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CONTRIBUTIONS TO THE MODELLING OF ARCHETYPES IN THE MANAGEMENT OF KNOWLEDGE WITHIN ORGANIZATIONS

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Abstract: *Human beings think and act according to their own internal structure, which is characterized by behavioural patterns, archetypes and emotions that may be the main knowledge generator at organizational level. Identifying behavioural patterns, archetypes and emotions as a source of knowledge in organizations is necessary for creating management models and policies. In this respect, our paper has an exploratory nature, addresses archetypes and emotions at organizational level from a mathematical perspective and proposes an identity coefficient, both at an individual and global level, to determine the knowledge capital. Using identity coefficient at an individual and global level facilitates the effective determination and quantification of knowledge and the management of knowledge capital based on specific emotions and archetypes of individuals in the organization.*

Keywords: *archetypes, emotions, organisations, identity coefficient, knowledge*

1. INTRODUCTION

In the current socio-economic context, organizations are subject to significant changes regarding the performance of economic processes. In the new global context, knowledge is defined in different ways: as a product or even as an economic and organizational tool. Up until the moment when the focus switched to intangible resources such as knowledge, organizations approached their employees only from the perspective of their ability to achieve specific organizational tasks. Employees in the new organizational structures have the preeminent quality of being the *main knowledge generators*. Also, they are the most important knowledge resource or fundamental capital in an organization, because of their specific capacity to generate, manage, transfer and exploit knowledge.

The current business environment is trying through various techniques and tools to clarify aspects of cognition, such as generation, dynamics, volatility, transfer and exploitation. In this context, knowledge of the human being with its complex structure becomes vital in a

highly technologized and digitized society. Knowledge capital of an organization is embedded in both smart technologies, organization processes, services associated to sales and policies, and in the main generator: the human being. More and more now we hear of the intellectual organizational capital structured as follows: organizational knowledge; organizational intelligence; organizational values [1]. Building modelling tools for psychological and mental processes is deemed necessary for this intellectual organizational structure and knowledge needs to be addressed in this respect through metaphors. Among others, the following specific types of knowledge metaphors have been identified: knowledge as fluid; tacit knowledge as potential energy; explicit knowledge as kinetic energy [2] and other types that contain in their structure terms such as: construction, creation, acquisition, transfer, knowledge map, etc. [3]. In this context, by highlighting the need to use metaphors in knowledge management, studying archetypes

and emotions corresponds to the paradigm of knowledge as the two dimensions, archetypes and emotions, include capabilities to create, transfer, manage and exploit knowledge through all specific processes and allow the possibility of their mathematic modelling. Human behavior represents a pattern that under a correct approach needs to be further analyzed, particularly for determining the level of

2. THE THEORETICAL BASIS FOR DETERMINATION OF THE PROPOSED IDENTITY COEFFICIENT STRUCTURE

The identity coefficient C_{idene} proposed as an expression of the possibilities of knowledge of archetypes and emotions at the organizational level contains in its structure the two main coordinates mentioned: archetypes and emotions. The importance of identifying dominant or preeminent archetypes in the individual is vital as they define the individual; in his turn, the individual, constrained by the conventional and legalistic character of the society, will always try to adapt to the requirements, permanently adjusting his level of knowledge. Thus, *"a businessman will try to look (and be) strong and energetic, a man with an intellectual profession will try to look smart, a servant will try to look right; a woman who chooses a profession today not only needs to look smart but also well dressed [4]"*. Since human beings adapt to the organizational environment, performing their specific activity based on organizational requirements, they will not be able to generate innovation and knowledge at maximum capacity if restricted. Correct knowledge management, globally or individually, requires the creation of strategies that give employees the opportunity to generate new knowledge in accordance with their own archetypal and emotional features. The common element of the two dimensions, emotions and archetypes, is their innate specificity of generating new knowledge.

Emotions are patterns through which feelings and inner states are manifested and archetypes are patterns of behavior defined as

knowledge of the members of an organization. In this case, an increase in the organizational knowledge capital level is possible by identifying, analyzing and managing archetypes and emotions both individually and globally; by using modern techniques, tools or methodologies to address archetypes and emotions; by possibilities offered by modern mathematical applications in this field.

