

# Theoretical aspects of knowledge as the key to success and economic growth

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**Abstract.** In the modern world, the most important value of humanity is knowledge. Therefore, the world is moving to a new economy based on knowledge. The purpose of the study is to study the conceptual basis of knowledge, the concept, classification and properties of knowledge as a key to success and economic growth. For the generalization of the conceptual apparatus and conceptual representations of knowledge, the classification of knowledge and the properties of knowledge, the method of generalization, analytical review of information sources and the method of comparative analysis were used. Results of the study: a new scientifically based definition of the concept of "knowledge" was proposed, the classification of types of knowledge was supplemented, and the properties of knowledge were clarified. The obtained results will allow you to get new knowledge that will lead to success and economic growth.

## 1 Introduction

Knowledge is the most important value of humanity in the XXI century and a competitive advantage. Knowledge has always played a major role in the life of mankind, but in the modern world its importance has increased immeasurably. This is primarily due to the fact that the world is moving to a new stage of its development, the basis of which is the economy based on knowledge, the economy of knowledge. Its distinctive feature is that knowledge plays a decisive role in it, and its production is the source of economic growth [1]. The stage of late industrialism and the transition to the "new economy" coincides with the so-called microhero, which ends in the second half of the 90s. Approximately in the middle of the development of Microom, the transition economy is more clearly formed into the economy of knowledge. After the Micro Hero comes the Network Era, when knowledge spreads unhindered through networks that have no center and borders [2]. Knowledge is an arms race. The use of knowledge leads to a multiplier effect, that is, knowledge affects the efficiency of the use of other production factors. It is knowledge that is the key to success and economic growth, which is proven by the "economic miracle" of the growth potential of Japan and its

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corporations after the Second World War, the success of companies in the global information market - Microsoft, Cisco Systems, IBM and others. In modern conditions, the concepts, properties and classification of knowledge are not fully defined.

The purpose of the research is to study the conceptual basis of knowledge, the concept, classification and properties of knowledge as a key to success and economic growth. The main tasks of the study:

- propose a new scientifically based definition of the concept of "knowledge",
- supplement the classification of types of knowledge,
- to specify the properties of knowledge.

## 2 Literature review

The topic of knowledge has been studied by many scholars. O. Toffler in the book "Metamorphoses of Power" was the first to clearly define the role of knowledge as the basis of power and the source of any successful activity [3]. According to Plato, knowledge is "a proven true belief" [4].

In a knowledge-based economy, the term "knowledge" is understood not only as knowledge concentrated in individuals. It is also part of a product, service or technology. "Embodied in a new technology, a new product or service, new knowledge leads to innovation.

As Paul Romer rightly argues, "knowledge is the only unlimited resource, the only asset that increases as it is used." Ideas give rise to new ideas, and the transferred (sold) knowledge in any case remains with those who share (sell) it [5].

Alvin Toffler calls knowledge the most powerful force, which is gradually turning into the main factor of production. E. Tofler argues that knowledge will replace labor, land and capital [6].

Drucker noted that "in the new economic conditions, knowledge is not one of the resources that labor, land, capital, but in general the only resource that matters", and this fact, in his opinion, makes the new formation unique [7].

Robert Rich calls knowledge "the only true competitive advantage", and those who "possess knowledge have competitive advantages, if only the volume of this knowledge is sufficient to set problems, solve them, and, as a result, receive some benefit [8]".

HE. Pavlova defines knowledge as a systematized set of information (that is, processed and rethought). And also it is a set of information that an individual owns about objects and objects of the real world, their properties and relationships between them [9].

B.Z. Milner claims that knowledge is useful information in action [10].

I. Nonaka, H. Takeuchi indicate that knowledge is created from the flow of messages, that is, information, but depends on the opinions and beliefs of its owner, and, therefore, is associated with human activity [11].

K. Wiig argues that knowledge consists of truths and ideas, points of view and concepts, judgments and assumptions, methodologies and know-how. Individuals accumulate knowledge, organize it, integrate it and store it over time in order to apply it to specific situations or problems [12].

