# KNOWLEDGE AND THEIR SHELF LIFE IN THE BUSINESS CYCLE

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**Abstract**
*In the attempt to draw a definition to the business topics of the current period, we report to a string of descriptive key words, which appeal to a growing amount of assets, other than the physical/tangible ones. Thus, the most used words/keywords are: knowledge, skills/abilities or talents and the successful leaders that can use/exploit them productively, to achieve competitive advantage, become the key individuals in the business organizations. This is partly due to the "promise" that "the world of intangibles" guarantee to the modern corporate success. Thus, knowledge has become valuable resources in the current competitive chaos. The issue of this paper focuses on how knowledge are used in business organizations, where they can be located within the organization domain and which is their shelf life/their term of validity comparing to the one of those tangible/physical.*

**Key words:** *business organizations, innovation, knowledge, shelf life, tacit knowledge*

**JEL classification:** *D83, J24, M10*

## I. INTRODUCTION

Business organizations, in their current development, became dependent on an increasing amount of assets, different from those of tangible nature/physical or monetary; of course we not exclude the recourse to the latter, but the focus is clearly transposed on those assets that do not wear out when they are used, but increase in value/amplifies, generating tangible benefits that can be traded on markets. This dependency relationship is the result/replica of social progress; otherwise, as individuals, we relate to a range of values, much different than the physical ones as to hold a house or a car; advancing in the profession, specializing in a certain area/very narrow field through a continuous and dynamic process of learning, interaction and sharing of experiences seems to be one of the basic needs for living together in the current society. The foundation of any success business activity is built on the top leader's vision, through constant reference to the organization's mission, aspect that involves the continuous integration of intellectual and *physical* assets and the continuous operation of the result of this complementary relationship. When we refer to the intellectual assets we relate to knowledge stocks and expertise of the employees, to their experiences and skills, implicitly to the organizational memory.

## II. WHAT DO WE KNOW ABOUT KNOWLEDGE UNTIL NOW?

Peter Drucker is the one which claims that education and knowledge are the productive assets of a business in the current industry conditions, where not only the technologies are advanced but the logic and the perceptions used are different. Industries are also different in terms of employment; the preferred workers are the *knowledge workers* despite the manual workers. These industries that prefer workers who use their minds more than their hands, are those that bring fast economic growth, opportunities, jobs, living standards and aspirations for the next decades if not a century from now (Drucker, 2008).

From a historical aspect we have developed two fundamental associations when referring to knowledge: scientific knowledge, that are rooted in the research conducted through academies, centers/research institutes and that category of knowledge that an experienced person possesses, we can call this category as pragmatic knowledge (Mertins and Heisig, 2003). It is absolutely natural that the chances of economic gain/benefits may increase for the companies when among technical people within it are included well-educated employees/skilled that expresses initiative (Nonaka and Takeuchi, 1995). Thus, in the business practice is individualized that category of employees/workers/individuals who possess those physical, intellectual, motivational skills and tend to continuously develop them to achieve goals, focused on innovation and implicitly on the creation of new knowledge. Those *efforts* are made for achieving economic benefits to the organization and for broaden personal knowledge horizon.

There are various optical on what we traditional mean by the term knowledge, but the role and place which they hold in KM is pivotal. Referring to this area we mention that there are hundreds of definitions for knowledge as the KM literature summarizes several decades of activity. Selective, we invoke some definitions of writers and researchers work in the field as shown in Table 1.

