

Big Database of Settlements

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Abstract—The digital economy uses big databases. This is an important direction for the development of an Open government. The article describes the characteristics of a large database for settlements. It allows you to make different management decisions. These include obtaining information for the development of forecasts for further development, the formation of strategic plans and scenarios of inter-territorial cooperation, and others. Database program written in Microsoft Access. Access is widely distributed. This is a technological advantage of the database of settlements. The interface of the program is user-friendly. No additional training is required. The database provides information for a specific area and for grouped according to different characteristics. The criteria for grouping are large agricultural producers, the predominance of private subsidiary farms of a certain orientation, the development of local crafts, tourist facilities and others. Identify significant stakeholders of a particular territory. The economic and social interests of its development are determined. Possibilities of attraction of internal and external financial sources are considered. Expanding publicly available information about competitors, investors, perspective directions of development of production.

Keywords—big database, human settlements, Microsoft Access, strategic planning, inter-territorial cooperation.

I. INTRODUCTION

A. Relevance

The digital economy allows for the creation of big databases. This expands the possibilities of information processing. Management decisions become more informed. In certain areas of the database are formed by the creation of an Open government [1]. Data analysis allows you to see patterns that are not available to a person. This allows you to optimize areas of life from public administration to manufacturing and telecommunications. To improve the technology of Big Data collection and analysis, synchronization with other statistical sources will take time [2].

B. The Scientific Significance of the Issue with a Brief Review of Literature

The term "Big data" appeared on 3 September 2008. In Clifford Lynch's article "Big data: How do your data grow?" [3]. Already in 2009, this concept was widely used in the business press. In 2010, there were technological solutions for processing large databases. In 2011, surveys showed the impor-

tance of big data for decision-making. The amount accumulated in the organizations of information are more possibilities of its use. So says 60% of top managers of IBM CEO Study. Four out of five named information vital for achievement of competitive advantages [4]. In 2011, it was determined the specifics of big data: volume, velocity of change, variety [5].

It is impossible to process volumes of heterogeneous and fast incoming digital information with traditional tools. New technologies of information processing have appeared. In the "Alfa-Bank" storage and processing platform Oracle Exadata, Oracle Big data Appliance and hadoop framework. Tinkoff Bank processes data using EMC Greenplum, SAS Visual Analytics and Hadoop. "Magnitogorsk iron and steel works" has introduced service "Sniper", "Surgutneftegas" - platform data and applications "in-memory" SAP HANA [6]. According to IDC research, the demand for big data will reach \$203 billion by 2020 [7].

Big bases and on separate territories are formed. Separate data on separate directions of economic activity are on the websites of territorial and administrative units [7, 8, 9]. On the website on limited number of indicators of Rosstat the database of settlements [10] is located. Wikipedia provides General information for individual cities, towns, farms [11].

Work on formation of databases maintained in different countries and at the global level. Among them are Geolite [12], Geonames [13], Global Land cover Characteristics [14]. In them for settlements names, geographical coordinates, characteristics of a land cover are given.

C. Problem Statement

The work carried out to date on the formation of big data has disadvantages such as the use of highly specialized software, the commercial nature of the use, the lack of accessibility, limited information, the inability to carry out the grouping of territories according to the selected criteria. The purpose of this article is to show the possibility of formation and use of big data for settlements, which allows to eliminate these disadvantages. It is easily programmable and updated, publicly available, can be widely replicated.

D. Theoretical Section

Large data analyzed by Optimization, Statistics, Visualization, Global GRID [15]. Their disadvantage is the need to purchase special programs. This drawback is devoid of the pro-

gram Microsoft Access. There are some applications for the introduction of Microsoft Access in the footwear industry [16], in the fields of gas [17], the activity of scientific institutions [18].

You use Microsoft Access to create a human settlements database. The information and analysis system consists of two parts: data entry and database queries. Sections are interconnected. It allows you to create a variety of samples as settlements in industry, agriculture, tourism venues, etc. For the convenience of users developed switchboard form tables. It allows you to open all the necessary data. The database interface is user friendly. You do not need to learn more to use the database.

A database consists of data entry and database queries. It consists of data entry and database queries. The first part consists of four sections: the administrative affiliation of the settlement, geography, history, current status and directions of its development. The latter includes housing, industry, agriculture, recreation and tourism, service structures, engineering systems, natural resources, protected areas, historical and cultural monuments. When you query the database, you can get information about the history and current state of a particular locality, to select a locality on the reservoir on which it is located, to find information about the localities in which certain economic and social facilities are located. When you click on the name of the settlement displays complete information about it.

