

PROSPECTS FOR THE INTRODUCTION OF SMART DEVICES IN THE REPUBLIC OF BELARUS

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Nowadays, in order to optimize their operations, many companies are integrating electronic devices actively. In freight transportation, for example, this is the emergence of smart containers that have the potential to improve the efficiency of the supply chain providing cost savings [1].

Artificial intelligence (AI) is creating opportunities to make transportation safer, more reliable, more efficient and more environmentally-friendly. Therefore, the adaptation of traditional shipping containers for intermodal transportation is gaining popularity. Using AI devices enables the transformation of everyday containers into smart ones.

The Republic of Belarus has begun to introduce smart devices for waste management systems actively. This process includes several key stages and directions: 1) development of a regulatory framework and standards; 2) financing; 3) recruitment and staff training; 4) public awareness and citizen engagement; 5) air quality sensors [2].

Much progress and advancement take place in technologies resulting in appearance of smart devices for cargo transportation, i.e. smart containers. Smart containers are ISO containers equipped with a number of sensors and devices. They can track cargo providing GPS position and control such parameters as humidity, pressure, etc. in real time. These devices enhance security as they can detect door opening and transmit the data collected by sensors to a central monitoring platform.

The concept of introducing smart containers into the transport infrastructure of intra-republican cargo transportation is impractical, since the Republic of Belarus has no access to the sea. While smart containers in most cases belong to marine ones. It is worth noting that Belarus is an important hub between Europe and Asia. At present, a number of trans-

portation companies mostly use smart containers, because of the advantages mentioned below:

- 1) the ability to track the container location in real time;
- 2) the ability to monitor cargo condition, such as temperature, or humidity, etc.;
- 3) the ability to detect unauthorized access to the container, resulting in cargo security increase;
- 4) the ability to maintain optimal environmental conditions inside the container to secure perishable goods;
- 5) the ability to integrate seamlessly with existing logistics systems;
- 6) the ability to reduce cargo losses and damage, resulting in costs decrease;
- 7) the ability to simplify and accelerate the document flow;
- 8) the ability to increase the competitiveness of a transport company by providing better and more reliable services.

A smart container is a promising technology that can improve the supply chain security, and make the economic potential and competitiveness of Belarus stronger. However, using smart containers does come with a number of challenges and risks. It is easy to integrate these devices, but it's far costlier than utilizing traditional shipping solutions. Besides, companies should invest in system security to prevent hacking and protect your data.

References

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