

# Logical-Philosophical Approach to the Interpretation of the Concept of Knowledge

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**Abstract**—The article analyzes the existing approaches to the analysis of the concept of "knowledge" and proposes a set of attributes characterizing the essence of knowledge as a phenomenon. There are different classifications and typologies of knowledge on the basis of the practical approaches which are important for the development of modern knowledge management.

**Keywords**—*knowledge; knowledge management; personal knowledge; implicit knowledge; coded and non-coded knowledge; understanding; communication; generation and transfer of knowledge*

## I. INTRODUCTION

One of the most controversial problems of modern logic and philosophy is the absence of a precise definition of the essence of knowledge. In this article, we will analyze some of the basic concepts in the interpretation of the concept of 'knowledge' and its possible classifications. We will clarify the meaning of "knowledge" in the management of knowledge and will show new possibilities of using the interpretation of knowledge and its application for the development of knowledge management.

D.U. Delong and L. Fahey offer the following approach: "... we need to distinguish between the concepts of data, information and knowledge. .... We define the data as raw or non-abbreviated descriptions or observations of past, present, or future events, but information is the models which people find in the data or get from them. Knowledge is the result of reflection and the experience of a person" [1, p.274].

The second point of view: knowledge is the content of thinking about the object, built on the type of technological idea. It can be put into the thing, process, or device, i.e., an infinite number of times and can be controllably reproduced

in the shape of an object. Knowledge is always prescriptive; it indicates the possible modes of action with objects, describes these actions, and takes the form of a prescription for human behavior with the world of known things.

The third approach: "Knowledge is the result of the process of cognition of reality which received confirmation in practice; adequate reflection of objective reality in human consciousness (ideas, concepts, opinions, theories). Knowledge is fixed in the signs of natural and artificial language"[2].

The fourth approach: "Knowledge is a set of information, concepts and ideas about something, received, acquired, accumulated as a result of learning, experience, in the course of life, etc. and is usually implemented in the activity. More formal definitions used commonly within the knowledge management are:

- information that has undergone transformation in terms of allocation of essential dependencies. Knowledge itself sets the context of description and is a holistic description of the situation.
- it is the results of integration of information and the establishment of specific laws in any subject area, which allow to formulate and solve problems in this area.
- it is the resource, based on the practical experience of experts and on information existing in the enterprise.

Knowledge should be distinguished from data and information" [3].

It is appropriate to bring another point of view: "What does it mean to know," I know"? Firstly, it is the need to put some basis under the act or the judgment or the intention.

Knowledge reduces the arbitrariness of the world in relation to man. Secondly, knowledge tells what I am supposed to do, i.e., knowledge reduces the arbitrariness of my activities in the world. Third, knowledge allows us to pose certain problems and prescribes certain ways of solving them. Thus, it limits the arbitrariness of the choice of instruments and means. Fourth, knowledge refers to some "authority" to certify the accuracy, sometimes—the truth, and sometimes—adoption, sometimes—holiness, sometimes—obligation, sometimes—beauty, but more often—the authority, no one knows where taken from, for this or that solutions... Fifth, knowledge involves the use of such a sophisticated symbolic system that many have doubts about whether it is possible to draw a distinction between the world and the system. In other words, manipulation of knowledge helps to operate the world"[4].

Thus, we can distinguish the following functions of knowledge:

- to use the forces of nature to multiply your own forces;
- to assess;
- to correctly estimate actions;
- to save resources, to act on the models;
- to avoid mistakes, gain confidence in yourself;
- to foresee, to ensure the planned effect;
- to use the prize in competition with the laymen, i.e. win in the social competition;
- to agree (to decide when to contradict the other, when not) behavior in your environment [4].

These four definitions reveal how diverse the approaches to the definition of knowledge are. In general, to construct a single brief definition of this concept is almost impossible. Serious research purpose of defining knowledge can only be realized in a system description of knowledge as intellectual life phenomenon.

## II. THE MAIN CHARACTERISTICS OF KNOWLEDGE

- Knowledge is the product and the result of human cognitive activity, either individual or performed collectively.
- Knowledge is always the result of the interpretation and understanding of information, as the information is seen through the prism of your own subjective experience and values of the individual and society.
- Knowledge is multi-functional.
- Knowledge is always historical. It depends on the level of development of culture and civilization and on the historical features of the era while being at the same time the basis of culture and civilization and the foundation of human society development.

- Knowledge is an intelligent system created by human beings but existing independently of each individual at the same time.
- Knowledge is always meaningful and reflects the reality in the human mind as a set of ideas, opinions, concepts, hypotheses, and theories. Thus, knowledge is a subjective image of objective reality.
- Knowledge necessarily involves intuitive component. The process of getting new knowledge always combines the rational and irrational procedures.
- In knowledge, there are distinguished cognitive (its conceptual content, a set of information, which may be partially codified), communicative (its feature to be transferred from one bearer to another) (5), praxeological (the applicability in real activity of the individual or the community as a whole, the possibility of converting it into practical action) and axiological (the feature to evaluate other fragments of knowledge and human thoughts and actions from the standpoint of logic, ethics and aesthetics) aspects. So knowledge is a fundamental feature of human life.
- Knowledge is always inseparably linked with language. Knowledge is codified by means of natural or artificial language and is stored both in the form of a document or memory, contents of which can be delivered orally. This is separable knowledge. Some part of knowledge cannot be or is not subject to codification. It remains an integral part of its bearer. Such knowledge is hidden (latent), subjective in the form of its existence. Knowledge combines objectivity and subjectivity. Language is a means of acquiring knowledge. Thinking is an intellectual process aimed at a specific subject matter. Knowledge is the result of operating resources, the purpose for which we are making an attempt to think and we express the content of the thoughts in the language [5].

