Goncharenko I.V.

THE PERSPECTIVE DEVELOPMENT DIRECTIONS OF INFORMATION SYSTEMS IN RURAL TERRITORIES OF UKRAINE

Summary

The problem of informatization of rural territorial subdivisions needs the systematic approach to its study and complex solving. The geo-information systems can be the instrument for practical realization of new research approaches and management of rural territories on the basis of spatial representation of processes.

Key words: IT, GPS, database, integration, rural territory.

Problem definition

Modem information technologies which allow to create, save and improve large information files, provide the effective methods of its presentation to a user, became the important element of the society life and means of efficiency increase in the management of all spheres of economic and public activities. The level of informatization is becoming one of the substantial factors of successful social and economic development and territory competitiveness as at internal as external markets. The work is underway on the databases formation within the framework of the functional automated systems of enterprises, public institutions and organizations. Maximum databases are creating in fiscal, economic and social spheres. The databases of legal information are created, the works are being conducted on the creation of basic cadastres and registers: population register, register of legal person, cadastre of real estate, land cadastre. The works are being carried out on the creation of cartographic databases and introduction of the geoinformation systems.

Analysis of the latest researches and publications

The problems of public informative policy formation studied the following soviet scientists: E.l. Boyko, S.Y. Vovkanych, V.M. Geyts, M.l. Dolishniy, S.M. Zlupko, G.l. Kalytych, B.A. Malytskyi, S.M. Mykhalevych, S.I.

Pyrozhkov, l.V. Sergienko, A.V. Shevchuk. At the same time, there are many undecided problems connected with the information technologies in the development of rural territories.

The Conception of the State Development Program of the dataware of agro-industrial complex and rural population of Ukraine for 2007-2011 was developed. The priority tasks of this Conception are the following: the creation of the integrated geoinformation and prediction-analytical system of the agrarian sector of Ukraine on the basis of monitoring of social and economic development of agro-industrial production, agrarian market and ecology of rural territories for the dataware of central and local government authorities, scientific and educational institutions, private sector, agricultural producers, agrarian nongovernmental organizations and associations, consultant services and rural population; improvement of the specialists training system concerning the estimation methods of information needs, information-communicative technologies and information-communicative management in the agro-industrial complex.

Mission statement

At the same time, the problem of informatization of rural territorial institutions needs to be fully solved. The purpose of our research is to define the perspective development directions of information systems in rural territories of Ukraine.

Statement of the base material

The researches confirm, that there is the considerable potential in the dataware of rural territories functioning: developed infrastructure of state statistics; hierarchically built organizational structures (center, region, district), which can provide information gathering and processing, and also its distribution in the reverse direction; highly qualified specialists in information technologies; organizational possibilities for studies and retraining the specialists in IT; scientific and technical information and databases are created;

there are databases concerning modern agricultural technologies; there is the developed research infrastructure.

To the problems of existent information systems of rural territories we should relate the following: insufficient efficiency and reliability of information gathering, systematization, processing and distribution, with the use of inveterate technologies; availability of considerable piece of low quality information; staff deficiency and turnover; considerable deficit of financial resources; realization of narrow departmental interests under informatization project development, lack of complex approach to the formation of territory information resources; the restriction of technical abilities of access to the national and world information resources, which the inhabitants of rural territories have.

The strategic task is the information resources integration of rural settlements within the framework of the unique information system. This task is difficult enough to realize, as the present information resources are oriented to satisfying institution's and organization's needs, without taking the integration prospects into consideration. But many settlements are just beginning the implementation of information technologies, it is worthwhile for them to form the unique integrated databases for satisfying management needs ot territorial institutions.

