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TRANSFORMATION OF INFORMATION
INTO KNOWLEDGE AT SOLVING THE MANAGEMENT TASKS

Abstract. The article considers the problems of people engaged in intellectual activity related to information overload. In the modern world, the amount of information with which managers, analysts and experts work is constantly growing. At that, the information required for daily work in the decision-making process is approximately constant in terms of volume. Due to which there is a problem of qualitative selection, filtering the flow of information with the transformation of its various forms: records, texts, documents into knowledge. The issue of transformation of information into knowledge is poorly understood in the scientific literature.

The issues of how to arrange your thinking and organize your intellectual activity within the organization are of interest to people involved in management activities. It is important for them that the process of creating new knowledge be manageable and productive. To solve this problem, we offer the technology of the subject's knowledge digitalization with Insight-DNA.

In 2016, Insight-DNA technology with a wide range of applications was registered as a copyright object. In this article, we will disclose one aspect of the application of this technology – the creation of text products in the digitalization of knowledge. We believe that well-organized and structured knowledge is transmitted and perceived in text products.

The emergence of digital knowledge technology in the market and creation of domestic robots – CEO assistants on its basis activates the scientific developments in the artificial intelligence.

Keywords: digitalization of knowledge, knowledge management, intellectual product, corporate knowledge.

The ability to use information resources most effectively is one of the basic requirements for the successful operation of any organization operating in the constantly increasing competition.

The amount of information in the modern world that analysts, experts, and managers must work with is constantly growing. But the amount of information that is necessary for daily work and decision-making is approximately constant. This leads to the loss of logical links between information objects and the brain, which processes 160,000 times more information every day than the human brain had been processing in the 19th century, and more and more produces disruptions in impulsive behavior, depression, chronic fatigue syndrome, etc. [1]

UNESCO noted the emergence of a new "information fatigue syndrome – info-phobia" in 2002, which is experienced, as a rule, by people actively engaged in intellectual and managerial activities [2].

It is difficult to disagree that the activity of any organization is a process-oriented search for the required procedural decisions in the system of distributed information of knowledge, which is related to the moment of transformation of the information flow forms into knowledge made in the form of records, texts, documents. We understand that information turns into knowledge when it is in demand and solves the specific issues. There are many definitions of the concept of "knowledge" in the scientific literature. But within our work, the definition of the Standard of the Republic of Kazakhstan ISO 9001 is well correlated determining the knowledge as the information that is repeatedly used during the activity.

And as the knowledge of the organization is the corporate knowledge, which cannot arise by itself. In today's publications, there are many discussions about the usefulness of corporate knowledge systems [3-11]. But there are no practical works that would show the mechanism of creating a corporate knowledge system itself in companies when creation of such system is needed.

Corporate knowledge is a system that integrates the knowledge of individual players who are constantly involved in the process of forming a corporate base. For example, if there are only consumers who are already using the knowledge formed by someone, then such a corporate knowledge system will no longer be necessary after a certain period.

The issues of how to organize the thinking and how to organize the intellectual activity within the organization are of interest to people involved in management activities. It is important for them that the process of creating new knowledge be manageable and productive.

To solve this problem, we offer the technology of digitalization of the individual's knowledge by Insight-DNA – the technology of transforming thoughts into intelligent products [12].

In 2016, Insight-DNA technology with a wide range of applications was registered as the copyright object. Today we will disclose one aspect of this technology application – creation of text products in the digitalization of knowledge. We believe that well-organized and structured knowledge is transmitted and perceived in text products, i.e. in text forms that allow to perceive, interpret, understand them, facilitating the adoption of managerial decisions [13].

Studying the literature on digitalization of knowledge, we formulated several search queries on international scientific bases and searched for information on a common network. After analyzing the materials received on request, we concluded that the scientific community had not developed this issue enough and began to carry out our own research of the theme [14].