Existence and expressiveness are different states of knowledge. Knowledge can exist as a set of intellectual results used by the subject who is the bearer and as a result the user of this knowledge. But this knowledge also exists in the form which is non-codified by its bearer. It cannot be expressed as a set of interrelated statements.

- Knowledge is a self-developing system.
- Knowledge is both static and dynamic. On one hand, knowledge tends to maintain stability, having stable paradigmatic forms and protecting itself by means of negative heuristics. On the other hand, knowledge has a positive heuristic which leads to its constant increment and transformation.
- Knowledge simultaneously includes assertive (positive), hypothetical and negative (problematic) components which are in constant dynamic interaction and mutually intermittent into each other.

- Knowledge is reflexive: it constantly refers to self-examination, comparing its results with the ideals and norms of knowledge. As a consequence, it reviews its foundations and finds new sources and ways.
- Knowledge is subjective due to its belonging to a learning subject because of its dependence on the peculiarities of the world perception of this subject. At the same time, it is objective in its sources and content.
- Knowledge has informative nature as productive information intended for a specific purpose. Knowledge combines the potential and actual information: by being objectified in language, in culture products, by being embodied knowledge from potential of information turns into actual information, and by this is included in the process of social communication. Thus, it facilitates the increment of individual and generic thesaurus [6].
- Knowledge is prescriptive, pointing to the ways and methods of work with cognized essences which enables its practical application.
- Knowledge is capable of unlimited proliferation in society, and its transfer is accompanied by its multiplication, rethinking and improving.
- Knowledge is a cultural phenomenon and "... has its own laws of development, connected with both the general process of cognition, and with those forms of organization and interpretation of reality, which are produced by culture. These are first of all the forms of categorical and semantic structure of knowledge associated with the structures of perception and understanding of space, time, movement, cause-effect relationships, and etc.[7].
- Knowledge is characterized by the properties of productivity, structuring and latency [8, p.94].
- Knowledge is always built on the basis of logical rules that restrict the structure of concepts (values) and their possible connection.
- Knowledge is one of the most important resources of the organization. So, as a first approximation by listing these provisions, we give a general description of the concept of "knowledge."

### III. THE MAIN OPTIONS FOR CLASSIFYING KNOWLEDGE

Now it is necessary to give several options for classifying knowledge.

Firstly, knowledge is divided into theoretical (fundamental), which form in the human consciousness a general holistic reflection of the world, and practical, applied (empirical), aimed at forming skills for activity in the world [11, p.27].

Theoretical knowledge, in its turn, is divided into abstract and concrete considering the degree of generalization or specification of the world represented in knowledge.

There is distinguished scientific, technical, humanitarian, magical, and religious knowledge.

Knowledge is also divided according to the spheres of human activity, which is embodied in the professions, specialties and specializations.

Secondly, knowledge should be classified by the level of consistency:

- intuitive knowledge (associations, opinions, hypotheses);
- conceptual (thesauri, frames, semantic networks);
- systematized (rules, theorems, laws) [8, p.94].

Third, knowledge is divided into codified (separable) and non-codified (personal, hidden, latent). This idea is developed by a prominent British philosopher M. Polani (10). Speaking about knowledge in the organization, D.U. Delong and L. Fahey emphasize: "First, there are individual, group and organizational levels of knowledge. Second, knowledge can be either explicit or implicit. Explicit knowledge can be encoded and reflected in formal rules, tools and processes. Implicit knowledge is what we know, but we cannot explain [1, p.245].

M.H. Zak said: "Common taxonomy singles out explicit and implicit, general and situational, which depend on the context, individual and collective knowledge. Knowledge can also be characterized by its type, including descriptive ("knowledge"), procedural ("knowing how" or know-how), causal ("knowing why"), knowledge about conditions ("knowing when") and attitudinal ("knowledge with") .... Strategic knowledge of all firms can be classified according to their ability" [12, p.172].

Basic knowledge is the minimum set and the level of knowledge obligatory for all participants in this market segment.

Advanced is knowledge which allows the company to be competitive due to the specific content of their knowledge.

Innovative knowledge enables the organization to lead the industry and change the rules of the game.

Here it should be noted that this classification of knowledge is suitable for any bearer of knowledge: both for organizations and individual bearers.

D.U. Delong and L. Fahey single out three distinct types of knowledge.