W. Applehans, A. Globe, G. Laugero argue that knowledge is the ability to turn information and data into effective actions [13].

According to A.F. Tuzovsky, S.V. Chirikova, V.Z. Yampolsky S, knowledge is the ability of company employees to solve the problems they face [14].

J. Botkin, C. Seeley say that knowledge is information that has found good use [15].

Panikarova S.V. argues that knowledge is not just a collection of certain information, it is a whole system whose task is to accumulate, formalize and transform the intellectual and creative capital of individuals [16].

The problem of classification of knowledge has been and remains one of the most difficult. The knowledge obtained from nature is so diverse that the solution of the problems of the formulation of features and the behavior of the classification is a scientific result.

Nevertheless, the first attempts to classify knowledge were noted in ancient Greece, in the 3rd-4th centuries. BC. during the period of Plato and Aristotle. Aristotle distinguished knowledge to a greater extent by means of cognition and ways of thinking of a person. Aristotle divided the spiritual activity of a person into memory (remembering impressions received on the basis of sensations) and reason (comparison of impressions received in the past on the basis of sensations with new sensations and their difference) [17].

F. Machlup classifies knowledge into: everyday, practical, spiritual, unnecessary, intellectual. In addition, F. Machlup distinguishes:

1. Practical knowledge.
2. Intellectual knowledge (including scientific, humanitarian and cultural).
3. Everyday knowledge (news, secular chronicles, etc.).
4. Spiritual knowledge.
5. Unwanted knowledge.

Other scientists classify knowledge into: knowledge objectified, codified in symbols and signs is information [18].

Wiig classifies knowledge into four types: conceptual knowledge (points of view and concepts), expected knowledge (judgments and propositions), methodical knowledge (methodology and know-how), and evidence-based knowledge (truths and representations) [19].

Classification of organizational knowledge by N. Tonaka and H. Takeuchi:

1. Explicit (systematized) knowledge. Can be expressed in words and numbers and can be easily communicated and exchanged as precise data, scientific formulas, ordered procedures, or universal principles.

2. Hidden (non-systematized and non-formalized) knowledge is something difficult to detect and difficult to express, is personal, conditioned by a specific context, and also difficult to formalize and transfer to other people. These include: insight, intuition and premonitions [20].

M.Yu. Sheresheva clarifies that the first way of transferring knowledge was defined as socialization, the second way was called externalization. Then it is possible to determine the explicit knowledge that is formed and used by a person. Since far from any implicit knowledge becomes explicit, this definition latently contains an indication of the presence of difficulties and problems that lie in the way of transforming knowledge into information and the movement of knowledge between different subjects [21].

M. Scheler singled out three categories of knowledge: knowledge necessary for action or control, knowledge acquired for general education, and knowledge for high spiritual purposes [22].

M. Polanyi divides knowledge into "explicit" and "implicit" and analyzes the latter in detail (V. Makarov). It is important to note the difference between implicit and explicit knowledge. Implicit knowledge is difficult to characterize: it is often contained in intuition and experience, skills, and habits that cannot be analyzed. Implicit knowledge can be held by one person or a group of people. Explicit knowledge is easily expressed in clear data, messages, words and numbers.

A. Downes, who was mainly interested in political knowledge, distinguishes between two main groups. The first group includes information obtained solely for the purpose of satisfying curiosity; information used to make decisions. The second is divided into production, consumer and political information [23].

In the study of the structure of knowledge, knowledge is distinguished external, internal and functional structure.

External knowledge: customer knowledge; marketing reports; ratings; prices; dynamics of changes in stock indices - Dow Jones, NASDAQ, etc.

Internal knowledge: knowledge of key business processes; knowledge about products (and services); knowledge about building relationships; best solutions (corresponding to current user needs); knowledge of employees (intellectual capital); "memory" of the organization (past experience); intellectual assets (knowledge bases - best practices).