"human being's way of being a human, the specific human form of the human being's activity [5]," that is, archetypes are a manifestation of the collective unconscious which *"indicates the presence of certain universal forms in the psychic [5]"* aspect that characterizes the main attribute of archetypes: universality. This indicates the absence of any manifestations of human beings, both at an organizational and social level, in the absence of certain specific archetypes.

The main knowledge generators within organizations produce knowledge by being coordinated by a number of unconscious, subtle and discrete tools which by their exercise form thought patterns resulting in specific forms of knowledge. The specific type of knowledge that an employee generates, is in a relationship of subordination, as a result of the manifestation of its preeminent or dominant archetype. The way of providing knowledge is conditioned however by the organizational values and organizational policies. A close scrutiny of the individual archetypal specificity of the organization members and of the global organizational specificity is needed for effective management of knowledge because these coordinates help determine the level of knowledge in the organization.

The collective unconscious archetypes are the basis of the human behavior, and they vary in number and structure. The founder of analytical psychology, C.G.Jung, managed to create through his studies on the unconscious an area of research whose achievements are used in areas such as marketing, management, medicine and other related sciences [6].

C.G.Jung depicted 12 archetypes that include in their various structures the most profound human motivations, desires, fears,

strategies, etc.. These 12 archetypes represent the theoretical basis to determine the identity coefficient and they are: *the Innocent, the Orphan, the Hero, the Selfless, the Explorer, the Rebel, the Loving, the Creator, the Witty, the Wise, the Magician, the Leader*. At the same time they have specific characteristics relating to the following dimensions: *Motto; Essential Desire; Goal; The Greatest Fear; Life Strategy; Specific Weakness; Strengths*. These dimensions capture and determine key aspects of the abysmal human as an individual belonging to an organization and provide a true picture of the structure of the human being. In his studies, C. G. Jung said that "*the unconscious produces dreams, fantasies, visions, emotions, grotesque ideas and so forth* [5]" which attests the ontological connection between the archetypes of the collective unconscious and emotions. On this basis, the proposed identity coefficient, individual and global, has the ability to integrate in its structure the two dimensions: emotions and archetypes, as fundamental elements of the structure of the main knowledge generators at individual and organizational levels. The proposal of such a coefficient has as main objective to give the possibility to increase the capital of the organizational knowledge through the knowledge of the unconscious mechanics and through the manifestation of human organizations.

Thus, one can conceive an efficient management system, a system that must take into account "*the profile, size and structure of resources, the staff potential and mentality* [7]" or, to put it in other words, the structure of human, material, informational and financial capital. Individual and global identification of archetypes and specific emotions is necessary for the creation of such a management system

3. DESCRIPTION OF THE MATHEMATICAL STRUCTURE OF IDENTITY COEFFICIENT

The archetypal and emotional identity of an organization's members needs to be known

that includes in its structure specific knowledge management processes. The process of manifestation of archetype and emotions follows the same pattern of expression in the sense that they appear "*so quickly that consciousness does not participate and is not even a witness of the mental event triggering it* [8]".

The specific and concrete link between the archetype as ordinate of the unconscious representation and emotions is expressed by the fact that the archetype by its specific energy has the ability to produce a strong emotionality in the person who experiences it [9]. In this context, we can say that both energy and specific emotions are produced in the process of manifestation of an archetype active in the human psychic. This archetypal mechanics produces specific emotions depending on which the typology of the human structure is manifested. In such a situation, the complexity of the unconscious mechanical processes production, namely of the archetypes and emotions, stands as a solid reason for a detailed study, for a practical observation of these in an organization or for determining individual and global knowledge capital. This new knowledge capital produced by individuals in organizations adds up to the existing global capital and becomes the initiator of building strategies, models and systems of knowledge management. Addressing elements such as archetypes and emotions from the specific perspective of an exact and abstract science such as mathematics is considered necessary because the holistic transposition of the two dimensions, archetypes and emotions, in the specific symbolism of mathematics is required to determine the level of individual and global knowledge within organizations.

individually and globally. This can be determined based on a specific symbolism of archetypes that allows understanding of immaterial reality from logical and mathematical perspective and enables understanding and quantification of knowledge. In this sense, *the identity coefficient* C_{ident} proposed, facilitates identification, analysis,

monitoring and efficient use of specific archetypes and emotions at an organization level as immaterial realities and sources of knowledge. Starting from these, the identity coefficient C_{ident} as a tool also offers the possibility of building objective strategies for quantifying knowledge. This possibility gives consistency and at the same time empowers the management of knowledge in organizations because through this new approach the internal human structure can be analysed in terms of logical-mathematical processes, which ultimately provides a series of concrete and visible results on the true identity of unconscious human knowledge capital in organizations. Identity coefficient C_{ident} expresses the archetypal stability level, the level of intensity and emotional dimension manifested and experienced in the organization as sources of knowledge.

