THE ROLE OF DIGITAL TECHNOLOGIES IN AGRICULTURAL ORGANIZATIONS

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INTRODUCTION. Today, we can see the active use of digital technologies in all sectors of the economy. The agrarian sector, which plays one of the main roles in improving people's well-being, is no exception. In this direction, large-scale work is being carried out in Uzbekistan, a number of large-scale projects aimed at the digital transformation of agriculture, which will fundamentally change agriculture and rapidly introduce advanced and innovative solutions to the sector, are being implemented. Of course, the scientific approach is of great importance in achieving the set goals. The development of not only one field, but the entire country depends on the actual and required scientific research. Based on this, on October 29, 2020, the head of our state signed the decree "On approval of the concept of science development until 2030". The purpose of the document is to ensure the wide use of innovative potential with the full mobilization of scientific, intellectual and financial resources, and to determine the priorities for continuous reform of science in the future.

It should be noted that the first steps were taken in this regard today. One of them is an innovative pilot project on agricultural land management using the "Monterra" artificial intelligence platform in the Andijan technology park. Within the framework of the project, six directions were selected, they were digitized in vector format and included in the online platform. The platform analyzes satellite images. This software tool works on the example of clusters in Andijan region. With the help of the platform, agricultural land owners will be able to receive the necessary recommendations using satellite technology based on the results of the research.

The convenience of the electronic system is that it is used in the process of processing, packaging, cleaning, sorting and delivery of the product even after harvesting. Smart farming technologies also play an important role in achieving high productivity and quality, reducing water consumption and production costs, crop planning and forecasting.

In the field of introduction of innovations in agriculture, first of all, it is based on the concept of "Smart Agriculture", which allows rational use of available land, water and other natural resources. It consists of tasks such as the introduction of modern tested forms of agricultural production, maximum automation of agricultural production in the agrarian sector, increasing productivity and improving financial indicators, as well as promoting the introduction of innovative ideas, developments and technologies that allow ensuring the country's food security.

In accordance with presidential decrees and decisions, starting from 2020, the state cancels the market order for cotton and grain in order to expand market mechanisms in the agricultural sector and increase the interest of farmers. In this regard, the head of our state signed the decree dated January 28, 2020 "On measures to implement the tasks set in the strategy for the development of agriculture of the Republic of Uzbekistan for 2020-2030 in 2020".

The main goal of the concept is to increase the yield of agricultural crops, increase the productivity of livestock, protect agricultural areas from diseases, pests, including insects, and weeds, as well as introduce modern farming methods and increase the scale of production. Due to the introduction of the concept, labor productivity in the field will increase by 30 percent and cotton picking will be done with full machinery. The creation of stress-resistant, fertile, transplantable varieties of agricultural crops rich in biologically active substances is 100 percent guaranteed. The use of satellite data and remote sensing technologies allows for quick and accurate assessment of the condition of agricultural land and the crops grown on it. Another important direction is to increase the number of objects designed using "smart greenhouse" technology to 500.

An automated production system will be introduced in animal husbandry, as a result of which the cost of production will decrease by 15%.

In the issue of digitalization of agriculture, it is desirable to implement it, relying on the experience of developed countries. The world's transition to "smart" agriculture is slowly but surely taking place. Most of the market (53 percent) is located in North America. IT-technologies are actively used in the cultivation of grain crops on land, and this is called "precision farming". In general, many countries confirm that they are actively developing their agriculture through the transition from "analog" to "smart".

Of course, completely different machines and aggregates are needed to work on them. It is worth noting that the world's leading companies producing agricultural machinery have already started defining their development strategies based on the needs of digitalization and automation of farming processes.

For example, the US company John Deere (Deere & Company) is one of the world leaders in the production of agricultural machinery. The company has begun to introduce IoT (Internet of Things) sensors and web-based interfaces to its tractors. Europe is currently lagging behind the United States in terms of the level of use of "smart" devices in the field of agricultural machinery.

Unmanned vehicles. According to Tractica consulting company, by 2024, the supply of agricultural robots will increase by 32 thousand to 594 thousand units. Analysts focus on the following important areas of application of robots in the agricultural production complex (AIChK):

✓ *driverless tractors and flying machines;*

✓ *management of material resources;*

✓ *automated systems of agricultural vegetation;*

✓ *forest and underground management;*

✓ *automated systems of management of cattle farms.*

In addition to reducing the impact of the human factor, self-propelled systems installed on tractors and trucks have another important advantage: they allow to reduce the theft of grain and fuel.

Intelligent farms can use not only driverless vehicles, but also drones equipped with cameras and high-sensitivity sensors. They have the ability to conduct research on agricultural plots for several hours, convey the data collected by cameras and sensors to the farmer, create an electronic map of the fields in 3D format, calculate the normalized vegetation index for the purpose of effective fertilization of crops, mark the ongoing work, protect the land and other opportunities. Currently, unmanned aerial vehicles are widely used in agriculture in the USA, China, Japan, Brazil and EU countries.

The use of sensors in farming is an important step in creating an intelligent farm. From a distance of tens of square kilometers, they can provide continuous information about the condition of the controlled objects - mainly soil moisture level, temperature, plant health level, fuel reserves and other important parameters - through radio channels.

For example, sensors installed at control points are adapted to detect the main systems of soil properties. Sensors provide preliminary information about natural diversity (relief, soil type, light, weather, number of weeds and pests), diseased plants, productivity. Sensors and sensors help not only to grow crops, but also to maintain a full crop. All of this provides a smart approach to plant care.

Electronic devices also help in the efficient management of livestock and fisheries - monitoring the location of cattle and weather changes. Through such devices, farmers have already learned to detect signs of animal pregnancy, milking time and disease.

A great example of this is Find My Sheep, a computer-aided solution for cattle tracking via satellite. The sensors of this system show the movement of any animal on the map and attach them. Another system of "General Alert" not only monitors the animals on farms, but also checks their health.

Consumers of the introduction of intelligent technologies in agriculture are, of course, farmers and farm managers. And technology providers are suppliers. They are responsible for developing innovative software or mobile applications for consumers, M2M equipment, sensors and tracking devices, communication channels, data analysis tools and other smart solutions. However, not every farm (every farmer) is connected to the Internet. Even a small farm needs enough investment to connect to the grid. How to help low-budget farms? The Japanese media corporation SoftBank completed a flight test of smart sensors in Colombia in July. Designed for paddy fields, this device measures soil and water nutrient content, moisture and temperature levels and sends the collected data to individual farmers via smartphones.

Despite all its advantages, smart agriculture is still in its infancy. According to a report by the US company "Trimble", only one in four farms in the world uses a data collection database. Financial factors (establishment of such infrastructure requires substantial initial investment by farmers) are a reasonable obstacle to this. In addition, data security, specific farming policies and weather also make most farmers hesitant.

SUMMARY AND CONCLUSIONS. Technologies that have come a long way are still in development today, and web-interfaced devices and services are much more popular, so interest in the Internet of Things is at a record high. Traditional farming methods cannot keep up with the growing demand for food, so farmers are increasingly turning to smart agriculture. And there is no doubt that

this is one area with a bright future. In short, the land of our country is fertile, if we plant a stick in spring, it will bear fruit in autumn. However, if we take into account the fact that our population is increasing year by year, water, electricity and other natural resources are limited, we realize how important "smart" agriculture is. Therefore, implementing a modern system in the agricultural sector is one of the important tasks.

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