The following are some of the database relationships (see Fig. 1).

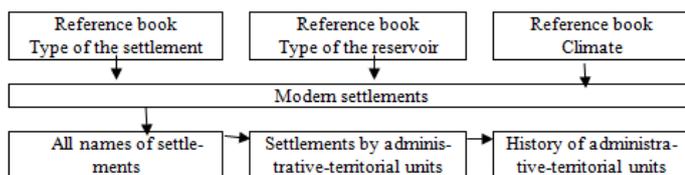


Fig. 1. Diagram showing the relationship of parts of the data.

In work [19] the description of database of settlements is given in more detail. An example of the description of several settlements of the Volgograd region, see [20].

II. THE PRACTICAL SIGNIFICANCE OF THE PROPOSALS AND THE RESULTS OF THE IMPLEMENTATION

A. Practical Relevance and Proposals

The database allows for different statistical samples. Analyze a specific locality and administrative-territorial units. The peculiarities of their development know. Predict scenarios development. Management decisions are more reasonable. The importance of the database of settlements is growing in the planning of inter-territorial formations.

B. Practical Relevance and Proposals

We give examples of management decisions based on the database of settlements.

Village Lobanovo Danilovsky district. The population is stable 900 people. The Krasnodon Corporation - the largest supplier of pork in the South of Russia works at the territory. It is possible to organize a Seating area. Forecast for develop-

ment of the village should be familiar with the plans of the owners of the Corporation "Krasnodon". State and municipal regulation should support this producer. To develop the village Lobanovo necessary with the direct support and interest of large enterprises.

A similar situation (the presence of a large stakeholder) in the village of Sady Pridonya Gorodishchensky district. Its development determines the largest manufacturer of juice - "NPG "Sady Pridonya". This makes it possible to form a point program for the development of micro and small enterprises. Explains the structure of production in private farms.

Shpak farm in Novotikhvinsky settlement of Staropoltavsky district has no large producers of goods and services. The main initiator of development is the CBT (territorial public self-government). The farm does not have an effective production capacity. The trajectory of its development remains unchanged. The build-up of the public product does not occur. At the same time, the settlement center (Novotikhvinsky) can become the basis of the recreation area. This involves the formation of an appropriate development strategy, including the construction of roads and tourist facilities. There is one more direction of development of the settlement. It is the realization of the program of land reclamation in the Volgograd region. On the territory of the settlement is located Valuiskaya experimental land reclamation station. In this case, for the development of the territory, it is necessary to use the tools of public-private partnership. It is necessary to the parties interested in the use of reclaimed land. For example, in relative proximity is a textile cluster in the city of Kamyshin. For him it is necessary to grow cotton. For the development of Novotikhvinsky settlement need different approaches to development.

Consider a tiny settlement - the village of Zaprudnoe. The number of inhabitants is seven people. It would seem that he was dying. The village is located 3 km from Panfilovo train station. In fact, it is a spatial reserve for the development of this railway junction. In the development of the village Zaprudny interested in Railways and Panfilov Elevator. The Elevator is part of the holding "Gelio-Paks-agro". He is a major producer of wheat, barley and sunflower. The settlement can successfully develop, attracting labor resources.

These examples demonstrate the capabilities provided by the generated database. It makes it possible to develop recommendations for human settlements in various areas. These include: 1) changing the trajectory of development of the settlement, 2) integration with other territories (settlements, districts and regions), 3) use of the interests of the main stakeholders, 4) involvement of stakeholders in strategic planning, 5) financial sources of development, including public-private partnership, 6) formation of strategies of inter-territorial agreements for the development of transport infrastructure and tourism.

III. CONCLUSIONS

Formation of Big database of settlements is an important direction of development of the Open Government during the digital economy. It allows you to see the specifics of a particular territory, to carry out a subjective analysis of its stakeholders. Automation of information collection in the database of news will always keep it up to date. Enterprises receive a

source of information about the conditions of production in a particular locality. This will make it possible to decide on the expansion of production capacities, to take into account the peculiarities of existing production resources, the availability and degree of competition, to develop state and municipal development programs.

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