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«BIG DATA» and Opportunities of Its Implementation in Transport and Logistics Organizations

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Recently, large transport and logistics organizations have been using a huge amount of necessary information in their activities, which can come in numerous directions. All incoming information flow is subject to storage, evaluation, analysis, structuring and accounting. Without the use of certain information systems, it is difficult and practically impossible to solve this problem, and even on a large scale.

To solve the existing problem, it is advisable and correct to use the "Big Data" technology

Big Data, also known as macrodata, refers to massive or large-scale data that, due to its volume, complexity or growth speed, makes it difficult to capture, manage or process. However, due to its high potential, more and more organizations are working with this type of information.

Currently the use of Big Data in companies is an unstoppable trend and the transport sector is no exception. Although it is true that it is still in a very incipient phase and many companies are still not applying it in their day to day.

"Big Data" is very important because analysis helps companies and organizations leverage their data and use it to identify new opportunities. It provides a point of reference for improving the organization internally, for example, working in the area of cost reduction or the generation of new products or services.

For example, in a transport and logistics organization, information is collected in three directions:

1) data obtained during the processing of transport applications;

2) data that appears as a result of managing the loading/unloading schedule;

3) additional settings and statuses that the shipper wants to record.

All these data are of indisputable benefit for a logistics company, which can control its activities by structuring incoming information and classifying it in a certain way.

According to the 2020 Teach Pro Research survey, "Big Data" is most widespread in the telecommunications industry, as well as in engineering, IT, and state-owned enterprises. According to the results of this survey, they are less popular in education and healthcare.

According to the results of the same survey, in logistics and transport, only 33% of organizations have implemented "Big Data" in their activities. Consequently, the sales markets for the technology in question in this industry are extensive [1].

In order for "Big Data" to function continuously, resources used for collection and processing are needed. These resources can be divided into 3 groups: software, hardware and services.

Software. Software for the implementation of "Big Data" will be considered, for example, RapidMiner.

The platform is available under various licenses: the free one allows users to use 1 logical processor and up to 10,000 rows of data; the cost of the commercial version of RapidMiner starts from $5,500 per year.

Hardware. Hardware includes: servers and infrastructure equipment. The infrastructure includes:

1) computing resources ($3,500), the main parameters of which are the amount of RAM (random access memory) with parity control and the maximum number of cores;

2) a data storage system (may consist of disk shelves, but computers can also be used in which a large number of local disks are connected – $ 3,000).

Renting a server for the technology will cost within $500 per month, i. e. $6000 per year. The cost of infrastructure equipment is $6,500. In addition to the above costs, a significant part of the costs are personnel costs. Consequently, the total costs will amount to about $12,000.

Services. Services include the construction of a database system architecture, the arrangement and optimization of infrastructure and ensuring the security of data storage. The service costs will cost $3,360.

Thus, the total cost of implementing "Big Data" at a transport and logistics enterprise will cost an average of $25,000. It should be noted that the final price of technology implementation will largely depend on the functionality and configuration of certain parameters. In this example, we consider the minimum cost of the entire set of the system, which can be used as a guideline.

Return on investment. It is almost impossible to calculate the average payback period of the "Big Data" project, since it largely depends on the size of the organization. The most tangible effect is when technologies help to save money or bring additional income. According to the research results, it was determined that the introduction of "Big Data", as a rule, adds about 15% to the profit.

The results of the Economist Intelligence Unit survey confirm the positive effect of the introduction of "Big Data". 46% of companies claim that they have improved customer service by more than 10% with the help of "Big Data" technologies. 33% of companies have optimized inventories

and improved the productivity of core assets. 32% of companies have improved their planning processes [2].

Advantages and disadvantages. Like any other technology, Big Data has both drivers and limiters.

Drivers include: development of information processing methods at the global level; creation of technology parks that contribute to the development of IT; the trend for the use of these systems; implementation of the industry plan for import substitution of software.

Limiters include: the need to ensure data security and confidentiality; lack of qualified personnel; in most companies, the amount of accumulated information does not reach the level of "Big Data"; it is difficult to introduce new technologies into established information systems of companies; high cost.

Big Data has no definite competitors among such information technologies at the moment. However, there is a technology that can be considered as an addition to "Big Data" – Block Chain or, conversely, "Big Data" can act as an addition to the Block Chain. Therefore, there is a possibility of integrating these technologies in the future.

Thus, it can be concluded that "Big Data" in combination with other modern information technologies can significantly simplify some logistics operations, and in the near future make logistics fully automated.

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