



THE DIGITAL TRANSFORMATION OF AGRICULTURAL BUSINESS - MARKET TRENDS AND CHALLENGES

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ABSTRACT

Digital transformation is necessary for today's business to remain relevant, competitive and successful. Different technologies bring different benefits to businesses. They help to organize and optimize processes, work more efficiently and create successful products and services.

Key words: markets, digitization, agricultural sector, bio-industry, food safety

INTRODUCTION

In conditions of a dynamic market environment, agrarian business follows trends of innovation, intelligent solutions, digital systems for precision agriculture, technologies for saving resources and higher economic efficiency. The economy, of which the agrarian sector is a part, is becoming digital. The accelerated digitization of Bulgarian agriculture is a necessary process for optimizing production processes, increasing farmers' incomes and yields, achieving a sustainable bio-industry, maintaining food safety in conditions of increased industrialization and new unproven technologies, drastically increasing competitiveness and the increased demand for Bulgarian products on the world market. The digitalization of agrarian business also defines new ways of communicating with customers and distributing new products and ideas.

The aim of the scientific research on the project is to determine the readiness of the Bulgarian enterprises in the agrarian sector for the digitization of their business or how many of them are already benefiting from it.

To achieve the goal, the following tasks are set:

1. To analyze the state of digitization in Bulgarian agriculture.
2. To study the models existing in the scientific literature for the assessment of the economic sustainability of agricultural production, the processing enterprises of the food industry and the trade in food products, by developing a comprehensive model for the assessment of the economic sustainability of the food chain in the conditions of digitization.
3. To establish the market trends in this area and to identify the problems and challenges facing agrarian business in the context of digital transformation.
4. To explore innovative methods and models in the digital world and their integration with the agr sector.
5. To analyze the problem areas that affect the sustainability of farms and offer recommendations for increasing the sustainability of agricultural farms in Bulgaria in the conditions of digitalization.
6. To reveal opportunities for increasing the sustainability of short chains and local consumption of agricultural products in Bulgaria in the process of digital transformation.

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The digital economy as a modern form of business development is gaining ever larger scales and applications in various industries. As its main aspect, the digital transformation was considered, which is defined as a strategy with the help of which enterprises today adjust their activities. Initially, digital technologies were considered to be a supplement to traditional business, but now they are permanently changing the notions of it and are the basis of modern business. Business digitization requires an understanding of modern technologies, following business trends and knowing the users. Digital transformation is necessary for today's business to remain relevant, competitive and successful. Different technologies bring different advantages to businesses, helping to organize and optimize processes and create successful products and services. Digital transformation enables companies to survive and thrive in times where technology is everywhere. It is part of the main priorities of the European Commission for 2019-2024 ("Europe prepared for the digital era"), for the development of Bulgaria for the period 2020-2030, for the development of cities, individual industries and business organizations.

The relevance of the researched scientific problem is expressed in the significant growth of interest in the digital transformation of business in the European Union and Bulgaria. Successful business transformation requires the right choice of approaches and platforms for its implementation. They must ensure the creation of applications that are maximally efficient and at the same time consistent with the resource capabilities of enterprises. The research focus, in the scientific research project, is placed on the digitization of the agricultural sector, due to certain reasons. Trade in agricultural products is of great economic importance both for Bulgaria and for Europe, and in recent years the interest in it has increased significantly. Following digitization strategies becomes a significant prerequisite for increasing the quality and quantity of Bulgarian agricultural products. This leads to better competitiveness in the international market. Digitization generates opportunities for better environmental protection and new dimensions of agricultural production development. The digital transformation of

agribusiness can be defined as a "change" that drives organizational processes in a different way than traditional ones. As a rule, digital transformation begins in parallel with the earliest emergence of information and communication technologies. In this direction, parallel to the transformations in the economy, the websites that connect the agrarian companies and their customers enter the agrarian business, then digital processes appear to support customer interaction. Due to increasing ambitions of agrarian companies, the need arises to form digital teams to manage new social and mobile channels. This need enables organizations to leverage digital data on their own operations and interactions. After the introduction of various innovative solutions, agricultural companies are starting to work in digital networks that provide them with all the necessary resources to process the information they need and do business. The digitalization of agrarian business also defines new ways of communicating with customers and distributing new products and ideas. One of the main objectives set in the Horizon 2020 Work Program, as well as in a number of national regulatory and operational documents, is linked to the European framework for research and innovation in food products, including organic products and food security, set out in the FOOD program 2030. The emphasis is placed on the diet of European citizens and the need to take a number of measures to improve it, by adopting higher quality food products (e.g. organic products), while ensuring the sustainability of the entire production-storage chain -transport-trade in food products.

The COVID-19 pandemic has "put" food supply chains under unprecedented stress related to the difficulty or limitation of labor resources in agriculture, processing, transport and logistics, as well as significant changes in demand. Although the restrictive measures taken, mainly of a health nature, the food supply chains have shown resilience in its entirety and have been able to respond to the increased demand for food, the high dependence of agriculture and related sectors on the import of various food products in different economies, led to economic instability and, accordingly, bankruptcy of a number of economic entities. The overall situation revealed the

importance of open international trade and distribution channels, ensuring timely food supplies when and where needed, which can also be seen as a necessary condition for achieving financial and economic stability. The global pandemic has presented food supply chains with a major challenge related to the greatest risk to food security, namely consumer access to food and improved quality of life through the adoption of safe foods.

Digital technologies are the future of agriculture. They will facilitate the work of farmers and make their production more profitable. Coupled with innovative genetics, climate change will demand ever-newer solutions to help growers produce more with fewer resources. The measures that should be taken by the state in relation to the digitization of the agricultural sector are in terms of increasing the digital skills of farmers and those employed in the sector; encouraging young professionals; access to trainings and consultations; financial incentives by reducing the tax burden when implementing digital solutions at the farm or settlement level.

