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**A STRATEGIC VECTOR IN DIGITAL TRANSFORMATION OF
INDUSTRY**

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Abstract

The paper concerns issues in digital transformation of industry, which is a priority growth area of the Russian economy that provides high adaptability in formation of business models and operation of production processes by means of cross-cutting digital technologies. Implementation of digital technologies in industry is based upon a drive to complex increase in efficiency and creation of conditions for successful cooperation of various branches. The authors note that in order to provide efficiency of the digital transformation, it is necessary to continuously and consistently take measures at all the levels of authority, from federal to regional and municipal one, as well as at a level of separate branches of industry. Physical state of digital maturity in processing industry serves as a catalyst for development of this strategic planning-related document. Digital transformation of industry that assumes transition of production processes to a new technological paradigm will become a catalyst for socio-economic development of the Russian economy and will allow it to come into the global market with competitive products that meet all the modern process requirements, thus prospectively becoming a highly profitable economic sector in the Russian Federation, a sector that is capable of fast regrouping in order to provide the government with necessary products.

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1. Introduction

Not so long ago financial organization and retail led digitalization process. Nowadays, more and more industrial companies are to be found among the most digitalized enterprises. This process concerns not only greenfield developments, but seasoned factories forced to introduce deep changes into their business processes to survive in the competitive global market. However, the need for digitalization shall be understood first. Then, there is a need to determine the areas that need it the most and which digitalization tools are going to bring in the most economic results (Idigova & Rakhimova, 2021). A lot depends on arrangements of data collection, storage and processing. And of course, the role of people in digital transformation is very important: it is not only IT specialists, but also managers and their readiness to change as well as frontline employees who are to work with these changes (Dyakov, 2020).

The main task of digital transformation of industry lies in upgrade of process management that shall result in a significant increase in workforce productivity. Digital transformation shall result in increased gross domestic product and as a result, improved prosperity of citizens. Digital transformation will result in a new production sphere, capable of flexible reaction to changes in both internal and external factors, including a capability for fast restructuring of production chains in case of new limits for supply of foreign equipment, sanctions or changes in the global markets. Digital technologies shall increase transparency of interactions between companies and with the government (Idigova et al., 2019). There is a strategy that defines principal growth areas of the state polity in the field of digital transformation of industry with respect to a number of economic activities pertaining to processing industry and controlled by the Ministry of Industry and Trade of the Russian Federation. The strategy, being an industrial planning document, covers goal, objectives, priorities and ways to achieve the objectives. Within the framework of the Strategy, sectoral, technological and economic aspects of processing industry development are being taken into account. The main goal of the Strategy is attaining the value of a digital maturity indicator stated in the Digital Transformation Goal, as approved in the Decree of the President of the Russian Federation On National Development Goals of the Russian Federation for the Period of up to 2030, dated 21.07.2020, no. 474.

Before 2030, this strategy foresees implementation of four projects in innovation development of processing industry. The main objective of the projects shall be increasing workforce productivity, accelerating launch of hi-tech products on the market and reducing prime costs of industrial products. In addition to implementation of six emerging technologies that include AI and robotics, digital transformation of industry shall be facilitated by preferences given to Russian software and hardware producers, as well as by creating of various digital marketplaces and platforms. Responsibilities for implementation of the Strategy will be shared by the Ministry of Industry and Trade, the Ministry of Economic Development, the Ministry for Digital Technology, Communication and Mass Media, the Ministry of Finance, the Ministry of Labor, the Federal Anti-Monopoly Service, Rostekhnadzor and Rostekhstandart (Ministry of Industry and Trade of Russia, 2021).

2. Problem Statement

Industrial sectors vary greatly and are very complex in management and arrangement of production processes. In addition to production sector, there are also extractive and processing industries. Moreover, the sectors themselves differ in their scale, product portfolio, complexity of production, length of production cycle, seriality, peculiarities of transportation and sales; in addition, there are vast numbers of various contractors and subcontractors. If this whole system is transferred to a single online platform, then it may significantly optimize the production chain, but its failure or hacking may result in chaos. However, assessments of the industry are rather complex and making conclusions for a common arrangement is even more complex.

