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**Valorificarea capitalului intelectual -
criteriu pentru performanta manageriala
in societatea bazata pe cunoastere**

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INTELLECTUAL CAPITAL VALORIZATION – CRITERIA FOR THE MANAGERIAL PERFORMANCE IN THE KNOWLEDGE-BASED SOCIETY

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*If we can see **the knowledge society** as an essential part of the “external environment” of the firm management, that brings with it some specific opportunities and threats, we have to consider **the intellectual capital** – that integrates the two basic resources: **knowledge** and **human** – a key ingredient for the “internal environment” of the firm management, which determines some strengths and/or weaknesses that lead to the success or the failure of the managerial effort of the firm operating under the circumstances given by the emergency of three processes with global spread: the economic globalization, the managerial revolution and the knowledge-based society.*

*Having as starting point the premise that Peter Drucker emphasized years ago: the managerial revolution represents the third essential change into the dynamics of knowledge, when **knowledge is applied to knowledge itself**, we have to accept **the priority of the human factor** – which generates, uses and valorizes knowledge in a never ending process of interaction with the environment. By continuing with this logic, we can not ignore that, even if there is no unanimously recognized approach about the meaning of **the intellectual capital**, it appears recently a quasi-unanimous recognized opinion regarding **the first place that the intellectual capital has to take as source for the competitive advantage of the firm and strategic resource for its management.***

*More than that, in a time when **knowledge** becomes the strategic resource for any of the human activities, firms shift through a new managerial paradigm that characterize “the civilized business” and promote management intellectualization.*

*By this way, **the valorization of the intellectual capital of the firm could become vital criteria for the managerial performance in the knowledge – based society.***

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The general discussion framework

Since 1989, Peter Drucker argued that “the transition of the developed capitalist countries through the *knowledge based society* was the biggest change that took place into the modern world”. Taking again the idea in 1993, the same author emphasized that „*the basic economic resource (...) is no longer the capital, or the nature, or work. It is and will be the knowledge*”. So, it was change the nature of wealth and its source, which brings the opportunity of some new points of view on firms activities and on the way they are managed.

The statement that ***we are living into a knowledge-based society*** became almost a truism but still, there are a lot of economists who consider nature, work and capital to be the basics of wealth creation. One of the reasons that allows and upkeep this confusion may be the fact that there is no unique conceptual framework able to confirm and emphasize, on the one hand, the role and the importance of knowledge in the society, generally speaking, and into its very specific domains of manifestation in particular and, on the other hand, capable to unify the managerial theory and the knowledge economy.

More and more individuals and organizations at different levels (local, regional or global) are talking about the ***knowledge – based society*** as the context of another two interrelated processes: the ***globalization of the economy*** and the ***managerial revolution***. Those two last processes and concepts have also recently entered into the vocabulary of the academic discourse and into the managerial practice sphere. The resemblances do not stop here, but they accompany the whole process of emergence and crystallization of the two notions; we can see a *sinalagmatic* development pattern here, because: (1) there still are controversies about the moment they appeared and the content of the terms; (2) the main determinant – of the economic globalization and of the managerial revolution as well – is the emergence of the knowledge-based society; (3) in content, both of them are social revolutions; (4) the positive effects of the acceptance and appropriation of there objective character: ensuring firm competitiveness; intensifying international flows of goods, services, capitals, persons and information; creating the premises for economic and technical-scientific co-operation development, etc.; (5) the negative effects induced from the social point of view: maintaining and growing the gaps that already exist regarding the economic development levels; the distribution of power and wealth; the drastic cutting off of the work places, etc.; (6) the multiple faces and dimensions, advantages and disadvantages, opportunities and threats for firms and there management, making necessary a integrative and interdisciplinary approach, capable to unify different elements from management, sociology, psychology, international economics, law, etc.

As phenomena which essentially mark the economic and social life of our times, shaped and defined by the ***knowledge based society***, we think that *economic globalization*

and *managerial revolution* have to be integrated into **a new model of managerial theory and practice** that will promote *the civilized business* and the *intellectualization of management*. The effects of this new approach will *spread* rapidly (thanks to the time and space compression, allowed by the globalization process) and *amplify* rapidly (thanks to the managerial revolution which, characterized by knowledge applied to knowledge itself, contributes to the edification of the knowledge spiral). This will ask from management awareness and permanent watch in order to accept and promote change management through the management of change and the appropriation of the new management approaches and directions.

Having as starting point the premise that Peter Drucker emphasized years ago: the *managerial revolution* represents the third essential change into the dynamics of knowledge, when *knowledge is applied to knowledge itself*, it appears to be the result of the composing of two vectors, of which content and importance can be determined by analyzing the contribution that the intellectual capital brings to the success of the managerial process:

- knowledge – representing the basis of the modern firm and management and being made efficient and effective through management;
- human factor – which, in its double quality of participant to the managerial process – as ruling factor and as ruled factor as well, was, is and will be the only one capable to generate, use and valorize knowledge.

If, continuing the same logic, we add that the same two factors are nowadays almost unanimously recognized to be the essential resources of the firm's management into the knowledge-based society and the basic sources of the power into the post-capitalist society, we have an almost comprehensive picture of the dependences and interdependences between firm management and managerial revolution in the context given by the knowledge-based society.

But, what would be missing from this picture is *the end*, the ability of these relations to determine the creation of a new loop on the knowledge spiral. Once the inputs exist, the new loop will not expect much and will appear, as *new directions for firm management* (see Fig. 1).

