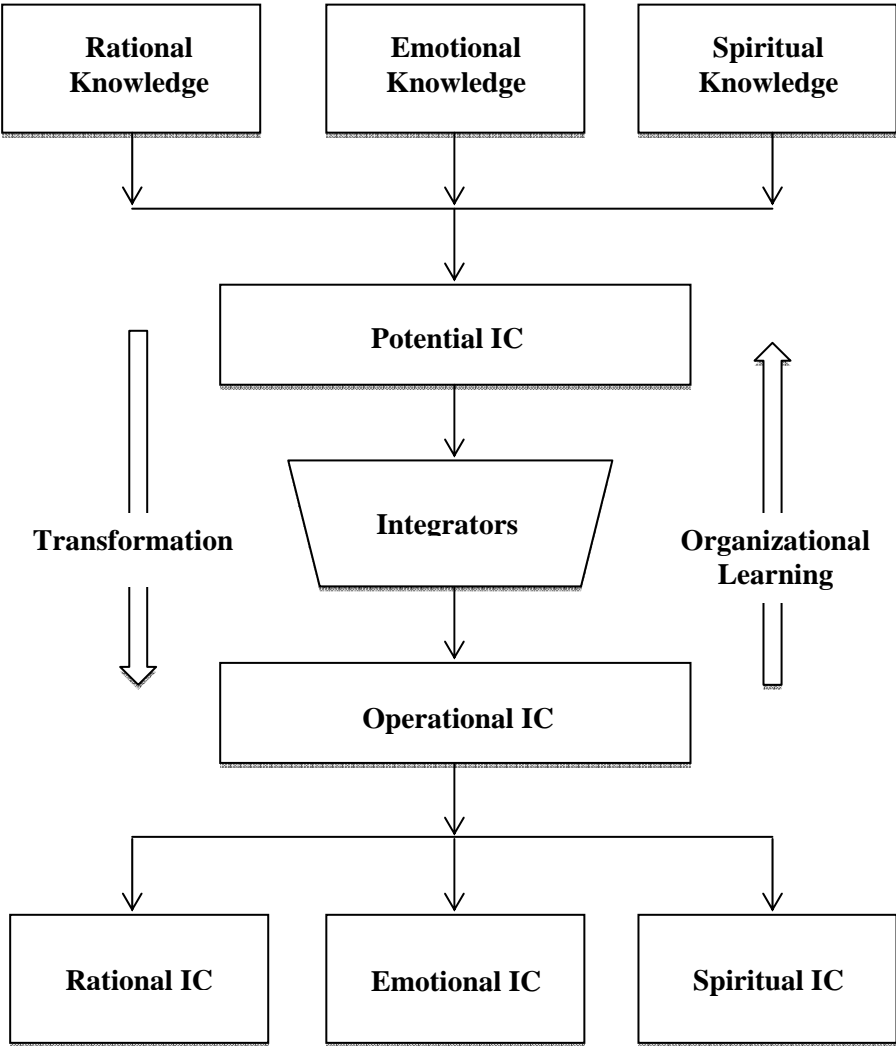


Figure 3. The new entropic model of the organizational IC

As Niland [22] emphasis, “It is understood that a truly eminent university will excel in teaching and research. But paralleling and supporting those core activities will be an excellence in management driving first-rate administrative system”. Analysing the actual governance in the Romanian universities and having the framework given by the entropic model shown in figure 3, it results that unfolding the Gordian knot means first of all to create a full university autonomy, and to change the elective system of voting the university managers with a more competitive one based on a new governance structure. In Japan, this ideas has been transformed into legislation, and called the corporatization of national universities that started on April 1, 2004 [23]. Such a transformation of the university governance should be done carefully based on the best international practices and in convergence with the cultural values in our society.

4. CONCLUSIONS

Our research focused on understanding university intellectual capital, a challenge of the world intensive competition and global rankings. Universities have the highest density of knowledge and intelligence amongst all public institutions and that means a high level of intellectual capital. However, the standard model used for understanding and evaluating university intellectual capital reflects only the potential intellectual capital and not that level of it used in operational decision making. The paper presents the main features of the standard intellectual capital model and its shortcomings derived from the Newtonian logic and of the fact that its components are not independent entities. Shifting the paradigm of understanding knowledge from stocks and flows metaphor to the energy metaphor, we can use the entropic intellectual capital model. This new model introduces as fundamental building blocks rational capital, emotional capital and spiritual capital, and as process driver the integrators. They transform the potential intellectual capital into operational intellectual capital. The entropic model of the intellectual capital help us understand much better the university intellectual capital, due to its focus on the academic management, organizational culture and leadership. Universities may have a high potential of their intellectual capital but a low level of the operational intellectual capital if their integrators are not efficient. That is the case of the Romanian universities which have a good potential but a rather low operational level of the intellectual capital. The challenge is to improve the university governance giving full autonomy and creating a new legislation able to support the development of academic leadership.

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