

ECOSYSTEM MODEL OF THE CONCEPT OF INDUSTRY 5.0

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Annotation: The ecosystem model of the concept of Industry 5.0 provides for the integration of technologies of the fourth industrial revolution with a focus on the human factor and sustainable development. This model emphasizes collaboration between robots and humans, implementing artificial intelligence to improve productivity while maintaining ecological balance. It also envisages the creation of synergies between digital innovation and social needs, promoting the development of cyber-physical systems within the framework of sustainable production.

Keywords: Industry 5.0, ecosystem, concept.

The evolution of Industry 5.0 technologies differs from the digital revolution of Industry 4.0 in that it transforms human labor into a joint activity of robots and creative individuals in order to produce customized products and services that meet the tastes, wishes and financial capabilities of consumers. Theoretical and empirical studies by scientists [1–5] allow us to assert that Industry 5.0 is comprehensive and universal and has progressive development potential, that is, the ecosystem model of the concept of Industry 5.0 can be presented in Figure 1.



Figure 1 – Ecosystem of the Industry 5.0 concept

The methodology of Industry 5.0 as a relatively new direction has an interdisciplinary nature and

provides for the analysis of economic, social, informational and environmental globalism differentiated by the tools of analysis. It is especially important for such research to take into account the scale and dynamics of the process of forming a system of global management of the planet's resources and redistribution of world income. Industry 5.0 becomes, on the one hand, a source and stimulator of competition, providing new opportunities for development, and on the other hand, it creates contradictions and challenges of a local and general civilizational scale. In our opinion, from a theoretical and methodological point of view, there is a systemic asymmetry of socio-ecological economic development, caused by the growing interdependence between macro- and micro-level economic entities. A systematic study of the origins and manifestations of the fifth industrial revolution involves the analysis of the main trends that characterize Industry 5.0. The first trend assumes that Industry 5.0 will quantitatively cover all countries, and qualitatively - all spheres of human activity. The fifth industrial revolution involves collaboration between humans and intelligent systems such as robots. At the same time, we are talking about robots that help people work better and faster, using advanced technologies: the Internet of Things, big data, virtual and augmented reality technologies. People and systems will act as partners, not competitors. At this stage of industrial development, automated mechanisms will perform monotonous, repetitive tasks, and human resources will be responsible for the creative component, control management systems and the level of production quality. Therefore, the goal of Industry 5.0 is the synthesis of cognitive computing capabilities with human intelligence and ingenuity in complex production, management and business processes. The second trend is the fact that Industry 5.0 will be based on the bioeconomy. Optimum use of biological resources for production purposes will help achieve a balance between ecology, industry, society and economy.

CONCLUSIONS. The ecosystem model of Industry 5.0 aims to harmonize technological progress with social and environmental challenges, emphasizing a human-centric approach. It emphasizes the importance of cooperation between humans and robots, which opens up new opportunities for sustainable development, increased productivity and improved quality of life in the context of digital transformation.

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