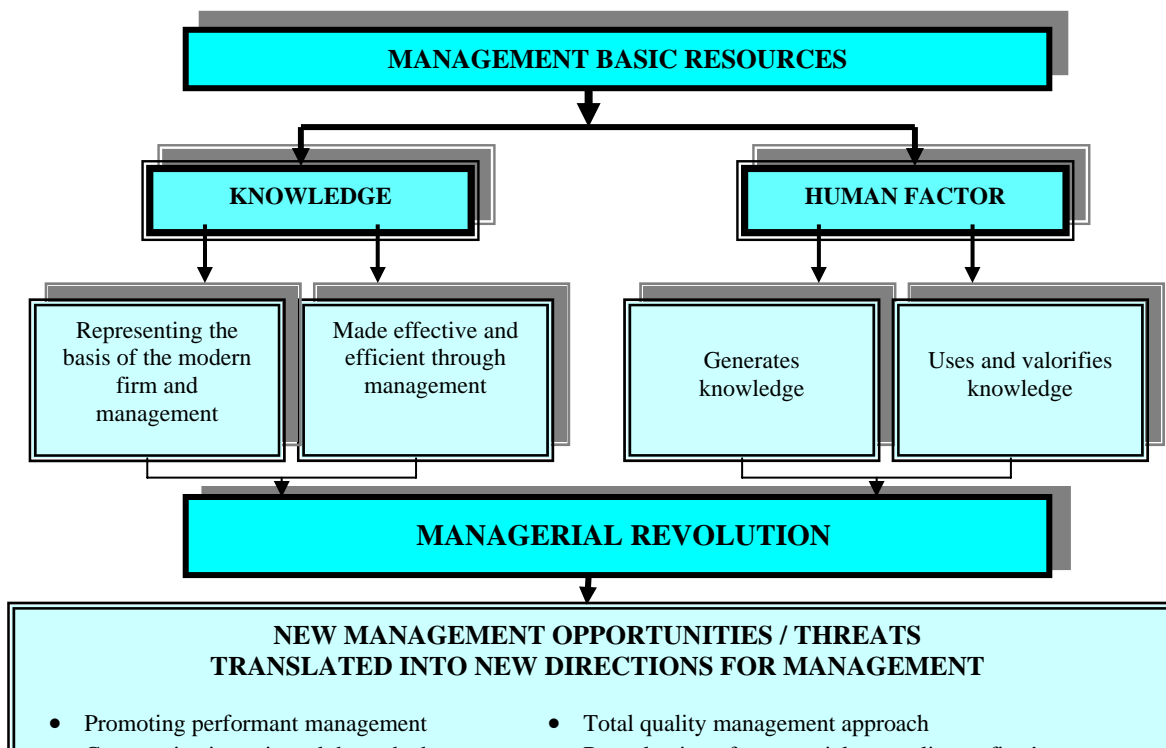


Fig. 1. The relationships between firm management and managerial revolution

The major challenge of assimilating the new management directions (promoting performant management; communication oriented through change; development of services; total quality management approach; growing of economic productivity; new place and role for the human resource of the firm, etc.) is given by the fact that all these changes take place under the circumstances of *permanent changing* of the evolving coordinates of the firm – internally and externally as well, more or less predictable and manageable. So, the appropriation of *change management* and the *management of change* will become essential premises for the firm's survival and for the managerial success. The conclusion we think it's just one: into the knowledge-based society, *the ideal of each firm is to be a learning organization* – characterized by: organizational change/development and individual change/development; promoting and supporting career management and performance management; using knowledge as strategic resource – source of competitive advantage, economically speaking, and as integrative, managerially speaking; omnipresence of permanent learning, etc.

Looking at the challenges that firms were confronted with (since the beginning of the new millennium) in their efforts to succeed in a global competitive context, we can distinguish at least two very important features:

- the emergence of the **knowledge – based society** – bringing with it some really important opportunities and threats for the firm's management;
- the continuous growing importance of the **intellectual capital** – bringing with it some determinant strengths and weaknesses for the firm's management.

So, we can look at those two elements in the terms of a **SWOT analyze: the knowledge – based society as the global context of doing business** – which has to be evaluated in its basic elements of influence, in order to take advantage of the opportunities and to avoid or reduce the impact of the threats – and **the intellectual capital as a source of competitive advantage for the firm** and as **strategic resource for the firm's management**, in order to use the firm's strengths or to reduce the weaknesses.

The knowledge-based society – opportunities and threats for the firm's management

Friedrich Hayek was one of the first economists who emphasized the importance of *knowledge* and of *knowledge transfer* into the society – generally speaking, and into the economy – in particular. In his article *The Use of Knowledge in Society* (appeared in *The American Economic Review* in 1945) he launched the thesis that many of the economists didn't understand the nature of the economic problem: "the peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate "given" resources – if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data". It is rather a problem of how to secure the best use of resources known to any of the members of the society, for end whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality." (Hayek, 1945)

This is right because, into a given spatial and temporal context, *each individual* possesses a certain advantage over the others because he *possesses unique information* which he can valorize only if *the decision* is his or it is taken with his direct *participation*. But, this is only one face of the coin: the *descentralization of the decision taking process*; it has to be working together with *communication*, in order to integrate the information that each individual possesses into the general context of changing the entire economic system that these individuals are parts of.

At his turn, Peter Drucker said, many decades ago, that *work*, technical and non technical as well, is *based on knowledge*. This assumption was justified by the fact that is no more need for many unqualified workers for an assembling line; most of the work places need knowledge and training. More than that, just a few of the work places into a manufacturing company are really into the factory, and most of them are in services as marketing, design, process engineering, technical analyze, accounting or management – work places which need professional expertise and a lot of specialized knowledge.

In 1993, Drucker estimated that "three fourths, if not four fifths" of all the work places in the developed countries are occupied by well paid "knowledge workers", and the weight of those will continue to rise. The nature of these works, by itself (which imply imagination, gathering information, experimenting, discovering and the integration of new technologies into larger systems), is the one that imposes for the knowledge workers to have to learn fast what they have to do in the case of a given project. This will confer some kind of *independence* to the work team in its relationships with a *manager* which establishes only the direction of

action, playing a role like the one of the orchestra conductor. That is because “the knowledge workers can not be supervised. If they do not know more than any other person in the organization, they are completely useless” (Drucker, 1993). So, Drucker expressed in other words something that Hayek stipulated decades ago, into his article: knowledge-based firm is characterized by the concentration of the most part of the knowledge to the basis of the hierarchic pyramid and the possessing of the knowledge by specialists which execute different tasks that organize themselves.

This “appeal to history” couldn’t ignore Alvin Toffler, who, into one of his best sellers, *Power-shift*, attributed to *knowledge* the quality of “*final substitute*”; he directly associated knowledge with power, anticipating that “the imminent struggle for power will become more and more a confrontation for accessing knowledge and distribute it”, because “the controlling of knowledge will become the key of tomorrow’s battle for power” (Toffler, 1995).

Confirming the well known maximum of Francis Bacon, “*knowledge is power*”, the knowledge-based society represents the acme of the development of human society, where *knowledge is the central resource of the economy* – because of its capacity to substitute by a specific “alchemy” materials, transportations, energy, time or space, the last and the highest *fundamental source of power*. It succeeds another two sources which marked the development of human society: violence (force) – progressively converted into law – and wealth (money) – converted, at its turn, into knowledge (Toffler, 1995). This is the reason why P. Drucker thinks that the transition of the developed capitalist countries through the *knowledge based society* was the biggest change that took place into the modern world.