**Table 1 The knowledge concept and its definitions**

| | |
|---|---|
| **KNOWLEDGE** | Understanding based on experience **(James 1907)** |
| | Contextualized information **(Auna 1970)** |
| | The capacity for effective action (**Argyris, 1993**) |
| | Justified true belief **(Goldman 1991, Nonaka 1995)** |
| | A fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating the new experiences and information **(Davenport and Prusak 1997)** |
| | Experience or information than can be communicated or shared **(Alee 1997)** |
| | Mental units collection of all kinds that give us insight and perspective **(Wiig 1998)** |
| | A better understanding of a situation, relationships, occasional phenomena, theories and rules that underpin a specific area or problem **(Bennet and Bennet 2000)** |
| | Knowledge is processed information for understanding the events that occur in the environment **(Brătianu 2006)** |
| | Knowledge is experience and expertise which when combined with data and other information, can solve problems and create value. This value is intellectual capital **(Pasher and Ronen, 2011)** |

As shown in the Table 1 defining the knowledge concept meets shades and markedly different approaches, because the understanding/definition of this concept remains inextricably linked to the way in which we classify/share/evaluate/quantify "parts/units/fragments" of what we call generic *knowledge* and implicitly how these units are passed through each individual's cognitive system.

To define knowledge with reference to the KM is not an easy demarche, by referring to the current organizational practice; they are the result of integration/mix between the rational and intuitive thinking, result which can be precisely quantified only to a certain extent, because part of this result is the subject to quantification of elements as intuition, emotions, instincts, non logical and nonlinguistic mental processes that are highly personal/individual. In other words, by an integration, which is sometimes imprecise/ vague/unexplained/misunderstood and that builds in the mind of individuals (managers or non managers) in the organization, it can be reached to a novelty, in the form of inventions/innovations that can be quantified then into new marketable products or services. In our opinion, we cannot give a succinct definition of knowledge in the KM domain, partly because the mechanism underlying human thought can be understood only in a small way and differs significantly from one individual to another.

As regards the sharing of knowledge offered by KM, they are divided into two major classes/dimensions/categories: *explicit knowledge* and *tacit knowledge*. The knowledge that can be formulated in sentences, caught in drawings and writings is explicit. Knowledge of the senses, abilities, physical experiences, insights is tacit (Nonaka, Von Krogh et al, 2006). Explicit knowledge can be found in textbooks, structured database and can be transmitted from one person to another, including from one generation to another. Tacit knowledge, related to experience, intuition, imagination of a person is much more difficult to measure (and sometimes impossible) and to transmit from one person to another. Explicit knowledge can be expressed in words, phrases and can be disseminate in books/textbooks, scientific formulas and can be transmitted between individuals, formally and repeatedly, while the personal tacit knowledge is difficult to express in words but not impossible to share with other individuals; they are rooted in individual`s experience and actions and in the ideals that a person embraces (Muntean, Danaiata et al, 2001).

## III. WHERE WE CAN FIND KNOWLEDGE IN ORGANIZATIONS?

Independent of the capacity and lengthy processes of "soaking" and integration in the individual`s mind, the human thinking hierarchy can be graphically represented in the form of a pyramid scheme, through which human knowledge meets levels that individualizes as data, information, knowledge, understanding and wisdom. In bounding these elements in the two areas/dimensions/fields underpinning the KM domain, some are likely mainly tacit in nature, part of them is mostly explicit as shown graphically in Figure number 1.

In the predominantly explicit area (although this area doesn`t exist separately of the tacit one in the human mind, by the graphical representation we tried only a conceptual delimitation) are the theoretical knowledge acquired by an individual through education; contextual information; structured information on suppliers or customers; information and knowledge that can be physically captured or electronically stored, that can be easily disseminated and shared with other individuals in the organization, for which we most often use the generic syntagma of *explicit knowledge*. On the other hand, the tacit area/field usually includes complex elements of rational and intuitive human system such as know how (technical knowledge), expertise, understandings, insights, emotions, skills, mental models, ideals, values which in some frames/contexts are the bases for creating that novelty element founded as enlightenment on the top of the pyramid.