The functional structure of scientific economic knowledge includes:

- theoretical knowledge;
- empirical knowledge (a set of facts that have been interpreted within the framework of the relevant theory and constitute its empirical basis);
- paradigmatic knowledge, including general standard ideas about the subject area and the principles of its study;
- instrumental knowledge and technological skills of research work;
- instrumental knowledge and technological skills of an applied, in particular, interpretive nature.

Corporate knowledge plays the role of an indispensable means of harmonizing the relationship between the enterprise and the market, and the internal environment of the enterprise - with its tasks, is a tool for creating a "harmonious" enterprise.

Knowledge is divided into science-intensive and high-tech.

Science-intensive knowledge is knowledge with a high proportion of scientific justification obtained as a result of R&D.

High-tech knowledge is knowledge with a high concentration of progressive technologies and opens up great technological opportunities.

There are different types of knowledge: scientific, ordinary (common sense), intuitive, religious, etc.

Ordinary knowledge serves as the basis for a person's orientation in the world around him, the basis of his everyday behavior and foresight, but usually contains errors and contradictions. Scientific knowledge is characterized by logical validity, evidence, reproducibility of results, testability, the desire to eliminate errors and overcome contradictions.

It is important to note that knowledge can be either explicit or explicit, encoded (codifiable, explicit knowledge), or implicit, or covert, implicit (implicit, tacit knowledge). Implicit, i.e. implicit or hidden) knowledge can be adopted only through observation, training, etc., while explicit (explicitly expressed, encoded) knowledge can be reduced to a list of rules and procedures for performing actions, the assimilation and implementation of which means its reproduction.

Also, knowledge is open and closed.

"Open" knowledge is relatively easy to store (in printed materials, disks, multimedia, cassettes) and transfer. To transfer "open" knowledge, reading, watching television programs, a computer, etc. are used. The abstract and intangible nature of "hidden" knowledge makes their storage and transmission much more difficult. A significant amount of information that previously could not be coded is becoming widely available through the development of new technologies: multimedia and computer networks [24].

Other criteria for the classification of knowledge are the connection with the subject (depending on what they distinguish: knowledge as abilities or knowledge embodied in a person - outwardly act as mental abilities, skills and abilities of their owner; knowledge as a product, or

knowledge that is not embodied in a person); method of economic realization (knowledge that needs to be provided to other subjects: such knowledge in respect of which the economic realization of property is possible only if other subjects master it.

By origin, they distinguish:

- knowledge as a result of intellectual work, or intellectual products;
  - knowledge that is not the result of intellectual work, or certain types of information;
- There are many ways to systematize knowledge, for example, knowledge differs:
- by carriers (individual/personal, group, or organizational);
  - according to the degree of generality (special, general);
  - by subject (I know how; I know why; I know what; I know who; I know where; I know when), as well as other characteristics;
  - by the form of existence (explicit and implicit).

Systematization of knowledge by media: personal, group and organizational knowledge.

Personal knowledge is the knowledge, skills, experience and competence of individuals, which are usually in the form of tacit knowledge, but can be translated into explicit ones. Personal knowledge is combined into group knowledge. Some researchers, in particular D. Stone House, combine group explicit and implicit knowledge into organizational knowledge.

“Organizational knowledge is a set of principles, facts, skills, rules that inform decision-making processes, behavior and actions in an organization.

Systematization of knowledge by subject: where, what, how Knowledge also differs in its subject [25].

Depending on the depth of changes introduced by knowledge into the technological process, knowledge can be differentiated into operational, structural and functional. Operational knowledge arises as a result of the simplest changes, which are characterized by low material costs, no risk of changes and, accordingly, a slight change in profit. When creating operational knowledge, the initial features of the system do not change. Knowledge of this type arises as a result of an operational response to changes in external conditions. Structural knowledge leads to deeper changes in processes, is accompanied by more significant material investments, the presence of implementation risks, which, on the one hand, can lead to losses, but, on the other hand, increase the level of profitability of production activity. The generation of such knowledge favors changes in the structure of an economic entity. Functional knowledge contributes to changes in the functional properties of the system or its parts, changes its functional principle and is characterized by significant financial costs, high risks of implementation, as well as the possibility of obtaining greater profits. Such knowledge leads to a change in technological processes. This differentiation of knowledge connects various types of knowledge with specific indicators characterizing the activities of a particular economic entity, as well as with economic categories (profit, expenses, etc.) [25].