There are some ***specific figures of the knowledge-based society***, which definitely distinguish it in qualitative terms from the previous models of societies and are really challenges for a firm and its management (Drucker, 1999):

- from a social perspective, the employee with studies occupies the central place: because the developed countries are transforming themselves into knowledge-based societies, they ask more and more for a university diploma in order for a person to get a job or a promotion;
- the unprecedented growing of the weight of the people with superior and medium special preparing, and of the general culture level of the population;
- the explosion of the number of scientific, specialty and general publications; the exponential multiplying of the sources of information dissemination, which store huge amount of scientific, technical, encyclopedia information and so on;
- the access, practically without limits, of the whole population to mass-media – the most important vector for the information transfer;
- enormous multiplying of the firms which offer intellectual, professional services – research and development; designing; technical, technological, marketing, management, legal, economic, environmental support;
- generalizing of the concept and practice of permanent learning.

This new type of society generates a ***new economic structure***, different from the previous one by at least two points of view (Nicolescu and Nicolescu, 2004):

- ***essential changing into the national economic structure*** – the knowledge-based economy is much more diverse and complex than the industrial one; it groups new domains such as research and development, telecommunications or informatics; an important part of the classical domains radically changed their content by including huge

processes of treating, processing and valorizing knowledge; the emergence of new economic branches by transforming some classical domains such as learning and scientific research. Under the new circumstances, the structure of the knowledge-based economy is characterized by: services – as the most important sector of the economy; industry and agriculture – as sectors with significantly reduced weights but still remaining with some high levels of productivity and productions; continuous rising of the importance of high tech industries; extremely spread of e-commerce; rapid development of the banking sector, especially through e-banking; quantitative and qualitative amplification of communications, and especially of telecommunications; informatics becomes a significant domain of the economy; research and development is continuously amplifying; learning and especially e-learning rapid development at each levels;

- ***qualitative content changing into the national economic structure – intellectualization and dematerialization of the economic processes*** (first, the intellectualization of economic processes generates more and more performant knowledge and value-added, together with economic usefulness in all the economic domains; secondly, we can see the diminishing of the gap between the economic processes which take place in different domains of the economy; thirdly, it appeared new virtual forms of economy, where the intangible, qualitative elements play a more and more important role, bringing positive results; fourthly, we must emphasize the changing that took place into the investment and spending structure: it raised a lot those related to the intellectual capital); *rapid proliferation of home working in almost all the domains of the economy* (this is an effect of some distinguish factors, like as: the intellectualization of work, which reduces the dependency of the working people upon some complicated machineries or technologies; large spreading of informatics, together with the substantial diminishing of the costs related to it and the development of friendly soft; telecommunication spreading, making possible real time communication between persons which are at long-distance to each other); *tele-working tends to represent a significant share of the economic processes* (because: it can attract the most qualified specialists in order to accomplish some objectives; it is possible to realize complex economic processes with the participation of some specialists impossible to bring together in the same place; it may produce substantial cuttings off); *development of some important electronic segments in almost all of the economy domains* (they replace the classical processes, forms and methods of work with superior performances: e-commerce, e-banking, e-learning and e-governance are just a few examples); *large proliferation of networking and cooperation* between different forms of activity and domains..

Translating all these at firm's level, we have to mention that there are some ***postulates and principles referring to the knowledge-based economy*** which could be opportunities and threats as well for a firm and its management (Useem, 2001):

- the value of an organization is mostly determined by the value of its intangible assets – value is mostly represented by the knowledge-based employees, by the ideas, knowledge and information which them and the organization possess;
- substantial diminishing of the importance and impact of geographical distances on business placement and actions – with the exception of a few sectors strongly related to geography (such as mining or petroleum), the importance of the geographic factor into the

economic activities has been considerably reduced, and the tendency is to continuously diminish;

- considerably diminishing of the period necessary for innovation and for its penetration into real life – the speed of knowledge, products, technologies replacement has significantly accelerated; innovations appear rapidly and diffuse themselves fast, making time to compress;
- knowledge people become the most important asset of a company and country – because valuable ideas and knowledge are essential into the development process nowadays, people who generate and poses them become an inestimable value; the preservation of those people into the company, by using a variety of means become a stringent necessity;
- accelerating the economic development and growth through the proliferation of networking – network creation, which integrate different kind of companies, oriented around the value chain vector generates rapid economic growth: the speed of technical, human and economic flows amplifies a lot, generating real explosive effects;
- products value rises exponentially with the value of the market share – the effect of networking leads to a situation in which as bigger as the volume of one kind of product becomes, so its market share is, and its value rises;
- rising importance of middle levels in the economy – the amplification of volume and complexity of information and knowledge determines the rapid growth of info-intermediaries and of there impact on functioning and performing of the economy;
- buyers get great power, and sellers get new opportunities – the possibility for the buyers to rapidly obtain the best information they can get just through one “click” confers them a higher possibility to choose and rapidly procure the product / service they need; in the same time, there are some new opportunities for producers and sellers, because, by holding relevant information about markets they know that to produce, at what prices to sell and which are the best market shares;
- the transaction of good and services become more and more personalized – rapid and cheap access to information about the specifics of demand reflects into manufacturing and selling of personalized product / services, which determines a substantial diminishing of stocks and of waiting times;
- availability of any product everywhere – you can order instantly by e-commerce on-line the product you wish and you can get it very fast; so, the gap between the wish to buy and the possibility to do it tends to diminishes to zero in some cases.

All these mutations demonstrate essential changes into the society, into the structure and dynamics of the economy, which has to be captured and valorized by the management – at micro, mezzo and macro level, transforming the way of “doing business”, generally speaking.

The intellectual capital – strengths and weaknesses for the firm’s management

If we can see the *knowledge society* as an essential part of the “external environment” of the firm management, which brings with it some specific opportunities and threats, we have to consider the *intellectual capital* – that integrates the two basic resources of the firm’s management: *knowledge* and *human* – a key ingredient for the “internal environment” of the firm’s management, which determines some strengths and/or

weaknesses that lead to the success or the failure of the managerial effort of the firm operating under the circumstances given by the emergency of three processes with global spread: the economic globalization, the managerial revolution and the knowledge-based society.

Human factor – generator, user and valorizer of knowledge

Accepting the fact that the *managerial revolution* represents the third fundamental change in the dynamic of the knowledge, in which *knowledge is applied to knowledge itself*, we have to accept the *priority* of the place and role of the *human factor* – which *generates, uses and valorizes knowledge* in a never ending process of interaction with the external environment.