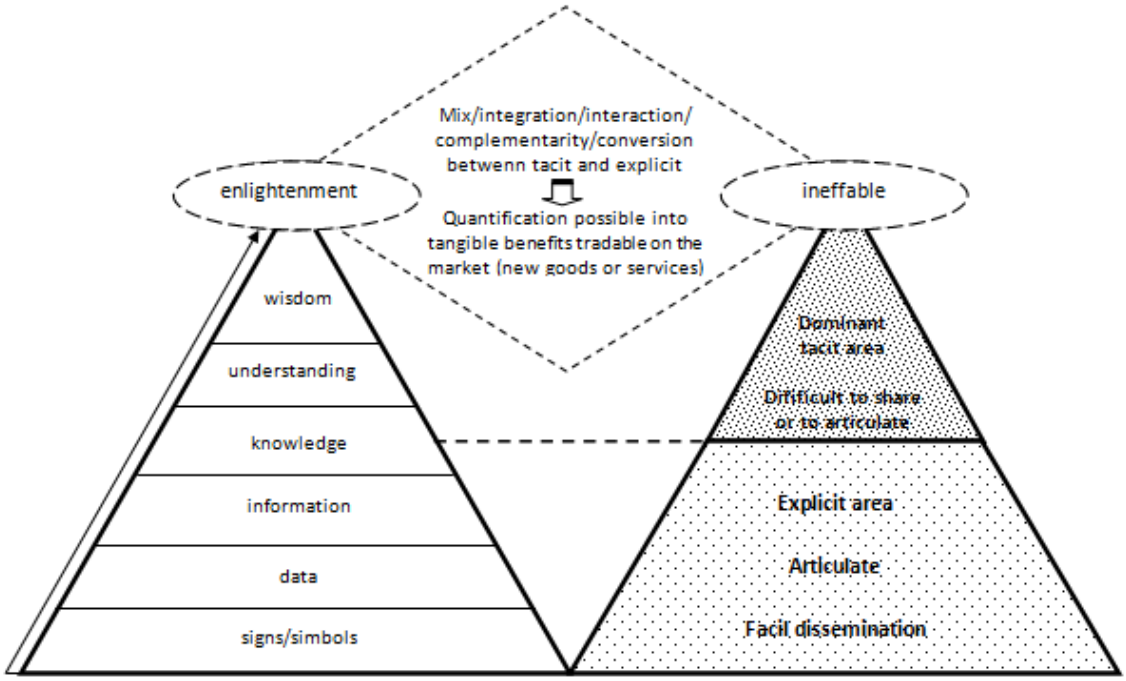


**Figure 1 Tacit vs. explicit domain and the cognitive human system**

*Tacit knowledge* is that knowledge that cannot be entirely explained even by an expert, which can be transmitted/transferred from one person to another only through a long process of apprenticeship. In contrast, the *explicit knowledge* it is relatively easy to articulate and communicate and as well to transfer between the individuals of an organization (Lee and Yang, 2000). Much of the knowledge of an individual cannot be expressed in words or is harder quantified/articulated, in the sense that we cannot say precisely from where/how is formed the expertise of a person (even the person has difficulty describing his expertise). All knowledge have a strong personal nature and all contain an element of tacit (a tacit component) which varies from one case to another, tacit forms of thinking are an indispensable part of all the knowledge and the ideal to remove all their personal items, results in their destruction (Polanyi, 2009, p. 20). Knowledge processing can be done on different levels of abstraction and complexity from scientific theories to the applied knowledge that are daily needed. In an organization, processing data into information and information into knowledge is done both, at the individual level and at the level of working teams (Brătianu, 2006).

As a result of those presented by us above, occurs a series of questions as: Where are these knowledge in organizations? Where are the engines/forces capable of creating new knowledge? Which of the two dimensions, *tacit or explicit*, is fundamental in achieving competitive advantage?

In the business organizations, *explicit knowledge* can be found in the form of archives, containing electronic documents; archived documents on a physical stand, created/built/stored/accumulated vertically and horizontally, inside and outside of the organizational boundaries, formal and informal within the existence of the

organization; knowledge stored in products or services; knowledge stored in innovation/development projects. On the other hand, these *explicit knowledge* though possibly to articulate and transfer, to communicate and share between individuals are the result of a process (simple in some cases, in others complex) of *coding and structuring in the minds* of individuals, by theoretical knowledge and direct experience (the accumulation of large amounts of explicit knowledge always requires a large volume of work distributed on years). In this context Michael Polanyi stresses that all knowledge has a strong personal character, they all contain an element of *tacit* which varies from one case to another and that the tacit forms of thinking are an indispensable part of all knowledge (Polanyi, 2009).

