Ensuring the sustainable functioning and development of industrial enterprises in the digital economy

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Abstract

Subject/topic. The article discusses the possibilities and prospects of ensuring the dynamic stability of the economic development of industrial enterprises through the use of end-to-end technologies of the digital economy. ***The purpose and objectives*** of the stud**y** is to consider the potential and state of the use of digital technologies in the context of ensuring the dynamic sustainability of the development of industrial enterprises and to identify promising areas for improvement. ***Methodology.*** The study used: the general scientific dialectical method of knowledge, as well as some special research methods: comparative, survey method, statistical, generalization method and others. ***Results.*** An approach to understanding dynamic stability as a key characteristic of economic development has been substantiated. The importance of end-to-end digital technologies as a source of dynamism and sustainability of the development process of industrial enterprises is noted. Insufficient effectiveness of digitalization of Russian industrial enterprises is stated, factors that inhibit and stimulate industrial digitalization are highlighted. Some promising areas of digital assistance to ensure the economic development of Russian industrial enterprises are presented. ***Conclusions/Relevance*.** It has been confirmed that complex digital technologies of the so-called "end-to-end" nature can be fairly considered as the most modern toolkit for ensuring the dynamic sustainability of the development of economic entities in industry. Their use is truly synergistic in nature, since it pushes high-tech development of related industries, provides a deeper penetration of digitalization into the public sector, and also contributes to an integral increase in the global competitiveness of domestic industry, thereby making an invaluable contribution to achieving the desired parameters of national economic security. The promising directions of digitalization as a tool for ensuring the dynamic stability of the economic development of Russian industrial enterprises are given, such as the introduction of wireless communication technologies and the industrial Internet along the entire territorial chain of added value creation; activation of the use of robotics and sensorics components through the support of digital control and monitoring tools; orientation of the consumer product portfolio to the "Internet of Things"; further digitalization of general administrative and management processes (upstream-level of management of industrial enterprises) based on the introduction of tools and technologies for integrated digital planning and digital controlling.

Keywords: *dynamism, sustainability, development, industrial enterprises, digitalization, end-to-end technologies, digital economy, Industry 4.0*

References

1. Altukhov A.I., Dudin M.N., Anishchenko A.N. Digital transformation as a technological breakthrough and transition to a new level of development of the agro-industrial sector in Russia // Food Policy and Security. – 2020. – Vol. 7. – No. 2. – Pp. 81-96. (In Russian).

2. Borgardt E.A. Strategic management of sustainable development of the enterprise // Actual problems of economics and law. – 2013. – No. 1 (25). – Pp. 55-61. (In Russian).

3. Innovative foresight as a tool for the competitive development of entrepreneurial structures: monograph / Dudin M.N. et al. – Moscow: Science, 2013. – 214 p. (In Russian).

4. National Technology Initiative (NTI). – 2021. [Electronic Resource]. – URL: https://nti2035.ru/ (Access date: 12.02.2021, In Russian).

5. Svyatokho N.V. On the issue of sustainable development of an industrial enterprise // Economy and efficiency of production organization. – 2020. – No. 31. – Pp. 83-86. (In Russian).

6. Filatov V.V. Development of the industrial complex of Russia on the basis of regulation of the innovation market of the sectoral economic system: theory and methodology: monograph. – Moscow: KnoRus, 2016. – 214 p. (In Russian).

7. Schwab K. The Fourth Industrial Revolution: trans. from English / Klaus Schwab. – Moscow: E, 2016. – 209 p. (In Russian).

8. Almeida F., Santos J.D., Monteiro J.A. The Challenges and Opportunities in the Digitalization of Companies in a Post-COVID-19 World // IEEE Engineering Management Review. – 2020. – Vol. 48. – No. 3. – Pp. 97-103. (In English).

9. Feder J. et al. Upstream Digitalization Is Proving Itself in the Real World // Journal of Petroleum Technology. – 2020. – Vol. 72. – No. 04. – Pp. 26-28. (In English).

10. Garrido-Hidalgo C. et al. An end-to-end internet of things solution for reverse supply chain management in industry 4.0 // Computers in Industry. – 2019. – Vol. 112. – Pp. 103-127. (In English).

11. Global digitalization outlook. – Amsterdam: Ernst & Young, KPN, 2019. – 418 p. (In English).

12. Isaksson A.J., Harjunkoski I., Sand G. The impact of digitalization on the future of control and operations // Computers & Chemical Engineering. – 2018. – Vol. 114. – Pp. 122-129. (In English).

13. Veselovsky M.Y. et al. Financial and economic mechanisms of promoting innovative activity in the context of the digital economy formation // Entrepreneurship and Sustainability Issues. – 2018. – Vol. 5. – No. 3. – Pp. 672-681. (In English).

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For citation

Stepanov D.A. Ensuring the sustainable functioning and development of industrial enterprises in the digital economy // Market economy problems. – 2021. – No. 1. – Pp. 110-119 (In Russian).

DOI: https://doi.org/10.33051/2500-2325-2021-1-110-119