So, **data** are statements about reality or about other data (they are representations about the world – be it physical, social, psychological, organizational, or any other form of reality). Data become **information** when they are organized according to certain *preferences* and placed in a context, which defines their meaning and relevance. Information is *meaningful, contextualized data*, but not yet knowledge. Information can become **knowledge** when a human being interacts with it, appropriates it and makes it her/his own, contextualizes it by placing it in relation to other knowledge that are already her/his own, and internalizes it by making it a part of his belief system. So, knowledge is produced by a person as a *response* to and as a *reflection* over one's own or others' experience, ideas, or some information. It is *subjectivized information processing*, relative to a social frame of reference. *It is both social and personal, both objective and subjective, at the same time.* (Acharya, 2000). His model of the knowledge producing process can be summarized as follows (Fig. 2):

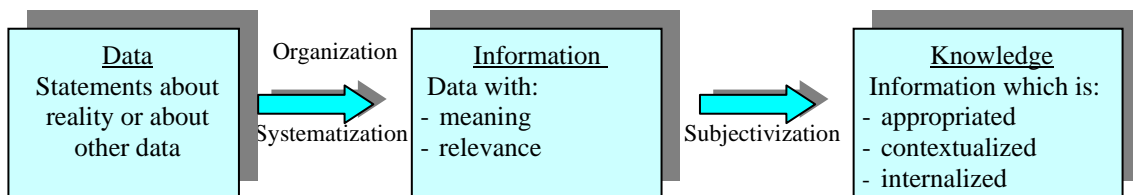


Fig. 2. The process of generating knowledge

The *characteristics of knowledge* and of *knowledge process* are, according to Acharya:

- knowledge involves a *human* interaction with reality, where the human is the subject and acts as the active, creative element, and modifies the latter by way of reconstructing it. Knowledge involves attribution of *meaning and significance* by the knower as a person;
- when I know something, it is relative to me. There can be no knowledge without me. In knowing something I individualize, subjectify and appropriate it, and make it my own. What I know, in the process, becomes *my own*;
- knowledge is essentially *social* in nature: we need universal categories for generation, expression, representation, storage, retrieval and re-appropriation of knowledge; the categories are universal in the sense that: (1) they are capable of holding the same or similar meanings for all humans belonging to the same community and sharing the concerned common universe of discourse; (2) they can be socialized – shared,

reconstructed and applied by other humans belonging to the concerned universe of discourse;

- in knowing something, I *believe it to be true*. Without this belief, it could just be some information, without that stamp of individualized identity marked on it. And this belief is a part of a system of beliefs, values and rationality, and hence constitutes a *responsibility* and potential *commitment*;
- this *truth*, however, has, potentially, at least, elements of *relative universality*, specific to a culture or frame of reference, without which it could be a pure fantasy or arbitrary construction. This relativity is both historical and social, and can be mapped in the interfaces between individuals, between communities, and between frameworks or universes of discourse;
- knowing takes place in relation to *existing knowledge* – it is placing things in the context, in relation to existing constructions of reality, content and concepts;
- knowledge involves a *judgement*, a subsumption of the particular under the universal. It involves a certain amount of synthesis and integration of discreet information under a category, a construction or an attribution of a causality or justifiability, relative to the knower's frame of reference;
- knowledge has a moment of *categorical imperative*, and can induce a cognitive dissonance between belief and practice, between the past and the present, between the present and the future, between what is and what ought to be, and so on. In other words, *knowledge by definition is driven into practice*;
- knowledge is a part of a *dynamic system*. It has the tendency to go for more of itself, to bypass itself, and to constantly develop itself. It is only limited by the mental and environmental constraints;
- knowledge is *gregarious* by nature, and has a tendency to socialize itself. Socialization is the means by which individual knowledge gets reinforced, challenged, modified, improved and validated;
- knowledge processes are always a part of an *open system*. It is like a game where the goal post keeps on shifting itself. It is like a game where the goal post keeps on shifting itself. *The meanings, the dictionaries, and even the rules of the language are always in flux* – as volatile as the turns in modern life. Knowledge creation, by definition, is a process of innovation.

Leaving this meta-philosophical level of the discourse, and translating it in the much more pragmatic area of mechanics, we can assimilate the whole process described above with the *functioning of a four times engine*; so, *fuel aspiration* represents gathering information from the outside, *compression* – the process of appropriation, contextualization and internalization, *explosion* – generating knowledge, and *evacuation* – socializing the knowledge, making possible knowledge transfer. Remaining under the same circumstances marked out by physics, *the human factor* could be compared with the *engine* which – contributing to the *variation of knowledge in time* – produces the *accelerator* materialized into the *knowledge-based society* building up.

Another model – from data to wisdom, this time – is proposed by Ackoff; according to Russell Ackoff, *the content of the human mind* can be classified into *five categories* (Ackoff, 1989):

- **Data:** symbols. Data is raw; it simply exists and has no significance beyond its existence (in and of itself). It can exist in any form, usable or not. It does not have meaning of itself;
- **Information:** data that are processed to be useful; provides answers to “who”, “what”, “where”, and “when” questions. So, information is data that has been given meaning by way of relational connection. This “meaning” can be useful, but does not have to be;
- **Knowledge:** application of data and information; answers “how” questions. Knowledge is the appropriate collection of information, such that it’s intent is to be useful. Knowledge is a deterministic process. When someone “memorizes” information then they have amassed knowledge. This knowledge has useful meaning to them, but it does not provide for, in and of itself, an integration such as would infer further knowledge;
- **Understanding:** appreciation of “why”. Understanding is an interpolative and probabilistic process. It is cognitive and analytical. It is the process by which I can take knowledge and synthesize new knowledge from the previously held knowledge. The difference between understanding and knowledge is the difference between “learning” and “memorizing”. People who have understanding can undertake useful actions because they can synthesize new knowledge, or in some cases, at least new information, from what is previously known (and understood). That is, understanding can build upon currently held information, knowledge and understanding itself;
- **Wisdom:** evaluated understanding. Wisdom is an extrapolative and non-deterministic, non-probabilistic process. It calls upon all the previous levels of consciousness, and specifically upon special types of human programming (moral, ethical codes, etc.). It beckons to give us understanding about which there has previously been no understanding, and in doing so, goes far beyond understanding itself. It is the essence of philosophical probing. Unlike the previous four levels, it asks questions to which there is no (easily-achievable) answer, and in some cases, to which there can be no humanly-known answer period. Wisdom is therefore, the process by which we also discern, or judge, between right and wrong, good and bad.

Ackoff indicates that the first four categories relate to the past; they deal with what has been or what is known. Only the fifth category, wisdom, deals with the future because it incorporates vision and design. With wisdom, people can create the future rather than just grasp the present and past. But achieving wisdom isn’t easy; people must move successively through the other categories.

There are some critics to this model, because other authors (Bellinger, Castro and Mills, 2004) consider there are only four phases – transitions from data, to information, to knowledge and finally to wisdom, and understanding is the one that support the transition from one stage to the next, it is not a separate level of its own. (Fig. 3).