*Tacit knowledge* of individuals come to "belong" to the organization in the context in which they support some forms of articulation or conversion or can be shared between individuals or groups of individuals in the context of teamwork for innovative acts. The living environment and development of *tacit knowledge* (whether in the form of experiences, insights, skills, values, emotions or mental models) is the *mind* of individuals. Articulating/sharing/converting processes are complex, being built by intentional or unintentional dynamic interaction between individuals. These subjective knowledge are not fully articulable/transmissible because they are conditioned by the cognitive system of each individual, and where they support forms of conversion, the process itself (of creating new knowledge) is very fragile, one that is not malleable/listener to the traditional management techniques. Individuals may be reluctant or even not be able to accept new perspectives, ideas or comments (Von Krogh, Ichijo et al, 2000). When experiences through: socialization, externalization and combination are internalized in the individual's *tacit knowledge base* in the form of shared mental models or technical know-how, they become high value assets (Reinmoller, Senoo et al, 1998). Internalization involves learning by doing, being also the process that creates systemic knowledge. Responsible for these interactions remain individuals, regardless of their status in the organization, whether they are top-managers or simple employees; practically the creation of new knowledge starts only when the *tacit knowledge* of an individual begin to be passed through the socialization process to other members of the organization. Such *tacit knowledge* of individuals becomes the basis of organizational knowledge creation (Nonaka, Takeuchi, 1995).

From Figure number 2 it can be seen that between the two general dimensions of knowledge provided by KM (*tacit vs. explicit*) there is a continuous need for integration and complementarity, in order to build, step by step, the organizational memory and the new organizational knowledge. It is important to note that part of the knowledge are purely tacit/subjective and impossible to articulate, although they representing a potentiating vector/adding extra value to the structuring and coding knowledge processes, they do not get to **"live"** physical through archives/documents/policies, but remain rooted in the mind (rational and intuitive) of each individual. Any forced attempt to articulate them could destroy them. These *tacit knowledge*, being too personal/individual, are the one that makes the difference in creating new organizational knowledge.

Also in the sense invoked by us through Figure number 2 part of the knowledge in organizations (the one of explicit origin) **"live"** in organizations by physical or electronic stand, in goods and services or into new innovation projects, constituting a significant part of the total knowledge in organizations. Their existence coincides with the deployment of extensive/long and personal processes of structuring and encoding through continued integration of the two dimensions. On the other hand, *tacit knowledge* that cannot be articulated/shared (in the containing of which the tacit dimension is reflected in a too much big scale) **"live"** in the minds of individuals in organizations and in the voluntary or involuntary relations established between them, contributing to building, articulating and easy disseminating the explicit knowledge.

From our point of view, knowledge are very precious assets for companies and their value, although it may not be measurable, is partly transmitted to the final goods/services, through a process too little understood and impossible to code. What should be the base concern of top people is not measuring "causes" that brings benefits of this type but valuation/valorization of the "effects" by occupying key positions in organizations with individuals that are capable, educated, rational that know to handle their emotions in a clever way. Too often people see their emotions as uncontrollable. The problem is that regardless the fact that we cannot stop feeling, we are able to limit the negative effects of emotions on the quality of decisions. To neutralize the negative impact of emotions on the undertaken activities, we must begin by identifying our emotions and their sources and at the same time to eliminate the effects of emotional manipulation (Bazerman and Moore, 2009).

