

Diversification of the role of cybernetics doctor in the conditions of digitalization of the economy and social sphere of Russia

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Abstract—A transition of Russia to the digital economy, digital health care leads to the need to expand the role of the cybernetics doctor by assigning the following new labor functions to him: system architect of the corporate medical information system (CMIS) health care facilities; a tutor-mentor and a medical-technical consultant for medical personnel of health facilities on the issues of setting up, configuring and using the medical information system functionality; expert analyst in assessing the effectiveness of the medical information system

Keywords—*corporate medical information system, cybernetic doctor, digitalization of medicine, expansion of labor functions*)

I. INTRODUCTION

Expanding the scope of information and communication technologies (ICT) in the 21st century, the widespread penetration of information technologies, automation, intellectualization in all areas of enterprises and organizations, the transformation of the role of ICT from a tool to support business processes into drivers and The “driving force” [1] of business innovation, the “strategic weapon” [2] and the source of competitive advantages of campaigns, is of particular relevance in the conditions of Russia's transition to a digital economy and digital health care.

It should be noted that the main role of DIGITALIZATION of the economy is [3,4] the most efficient use of information technology resources and systems available to organizations and firms, aimed at improving the performance of their functioning, at reducing costs, at improving the quality of the adoption and implementation of management decisions, the optimization of internal business, information and technological processes, the modification of the general model of doing business or socially significant activities. All of the above is fully correlated to social enterprises, primarily to health care organizations.

It is clear that solving the problems of digitization of the organizations of the social sphere is impossible without a highly skilled creative personnel “cushion”, without trained ICT specialists who understand the specifics and objectives of digitization of the economy, social sphere, education, science, and health care. There is currently a certain personnel shortage [5,6] in specialists with the necessary level of training in the creation and application of algorithms

and mechanisms for processing huge arrays of digital data [7] in various areas of the digital economy and social sphere, including . in the health care system; in the production of high-tech ICT goods and services, focused on the use in the digital economy. Such specialists also include graduates of the specialty 30.05.03 Medical Cybernetics, who, after successful completion of training, receive the qualification of “cybernetic doctor”.

It is of interest to conduct research aimed at assessing the compliance of the level of professional competence of graduates of the specialty 30.05.03 Medical cybernetics with modern requirements imposed on them by the digitalization of economics and medicine. It is also necessary to determine how to change the labor functionality of a “cybernetics doctor” in the conditions of total digitization of society's activities.

II. METHODS

In the early 80s of the last century, civilization began to experience an information boom, the amount of information that people began to receive for processing increased sharply, and as a result, it became difficult for a person to orient in it. The information crisis has led to the need to find ways out of this impasse. The introduction of computers, digital means of processing and transmitting information in various areas of society was the beginning of a new evolutionary process, which they began to call INFORMATIZATION [8,9]. Note that informatization is not so much and not only technological but also social and even, to a certain extent, cultural-cultural processes.

The next important stage in the development and use of ICT was the end of the 20th and the beginning of the 21st centuries, which was marked by rapid quantitative and qualitative growth of computer networks, both the global Internet and local and corporate computer networks of enterprises. The latter became the basis for the implementation of information technologies for AUTOMATION [10] of managing business processes of enterprises and firms, as well as automating the processing of information in almost all spheres of human activity. The implementation of many designs, administrative, economic, financial, industrial, technological and other management tasks in an automatic mode have become a highly effective tool for the automated processing of information in the process of the professional activity of employees of the company. Further development of the ideas of automating

individual business processes was the concept of INTEGRATED AUTOMATION of management processes in an enterprise [11].

What is the role of DIGITALIZATION here? The broad meaning of the term DIGITALIZATION has the following interpretation [12]: it is a digital transformation of information that covers the production, business, science, social sphere and ordinary life of citizens; which is accompanied by the effective use of the results of this transformation; which implies that the obtained results of the transformation are available to users of the transformed information, specialists and ordinary citizens who need it. As a result, the boundaries of economic relations are expanding [13]; The importance of campaigns and organizations to create and support progressive technologies themselves, ICT infrastructure, to integrate digital technologies into business processes.

Obviously, not all health care professionals and users of medical information that have undergone digital transformation are able to perceive and interpret it unambiguously. This is especially relevant for specialists of medical institutions (MI) and preventive treatment institutions of the 2nd (municipal and intermunicipal MI) and 1st (MI primary health care) levels, where there are often no specialists with the necessary qualifications in the field of informatization and digitalization of medicine.

In order to resolve the current impasse, it is necessary to determine whether human resources are at the disposal of the health care system to minimize the costs associated with the training and information support of working MI specialists of the 2nd and 1st levels.

III. RESULTS

Taking into account the existing level of information training of medical specialists MI of the 2nd and 1st levels, the diversification of the labor functions of the “cybernetics doctor” should be carried out in the following areas:

1. Development of the generalized labor function “Providing information technology support in the field of health care” in terms of enhancing professional competencies related to system engineering of corporate medical information systems of healthcare institutions, expanding skills and abilities to manage the development of information and telecommunication infrastructure MI, mastering mechanisms and technologies development, modeling, analysis of CMIS system architectures and MI network infrastructure. This functionality essentially corresponds to one of their labor functions of qualifying a system architect - an information technology specialist.

2. Introduction to the structure of the generalized labor function “Provision of information and technological support in the field of health care” of the new labor function necessary for the implementation of labor activities in training CMIS users to work with its subsystems and workplaces, in preparing and conducting training sessions with users advising users on the deployment of CMIS workstations in MI, setting up and configuring equipment and application software CMIS, integrating CMIS with existing ones in MI GIMI information systems. In terms of content, such functionality corresponds to a number of work functions of an information systems specialist, thus realizing

the tasks of a tutor-mentor and a medical-technical consultant.

3. Inclusion in the labor function “System analysis of research objects in medicine and health care” labor activities aimed at performing expert and analytical tasks of assessing the effectiveness of CMIS in MI, analyzing the quality and level of information security in CMIS, organizing testing procedures for CMIS MI functionality subject to user requirements. The described functionality by its purpose refers to the labor functions of the system expert analyst in the field of informatization, automation and digitalization of MI activities.

Note that the noted new labor functions and actions in the expanded functionality of the “cybernetics doctor” are part of the “standard of professional competence” of the ICT specialist described in [15].

IV. CONCLUSION

Thus, the expansion of the labor functions and labor actions of cybernetic doctors makes it possible to more efficiently use the competencies that they acquired when teaching at the university in the specialty 30.05.03 Medical cybernetics, more efficiently apply the knowledge and skills of technological information in the university system-analytical, organizational and managerial orientation.

The uniqueness of the proposed organizational and personnel decision is to strengthen the competence training of a “cybernetics doctor” in the field of systemic and applied fundamentals of informatization and digitalization of health care and bring this training to the “standard of professional competence” of an ICT specialist [15].

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