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Udachyna Kateryna¹, Petrechuk Lina²

¹ PhD (Economic), associate professor, DMETI USUST

² senior teacher of the Department of Economic Informatics, DMETI USUST

OVERVIEW OF WEB-ORIENTED INFORMATION SYSTEMS FOR AUTOMATION OF LOGISTICS PROCESSES

Logistics processes are very important in various fields of activity. It is a pressing task to build an optimal route for the delivery of goods, as erroneous routing leads to additional costs and affects profits.

Building an optimal delivery route to a specific address depends on the accuracy of the customer's location data, and the accuracy of their geo-coordinates is also important. The use of modern information technologies helps to solve the issues of geocoding data and building a route online.

The aim of the work is to analyze the existing logistics information systems and study the issues of online automation of logistics processes.

Logistics consists of various subsystems [1-2]: production, procurement, inventory logistics, transportation, information, customs, and warehousing.

An important component of logistics is transport logistics, which manages material flows as they move from supplier to consumer. The value of the delivered goods depends on the amount of costs associated with their transportation. These costs are affected by the type of transport, route, number of participants in the transportation process, and other factors.

Modern software applications have built-in GPS trackers that track traffic flows, weather conditions, and fuel prices. Advanced systems can detect problems and prevent unforeseen events. For example, pickers and trackers on forklifts are used to safely transport and store goods, minimizing the likelihood of failures.

Today, the IT market offers a wide range of information systems for managing transportation processes, including the formation of optimal supply chains. The list of popular logistics management software products includes: Upper, Zoho Inventory, Oracle NetSuite ERP, Salesforce, Rose Rocket, Logiwa WMS, Acumatica: Best Cloud-based ERP with integrated logistics and inventory management, SAP, AVADA MEDIA, Fishbowl, Alvys [3].

Most transport management systems are cloud-based TMS services designed for route planning and transport control [4]. The basic functions of such systems are:

- route calculation for a certain number of address points in 10-30 minutes (road traffic is taken into account when determining routes);
- availability of a web-based supervisor interface for working with agents, performing multi-factor optimization when planning routes;
- using of various calculation models according to the customer's needs, visualization of the delivery point on the map and route display; comparison of the planned route and actual GPS tracker data; provision of information on delays and deviations from the route;
- performing analytics (ready-made reports and printed forms);
- access to the route in mobile applications, delivery control, SMS notifications to customers;
- API integration with the accounting system.

Having examined the existing ones, we can conclude that there is no software in the public domain that would solve the problem of forming an optimal route, except for the sometimes offered trial versions.

An analysis of existing information systems that solve problems in the field of logistics showed that the development of logistics software products is mainly carried out to order for a specific consumer and takes into account the specific features of the enterprise's activities. In the future, support and reconfiguration of parameters for specific conditions are necessary.

Therefore, there is a need to create an open information system for a logistics company that would organize the delivery addresses of goods, build the optimal transportation route on an online map, and then save the results.

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