Formation of an Information and Digital Structure to Ensure the Functioning of Enterprises

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Abstract: The article is devoted to the issues of transition of enterprises to information-digital structures in order to ensure further functioning and development. The study analyzes the existing digital platforms that ensure the functioning of large system and infrastructure facilities, as well as the implementation of intelligent systems to ensure complete independence and reliability of these facilities. At the end of the study, proposals were formed for the transition to information and digital technologies of enterprises, which should be integrated with existing external large digital systems, take into account the conditions of interaction within the system with the supporting subsystems and objects of the system, and also contribute to obtaining the necessary result from the functioning of this system.

1 INTRODUCTION

In recent years, there have been trends in the transformation of certain types of activities and industries into digital and information technologies, which is associated with the need to ensure their sustainable functioning and development. Similar trends in world practice began to be observed back in the middle of the last century, when individual industries tried to automate their production process, as well as improve the quality of individual operations and the process as a whole. In the spheres of activity, this was caused by the need for better and faster customer service and service delivery, as a result of increasing demand for products and quality of service. However, in our countries this process has just begun to gain momentum and similar requirements have begun to be imposed due to necessity, exactingness and trends in interaction with the external environment (Zhichkin, K., Nosov, V., Zhichkina, L., Abdulragimov, I., Kozlovskikh, L. 2021.; Flaksman, A.S., Mozgovoy, A.I., Lopatkin, D.S., Dikikh, V.A., Shamsov, I.S., Romanova, J.A., Morkovkin, D.E., Bovtrikova, E.V. 2021.).

Today, when digitalization issues have begun to penetrate all areas of activity, it seems necessary to develop new methodological foundations for the functioning of the information space and enterprises. This relationship can be represented in the form of various schemes and mechanisms that will ensure sustainable growth of enterprises and organizations (Zaenchkovski, A.E., Kirillova, E.A., Golovinskaya, M.V., Sazonova, E.A., Borisova, V.L. 2021.; Zhichkin, K., Nosov, V., Zhichkina, L., Fomenko, N. 2021.).

2 MANUSCRIPT PREPARATION

The purpose of this study is to form an information and digital platform to ensure the sustainable operation and development of enterprises. To solve these problems, the following tasks were set:

- To analyze the conditions for the functioning of the information and digital platform;

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- To propose recommendations for the creation of information and digital platforms in the industry.

Analytical and logical methods, methods of comparison, analysis and synthesis were used in the work (Kolokolov, Yu., Monovskaya, A. 2019.).

3 RESULTS AND DISCUSSION

Currently, information and digital platforms are especially relevant in infrastructure projects, that is, projects in which it is necessary to combine several industries and ensure the functioning of individual infrastructure objects or human life. Such projects include transport, water supply, security systems and other areas of activity, that is, they are used in those areas where there is a need to integrate not only the type of activity itself, but also supporting components, such as electricity, video surveillance system, traffic analysis and, if necessary, prompting tasks to solve any problems.

However, in recent years, intelligent digital platforms have begun to appear that allow not only to manage any activity, but also to make decisions in case of situations that have arisen. Such platforms are used and integrated into the systemic spheres of activity, which makes it possible to ensure uninterrupted power supply, heat supply, the functioning of transport systems, systems of state and military security, and more.

At the same time, it seems necessary and relevant to offer such information and digital platforms for industrial enterprises that do not have such technical, engineering and information potential, but, at the same time, are forced to rebuild and adapt to the existing systems of functioning of infrastructure, engineering and support systems.

The creation of an information-digital platform to ensure the functioning of enterprises and organizations requires serious study, since as a result of such a system it is necessary to solve the issues of integration into existing systems, that is, to have the necessary parameters of the input system, to ensure the functioning of the specified system, taking into account the interconnection of all elements of the system itself and providing its subsystems, as well as to obtain the required product parameters at the output (Zhichkin, K.A., Starikov, P.V., Zhichkina, L.N., Mamaev, O.A., Artemova, E.I., Levochkina, N.A. 2020.).

To achieve this goal, it is necessary to consider the system as the relationship of elements entering and leaving it, which can be represented in the form of the following diagram (Fig. 1).

Thus, to ensure the functioning of the specified system, an information-infrastructural digital complex is required, which ensures the maintenance of the specified system, while it is impossible to influence this complex. Further, for the functioning of the system, not only the supporting subsystems and objects of the system itself are required, but also an information and software complex, which should include not only the corresponding programs and applications that ensure the interaction of the entire system, but also integrated ones, allowing to adjust to changing conditions independent of the system and issue the desired result (Provodina, E.V. 2021.).

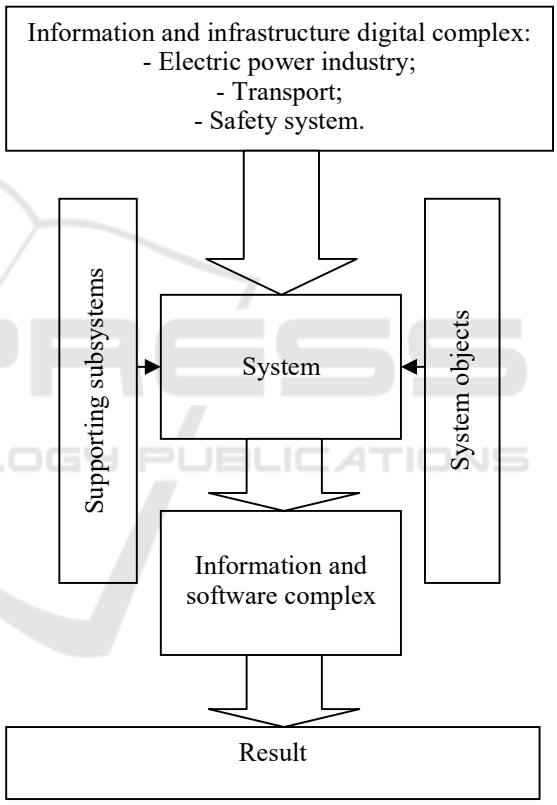

Figure 1: Scheme of transition to information and digital technologies of enterprises

4 CONCLUSIONS

In the presented study, we tried to formulate the main problems that need to be solved when creating an information-digital structure of enterprises in the context of integration into existing information-infrastructure systems. At the same time, it should

be noted that this study is not complete, it sets out the main directions for the development of information and digital systems in the context of the transition of enterprises to new conditions of functioning and existence in the information-digital space.

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