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ANALYSIS OF PRODUCTION ACTIVITIES IN THE PROCESS OF DIGITALIZATION OF INFORMATION SUPPORT

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Abstract:

The article discusses approaches to the correct formulation of information support for an agricultural producer. In modern conditions of introducing digital transformation processes into the economy, for the food security of the population, the digitalization of agriculture is a priority. The results of digitalization of information support, the organization of a digital platform for an agricultural producer are analyzed, quantitative estimates are given.

Keywords: informatization, online information system, digital platform.

INTRODUCTION

Decree of the President of the Republic of Uzbekistan dated October 23, 2019 N UP-5853 "On approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030" and with the Decree of the President of the Republic of Uzbekistan dated October 5, 2020 No. UP-6079 Strategy "Digital Uzbekistan - 2030 » the beginning of the process of digitalization of the economy in general and agriculture in particular. The solution of this task primarily implies the development and implementation of a national platform for digital state management of agriculture, the Digital Agro-Industrial Complex platform, integrated with other specialized subplatforms at the republican and regional levels, which will give agricultural producers the opportunity to receive state support through a single national digital platform, including all the necessary information for farmers[1,2].

The development of an interactive advisory information system can solve this problem[3]. This system is capable of delivering useful information to various places on a daily basis. At the same time, with the help of expert systems, the consumer will have the opportunity to conduct an online consultation in the selected network. The consultation itself is carried out by a separate module, namely a Specialized Expert System, which will be located on the same server with the information system in contact with the user, or by placing expert system on a separate server, and the system will again submit an application via the Internet. The interaction of the modules is shown in figure-1:

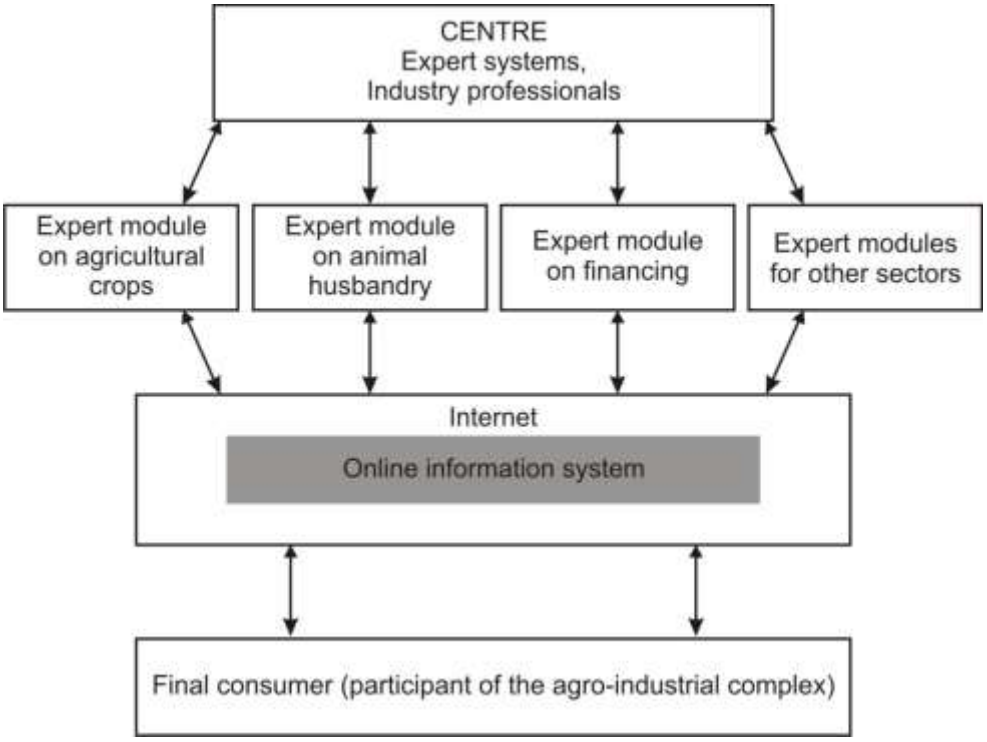

Figure-1. AIC online information system.

What are the challenges in developing and implementing an online counseling system? The creation of such a global information system implies its high efficiency. But here it should be borne in mind that the effectiveness and quality of the online consultation completely depend on the information that people provide to the system and scanning. At the same time, it will be possible to introduce the use of such systems only if people transmit complete and undamaged information to these information systems.

In the future, it is necessary to understand that data collection, processing and storage is an important part of enterprise management, the human factor that works in the network. Information and information about production should be processed in a predetermined form and form an organic part used in the operation of various information systems. This requires the use of computer technology at all stages, and then on this basis it is possible to build other new systems related to changes in the structure of the market, the quality of decisions and specialization of production.

The collection and processing of data on manufacturers and their activities involves significant financial costs. In addition, it is also difficult to design and build a database in which the process will not only be organized, but will also have all the information and on this basis it will subsequently be necessary to solve various issues and problems. There are not only material causes and problems here. The main thing is that to create such a complete database of agricultural information requires full confidence on the part of the manufacturer, his willingness to provide complete and up-to-date information about his products. As a result, in the future they themselves will become consumers of these information systems, and only then they will be interested in it and benefit from it.

RESULTS AND DISCUSSION

If we look at the examples of two farms where the research work was carried out, then these farms located in the Samarkand region differ from each other in their geographical and territorial location and economic and organizational capabilities: "Abduvakil Dilnoza Dilrabo " FX (ADD) has 18 hectares of land, is engaged in the cultivation of agricultural grain and vegetables, has large and small cattle with a small number; at the disposal of the second farm "Agrobravo" (AB), based on animal husbandry and vegetable growing on 500 hectares, there are 400 heads of dairy cattle, grain, fruits and vegetables are grown, there are greenhouses, 150 people constantly work on the farm and is located in the flat areas of the Akdarya district. As can be seen from these descriptions, Add is located 60 km from the Regional Center and middle-class, while AB is quite well-off and is only 7 km from the Regional Center. Large farms and clusters were not involved in the study, since small and medium-sized enterprises formed the basis of agriculture.

