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DEVELOPMENT OF STRATEGIC BENCHMARKS FOR THE CREATION AND OPERATION OF DIGITAL REGIONAL ECOSYSTEM INDUSTRY PROFILE

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Abstract:

The authors attempted to identify the main stages, advantages and prospects for creating digital agricultural regional ecosystems, which will help integrate the system into the supply chain, make more efficient use of time and resources, speed up the exchange of information between suppliers, distributors, retailers, consumers and auxiliary industries.

Keywords:*digital agricultural, regional ecosystems, retailers, auxiliary industries.*

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INTRODUCTION:

One of the priority challenges of the modern macro and micro environment is the rapid development of digital technologies, which determine the need to take into account and realize the possibility of digitalization of all sectors and spheres of the economy, including agriculture. Digitalization helps simplify and speed up workflow, allows you to accumulate and analyze large amounts of data, simulate events, conduct complex calculations, and also creates conditions for increasing the transparency and openness of agricultural markets for households and consumers.

The strategic orientation of the digital economy in the agro-industrial sector is to increase the export potential of Russian agricultural products and the efficiency of land use.

According to the Ministry of Agriculture of the Russian Federation, our country ranks 15th in the world in terms of digitization of agriculture, and the industry's information and computer technology market is estimated at 360 billion rubles.

Despite certain positive changes (growth of investments, increase in the level of competition, increase in the volume and quality of application of modern technologies, etc.), the development of agricultural production is constrained by a number of problems:

- limited access to knowledge and technology;
- insufficient use of network effects;
- low efficiency of economic entities in conditions of insufficient state influence on the processes of formation of the material and technical base and the organizational and economic situation of system informatization;
- the lack of a developed infrastructure of informatization of the domestic AIC;
- low interest of economic entities in the development of informatization systems and the use of its products due to insufficient incentives for the production of information technology systems.

The relatively low overall level of informatization of agricultural enterprises in modern conditions is due to a number of the following reasons:

1) low efficiency of economic entities due to insufficient state influence on the processes of formation of the material and technical base, including the system informatization of agricultural production;
2) the lack of a developed infrastructure of informatization of the domestic agro-industrial complex;
3) low interest of economic entities in the development of information systems due to the dependence of the efficiency of using these systems on the volume of agricultural production.

All of the above necessitates a transition to the use of new and advanced technologies integrated into a single system in which all stakeholders in the value chain can improve food production — creating digital agricultural regional ecosystems.

MATERIAL AND METHODS:

The theoretical and methodological basis of the article consists of theories and concepts of classical and neoclassical economic schools: evolutionary and transitional economy, reproduction of socio-economic systems, sustainable development of agricultural production, economic efficiency, ecologization of land use, management of natural (including land) resources, etc., instrumental and methodological means and heuristic potential of which allowed to interpret the polymorphism of socio-ecological-economic relations in Fere APK.

The study found the use of simulation and computational algorithms, monographic survey methods, empirical facts, the use of which guaranteed the representativeness of the research method and a high degree of authenticity of the results, generalizations and recommendations.

RESULTS AND DISCUSSION:

The basis of all interactions of subjects of the agro-industrial complex are information and communication relationships. They cover all areas of activity, speaking in the form of informational interactions between agricultural organizations, producers of means of production for agriculture, enterprises for the processing and marketing of agricultural raw materials and food in order to provide them with relevant information that plays an important role in management decisions and promotes innovative development agro-industrial complex, etc.

Information and communication interactions of subjects of the agroindustrial complex should be formed in a single information space of the agricultural digital ecosystem, and the effectiveness of introducing digital technologies depends on the willingness of its participants to work in the digital economy, which can be classified as:

- with a high level of readiness;
- with a partial level of readiness;
- adaptable.

The group with a high level of readiness includes economic entities of the agroindustrial complex of territorial entities that have advanced technologies and use them in the production process.

The group with a partial level of readiness includes stably working and profitable enterprises of

agricultural services, food and processing industries, retail chains, poultry farms, etc.
The third group can be classified as medium and large agricultural enterprises; having material, financial and labor resources to use modern information technologies.
The creation of agricultural digital ecosystems, taking into account the characteristics of each of the selected groups, contributes to the integration of the system into the supply chain, allows for more efficient use of time and resources, and accelerates the exchange of information between suppliers, distributors, retailers, consumers and auxiliary industries.
Based on the above, the overall target is to identify the main stages of creating digital agricultural regional ecosystems (Figure 1).

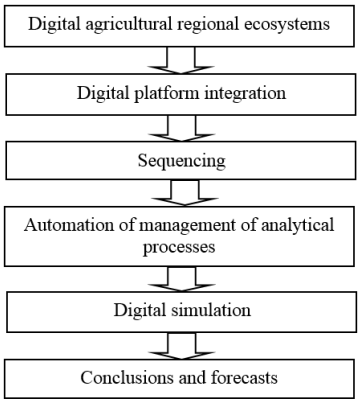

Figure 1: Stages of creating a digital agricultural regional ecosystem of the agricultural sector

Primarily in the digital ecosystem, an integrated digital platform is needed that protects information from interested parties; automates the development and analysis of the data array; manages potential costs and revenues.
Secondly, as in every process, there must be a sequence of actions. Technologies and knowledge must be organized, structured, modeled and planned so that their ideas of decision making are practically applied in this area. Many of these technologies currently exist outside the digital ecosystem, and, accordingly, they need to be modeled and integrated in digital form in order to improve decision-making processes and create value for stakeholders.

Each individual technology should be considered regarding its contribution to the decision-making process. Thus, visualization should be performed in digital form, analyzed and integrated with other information already known.

A key application of the digital environment is the automation of analytical process management, which analyzes a specific body of data that exists in very large files that must be transferred through available communication systems and can be stored and analyzed in a timely manner, as needed, and in a cost-effective way. This allows you to move from planning and describing data to forecasting and diagnostics. At this stage, you can get answers to the questions: what happened, why it happened, and how it can be mitigated.

Digital modeling allows you to consistently:
- form groups of endogenous and exogenous variables and determine the relationship between them;
- to organize the process of building econometric models, identifying the results of the functioning of enterprises of the agro-industrial sector;
- predict the spatial indicators of the activities of agricultural enterprises;
- rank the factors from the smallest to the largest variable;
- develop a digital model of the occurrence of certain events to ensure continuous monitoring, forecasting and planning.

The considered stages are only some of the main elements that need to be integrated into a single whole, which will allow you to choose the best option for making a management decision and ensure the greatest effectiveness of the proposed and (or) implemented measures.
Digital agriculture must be economical and scalable, and the platform must create and provide value to all stakeholders. Savings, scalability and value creation ensure that the platform and its capabilities presented are used and successfully integrated.

CONCLUSION:

The studies conducted in this paper prove the undoubted advantages and prospects for creating digital agricultural regional ecosystems and preparing its participants for effective interaction in the digital economy.

Taking into account the results obtained, the effective development of agricultural territories requires the introduction and use of information and communication technologies, digital information processing and storage technologies, as well as the creation of digital agricultural regional ecosystems, which will contribute to:

- reduction of labor costs;
- optimization of production and logistics processes;
- organization of remote control;
- departments, technological and technical complexes, equipment, units and service;
- reduce the number of intermediaries between producers and consumers;
- rational use of natural resources in order to ensure resource conservation;
- improvement of ecology;
- implementation of social projects: open education, provision of remote consultations, etc .;
- building up scientific, information and communication, natural and ecological potential;
- modernization of infrastructure and technical equipment [16-20].

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