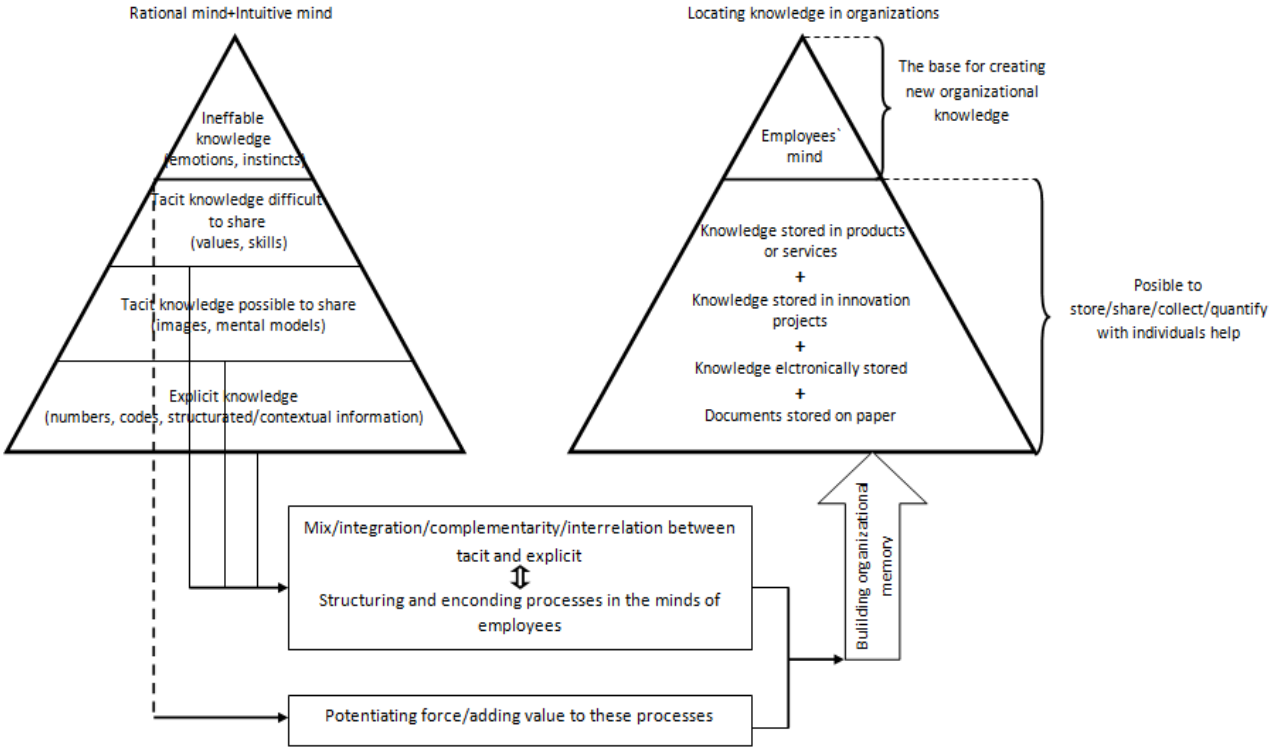


**Figure 2 Location of knowledge in organizations**

## IV. KNOWLEDGE AND THEIR SHELF LIFE

Beside the aspects shown by us in the structure of this paper, we find ourselves implicitly in the situation of wondering: Which is the shelf life of these assets compared to the traditional/tangible ones? / Which is their durability? All this caused by the dependency of business activities in their current development of these knowledge assets, especially of those which even are not visible, through lengthy processes of sharing and dynamic conversion bring value to an organization - tacit knowledge.

According to a research made by the ”Buletinul Universității Naționale de Apărare”, 42% from the knowledge in organizations can be found in the *mind* of the individuals (Iordache and Iordache, 2014); we would say that in percentage, that most of the times exceed 50% of the total knowledge from organizations, are founded in the employees minds (executives or nonexecutives) as well as in the formal or informal relations established between those and which, according to the graphical representation from Figure number 3, leave the organization once with the moment the employees physically leave the work place

Knowledge of the physically or electronically nature contains structured and contextual information about the whole business (plan, strategy, organization chart), from reports on research activities to documents concluded with suppliers or information about customer portfolio and their needs, accounting documents, etc. In the most general way, some of these are valuable resources at any time; part of them must be suited to the market requirements and internal changes; units of these knowledge are extinguished as value at some point and become useless. Regarding the knowledge, which is only in the *minds* of employees, they have no shelf life, because by definition, the individual renews, adds value, increases the level of complexity, adapts through rational and intuitive processes its own "base / knowledge archive", this taking place in the learning organization and beyond its boundaries.