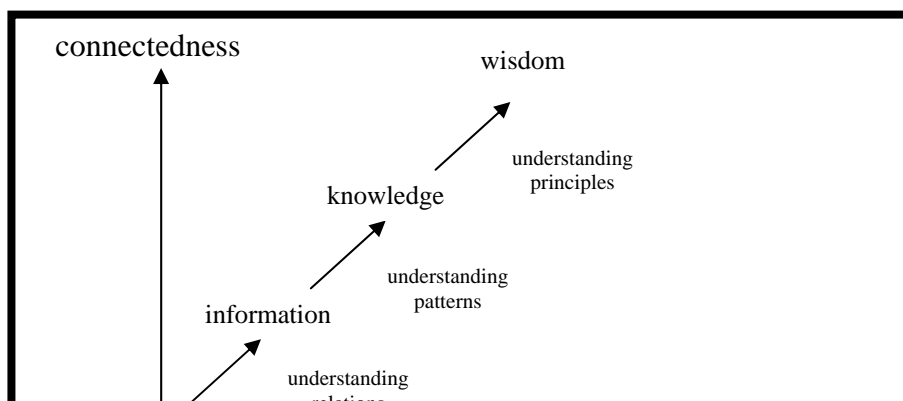


Fig. 3. From data to wisdom

However, in each one of the models, knowledge can not be generated by itself; more than that, it is usefulness by itself; the most important role is played by the human factor. This is the only one capable to accumulate, organize and valorize data and information in order to valorize them through knowledge aiming the wisdom. So, we have to emphasize now the existence of the two kind of knowledge: tacit and explicit.

According to Nonaka, **explicit knowledge** is knowledge that is easily expressed, captured, stored and reused; it can be transmitted as data and is found in databases, books, manuals and messages. In contrast, **tacit knowledge** is highly personal; it is hard to formalize and therefore difficult to communicate to others (...) tacit knowledge is deeply rooted in action and in an individual's commitment to a specific context (Nonaka, 1991). Those two components are not separate, but mutually complementary entities, interacting with each other in the creative activities of humans. The interaction of the two results into the *knowledge conversion process* (Fig. 4).

This process consists of four stages: (1) *socialization* – it transfers tacit knowledge between individuals through observation, imitation and practice; (2) *externalization* – it is triggered by dialogue or collective reflection and relies on analogy or metaphor to translate tacit knowledge into documents or procedures; (3) *combination* – it consequently reconfigures bodies of explicit knowledge through sorting, adding, combining and categorizing processes and spreads it throughout the organization and (4) *internalization* – it translates explicit knowledge into individual tacit knowledge. Eventually, through a phenomenon that Nonaka calls the “knowledge spiral”, knowledge creation and sharing become part of the culture of an organization.

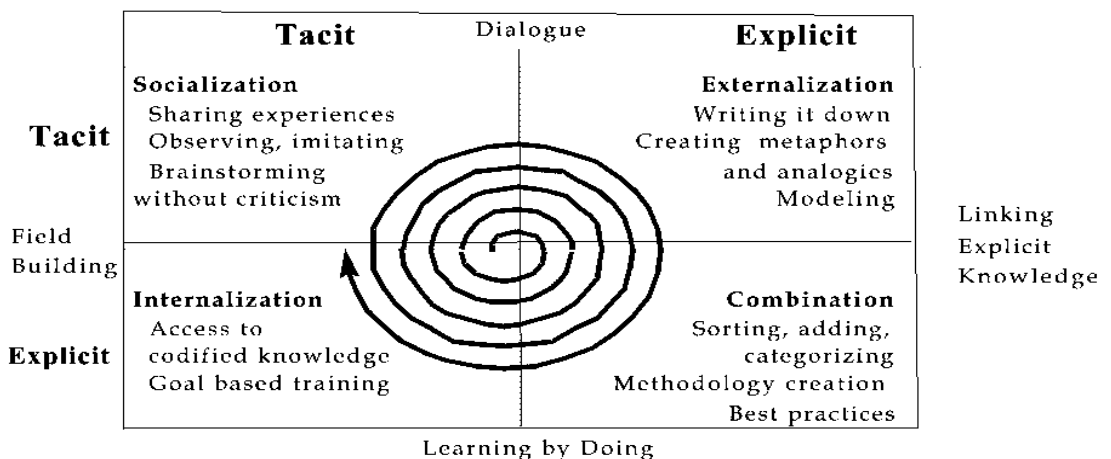


Fig. 4. Nonaka's spiral of knowledge

Almost everybody agrees about **the dual nature of knowledge**, even if the opinions are different: as Nonaka (1991) says about knowledge that it is *tacit and explicit*, Acharya (2000) divided it into *subjective and objective*, Conklin (1996) uses the terms *formal and informal* to define knowledge and Hildreth (1999) adopted the terms *hard knowledge and soft knowledge* (Hildreth and Kimble, 2002). This quality of being dual makes knowledge capable to be **transferred**. **Sharing of knowledge** is a moment in the development of knowledge itself, and conversely, this sharing also constitutes a necessary moment in the general social intercourse and practice. This is the moment when a firm and its management have to be aware that “our people are our most important asset” and to valorize that.

In conclusion, we can say that, **at firm's level, knowledge** is not just about knowing something or poses an information, it is about how to **apply** that information to the specific realities that the firm confronts with. So, **organizational knowledge** – which can be **identified** and than **valorized** by **use and/or transfer** only if it is encapsulated into a coherent system, in processes, products, rules, and culture – can be defined as processed information embodied in routines and processes that allow action. Under these circumstance, excepting the monopolistic politics and another market dysfunctions, the **competitive advantage of the firm** can not be reached and maintained but as a result of what a firm knows, how it can use what it knows and how fast it can learn something new. That's why into nowadays business environment the **managerial performance** relies mostly on the capability of the firm to buy, codify and transfer knowledge faster and more effective than its competitors, on its **intellectual capital** (Myers, 1996).

Intellectual capital – fundamental input for firm management

There is no single and unanimously recognized approach about the conceptual content that the intellectual capital reflects. That may be because the term just relatively recently entered into the managerial area preoccupation. Despite this, there is lately a strong opinion considering that intellectual capital is (among other intangible assets) the most important source of competitive advantage for a firm and strategic resource for its management.