Table-1. The ability of subjects to access information[1].

	Distance from the regional center	Availability of computers	Stationary communication	Broadband internet	Mobile communication	Mobile internet 3G/4G	ICT skills	Access to new information	IoTag application
ADD	60 km	+	-	-	30%	20% / -	10%	10%	-
AB	7 km	+	+	-	40%	30% / -	25%	20%	-

In order to evaluate the effectiveness of the online information and consulting portal system, a special online simulation consulting service was created for these two farms. In the production processes of farms, they tried to convey information that would be necessary for decision-making, to give advice on emerging issues. The issues were summarized mainly due to production technology, fertilization, seed selection, agrotechnical measures, harvesting, processing, logistics and sales.

Table-2. Impact of information on opportunities[1].

Knowledge expected from online service	ADD (in %)		AB (in %)	
	Before research	After research	Before research	After research
ICT skills	20	80	70	90
Internet technologies	20	60	45	65
Legal framework	15	55	50	75
Opportunities	70	85	80	95

[1] based on the author's research.

Obligations	80	90	90	95
Production process	40	75	80	95
Weather forecast	30	70	50	70
IoTAg application	10	70	60	75
Agrotechnical activities	35	75	65	90
Soil processing	45	75	75	95
Application of fertilizers	50	80	80	95
Selection of seeds	30	80	80	95
Melioration	50	75	75	90
Selection	15	65	70	90
Energy and resource saving technologies	40	90	70	95
Chemicalization	20	70	75	95
Technical support	30	70	70	95
Attracting specialists	15	55	60	85
Salary	20	55	70	90
Fuel and lubricants	40	70	60	85
Harvesting	45	75	70	95
Crop processing	20	65	70	95
Storage services	30	70	70	90
Logistics	35	70	75	95
Product sales	50	75	80	95
Quality control	45	85	80	95
Bank services	30	70	75	90
Insurance	10	70	40	75
Taxes	65	95	80	95
Expanding production	20	70	80	95
World market	10	65	80	95
Consumer Feedback	15	70	70	95
Excellence of service	10	80	50	90

According to the results of the analysis, it was found that the farm, which has small financial capabilities and is located further from the regional center, has a lower level of information than the one that has wider capabilities and is closest to the center. The conditions for the proper organization of information support equalize the possibilities of various farms to obtain information necessary for making decisions in production. While information updates in AB averaged 20%, in ADD this figure increased by more than 40%. The impact on production also varied significantly.

Table-3. Economic indicators[2].

	ADD (mln. sums)		AB (mln. sums)	
	Gross income	Gross expenditure	Gross income	Gross expenditure
2018	176	35	16820	7140
2019	220	45	17314	7364
2020	256	64	17717	8221
2021	289	62	18345	7645

If we pay attention to the period up to 2020, in which the research work was carried out, the indicators for accounting for production capacities and capacities and inflation in farms are growing at a pace. We will describe the changes that have been made since 2020. With the help of the created simulation information system, we started working with the planning of the season in the winter months. Seasonal expected weather forecasts, land preparation, selection of fertile and adapted acreage, irrigation methods, methods of effective cultivation, application of energy- and resource-saving technologies, productive use of labor, daily monitoring and registration of changes in crops, chemistry, protection from diseases and pests, compilation of dossiers experience in cultivating varieties, harvesting, processing and storage technologies, the following indicators were achieved by providing information necessary for decision-making and providing a good offer when performing successive stages of ownership and sale:

Table-4. Growth of economic indicators[2].

	ADD (in %)		AB (in %)	
	Saving costs	Income growth	Saving costs	Income growth

[2] based on the author's research.

Production planning	36	19	18	12
Soil tillage	20	10	5	2
Selection of high yield varieties	- 80	200	12	8
Irrigation methods	14	18	5	26
Fertilization methods	56	20	6	12
Fuel and lubricants	10	8	40	15
Chemicalization	18	6	16	12
Diagnosis of diseases	40	23	12	34
Equipment outsourcing	60	40	18	22
Harvesting	12	8	6	8
Processing and storage	6	8	14	18
Ownership and realization	16	20	12	18
Salary	4	14	2	18

According to ADD, the savings averaged 16% and the revenue was 30%, while in AB the savings were approximately 13% and the revenue was 16%. Given the fact that in 2021 there will be no established procedures and costs for new technologies and equipment, the indicators in ADD have also become similar to AB. This led to an increase in the net income index by more than 24%.

If we consider a farm as a small semblance of a state, we can also apply this indicator to the state. Taking into account the level of development of such entities as some modern developed industries - banking, logistics, clusters, this figure will be about 22%[4].

In order to increase production efficiency, new technologies are first needed, innovation, that is, information is first transmitted to where it comes from, to the center of the Republic, then to the Regional Center, and then to districts and farms. The incoming information is also not enough to resolve the issue in terms of volume. Given that a certain amount takes time to the information arrival process, the costs of this time can delay agrotechnical measures. The agrotechnical process, which is ultimately delayed in time, causes the farmer not to achieve the goal that he poured in front of him, which leads to a decrease in the contribution of the district, the region in GDP. Going to the regional and republican center also requires significant road and time costs. Before the head of the farm, the question of timely receipt of up-to-date and sufficient information for the cultivation and production of products is transverse.

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