- Human knowledge is what people know or know how to do.
- Social knowledge is the type of knowledge that exists only in relations between individuals or within groups. This knowledge is mostly implicit; it belongs to the members of the group and develops. Its existence is manifested in the ability of individuals for effective cooperation.
- Structured knowledge is presented in the systems, processes, tools and existing practices of the

organization. Knowledge in this case is explicit and is based on the rules" [1, p.245-246].

I. Nonaka and N. Konno in the article *The concept of Ba: Institutional Mechanisms for Knowledge Creation* states: "there are two types of knowledge: explicit and implicit. Explicit knowledge can be expressed in words and numbers and is spread in the form of data, scientific formulas, specifications, instructions, etc. Knowledge of this type can be easily transmitted from person to person formally and systematically. In the West, the emphasis is, as a rule, on this form of knowledge. Implicit knowledge is highly individual, and it is difficult to give a definite form to it, which complicates the process of its transmission to other people. Insight, intuition and hunches fall into this category of knowledge. Implicit knowledge is deeply rooted both in the activities and experience of the individual and in its ideals, values and emotions. There are two aspects of implicit knowledge. First - technical - includes non-formalized knowledge and skills, often referred to as "know-how". The second is the cognitive and consists of ideas, ideals, values, norms, schemes and mental models which are deeply rooted in us, and are often perceived as evident "[13, p.277]. Thus, from the point of view of I. Nonaka and N. Konno, the creation of knowledge is a process of interaction between explicit and implicit knowledge which unfolds along a spiral.

#### IV. THE PROCESS OF TRANSITION FROM THE NON-CODIFIED KNOWLEDGE INTO CODIFIED

The main interest of our research are the processes of transition of non-codified knowledge into codified (socialization and externalization according to the idea of I. Nonaki and H. Takeuchi), the processes of incrementing knowledge (combination) and the processes of transition of codified knowledge into non-codified one (internalization) [13].

R. Grant notes that the critical factor in determining the ability to create sustainable competitive advantages of the organization is transferability of resources and capabilities of the company. There is a clear distinction between knowledge "how" and knowledge "about". The first is subjective, implicit, personal and procedural knowledge. The second one is objective, clear, propositional and declarative. The main difference between these two kinds of knowledge is the ability and mechanisms of their transmission between individuals, in space and time [15]. Effective enterprise should be capable of reconfiguring knowledge, firstly, of recombining existing knowledge and secondly, generating new knowledge. The appearance of new knowledge largely depends on the skills already used.

"M. Buaso characterizes the recombination of already accumulated by an organization knowledge as its abstraction, while stressing that the latter is a generalization and the use of the newly codified knowledge in a wider range of situations. This means the reduction of knowledge to its most essential characteristics, i.e., its conceptualization. Abstraction requires such an assessment of causality, which is inaccessible to the codification. It leads to withdrawal of knowledge from a particular context and reduces codified

knowledge to elementary cause-and-effect relationships. Abstraction expands the range of potential applications of knowledge and transfers it to other markets. This increases the playing space of the enterprise, which can be interpreted as the acquisition of real opportunities. If abstraction costs are lower than the benefits of these opportunities, it increases the value of the company" [16].

Here is one of the most important positive aspects for the development of subculture and culture in general: rethinking is always heuristic. As part of its consequences, it gives either some increment of knowledge and its enrichment or its updating and revision with discarding outdated or ineffective elements.

The result is the development of organization subculture as a whole with knowledge inherent in it.

So, first, what we face is the social and psychological problems of codification, transfer and internalization of knowledge.

The second group of problems is associated with a purely logical characteristics of knowledge and logical and psychological characteristics of understanding.

#### V. CONCLUSION

Hidden knowledge can never be fully codified, as in addition to the conceptual components it includes intuitive ones which are not essentially codified. The problem of incompleteness is a traditional one in the history of world science in its various aspects. Thus, the attempts to fully codify implicit knowledge are initially meaningless and should be considered as an inefficient use of resources. Consequently, the task here is to retain the bearer of unique knowledge within the organization. It is necessary to establish a system of conserving the bearers and generators of knowledge, providing the extraction and codification of their implicit knowledge for its distribution within the organization at the same time. In this process, we will immediately face the problem of interpretation and understanding of the inner knowledge because clarity and obviousness for the bearer of knowledge is not clarity and obviousness to a specialist in the recovery of this knowledge and to the future user.

Within literature, there are different approaches to singling out the levels of understanding. The author believes that, on the linguistic level, understanding is divided into the terminology, understanding of logical stress and conceptual understanding. On the presupposition level, understanding, in its turn, is divided into understanding of hidden cognitive, hidden contextual and motivational prerequisites [17].

Given that each person is a unique emotional and intellectual system, we have to admit the fact that complete adequate understanding of knowledge transmitted in the process of communication (both in externalization and internalization) is fundamentally impossible.

The task is to develop a strategy for understanding.

Currently there is a whole set of well-known strategies:

- schematic—it is to build the schemes as a means of processing information;
- semantic—it is to construct the semantic plan of a text (elements of general knowledge and elements of the situational model);
- stylistic strategies—it is to choose an alternative way of expressing the same meaning;
- rhetorical—it is to use the figures of speech to improve communication efficiency, etc.

These strategies work well to increase the efficiency of the processes of verbal communication.

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