

Role of Information technologies in Logistics

Vinnitsia National Technical University

Анотація

Дана стаття містить інформацію про залучення ІТ до автоматизації процесів логістики, цілі, переваги та перспективи розвитку інформаційних технологій у рамках логістичних процесів.

Ключові слова: логістика, ІТ, технології, відслідковування, ланцюжки поставок, автоматизація, інтернет речей.

Abstract

This article contains information about the involvement of IT into logistic automation, goals, advantages and development prospects of information technologies within the logistics processes.

Keywords: logistics, IT, technology, tracking, supply chain, automation, internet of things.

Smart information technology (IT) is fundamental to success. Leading manufacturers know the importance of effective logistics management. Getting the product to the right place, just in time, and exactly as the retailer demands is crucial to the bottom line.

Smart use of IT enables more efficient, cost-effective movement of product through the supply chain, and provides actionable data necessary to increase productivity, reduce costs, and give the company a competitive edge. Integrating new technology into existing operations can help significantly increase customers service, reduce costs, and streamline supply chains. The new technology must be fully synthesized with existing policies, practices, and people, however, to tap its full power [1]. Often the best way to achieve this is by outsourcing logistics services for part or all of your supply chain management functions. In fact, 74 percent of the largest American manufacturers use third-party logistics services – internet or desktop applications.

But what is the reason of such high popularity of such additional option within logistics sphere? The urgency of the adoption and application of information technology in the logistics associated with the continuous increase of the amount of data to be processed. Usual and conventional methods can't be used to extract the required information from the data stream and that's why they need to be replaced. The most important factor in such kind of technique is the speed of data processing and ability to obtain the necessary information. Information technology branch is perfectly suitable for resolving issues described above.

First of all, it's necessary to look into key values and aims of any successful big company. So, after the analysis three main features were determined which logistic software should solve:

1. The calculation of optimal routes.

Finding the most efficient set of routes can be quite difficult and time consuming. Furthermore, each of routing decisions will impact company's service levels and its profitability.

Transport logistics automation software takes into account the specified parameters: weight of the load, the size of cars, delivery date, the characteristics of the roads and so forth.

What can it give? The delivery time of goods is decreased; the number of transport used is reduced.

2. Delivery on time.

When clients are depending on receiving their order on a set date and time, any delays can cost the business good will. Failures will negatively impact company's reputation and will cost its clients.

Predictable delivery time is one of the features automatic generation of routes. In addition, calculation of routes takes into account the time of the delivery points to avoid transport downtime waiting for shipment.

3. Transparent control of logistics.

As the supply chain becomes more refined and integrated, logistics management has an even greater impact on the bottom line. Every penny allocated to transportation and materials management must be ultra-efficient. But how is it possible with innumerable documents on different machines or with huge blocks of balance sheets or reports?

Nowadays, just using GPS-trackers on cars the specific software is capable to monitor actual routes and to monitor their mileage, monitor the fact, and timeliness of visiting the clients, adjust the parameters for the route calculation based on the statistics collected by service itself and even count the revenue. Convenient, isn't it?

As is now the World Wide Web is becoming more widely used, technologies such as bar coding or electronic data exchange are transformed from technological innovations into a means of automatic identification of modern business behavior. Now, when the logistics efficiency increases, brand-new algorithms appear and let people to earn money, information technologies successfully accompany that process. That's why logistics IT and automation are key points at the present stage of development.

The logistic industry is going through a time of rapid and unprecedented transformation. The future of logistics is paved with innovation and technology. It was not long ago that ideas like 3D printing, the Internet of Things (IoT), drone delivery, and augmented reality were things of science fiction. Today, the industry is cautiously adopting these technologies to provide faster, cheaper, more reliable and sustainable delivery.

Internet of Things is considered to be the revolutionary technology that allows devices to communicate with each other within an existing internet infrastructure without human intervention. Its application in the future of logistics is expected to increase speed, decrease waste and reduce overall costs. Modern researches have shown the impact of IoT on logistics and supply chain management within big companies: 47% said they believe it will have a tremendous impact while 49% said that it would have some impact. Only 3% said that it would have no impact [2].

Another impressive technology seems to be a science-fiction story at first glance, but drone delivery sounds like a new transportation mode in the future of logistics. However, not everyone is so skeptical of drone delivery. 27.31% of survey respondents believe drone application in shipping will occur only in highly specialized areas, such as delivering drugs to remote locations. 36% of respondents believe that there will be some form of drone delivery in 5 - 10 years and 6.3% believe that it will be commonplace in 10 years. Without a doubt, drone delivery faces many challenges just as every new technology.

To conclude, manufacturers should ask themselves how making capital investments—whether updating equipment, manufacturing processes, software solutions, or even supply chain functions—will impact their inventory, customer demand, sourcing strategy and distribution models. Efforts to modernize manufacturing through initiatives such as automation, the integration of cloud-based technologies, the incorporation of additive manufacturing and even the utilization of data management tools all can have an impact on a manufacturer's overall supply chain operations.

Anyway, information technologies give a fresh breath for classical logistics approach, and manufacturers, faced with the prospect of investing in new technologies and equipment to remain competitive must soon answer many large and complicated questions, like this: "How will modernizing manufacturing and logistics operations affect my supply chain and as a result my incomes?"

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Польова Марія Валеріївна, студентка групи ІІІ-12б Факультету інформаційних технологій і комп'ютерної інженерії Вінницького національного технічного університету, м. Вінниця, e-mail: maria.polevaja@gmail.com.

Магас Людмила Миколаївна, викладач кафедри іноземних мов Вінницького національного технічного університету, м. Вінниця.

Polova Mariia Valeriivna, student of the group IPE-12b, Faculty of Information Technologies and Computer Engineering, Vinnytsia National Technical University, Vinnytsia, e-mail: maria.polevaja@gmail.com.

Magas Liudmyla Mykolaivna, teacher of Foreign Languages Department, Vinnytsia National Technical University, Vinnytsia.