### 3 Methods

To generalize the conceptual apparatus and conceptual ideas about knowledge, classify knowledge and properties of knowledge, the method of generalizations, an analytical review of information sources and the method of comparative analysis were used.

### 4 Results

The analysis shows that this concept is multifaceted and multifaceted. Many domestic and foreign researchers and practitioners give only a general formulation. This preserves uncertainty and makes the problem of intellectual capital management in a corporation unsolvable. The formation of basic development strategies and a model for managing intellectual capital in a corporation actualizes a stricter definition of not only its essence, but also its structure.

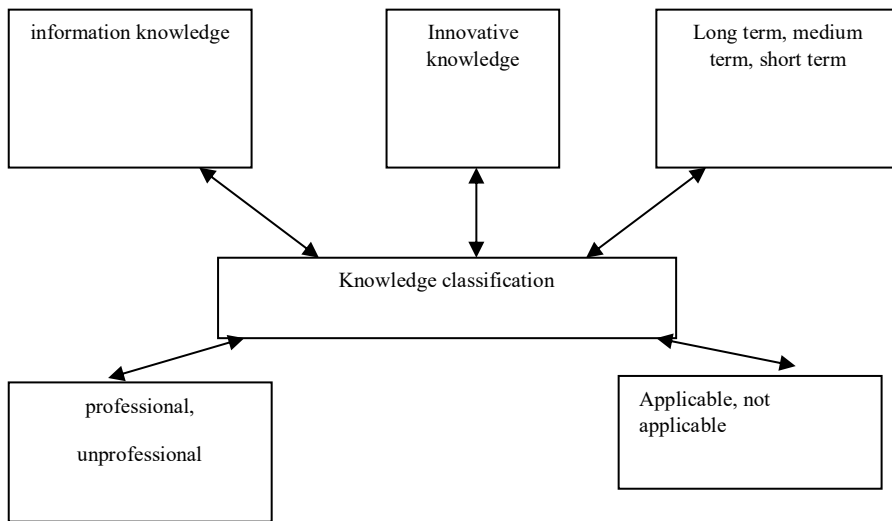
In general, in the new post-industrial economy, knowledge will act as:

- a) the direct product of the activity;
- b) the object of direct final consumption;
- c) a production resource used in the production process;
- d) subject and means of distribution and/or market transactions;
- e) means of thesaurus;
- g) a tool or instrument of control;
- h) a means of consolidating society and reproducing social institutions.

Thus, knowledge can be defined as information realized by the subject, which is then realized in certain actions of this subject, as a result of which he acquires specific experience, taking into account the ideas he has formed about reality in conditions.

Summarizing the above, we can say that knowledge is a holistic value set of factors of an organization, consisting in people working in it and arising from production processes, systems or organizational culture, in which the key factor is the knowledge and skills of specific people (their production and life experience), their norms and value systems, but also containing databases, methodologies, software.

Thus, in the scientific literature there are various classification signs of knowledge, but the distinctive features of knowledge that depend on information, innovation, time, age, profession, depending on the field of application are not taken into account (Figure 1).