The word "digitalization" itself requires an interpretation. Today, there is an interest in new words, probably contributing to our inclusion in the world community. And the term is used universally and literally without understanding its meaningful palette. We focused on one definition of digitalization, which was published by Alexei Marey, Board of Directors of Alfa Bank: "digitalization is a paradigm shift in how we think, how we act and how we communicate with the external environment and with each other. That is, digitalization is more a tool than a goal" [15].

Let us outline a brief description of the management system for creation of text products (MSCTP) – a pilot version that implements Insight-DNA technology in the process of creating a corporate knowledge base, based on this understanding of digitalization.

The key concept of our development is the "consciousness flow". Today this concept is met in the modern version in the works of E. De Bono when he forms his apparatus [16]. However, De Bono does not consider and does not define the concept of "consciousness flow". After a literary survey, we found a definition in the Great Soviet Encyclopedia proposed by James Wiliams back in 1890. In his scientific work "The Foundation of Psychology", the consciousness flow is a complex river in which thoughts, sensations and emotions and associations are strangely mixed [17]. Now the purpose of our digitalization technology of subject knowledge becomes clear.

The Insight-DNA technology of digitalization of the subject's knowledge is aimed at:
– transformation of spontaneous thoughts, sensations and associations into ideas;
– increasing the survival of ideas;
– fixing the idea in symbolic forms;
– development of ideas in intellectual products (solutions, publications, developments, etc.);
– synthesis of ideas and products disaggregated in time and relevant now.

It is very important that one of the purposes of the system is to guarantee the survival of ideas. On a pragmatic and practical level, we always feel that thoughts somehow spontaneously come to mind and go away, and we remember something. Our technology contributes to the survival of spontaneous ideas that can be formed in the process of orderly and systematic transformation of spontaneous thoughts into ideas.

Also, the technology allows to consolidate ideas in symbolic forms, which are specially prepared and recommended by us as tested in practice. A whole system of notations and rules was developed. Because the consolidation of the ideas themselves in symbolic forms is not carried out once at any time, it is

distributed over a sufficiently long period. Personal experience within the Insight-DNA technology since October 10, 2012, showed that in a certain version the idea itself can be formed depending on its depth within a period from one month to several years. Moreover, the process of formation of ideas itself involves the clarification of certain formulations of conceptual things that arise as the subject receives information from outside during reading and in real life all it is all fixed. An important condition for permanent participants of this process is the continuous record keeping. Significant insights, thoughts, important day outputs (the so-called 'out-put') should be registered daily and this is a mandatory requirement for the technology application. Our idea is well illustrated with one of Nikola Tesla's 25 quotes: "If there was some exhausting task in front of me, I would attack it again and again until I made it. So, I practiced day by day, from morning till night. At first it required a strong mental effort directed against inclinations and desires, but for years the contradiction became weak, and finally, my will and desire became the same. So they are today, and this is the secret of all my successes" [18]. And so, the technology allows to develop ideas into intelligent products. This is already a whole set of algorithms, rules of behavior, processing rules that allow connecting and developing this idea, orienting it on current goals, plans and responding to changes.

And finally, the main feature of this technology is that it is aimed at the synthesis of ideas and products disjointed in time and relevant to the current situation.

The five areas listed below still do not exclude some additions that are being worked out, we are studying them now.

The technology includes 4 groups of processes (see figure 1). Moreover, these groups of processes are also the phases of the process of converting spontaneous thoughts into intellectual products.
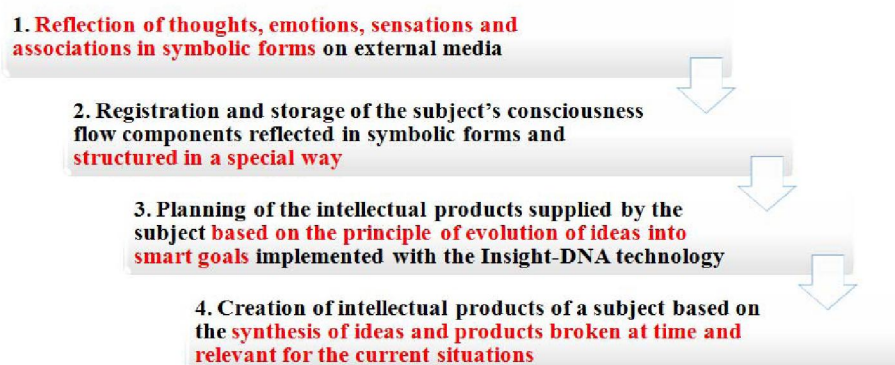