In our opinion, the information systems of rural territories must include:

• information-analytical subsystem, which will provide the possibility of monitoring, analysis, forecasting and planning the activities of public and local government authorities to achieve the aims of social and economic development, and will be useful for scientific researches;

• functional subsystems which provide the activity efficiency oi public and local government authorities, enterprises and institutions, concerning giving services to population and organizations, and also realization of control and supervision;

• subsystems of access providing for population and organizations to the information about the activity of public and local government authorities, enterprises and institutions, to the regional and local information resources;

• integration subsystems which provide the possibility of organization and electronic information interaction of subsystems, as among them as with the state information systems;

• general information technological infrastructure which provides the possibility of the common functioning of separate subsystems. The important part of information infrastructure which provides free information spread among its numerous information specialized parts, such as sources and users of information, warehouses and databases, processing and spread of information, and others, are telecommunications. Telecommunications should provide safety and confidentiality for users, give infocommunication services of proper quality in any place, any time, at agreed prices.

The instrument for practical realization of new approaches to researches and management of rural territories on the basis of spatial representation of processes is the geo-information systems. Ground areas, agricultural lands, workshops, reservoirs, wood areas, roads, residential constructions, have location in space and size, that is why only technology of spatial databases, can guarantee the adequate computer presentation, will provide the analysis of this information and will give the ability to forecast the variants of development.

For example, current and retrospective monitoring of agro-ecological soil descriptions, relief of the land territory areas, moisture, ecological pollution, distribution of nourishing elements in soils, monitoring of agricultural crops growing and area use form the basis of geo-information system of land use by rural population. On the basis of monitoring data and use of economical and mathematical modelling it is possible to plan the use of ground areas. The information processing and analysis provide the calculation of economic efficiency indexes of the planned and actual activities and possible agro-

ecological consequences.

At the first Ievel-stage GIS - getting (introduction) and visualization the data about the land location and its description (cadastre information, agrotechnical groups of soils, its yield class, land-improvement, nutrients content, various additional information). GIS of agrarian enterprise should contain the following reference books: practice factors on the grading of soil; agrotechnical groups of soils, characterized for the different areas of Ukraine with the marks of crops capacity; nourishing value of forages in the South area of Ukrainian steppe; norms of animals feeding (minimum and maximum possible); norms of crops needs in nutrients (NPK) depending on the production output.

At the second level - analytical - the optimization of use and management of current resources on the basis of mathematical modelling taking the ecological and economic aspects of management into consideration. The optimization criteria and the purpose are defined. The visual distribution of crops is given out in the ground areas.

At the analytical level such system should support the decision-making, i.e. conversationally by the integration process the options are corrected and there is a decision of models. GIS demonstrates the received set of data by sight indicating the possible consequences or contradictions after every decision. If conclusions by these or those parameters are not acceptable at the stage of decision-making it is possible to correct the data.

The perspective direction for rural territories is also the GPS use (GPS - Global Positioning Systems). These systems are already widespread enough. The simplest navigator is able to define speed, movement direction and to reach the destination. The accuracy of location makes on average near 15 meters. GPS-navigators are able to decide as simple navigation tasks (to go out to destination) as difficult (choice of the most optimal route). To build the information society and providing the conditions of social and economic

development of rural territories we should consider the use of the Internet for access expansion to the infocommunication services of rural population. In this connection it is necessary to carry out the state support in the Internet development in the rural regions of Ukraine and to stimulate the use of the Internet services, such as audio- and video- intercourses, electronic education, electronic medicine, the creation of distributed scientific networks, electronic management, electronic trade and others like that. It is necessary to pay considerable attention to the development of all elements of telecommunication infrastructure of the Ukrainian segment Internet which will promote the expansion of services nomenclature and cost decrease in different regions of Ukraine.

It is worth noticing that the issue of current importance is the integration of Ukrainian information system into the international information space. This task foresees the synchronization of national standards, methodologies and tools in accordance with the international standards, and also improvement of communications with t international scientific and information centers.

Conclusions

The development of informatization and telecommunications of Ukrainian rur territories will enable to reach considerable results in all other types of social ar economic society activities due to more clear organization, economy expenses of a types of resources (material, power, labour, financial and others like that), improv ment of work conditions and life of rural population.