Digital maturity of industrial enterprises shall be understood as their readiness to being integrated into the new technological paradigm using state-of-the-art developments in digital technologies. In order to provide a complex objective assessment of digital maturity of industrial enterprises, a procedure has been developed that allows analysing all the principal and auxiliary processes within an enterprise and thus assessing enterprise readiness to perform production and economic processes with digital tools, to integrate software and hardware complexes into production with the aim of reducing prime costs and increasing efficiency of production chains. Application of a common procedure for evaluation of industrial enterprise digital maturity allows such enterprises to compare their values of indicators to industry averages and get recommendations concerning application of digital products and services, while digital transformation regulators may understand the amounts of measures necessary to ensure successful transformation. In the Russian Federation, rather high degree of readiness is typical of large industrial enterprises with branching organization that requires complex and fast managerial decision-making. Thanks to inter-sectoral contacts facilitated by digitalization linking Russian industry together, it is possible to achieve a synergistic effect of various activities even in traditional production fields. Project-based management shall be used for inter-sectoral ecosystemic cooperation between enterprises turning them into efficient hi-tech producers. Territories of the Russian Federation shall be connected by development corridors with the aim of enlarging their economic potential.

3. Research Questions

The current state of civil sectors of the Russian processing industry is characterized with significant non-uniformity in development of different economic activities.

Digital transformation is also currently proceeds non-uniformly. Companies that aim at export markets execute digital transformation independently and at a swift rate in order to faster integrate in the global economic system, such companies attract capital for renovation of assets and implement digital technologies. From this point of view, slowing down of growth of the Russian economy is of structural nature and determined by non-uniform development of markets and enterprises.

Consequently, solution of the arising problems requires diversification of industrial policy instruments in the context of goals and objectives of sectoral digital transformation.

Under the conditions of possible worsening business environment in product markets and enduring instability in capital market, it is necessary to focus state resources at priority growth areas to support digital transformation without scattering funds.

In order to ensure digital maturity of processing sectors before 2024 and for the period of up to 2030, within the framework of the developed governmental strategy, five key ecosystemic projects will be implemented aimed at digital transformation in the following large-scale sectors:

- innovations in production organization;
- process innovations;
- product innovations;
- human resource innovations;
- state management innovations (Ministry of Industry and Trade of Russia, 2021).

4. Purpose of the Study

The purpose of the study is to analyze and assess transformation of existing industrial systems that provide implementation of state digitalization programs for national economy, as well as situation at sector level and analysis of industry digitalization. The goals of the digital transformation of processing industries are defined as: stimulation of domestic demand for industrial production; creating conditions for increased investment in research and development, including development of new production technologies; creating conditions for increased cooperation between Russian enterprises, stimulation of integration.

5. Research Methods

During the research, the authors employed the methods of statistical and comparative analysis, as well as Delphi procedure, thus allowing for identification of the principal issues in digitalization of industries.

6. Findings

Questions related of security and infrastructural stability of industrial facilities, including that against possible cyber-attacks are essential nowadays. Globalization of information and communication networks and systems, inevitable need to use foreign equipment and software in their construction form new security threats at all levels (Idigova et al., 2019).

The main target directions for implementing the measures of state support shall become systems that provide functional solution of these problems, aimed at production management, analysis of business data, management of financial and economic activities, life cycle management of complex facilities, after sale and maintenance, etc. Support, including governmental support for these areas of growth directly correlates to increases in operational indicators of industrial enterprises. Market analysis covering the largest suppliers of various classes of systems in civil industrial sectors demonstrate a disbalance between domestic and imported software (Serenkov et al., 2018). The share of Russian market does not exceed

30% for any of the key system classes, which is an extremely low value for solution of such tasks as provision of industry transformation by means of deployment of Russian software. Among the problems in digital design and testing in the context of industrial facilities, one may list the following: – full or partial dependence on imports; – interaction between enterprises for integration is inhibited by different data formats; – software does not meet the necessary level of information security (Ministry of Industry and Trade of Russia, 2021). In the existing situation, transformation of high-priority sectors and social services with their digital maturity in mind cannot be attained without state support to development and distribution of domestic solutions (Novikova & Strogonova, 2020).

7. Conclusion

In conclusion, let us note that digitalization transforms production throughout the world, having a colossal influence on productivity as this is the main promise of the digital production. Nowadays, support policy to small and medium enterprises is implemented in ten countries—Argentina, Australia, Austria, Canada, China, Germany, Japan, the United Kingdom and the United States of America—while development of common standards may facilitate technology deployment, a typology is suggested that helps conceptualize different production systems and strategies, showing how should they be supported by various sets of digital tools. It is important that the transformation process that involves information security systems of industrial enterprises is a complex procedure for transition of the whole production cycle to a digital platform. While there are clear advantages in such a transition (production cycle optimization, full transparency, reduced time spent negotiating and searching for contractors), there are also threats from increased probability of cyber-attack onto information systems. That is why the considerations pertaining to provision of information security shall become first priority when commissioning this platform.

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