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Urban freight logistics: innovation and policy across Europe

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A number of recent studies, highlighted by the European Commission's Transport Research and Innovation Monitoring and Information System (TRIMIS) Digest have provided insights into the capacity of innovative technologies and solutions to respond to the challenges of urban freight transport (UFT). But how is urban freight transport changing? This news item will discuss the power of public-private partnerships and the support offered by the European Commission in responding to UFT challenges.

Responding to challenges in urban freight transport

Timely freight transport is vital to the prosperity of many businesses in cities across Europe and facilitates economic growth. However, UFT is associated with a significant amount of air pollution, due to the traditional use of heavily-polluting vehicles. In addition to air pollution, freight vehicles also contribute to congestion, road accidents and noise pollution.

EU funding has been recognised as a key resource for cities that aim to tackle the challenges associated with urban freight transport. In addition, a study in Transport Policy found that many cities viewed engagement in EU-funded projects as essential for obtaining legitimacy in the UFT policy arena, as well as a useful opportunity to collaborate with other cities. The study showed a strong relationship between the level of participation in urban freight transport projects, the level of integration of UFT in local transport policy documents and the level of intervention of UFT policy measures. The study found that the lack of integration of urban freight transport into policy and governance structures was largely linked to a lack of resource available to local authorities to invest in these policy measures.

As the challenges facing the transport mode shift over time, it will add value to local authorities to collaborate with the private sector, as well as learn from the measures and policies implemented by other cities. In addition, establishing dedicated roles in local authorities to champion UFT and track the success of measure implementation will also help to respond to challenges more efficiently. The study also suggests that UFT policy should be developed with non-freight policy measures in mind (e.g. pedestrianisation) to enable the creation of a cohesive urban network.

The role of electric cargo bicycles in urban freight transport

As an increasing volume of traditional freight vehicles adds to air and noise pollution issues in many cities, some urban areas in Europe and North America are witnessing an increase in the deployment of alternative vehicle types for delivery. A study in the European Transport Research Review examines the potential for electric-assisted (EA) cargo bikes to help meet the increasing demand for the transfer of goods.

Current freight infrastructure is unable to meet the diverse and dynamic delivery needs of the last mile, which refers to the final part of the delivery from the distribution centre to the delivery address. This is considered the most costly part of the delivery process and therefore, many companies are introducing EA cargo bikes as an alternative mode for last mile delivery.

The study presented EA cargo bikes as most cost-effective when compared to delivery trucks for deliveries in close proximity to a distribution centre, where there is a high density of residential units and low delivery volumes per stop. Therefore, EA cargo bikes have great potential to tackle some of the detrimental effects associated with heavily-polluting vehicles in cities over the last mile. They have the power to be implemented within the last stretch of the supply chain, particularly in cities that already have well-established cycling infrastructure.

Crowdshipping for urban logistics

Despite benefits, urbanisation and e-commerce present new challenges to urban logistics. However, a number of policy measures could help to balance the benefits (e.g. accessibility and economic development) with the challenges (e.g. congestion and air pollution). A study in the journal, Sustainability, examined the environmental and economic impacts of a 'crowdshipping' platform in urban areas, where customers use public transport to pick up or drop off goods in automated parcel lockers. The study found that the platform had the potential to deliver environmental benefits. However, there was a need for policymakers to offer greater incentives to use this option.

The greatest challenge facing policymakers is the need to redistribute costs and benefits among stakeholders. The study found that subsidies are necessary to enable crowdshipping platform to deliver the social benefits to society. Similar to the EA cargo bikes, crowdshipping has great potential to replace the use of heavily-polluting vehicles for last mile deliveries.

Electric vehicles for urban freight transport

In addition to EA cargo bikes and crowdshipping, electric vehicles (EVs) are also being considered as a potential mode for UFT. A study released by Transportation Research evaluated the impact of policies that promote the adoption of electric freight vehicles and found that there are a number of challenges associated with the transition towards EVs for urban freight:

- High acquisition costs of vehicles
- Long recharging times required
- Low capacity
- Limited driving range

These factors greatly influence decision-making by logistic companies. However, attempts to tackle the high acquisition costs, through providing EV purchase subsidies, alongside exemptions from low emission zones and vehicle taxes, have been found to contribute towards the uptake of EVs. Developments in vehicle technology can also affect a logistics company's vehicle fleet and routing plan decisions. Therefore, as EV technology and charging infrastructure develops in cities, supporting policies will help to drive the uptake of EVs for freight delivery.

Main insights

A number of innovative measures are being employed across cities in Europe to tackle air pollution, noise pollution, congestion and fatalities associated with traditional urban freight transport. Through investing in these technologies, integrating UFT into policy, working with private companies and making the most of EU funding, cities will gain the ability to effectively address the issues associated with increasing demand for deliveries in cities.

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