The most fervent “defender” of the intellectual capital is considered to be Thomas Stewart, author of the book called *Intellectual Capital: the New Wealth of Organizations*. Starting with the *hypothesis* that knowledge is the most important reality of the economic life – because it represents the final substance of everything that is buying or selling, the raw material over which all of us action in order to transform it – he *conclude* that, in the new knowledge-based economy, the **intellectual capital** – and not natural resources, machines, and not even the financial capital – has become **the indispensable asset of any firm**. He defines two major components of the intellectual capital: **hard intangibles** – which can take (partially at least) a measurable / quantifiable form, such as: patents, property rights, data

bases, computer programs, market studies, commercial contracts, etc. and **soft intangibles** – which incorporate abilities, capacities, expertise, cultural values, loyalty of the people; it also includes the most part of the exterior relations (with clients, suppliers, local administration) and of the internal structural relations (the managerial system, the cash-flow, the research-development potential).

Even the most well known, Stewart itself recognizes that Karl-Eric Sveiby was the first one who classified the knowledge assets into three categories: (1) **structural capital** – concept that groups assets as patents, trade marks, intellectual property rights, data bases, soft-ware, private systems and networks (“hard intangibles” for the firm, capable to be protected in justice as property rights); (2) **relational capital** – the value of the relationships that the firm establishes with its clients and suppliers; (3) **human capital** – the sum of the abilities, knowledge and productivities of the firm considered individually and aggregately (Sveiby, 1997). A similar opinion has Hubert Saint-Onge, who considers that intellectual capital is a synergic result of: **human capital** – capabilities of individuals responsible to offer solutions to the clients; **structural capital** – capabilities of the firm to satisfy market demands; **customer capital** – size and intensity of the relationships that the firm has with its clients.

Touraj Nasseris is trying to offer a visual image about intellectual capital: “just imagine that your company is suddenly struck by a knowledge blight that erases all your corporate knowledge from the storage media including the employee’s minds. The difference between the market values of the company before and after the blight struck is the value of the company’s intellectual capital” (Nasseris, 1996). So, **intellectual capital** is made up of **human capital** – which comprises individual talents and knowledge that is acquired through education, training, experience and cognition – and **knowledge capital** – which is the documented knowledge that is available in such forms as research papers, reports, books, articles, manuscripts, patents and software; this last one component consists of the artifacts of the human mind that are also stored outside the minds of their authors, and can therefore be available to whoever seeks them.

In order to properly define the concept and to put it at its place (and in relationship with other “confusing” ones), Ilidio Lopes and Maria do Rosario Martins conclude: “the emergence of a new economic order has resulted from the management of this new raw material, in which intangible assets, while supporting the main source of value creation, have assumed a preponderant role. In *accountancy* it is known as **intangibles**, in *economic theory* as **knowledge assets** and in *management literature*, as **intellectual capital**. Its essence represents an asset without physical existence, providing potential future returns. Those assets are generally very expensive. They are extremely difficult to manage and, even today, their associated property rights are confused. This assertion raises the need to rethink accounting and financial principles and, also, protection and management models, with a view toward creating a more appropriate match between accounting and market values” (Lopes and Martins, 2006).

Once they have established this framework, the next step was to emphasize that, from a management point of view, in contrast to tangible assets and financial capital, intellectual capital emerges as an alternative in intangible asset analysis. Strongly focused on and oriented towards the management of a firm – in particular knowledge management – this approach has recently received great credit and wide application (Fig. 5).

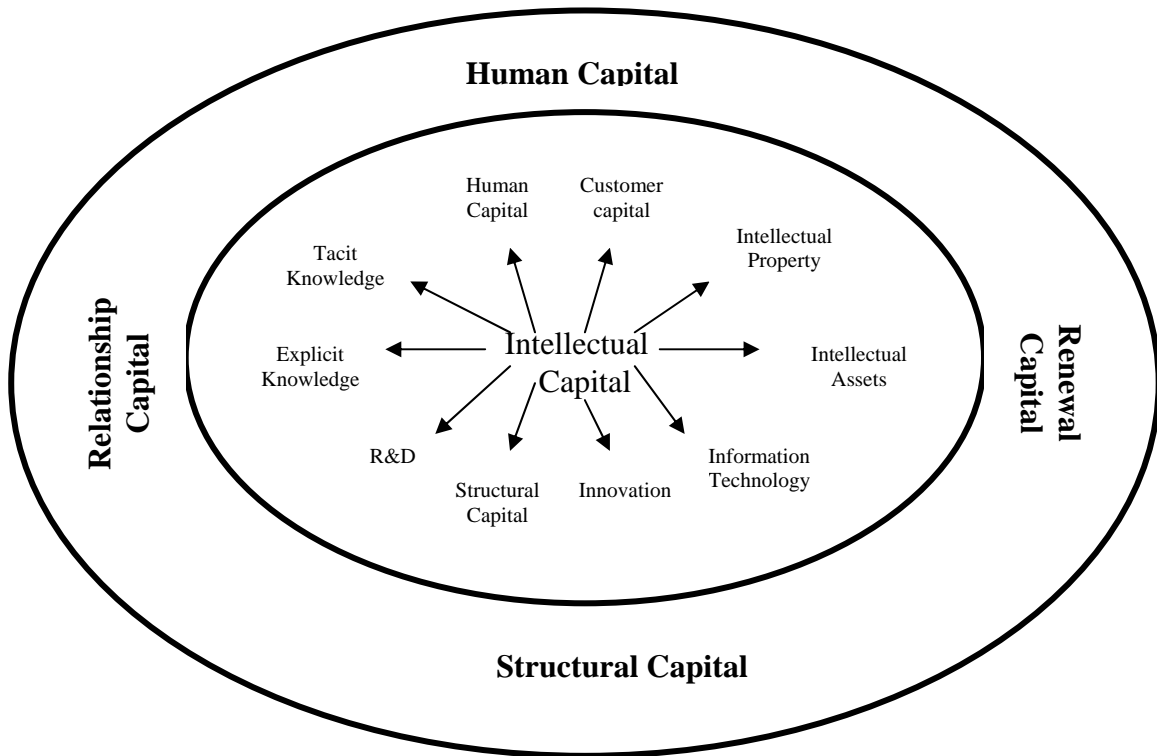


Fig. 5. Intangible assets categories

But still, *what is intellectual capital?* At this question, Anrew Wileman answers (Willeman, 1999): „the recognition that „intangible” assets (intellectual property, internal knowledge and capabilities) and external relationship with customers and suppliers are often more valuable and critical to success than „tangible” assets such as physical property, equipment, stocks and cash. And that these intangible assets need to be actively managed, invested and exploited”. Continuing his ideas, Wileman answers to another two fundamental questions:

- *who are the practitioners?:*
 - business that spend heavily on research and development or brand marketing have always managed their “hard intangibles” aggressively (such as Microsoft, Coca-Cola, Nike);
 - large corporations which have created a new position of chief information (knowledge or learning) officer (such as Nokia, Unilever, Skandia).
- *what are the practical applications?*
 - of structural capital – companies that depend heavily on hard intangibles are developing new strategies to:
 - defend and strengthen ownership rights (for example, internet distribution and global pirating or counterfeiting are threatening the value of music

labels – Polygram, applications software producers and high-priced western fashion brands – Calvin Klein, Rolex);

- increase exploitation of the assets (for example, stretching or licensing brands and trademarks into new product areas – Marlboro into clothes or Mars into ice-cream);
- of relationship capital – once they understand the value of relationship capital, companies are driven to invest more in keeping customers by using loyalty programs and personalized marketing. Keeping existing customers is far more profitable than getting new ones and this relationship asset can be mined for its cross-selling potential;
- of human capital – the concept “our people are our asset” is easy to grasp but difficult to manage. Employees can walk out any time. The challenge is to create an environment where talented individuals are more engaged, productive and satisfied than they could be elsewhere, creating a virtuous cycle in which the best people stay because the best people are there. That sort of business is usually one that is investing heavily in structural and relationship capital.