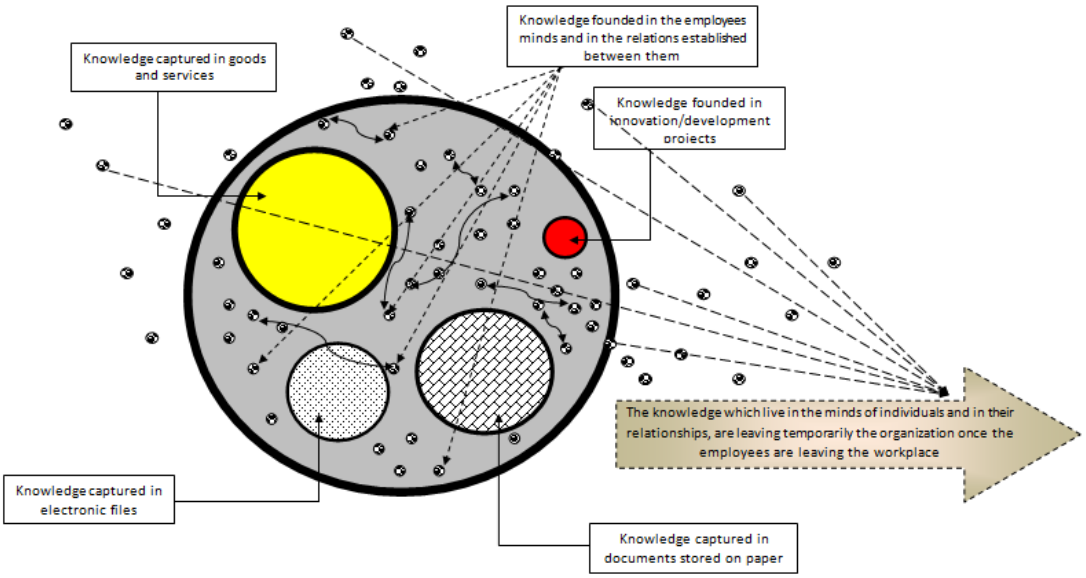


**Figure 3 Knowledge *in* vs. knowledge *out***

In 1990 the importance of intangible assets began to be recognized by national governments and international organizations in Europe and America, as a factor contributing not only to the competitiveness of companies but to the entire economy (Mertins and Heisig, 2003). According to Lev, intangibles assets are encoded workforce, patents and know-how, software, strong customer relationships, brands, and other unique organizational design that also generates the largest corporate growth and value. They count for more than half of the public company's capitalized market. They absorb, every year, a trillion dollars of corporate investment funds. In fact, these *light assets* are what give to companies the competitive advantage today (Lev, 2004). Some authors of KM literature do not distinguish between intellectual capital, intangible assets, knowledge assets, or intangible resources, using these terms as interchangeable. One of the authors who put in synonymy intellectual capital, intangible assets and knowledge assets is Baruch Lev, referring to these terms as follows: all three are used: intangibles assets by the accounting literature, knowledge assets by the economists and intellectual capital in management and legal literature - but they essentially refer to one thing: a non physical right for future economic benefits. When this right is ensured in legal terms (protected) such as in the case of patents, trademarks or copyrights, the asset relates generally to intellectual property (Lev, 2001).

From an accounting perspective, assets are resources controlled by the firm, the benefits obtained from past and expected to generate future economic benefits in the form of cash inflows (or cash equivalent) or by reducing cash outflows. Assets are divided into two categories: current assets, participating in a single economic circuit, helded for short-term (less than one year) by the company and fixed assets representing goods and values with a useful life of more than one year, which are not consumed upon first use. The latter category includes: intangible assets (also called intangible), tangible assets (also called fixed tangible assets) and financial assets (financial amounts invested by the company for long term).