Figure 1 – Insight-DNA technology process groups

Those moments that relate to the new innovative developments were highlighted in red.

It turns out that the presence of the base itself, which has been formed in compliance with the Insight-DNA technology principles leads us to achieve higher goals, namely the SMART goals. It became clear to us only after five years of practical work. We began to understand that this technology cannot help the team or a group of people, if they do not have their own initial reserve. Therefore, our technology provides self-diagnostics, namely the thematic self-diagnostics of components using the tools of the artificial intelligence algorithm and the knowledge base itself, which relates to the database of accumulated records, allows identifying the areas that are the most developed today. The most prepared, in our practice, were the bases for the preparation of publications.

Finally, the last phase is the creation of intellectual products of the subject based on the synthesis of intellectual products broken in time and relevant for the current situation [19]. The main categories of information objects in the Insight-DNA technology introduced in the pilot version in the MSCTP are:

– personal records of the subjects that form the corporate knowledge system;

– text products that are being created as deliverables. The delivered result is any unique and verifiable product, result or the ability to provide the service that must be performed to complete the process, phase or project. The deliverables are usually the material components created to achieve the project objectives, which may include elements of a project management plan [20];
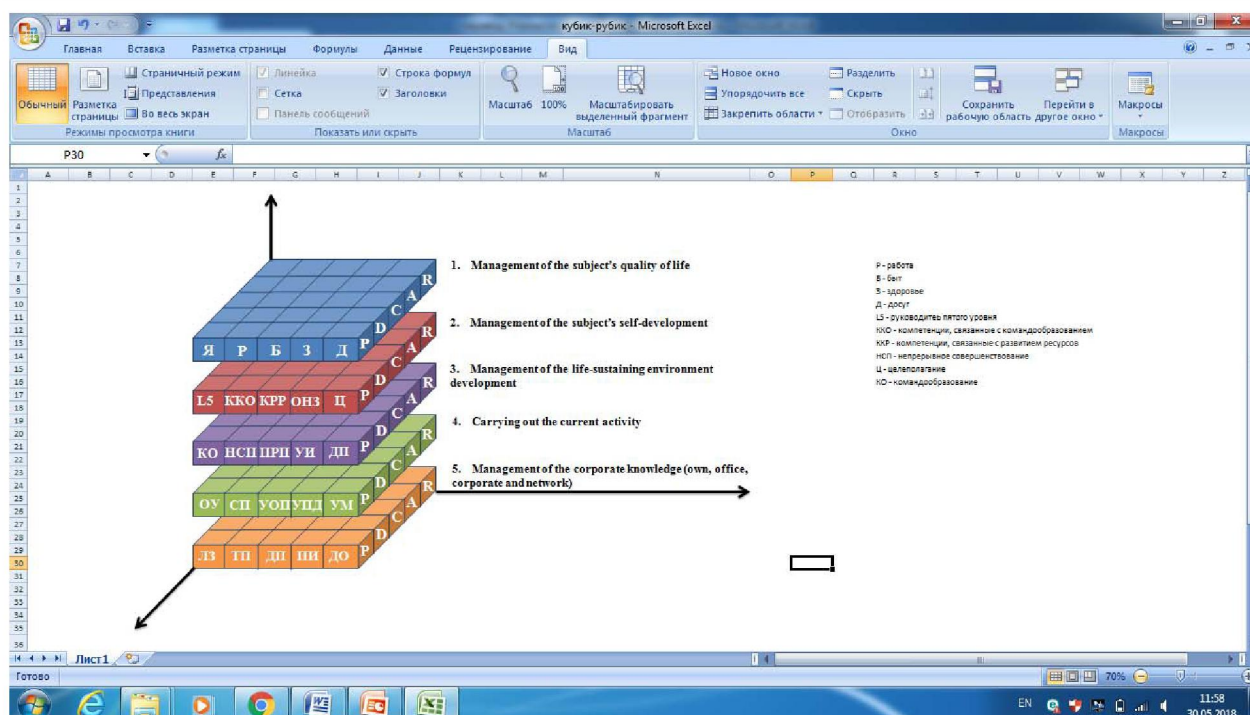
Figure 2 – Model of "CEO-organization" dyad development management

