

## LEADING LOGISTICS TRENDS IN 2023

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**Abstract.** *This text discusses current trends in the development of logistics in 2023, which include the introduction of automation, digital technologies and robotization in logistics processes. Particular attention is paid to creating warehouse models and flexibility in logistics organization, which allows companies to effectively adapt to changes and maintain resilience to risks in supply chains. In the text, robotics also plays an important role in improving product quality and optimizing orders. Technological innovation plays a key role in shaping the future of the logistics sector and improving its efficiency and competitiveness.*

Modeling using twin criteria improves the competitiveness of companies. It consists of developing virtual copies of objects or taking actions to ensure compliance with their real realities. In logistics, this virtual representation of processes allows you to simulate the layout of your train, as well as the flow of operators and goods. Thanks to the 3D representation of premises, you can visualize your future logistics operations. Additionally, once your composition is running, simulation helps identify inefficiencies and the possibility of undesirable scenarios. She is also able to identify opportunities for improvement to support strategic decision making. For example, you can introduce new selection methods or anticipate how your space will operate if different storage systems are installed.

Logistics flexibility has been key in 2022 and will continue to be so this year. Factors such as omnichannel consolidation, product seasonality and returns management have forced many companies to implement flexible logistics to remain competitive. Flexibility is required at all stages of the supply chain. Having flexible logistics and production activities ensures the availability of stocks for end consumers. At the same time, this limits production, storage and transportation costs. A business with elastic logistics can adapt its trains to unexpected changes without affecting their performance. They can also more easily maintain their competitiveness in the face of supply chain disruption. Flexibility also allows you to have a competitive advantage in order fulfillment, one of the most demanding logistics activities. Flexible order fulfillment is a strategy aimed at tailoring

order picking to complex demand so that products can be delivered from any distribution center, warehouse or physical store [1].

Robotic process automation (RPA) technology—that is, the use of software robots to interact with programs in an automated manner—will play a key role in business processes in 2023. RPA is used to automate repetitive tasks. Such tasks include connecting to web applications, copying and pasting data, moving folders, and creating directories and folders, among other functions. At the logistics level, RPA technology can improve tracking and control of order shipment status. RPA allows you to send messages about delivery times, inform customers about possible delays, and create an electronic delivery document using automatically generated messages. RPA also facilitates the fulfillment of purchase orders based on automated criteria such as price, quantity and frequency. You can also use software to forecast supply and demand by automatically analyzing historical sales data and market performance. This ensures the quantity of products needed to fill future orders and maintain the required amount of spare inventory.

Data mining involves analyzing large amounts of information to identify and extract patterns that reveal useful knowledge to improve decision making in organizations. In Logistics 4.0, automatic discovery of patterns in operations such as goods receiving, order picking and returns can improve inventory demand forecasting and inventory control. Data mining has become more relevant with the advancement of technologies such as big data, artificial intelligence (AI) and machine learning. Automatic data mining techniques organize and filter information to turn it into useful knowledge. In some areas, it helps detect fraud (finance), forecast demand (sales and marketing), and identify problems (industrial and logistics), among many other uses.

Drones are starting to take their place in the logistics industry and could become a mainstay in 2023. International technology companies such as Google and Amazon have been working on prototype drones to deliver orders to customers by air for some time now. Although still at an experimental level, drone delivery has benefits such as lower costs, faster shipments, less road transportation and reduced pollution. Another practice already in use is inventory management using drones. To perform this task, the drone flies autonomously over the train and scans barcodes or RFID tags. It then informs the logistics software about the available units in stock for each SKU. Together with effective product management, this allows you to automatically detect inventory imbalances without dedicating dedicated resources to the task [2].

Also known as sustainable logistics, green logistics encompasses a set of policies and measures aimed at reducing the impact of business activities on the environment. Environmental awareness is becoming increasingly important as companies look to reduce their carbon footprint, pollution and waste throughout the supply chain. Using electric vehicles, supporting collection points and using biodegradable materials are just some of the measures companies are taking to limit waste and reduce energy consumption during their business processes. In 2022, warehouse automation and digital technologies have become the core of logistics strategy. In 2023, it is clear that organizations will continue to rely on new technologies to remain competitive, streamline processes and minimize errors. The goal is to have smooth, flexible logistics operations that can adapt to upcoming changes.

### **Conclusion**

In 2023, logistics companies will continue to strive to achieve flexibility, increase competitiveness and timely delivery of tasks, which will remain the main goals of their activities. To address these challenges, logistics organizations will employ advanced strategies including warehouse modeling, robotic process automation, and enhancements to established technologies and practices, including logistics agility. In addition, the introduction of automated methods for collecting data on air waybill numbers from external web portals has significantly increased efficiency, reduced information processing time, eliminated human errors and eliminated subjective factors. The logistics industry will continue to lead the way in efficiency and sustainability thanks to the continued advancement of logistics technologies and tactics.

### **References**

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