Mathematically, the identity coefficient C_{ident} can generally be expressed as a sum of three terms expressed as:

$$C_{ident} = D_a^\sigma + E_\alpha^\sigma + E_\omega^\sigma \tag{1}$$

The term: D_a expresses the global *archetypal* dimension;

E_α expresses the global dimension of *basal emotions* of the organization’s members;

E_ω expresses the global dimension related to the *relived emotions* of the organization’s members.

The proposed identity coefficient, C_{ident} , must be determined at an individual and global level because the knowledge of the active dominant or preminent archetype and of the specific emotions must be addressed both individually and globally. From the perspective of this logical-mathematical reasoning, C_{ident} has a different structure for determining its value at individual level, compared to the case of global determination.

The identity coefficient ($C_{ident,i}$) at the individual level, is expressed as:

$$C_{ident}^i = D_a^{\sigma_a} + E_\alpha^{\sigma_\alpha} + E_\omega^{\sigma_\omega} \tag{2}$$

Where the basic terms of the relationship (2) have a structure expressed by the relations (3), (4), (5):

$$D_a^{\sigma_a} = \frac{\sum_{i=1}^7 d_i \times \sigma_i}{\sum_{i=1}^7 \sigma_i} \tag{3}$$

where: d_i expresses the seven specific dimensions of the archetypal structure (motto, fear, anxiety, etc.); σ_i represents the number of dimensions specific to the archetypal structure, of the seven dimensions included in the analysis; $\sigma_i = (1$ if the dimension is included in the analysis and 0 if the dimension is not included in the analysis.)

The structure of the second term $E_\alpha^{\sigma_\alpha}$ in this case is:

$$E_\alpha^{\sigma_\alpha} = \frac{\sum_{i=1}^7 (e_{\alpha_i} \times i_{\alpha_i}) \times \sigma_i}{\sum_{i=1}^n \sigma_i} \tag{4}$$

where: e_{α_j} expresses the basal emotions of the individual; σ_i represents the total number of basal emotions included in the analysis; i_{α_i} represents the intensity of each basal emotion included in the analysis.

The term $E_\omega^{\sigma_\omega}$ expresses the dimension of the relived emotions and can be quantified by relation (5) as follows:

$$E_\omega^{\sigma_\omega} = \frac{\gamma \times \left(\sum_{i=1}^n e_{\omega_i} \times \sigma_i \right)}{\sum_{i=1}^n \sigma_i} \tag{5}$$

where e_{ω_i} expresses relived emotions, γ expresses the maximum intensity level of relived emotions; σ_i represents the number of emotions included in the analysis.

By replacing the expressions of the terms in (2), the overall relation of the identity coefficient C_{ident}^i , becomes:

$$C_{ident}^i = \frac{\sum_{i=1}^7 d_i \times \sigma_i}{\sum_{i=1}^7 \sigma_i} + \frac{\sum_{i=1}^7 (e_{\alpha_i} \times i_{\alpha_i}) \times \sigma_i}{\sum_{i=1}^n \sigma_i} + \frac{\gamma \times \left(\sum_{i=1}^n e_{\omega_i} \times \sigma_i \right)}{\sum_{i=1}^n \sigma_i} \tag{6}$$