– primary sources;
– documents for configuration management.

An innovative element in Insight-DNA technology is: creation of a "CEO-organization" "dyad development control cube" of the (see figure 2).

The model consists of five levels. We proceed from the fact that management should be comfortable. At present, software applications are widely used to calculate the number of steps that have been taken. But there are no software applications that assess the quality of thinking activity: how much time was spent on work, how much time for leisure, and how long our mind was resting, etc.

The first level was called "Management of the quality of life of the subject". It includes: "Work", "Life", "Health" and "Leisure" (WLHL) strata, S - subject, Deming and Shewhart PDCA cycle: Plan-Do-Check-Act - and repository of lessons learned - R. "WLHL" may be linked with the known four dimensions of human nature that Steven Covey suggests: "body", "mind", "emotion" and "spirit" [21]. The person starts feeling the happiness comfort when he has balanced 4 dimensions of human nature. They are expressed through the WLHL strata. S is a complex sense of own personal dignity, it is formed in comfort on four strata of the WLHL. Each of these strata ends with a repository of lessons learned.

The second is the management of the quality of life, in the unity of the leader-organization-family-society. For this, we introduce the concept of quality and self-development management of the subject as a leader by analogy of the PMI talent triangle with the sides of technical project management, strategic management and business management and leadership.

Among the components of our concept of the side are:
1. Management of own living environment development.
2. Implementation of current activities.
3. Knowledge management: personal, office, network and corporate.

Speaking about the adaptation of technology to the current terms, we note the following features:
– focused on project management;
– adapted to the conditions of Kazakhstan (100% Kazakhstani content);
– contains the developed modern conceptual-categorical apparatus that incorporates the best international practices;

– the main components of the technology and author algorithms that implement them are tested in practice and provide digitalization of the subject's knowledge in managing the organization development (through projects);

– the key users of the pilot version are the head managers, top managers and project managers.

To form a circle of people interested in more details, we need to connect the purpose of this technology with the tasks that arise at high levels of management. With this purpose, let us apply to the Decree of the President "On approval of the strategic plan for the development of Kazakhstan until 2025". It becomes obvious that this technology is not limited to an industry or a single group of interested persons. Practically, it is aimed at implementing the most important reform (one of seven) - it is obtaining the new human capital in the country. Moreover, it is in demand to carry out the modernization of consciousness, the first step of which is "Rukhani zhangyru" [22]. Unfortunately, the program lacks an important component that related to the search for a tool allowing to accelerate and ensure the formation of this new human capital, which will have a higher culture of thinking. The goals of our technology are focused at enhancing the culture of thinking.

The emergence of the knowledge digitalization technology on the market and creation of domestic robots - CEO assistants on its basis activates the scientific developments in artificial intelligence. The development of a universal management tool will have a multiplier effect on all sectors of the country's economy and in the Higher School system.