The **intellectual capital** as it is defined has six major **characteristics** (Nicolescu and Nicolescu, 2004):

- the intellectual capital can potentiate the other resources of the economy and firm, because the knowledge it incorporates can replace, into the products it realizes, part of the expenses and / or the difficulty to manipulate or transport physical assets and / or it can multiply the effects given by the using of those assets;
- powerful dependency of the value of the intellectual capital and of its capacity to produce value-added on the knowledge, the abilities to use it effectively and of the motivation of the people involved into its use;
- into the circumstances given by the knowledge-based society, the value structure of the intellectual capital is very different from that of the classical capital used into the traditional firms / economy;
- the huge, almost unlimited capacity of multiplying of the intellectual capital;
- the investments in intellectual capital generate almost anytime complementary investments, generating a massive charging of the investments and value-added spiral.

The efficiency of using the intellectual capital is measured not only financial, but also by human, commercial and prospective point of view, trying to capture all the major effects (measurable or not) it generates.

Managerial performance – result of the appropriate valorization of the intellectual capital of the firm

The managerial performance should really be measures taking a wide range of factors into account. Today, under the influence of globalization, environmental crises, and widespread ethical breakdown there is pressure to identify and report new, non-traditional, and “non-financial” measures of performance to get at newly recognized dimensions of enterprise value, success, and significance. These new demands emerge from a belief that social, environmental, ethical, and geopolitical factors materially impact the ability of a company or enterprise to perform favorably. Admeasurement of the activities and behaviors

that create related intellectual capital assets is key to both standardizing non-financial performance variables and integrating them with the traditional measurements of enterprise performance. Into the knowledge-based society, when the asset base shifts significantly toward intangible, intellectual capital assets like brands, intellectual property, corporate reputation, and knowledge, new and different managerial competencies become the order of the day. But which are these **intangible asset management competencies** that impact all industries, irrespective of their industry?. The answer is: capturing ideas and driving innovation; leveraging intellectual property; brands and brand strategy; reputation and social responsibility (Moore, 2004).

As any other form of capital, the intellectual capital is necessary to be evaluated (in order to define the best form of use and valorization for it). The ideal is that the results of this evaluation to be reflected into some form of documents like the accountancy ones. But the intangible resources / assets are not managed properly, that they deserve more management attention and they need to be managed different than the other resources / assets.

As Thomas Stewart said in his book *Intellectual Capital: The New Wealth of Organizations*, the emergence of the Information Age has changed the nature of wealth and wealth creation, and it offers powerful new ways of looking at what companies do and how to lead them. In an economy based on knowledge, **intellectual capital** – the untapped, unmapped knowledge of organization – has become **a company's greatest competitive weapon**. It is found in the talent of the people who work there; the loyalty of the customers it serves and learns from; the value of its brands, copyrights, patents and other intellectual property; the collective knowledge embodied in its cultures, systems, management techniques, and history. But *these vital assets are nowhere found on a balance sheet, only rarely managed, and almost never managed skillfully*.

Even if there is now a large consensus about the invisible assets playing the biggest role into the gaining of the managerial performance, the last assumption raises some questions: *“can the intangible assets be properly evaluated – identified, categorized, measured – and then managed?”* Because the concept of intellectual capital itself is not unitary defined, it is very difficult to give just one kind of answer to those questions. The approaches are different (management versus accountancy), the points of view are different, the elements taken into consideration are different, the units of measurement are different, and the results are, obviously, different. Some of them will be analyze bellow.

Considering the *intellectual capital* to be the *fundamental input to all wealthy generating processes*, Touraj Nasserri tries to demonstrate how knowledge leverage could and has to be the ultimate advantage of a company (Nasserri, 1996). He starts with the idea that without knowledge natural resources could not be developed and most of the value of manufactured goods consists in their knowledge contents. So physical assets owe must offer their value to intellectual capital, and yet most companies are not organized to benefit fully from **leveraging the intellectual capital**. The interaction and effective integration of the two components of the intellectual capital – human capital and knowledge capital – into a **system of managing the intellectual capital** is essential in order to maximize the results of the company.

The author considers that the challenges to capitalizing on the knowledge advantage include:

- *integration of the intellectual capital with strategy* – because intellectual capital is a company's most important resource for competing and winning and because it strongly influences many strategic decisions involving allocation of considerable resources of a company (such as: the kind, quantity and quality of information that should be gathered; what learning system and environments should be created to encourage building and renewing human capital; what kinds of knowledge and talent should the prospective employees command to support the human capital development strategy; what information infrastructure should be installed so that it can best facilitate creation, tracking, storage and sharing of knowledge to support strategic and operational objectives; what system should be installed to safeguard intellectual capital and to ensure its quality and reliability; what processes are to be implemented to mobilize intellectual capital for developing distinctive corporate capabilities that are essential to the strategy of the company; what R&D programs to fund so that they can create the future knowledge that is needed; what part of the R&D should be done in house, what part should be outsourced, and what part should be done collaboratively with competitors, suppliers and customers; what kind of business relationships and alliances should be established with external providers of strategic knowledge and technology; what incentives and corporate culture are needed to foster and inspire efforts to enhance corporate intellectual prowess);
- *monetary evaluation of the intellectual capital* – there is difficulty in evaluating intellectual capital by the prevailing accounting rules that are used to evaluate physical capital, and it seems that this difficulty has regrettably discouraged investment in intellectual capital. But intellectual capital manifests its value by how it is managed to enhance the performance and development of a company on the route to achieve its strategic intent. For any company it is possible to assess the contribution of intellectual capital to increased market share and profits through new products and faster product developments, through cost reduction, and by positioning the company for seizing future opportunities. The management system that is in place to leverage intellectual capital can measure continually its effectiveness by company-specific metrics, and demonstrate the real business worth of intellectual capital.