The development of digital technologies and their penetration into all spheres of economic and social life necessitates a rethinking of the approach regarding the utilization of their exceptional potential for increasing the competitiveness of the Bulgarian economy, strengthening demand and supply and the efficiency of public services and successfully dealing with the main social challenges in the period until 2030. Digital transformation is a process characterized by the ubiquitous implementation and combination of digital technologies in all spheres of social and economic life. And a process of technological development of Bulgaria is necessary to create conditions for innovation and business growth, increasing the efficiency of the workforce, a competitive digital economy and a high standard of citizens. O has a great impact on the transformation of society and the related changes in the labor market. (1-3, 5)

Digital transformation, along with the "European Green Deal", is also a top priority at the European level. The COVID-19 crisis has also confirmed the need to accelerate digital transformation in

virtually all economic and social sectors. Investments in digital technologies are also investments in achieving the ambitious goals of the European Green Pact, such as building a clean and circular economy, smart mobility, energy integration, precision agriculture, etc. The pandemic has proven the ever-increasing importance of digitization for all aspects of the economy, society and government. She also confirmed the need to build high-speed digital connectivity and harness the potential of data by removing barriers to its sharing.

Digital transformation must be built on a sustainable, competitive and human resource-based data economy that must be based on data quality and respect rights and privacy. Connected data will be a major source that will power the digital economy. Digitization will strengthen the export orientation and competitiveness of the economy and the transition to a circular and low-carbon economy. Businesses should be encouraged to contribute by modernizing their technological base, adapting their business models to future changes, implementing the principles of sustainable development and taking advantage of digital-based innovation. (1, 2, 9)

Digitization will enable the agricultural sector to realize its high potential by achieving increased productivity, adding value, improving quality and safety, thus incomes and quality of life, drastically reducing pollution to sustainable levels, flexible and fast reacting to market trends. The main goal of the digitization of Bulgarian agriculture and the related agricultural business is to turn it into a highly technological, sustainable, highly productive and attractive sphere of the Bulgarian economy, improving living conditions in rural areas.

In conditions of a dynamic market environment, agrarian business follows trends of innovation, intelligent solutions, digital systems for precision agriculture, technologies for saving resources and higher economic efficiency. The economy, of which the agrarian sector is a part, is becoming digital. The accelerated digitization of Bulgarian agriculture and rural areas is a necessary process to reduce the bureaucratic burden, optimize production processes, increase the incomes and

yields of farmers, achieve a sustainable bio-industry, maintain food safety in conditions of increased industrialization and new unproven technologies, a drastic increase in competitiveness and the increased demand for Bulgarian products on the single European and world market. The strategy for the digitization of agriculture and rural areas of the Republic of Bulgaria foresees the following areas of activity to develop the potential of the Bulgarian agrarian economy: building and developing an appropriate digital infrastructure for communication and connectivity; investment in modernization and technologies for precision agriculture; development of digital networks and use of software applications in business management and decision-making; awareness, training and advisory services for the development of digital skills and qualifications, research and innovation, partnership for the exchange and transfer of innovations, development of infrastructure for experimentation and access to it. This area of impact corresponds to priority 6 "Sustainable agriculture" in the national program "Bulgaria 2030" and to Goal 2 "End hunger - achieving food security and better nutrition, promoting sustainable agriculture" of the Sustainable Development Goals of the United Nations.

Digital agriculture in Bulgaria began its development in the last decade with the introduction of new technologies such as ground sensors, satellite images, GPS receivers in agricultural machines, etc. There are a number of companies in the country that create software products and applications aimed at the agricultural sector and especially at specific customers and according to their requirements. One of the priorities for the new EU CAP programming period is to improve the spread of knowledge, innovation and digitization in agriculture and rural areas, which will significantly contribute to increasing the competitiveness of the agricultural sector and ensure a higher return on investment. (5, 8, 9)

The transformation of Bulgarian agriculture that took place at the end of the last century and the changes that occurred in its structure, based on the guidelines of the Common Agricultural Policy of the European Union and supported by financial

support on its various pillars, led to the concentration and specialization of Bulgarian agricultural production. The specialization of the Bulgarian producers lowered the diversification levels of the manufactured products and led to dependence on the import of a number of food products in the country. In the conditions of a pandemic, the logistics chain is destabilized, and the national economy is placed before the expectation of the population to satisfy the need for food products. At the same time, access to labor resources for the needs of agricultural production is limited, as well as access to some established distribution channels (for example, the closing of restaurants leads to a lack of wholesale demand for some food products, for which, in the absence of an established commercial distribution channel of small this can lead to significant economic losses for producers). (3, 4, 9)

CONCLUSION

Digitization can also help to improve the availability of information on product characteristics – an electronic passport of the product. One of the main points of business models based on the circular economy is that, instead of the usual sale, durable products are leased, rented or owned and shared where possible. Therefore, the transition to product-service systems is recommended as one of the key solutions for accelerating the transformation to the circular economy. Information and communication technologies are changing the way business processes are innovated. Through the tools of digitalization, the process of testing and diffusion among users of innovations is facilitated. In modern conditions, the creation of consumer interest in a given product of agrarian origin can be assisted by social networks, considered as new channels for information and distribution. (6-9)

Digital health is a natural application field for the products and services created by the digital economy. It is planned to build and/or upgrade and integrate information systems in digital healthcare with information systems in other areas with a view to improving prevention and the quality of life of citizens. (6-8)

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