In terms of management, especially of the KM domain, knowledge are called intangible assets, although, sure, in accounting terms they do not exist in the chart of accounts, so there may be no record value and contribution to the welfare of the company. Moreover "the control of them" by the company is subjective. From what we know up to now, *explicit knowledge* that, according to Figure number 3, can be found in organizations in the form of physical or electronic storage and can be controlled and coordinated by the organization, represents one of the tasks for management and for teams (working for innovation). Of course we cannot measure their value, but certainly we can say that they provide added value when are connected to the "tangibles sources" such as human capital, which set them in motion for future welfare. They are extremely important assets that depreciate over time in the context in which appears new internal and external requirements, new customers, suppliers, relationships. Also in the sense mentioned, we consider that they lose value over time and can reach the first link in the chain value: data, information, knowledge. They remain in the archives of organizational memory and are certified as valuable evidence when it appeals to past activities.

*Explicit knowledge* of the type quantified in products and services or in new innovation projects/invention (following integration processes, encoding, conversion and structuring taking place only in the minds of individuals) are results that may be included in the budgetary processes requiring a continues updating – depending on the needs of consumers - by applying "knowledge to knowledge". In terms of accounting for these intangible assets there is created an account (under the name of *development costs*) and are recognized if,

and only if, an entity can demonstrate the technical feasibility of completing the intangible asset in order to use or sale, how it will generate future economic benefits, etc. The validity term of the new products renews/extends once with every possible updating that occurs in their structure/content, under extraordinarily rapid generalization and dissemination of knowledge.

Instead, knowledge that can be found only, at one point, in the minds of individuals in organizations and in the relations between them, are purely *tacit knowledge* which does not bear a form of articulation, because would destroy them in the forced attempt to be converted and to give them a physical form. They do not degrade but develops, do not destroy but regenerated, do not devaluing but raise their default value depending on the learning processes and experiences that individuals meet over climbing the mountain/the job they hold. Sometimes regarded as intuition or judgment, tacit knowledge can be the most important existing organizational knowledge and are a challenge to transfer. But it can also represent a great risk of loss when employees leave (Tryon, 2012). It is not enough to hire people to perform different jobs, organizations need the knowledge that people can bring to the workplace and apply them in solving problems and creating innovation. Organizations need individuals to have knowledge when they come to work, to accumulate knowledge over time and to share their knowledge with others in the organization (Vaiman and Vance, 2008).

## V. CONCLUSIONS

Following the aspects summarized and graphed in this paper, we can draw conclusions that follow this demarche as: the society in its development was and is dependent on knowledge. In this sense, business organizations become increasingly dependent on knowledge workers which own knowledge that can be brought to work and shared with others in the organization, in order to create innovation. When entities "for breathing" in the chaos of global competition, are dependent of these individuals and of the dynamics they can give to the internal activities, of their knowledge and skills/abilities that can make use of their *natural equipment*, intuitive and rational, means that they are subject to a substantial risk if they suffer any loss in this sense. Through a simple exercise of imagination we should have thought about: How these fixed assets/tangible look when at 17 pm the intangible ones, living in individuals mind are "leaving" home once with them? How will it be "filled the gap" when one of the skilled and educated individual is permanently leaving the organization? How it will be if these knowledge would have a useful life of *n* months/years? In this regard, we believe that our graphical representations and connections were, generally, sufficiently clarifying and we believe that more attention should be implemented in this direction. The researches on the topic/content discussed in this paper should rise exponentially, quantitatively and qualitatively. In an attempt to give another direction to what means the business practice involving KM, depending on the niche that KM strategies should occupy at the level of corporate strategy, we are convinced that they should be closely related to human resources strategies and talent management, to retain and attract capable people in organizations, educated and dedicated to creating new knowledge; employees which can be able to apply individual knowledge to create wealth and tangible economic benefits for the organization.

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