The new approach of the **resource-based view of the firm** offers a distinctive perspective upon gaining and maintaining competitive advantage (Halawi, Aronson and McCarthy, 2005): a firm's resources consists of all assets both tangible and intangible, human and nonhuman that are possessed by or controlled by the firm and that permit it to devise and apply value-enhancing strategies. Knowing that sustainable competitive advantage results only from strategic assets, we also know that intangible resources are more likely than tangible resources to generate competitive advantage, because such advantage is developed over time and cannot easily be imitated. So, managerial performance could be measured taking account of all the elements of the intellectual capital.

In this context we can exemplify with the case of *Skandia Model for Measuring Intellectual Capital*, which is one of the most quoted example of measuring intellectual capital (Malhotra, 2000): In this model, there are four components of intellectual capital: market capital (also denoted as customer capital); process capital; human capital; and renewal and development capital. The value chain (according to Edvinsson and Malone, 1997) expresses the various components of market value on the basis of the following model (Fig. 6):

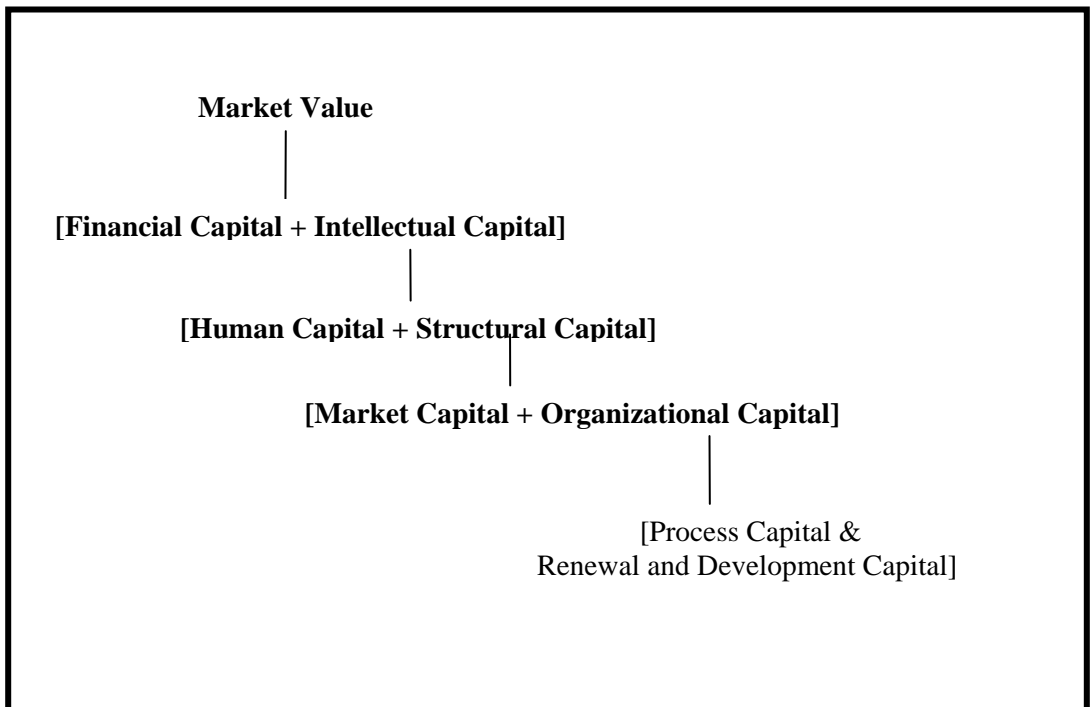


Fig. 6. Components of Intellectual Capital

Market Value = Financial Capital + Intellectual Capital

Intellectual Capital = Human Capital + Structural Capital

Human Capital: The combined knowledge, skill, innovativeness, and ability of the individuals to meet the tasks at hand, including values, culture and philosophy. This includes knowledge, wisdom, expertise, intuition, and the ability of individuals to realize organizational tasks and goals. Human capital is the property of individuals, it cannot be owned by the organization. *Structural Capital:* Structural capital signifies the knowledge assets that remain in the company when it doesn't take into consideration human capital that is the property of individual members. It includes *organizational capital* and *customer capital* (also known as *market capital*). Unlike human capital, structural capital can be owned by the nation and can be traded.

Structural Capital = Market Capital + Organizational Capital

Market Capital: In the context of the original model applied to market enterprises, this component of intellectual capital was referred to as *customer capital* to represent the value embedded in the relationship of the firm with its customers. *Organizational Capital:* Organizational capabilities in the form of hardware, software, databases, organizational structures, patents, trademarks, and everything else of organization's capabilities that support those individuals' productivity through sharing and transmission of knowledge. Organizational capital consists of two components: process capital and, renewal and development capital.

Organizational Capital = Process Capital + Renewal & Development Capital

Process Capital: Organizational processes, activities, and related infrastructure for creation, sharing, transmission and dissemination of knowledge for contributing to individual

knowledge workers productivity. *Renewal and Development Capital*: This component of intellectual capital reflects the organization's capabilities and actual investments for future growth such as research and development, patents, trademarks.

Another model that is trying to evaluate the knowledge capital is proposed by Paul Strassmann. He argues that "the creation of management value-added is something that defies the laws of conservation of energy. These laws state that the output of any system in the universe can never be greater than its input. Delivering a positive management value-added must be therefore an act of creativity that springs forth from something that is intangible, as if it were an artistic conception. *The source of this creative energy is knowledge capital*. This ephemeral element can be quantified only indirectly by observing how much management value-added it yields. Another way of looking at the same phenomenon is to infer the value of knowledge capital from its periodic yield. If management value-added is the interest earned from an accumulation of knowledge residing with the firm, then the value of this principal can be calculated by dividing the management value-added by the price one pays for such capital"(Strassmann, 1998).

Since investors cannot differentiate between the price of capital for financial or knowledge investments because they are intermingled, so the author uses the same price for all capital as a first approximation. This yields a simple equation:

$$\text{Knowledge Capital} = \text{management value-added} / \text{price of capital}.$$

This relation makes it possible to prepare a revised balance sheet for any firm, by adding a line item Knowledge Capital on the asset side of the ledger, and by increasing (or decreasing) the reported valuation of shareholder equity by the identical amount.

So, while financial performance is easily measured and observed, it is just the "tip of the iceberg", and the organization's true vitality and promise or, conversely, its weaknesses and sources of potential disaster lie below the waterline. While almost all the efforts still have in mind the financial results of the firm, it is difficult to understand how someone can invest in human development and, more than that, to know that when someone invests in these intangible assets he will get some big tangible results.

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