Determination of C_{ident}^g at a global level is as follows:

$$C_{ident}^g = \frac{D_a^{\sigma_a}}{n_a} + \frac{E_\alpha^{\sigma_\alpha}}{n_\alpha} + \frac{E_\omega^{\sigma_\omega}}{n_\omega} \quad (7)$$

where D_{α_g} is the global archetypal dimension, whose expression becomes:

$$D_a^{\sigma_a} = \frac{\sum_{i=1}^7 d_i \times \sigma_i}{\sum_{i=1}^7 \sigma_i} \times \frac{1}{n_a} \quad (8)$$

where n_α is the size of the sample analysed; The value of the global dimension of emotions felt globally, at the organizational level, $E_\alpha^{\sigma_\alpha}$, is determined by the relation:

$$E_\alpha^{\sigma_\alpha} = \frac{\sum_{i=1}^n (e_{\alpha_i} \times i_{\alpha_i}) \times \sigma_i}{\sum_{i=1}^n \sigma_i} \times \frac{i}{n_\alpha} \quad (9)$$

where n_α is the size of the sample analysed;

4. CONCLUSIONS

The identity coefficient C_{ident} proposed in this paper provides the opportunity to address the organizational knowledge from a new perspective based on the comprehension of archetypes and emotions. The use of the identity coefficient C_{ident}^i at an organizational level has implications both on the strategies used to comprehend the individuals within companies by determining the identity coefficient C_{ident}^i individually, and on the determination of the level of comprehension at the organizational level by determining the identity coefficient C_{ident}^g globally.

Acknowledgement of the identity coefficient at an individual and global level allows the intervention on knowledge management in a company where knowledge is generated and transferred by the main knowledge generators.

The logical-mathematical approach to psychological and emotional processes specific to the individual's unconscious mechanics facilitates a new approach towards knowledge and knowledge management through

The term $E_\omega^{\sigma_\omega}$, which expresses the global dimension of relived emotions has a structure defined by (10):

$$E_\omega^{\sigma_\omega} = \frac{\gamma \times \left(\sum_{i=1}^n e_{\omega_i} \times \sigma_i \right)}{n \sum_{i=1}^n \sigma_i} \times \frac{1}{n_\omega} \quad (10)$$

where n_ω is the size of the sample analysed;

The final form of the relation for calculating the global identity coefficient after replacing the value of terms $D_a^{\sigma_a}$, $E_\alpha^{\sigma_\alpha}$, $E_\omega^{\sigma_\omega}$ expressed as relations (8), (9) and (10) is:

$$C_{ident}^g = \frac{\sum_{i=1}^7 d_i \times \sigma_i}{\sum_{i=1}^7 \sigma_i} \times \frac{1}{n_a} + \frac{\sum_{i=1}^n (e_{\alpha_i} \times i_{\alpha_i}) \times \sigma_i}{\sum_{i=1}^n \sigma_i} \times \frac{i}{n_\alpha} + \frac{\gamma \times \left(\sum_{i=1}^n e_{\omega_i} \times \sigma_i \right)}{n \sum_{i=1}^n \sigma_i} \times \frac{1}{n_\omega} \quad (11)$$

Relations of the identity coefficients, individual C_{ident}^i and global C_{ident}^g , have been implemented in some organizations on a representative sample.

organizational archetypes and emotions. In conclusion, the proposed identity coefficient of C_{ident} is considered to be beneficial for companies that want to better understand their employees, to increase the capability of generation, transfer, management and effective utilization of knowledge within the organization and to develop strategies and effective policies for that purpose by modelling archetypes and emotions. The functionality of the identity coefficient, both individually and globally, is attested by the results obtained through processing the implementation on a representative sample. These results will be the subject of a future paper.

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CONTRIBUTII LA MODELAREA ARHITECTURILOR IN MANAGEMENTUL CUNOSTERII PRIN ORGANIZATII

Rezumat: Ființa umană gândește și acționează în funcție de propria structură internă, caracterizată de tiparele comportamentale, arhetipurile și emoțiile, care pot fi principalul generator de cunoaștere la nivel organizațional. Identificarea tiparelor comportamentale, a arhetipurilor și emoțiilor ca sursă de cunoaștere în organizații este necesară pentru crearea unor modele și politici manageriale. În acest sens, lucrarea cu un caracter exploratoriu, abordează arhetipurile și emoțiile la nivel organizațional printr-o optică matematică și propune un coeficient de identitate, individual și global pentru determinarea nivelului capitalului de cunoaștere pe baza acestora. Utilizarea coeficientului de identitate la nivel individual și global oferă posibilitatea determinării și cuantificării cunoașterii și managerierea eficienței a capitalului de cunoaștere pe baza identificării arhetipurilor și emoțiilor specifice indivizilor din organizație.

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