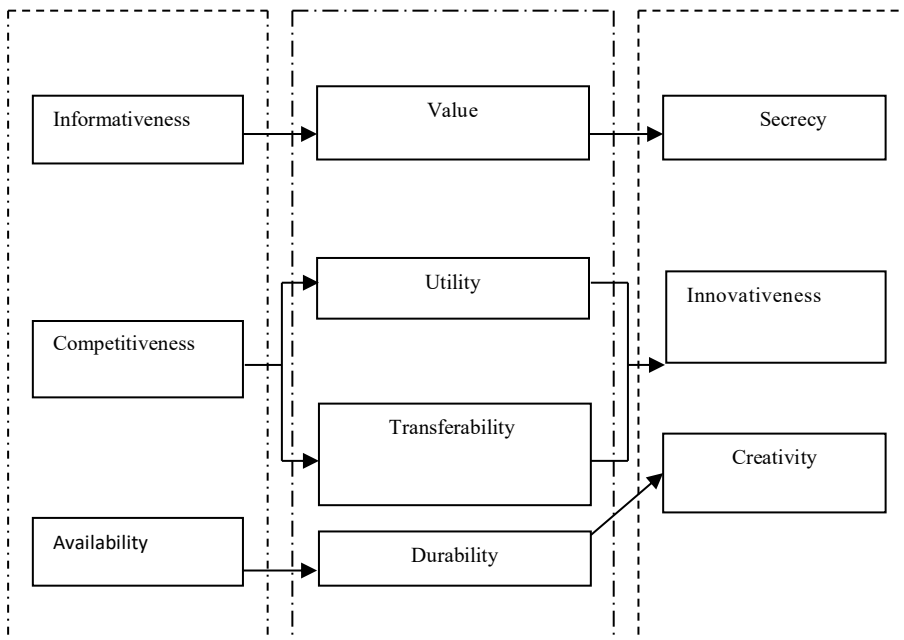


**Fig. 1.** Classification of knowledge. Note - Compiled by the author.

Thus, we have made an attempt to classify knowledge into informational, innovative, long-term, short-term, young, old, professional and non-professional, applicable and inapplicable. Such a classification of knowledge more fully reflects the division of knowledge according to certain characteristics, which serves as an addition to the theory of development and classification of knowledge. The above classification of new knowledge makes it possible to identify objective areas of activity in order to obtain the most effective result in the field of knowledge management.

Thus, knowledge as the most important resource of an organization has the property of inexhaustibility and reproducibility - renewable. In our opinion, it is difficult to agree with the property of knowledge singled out by scientists - the inability to increase indefinitely. We believe that the use of knowledge leads to a multiplier effect, since it affects the efficiency of the use of other production factors.

Based on the proposed features of knowledge, we consider it necessary to clarify the properties of knowledge. Knowledge should have the following properties: informative (should carry certain information), competitiveness (should be in demand and mostly better than competitors), accessibility (to a certain group of people), value (should have a price), usefulness (beneficial to society, be beneficial), marketability (can be passed down from generation to generation, or from employee to employee), durability (can be useful for a lifetime), secrecy (especially in military affairs), innovation and creativity (to achieve something and surpass competitors, you need to use innovation and be creative). The proposed classification of knowledge properties covers them in more detail and serves as an addition to the theoretical aspects of the knowledge economy (Figure 2).



**Fig. 2.** Classification of knowledge properties. Note - compiled by the author

An important property of knowledge is its value. In the scientific literature, the value of knowledge is determined by the importance of decisions made on the basis of this knowledge. The importance of decisions, in turn, depends on the hierarchy of goals for which the decision is made. The hierarchy of the company's goals depends on the tasks facing it at a certain point in time. Thus, the value of knowledge in different periods of time is different and depends on what tasks come to the fore. In general, the value of knowledge can be divided into two types: immediate and potential.

## 5 Conclusion

Once knowledge is used to make a specific decision, its immediate value disappears, as the need to make a decision disappears, but potential value remains, that is, the ability to use knowledge to solve similar or other problems in the future.

Any knowledge can and should be improved in time. Knowledge cannot be eliminated - it can be temporarily withdrawn from the information circulation of the organization so that it can be used at any time - that is, it is necessary to create archival knowledge of the

organization - this implies the property of "archival knowledge". In addition, it is necessary to specify the indicated property of knowledge as a self-organizing system. In this case, it should be considered that knowledge should constantly encourage the employee to act, which is directly related to this knowledge.

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