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БАСҚАРУ МӘСЕЛЕЛЕРІН ШЕШУ КЕЗІНДЕ АҚПАРАТТЫ БІЛІМГЕ АЙНАЛДЫРУ

Аннотация. Мақалада зияткерлік қызметпен айналысатын адамдардың ақпараттық жүктемесіне қатысты мәселелер қарастырылған. Қазіргі таңда ұйым жетекшілері, талдаушы-сарапшылар жұмыс жасайтын ақпарат көлемі қарқынды ұлғаюда. Алайда шешім қабылдау үрдісіндегі күнделікті жұмысқа арналған ақпарат көлемі тұрақты болып қала береді. Осыған сәйкес болашақта білімге айналатын жазбалар, текстер, құжаттар секілді әртүрлі формалардан тұратын ақпарат ағымын сапалы іріктеу мәселелері туындайды. Ғылыми әдебиеттерде ақпараттың білімге айналу мәселесі аз зерттелген. Өзіндік ойлау жүйесін және өзіндік зияткерлік қызметін дұрыс ұйымдастыру мәселесі басқарушылық қызметпен айналысатын адамдардың қызығушылығын тудырады. Олар үшін жаңа білім қалыптастыру үрдісінің басқарымды және табысты болуы маңызды. Осы мәселені шешу үшін субъект білімін цифрландыратын Insight-DNA технологиясы – ойды зияткерлік өнімдерге айналдыратын технология ұсынып отырмыз. Қолдану саласы кең Insight-DNA технологиясы 2016 жылы авторлық құқық нысаны ретінде тіркелді. Бұл мақалада біз аталған технологияның қолдану аспектілерінің бірі – білімді цифрландыру барысында текстік өнімдерді әзірлеуді қарастырамыз. Жақсы ұйымдастырылған және құрылымдалған білімдер текстік өнімдер түрінде, яғни басқару шешімдерін қабылдауға ықпал ете отырып, қабылдауға, түсінуге, түрлендіруге мүмкіндік беретін текстік формаларда беріледі және қабылданады. Бүгінгі таңда нарықта білімді цифрландыру технологиясының пайда болуы және соның негізінде отандық роботтар – CEO көмекшілерін жасау жасанды интеллект саласындағы ғылыми зерттеулердің белсенді жүргізілуіне ықпал етеді.

Түйін сөздер: білімді цифрландыру, білімді басқару, зияткерлік өнім, корпоративтік білім

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ТРАНСФОРМАЦИЯ ИНФОРМАЦИИ В ЗНАНИЯ ПРИ РЕШЕНИИ ЗАДАЧ УПРАВЛЕНИЯ

Аннотация. В статье рассматриваются проблемы людей, занимающихся интеллектуальной деятельностью, связанные с информационной перегрузкой. В современном мире количество информации, с которой работают руководители, аналитики-эксперты постоянно растет. При этом информация, которая необходима для ежедневной работы в процессе принятие решений, приблизительно остается постоянной по объему. В связи, с чем возникает проблема качественного отбора, фильтрации потока информации с превращением его разнообразных форм: записей, текстов, документов в знания. Вопрос трансформации информации в знания слабо изучен в научной литературе. Вопросы как организовать свое мышление и как организовать свою интеллектуальную деятельность в рамках организации вызывают интерес у людей, занимающихся управленческой деятельностью. Для них важно, чтобы процесс создания нового знания был управляемым и продуктивным. Для того, чтобы решить эту задачу нами предлагается технология цифровизации знаний субъекта Insight-DNA. В 2016 году технология Insight-DNA с широким спектром применения была зарегистрирована как объект авторского права. В данной статья мы раскроем один аспект применения этой технологии – создание текстовых продуктов в рамках цифровизации знаний. Мы считаем, что знания, хорошо организованные и структурированные передаются и воспринимаются в текстовых продуктах. Появление на рынке технологии цифровизации знаний и создание на ее основе отечественных роботов – помощников CEO активизирует научные разработки в сфере искусственного интеллекта.

Ключевые слова: цифровизация знаний, управление знаниями, интеллектуальный продукт, корпоративное знание

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