



THE POSSIBLE CONTRIBUTION OF POSTAL SERVICE SECTOR TO CITY LOGISTICS

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Abstract

The use of traditional postal services is constantly decreasing, prompting the management of postal service providers to look for new opportunities for utilization of available resources and developing the postal service sector. Simultaneously the city logistics experts are looking for a way to ensure sustainable development of the urban areas and fulfill increasing delivery requirements within the city. In Czech and European literature, there is no publication focusing on the interconnection of these two sectors, i.e. postal service sector and the city logistics. Foreign literature provides a number of papers related to the possibility of cooperation between the postal service sector and the city logistics. The analysis of these papers and the proposal of possible solutions respecting local conditions in the Czech Republic is the aim of the paper.

Keywords

postal services, city logistics, reverse logistics, urban consolidation centre

1 INTRODUCTION

The problems of city logistics, which has been designed to ensure sustainable urban development in the city, are the object of experts', politicians' and public attention. The main cause of such interest is the deterioration of the state of the cities around the world, especially in the ecological, economic and social aspects. One of the main cause of urban unsustainability is the development of e-commerce, which results in higher demand for parcel delivery and larger numbers of trucks in cities. Changes in the transport market, wherein the current post-liberalization era is a considerable competitive pressure, lead transport companies to offer more frequent and smaller supplies for the maintenance of the competitive position of the company. It causes a higher number of journeys and the inefficient use of the cargo space. The lack of interest of large shipping companies in the problems of city logistics and urban sustainability causes a permanent deterioration of the whole situation, especially in large cities. Another reason of unsustainable cities is the increase in individual car traffic in cities, mainly due to the rising trend of urbanization. According to the United Nations 54 percent of the population currently lives in urban agglomerations and according to the prediction about 66 percent of the population will live in cities by 2050 [2]. Besides the growth of the urban population, the trend of growing goods' flows is continuing, which leads to the increasing activities of the road freight and light commercial vehicles [2]. Negative impacts of growing trend of road transport are related to the economy (prices

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increase), society (damage to human health, accidents, noise and lower quality of life in the city) and environment (emissions and consumption of non-renewable energy) [3]. A lot of authors (Tadič, Taniguchi, Witkowski) outlined sustainability as a way to ensure economic, ecologic and social prosperity in city logistics. Sustainability can be characterized as a development that provides the needs of present and does not compromise the ability of futures generation to ensure their own needs [4]. In term of city logistics, it can be characterized as an urban development and ensure the consumers' needs for goods' flows in a way that not damages the liveability of a city for the future generation. There is a need to create a balance between smart economic growth and cleaner, safer and quitter agglomerations and a risk of disaster due to global climate change, so urban transport should work in a way where the cities are more sustainable and liveable [5]. The efficient city logistics system can be a way how to achieve this balance. City logistics could be characterized as a process of planning, implementation and monitoring effectiveness of people, freight transport and information flows in urban areas in order to improve quality of life in the city [6].

The postal service sector in Europe has changed since the end of 2012 year, when there was complete liberalization of the postal service sector. National postal providers in Europe have thus lost their monopoly position within their territory and are now facing a great competitive pressure especially from the global courier, express and postal service providers. The development of digital technology has changed the way of communication and has reduced the use of basic postal services. At the same time, the volume of parcel delivery grows mainly due to the development of e-commerce. Currently, the national postal providers are looking for a possibility to maintain its market position and develop new services and direction to satisfy the growing demand. However, due to licensing mode for the basic postal service, the national postal operators continue to provide services just like before liberalization, on the other hand, competing companies mostly apply the strategy of cream-skimming and offers just profitable services such as bulk mail or parcel delivery. The situation has led to the fact that a large number of trucks from different companies are currently daily circulating in Czech and European cities, which returns us to the city logistics problems.

The research of Czech and European literature shows a lack of publication focusing on the city logistics and postal service sector problems and a possible sustainable solution. Foreign literature (mostly from the USA) provides a number of papers related to the possibility of cooperation between the postal service sector and the city logistics. The analysis of these papers and the proposal of possible solutions respecting local conditions in the Czech Republic is the aim of the paper.

2 THE CURRENT STATE OF CITY LOGISTICS AND POSTAL SERVICE

As was pointed out before a huge demographic shift has a global trend: people leave rural areas and move to large cities. Cities, that are already trying to provide adequate services to residents, will be exposed to more pressure with the growth of their population. That's why cities are focusing on extensive data, analytical and digital technologies in order to improve the management of their territory. In an effort to solve the main city logistics problems, for example, traffic congestion, poor air quality, and infrastructure maintenance, the government of the cities seeking for a new smart solution. The postal operators could support the cities initiatives in the city logistics efforts, due to the extensive network, the postal operator could be a platform for collecting important data [7]. On the other hand, it is difficult for cities to begin a cooperation with postal provider due to several factors, for example, money, technology expertise and data collection and storage.

The historical position of postal service providers is changing in all countries in Europe and in the world. Until recently the postal service has been fundamental for many businesses like banks, logistics, retails, communication and the other. On the other hand, the growth of alternative communication channels has affected the role of postal service and changed the traditional postal

value chain. With the aim to adapt to new circumstances, postal service providers (providers of postal services need to find a way to ensure the added value services to customers) use the benefits of the digital and paper world. Nowadays the consumer has become the central point of the parcel value chain, due to it the receiver requires to choose from the different options of delivery, for example, speed of delivery, reliability and convenience. While the customer requires to have an option to redirect or postpone the delivery, postal services providers stuck in the past with traditional postal value chain (the items are collected, sorted, shipped and delivered to recipients) [8].

The main problem of future cooperation is the city governments need to invest in city logistics projects and on the other hand postal services providers need to invest in information technology. The willingness of the governments of the cities to invest the limited resources to the unproved city logistics project varies from one city to another. Often, pilot projects are funded by the private sector or the state grant, but in the long run, the question of funding is still undetermined. Due to similar financial problems and some similar initiatives like to cut down carbon emissions, the idea of cooperation between the city governments and the postal service sector can be useful. The postal service sector can represent the opportunity for the cities to start city logistics projects. Interviews with cities governments show that all participants saw postal service operators as valuable partners, mostly thanks to the ubiquity infrastructure that crisscrosses almost every town daily and postal vehicles that travel down almost every road every day [7]. Cities in Europe and around the world can benefit from the cooperation with the postal service sector. Increasing the effectiveness of postal service providers in any city would mean reducing trucks from private logistics providers in the city center, which would lead to the fulfillment of the goal of city logistics, such as an improvement of traffic, emission and noise situation in cities. Thanks to it postal service provider could better manage the logistics, keep costs under control and invest the money saved from the cooperation with cities to meet the customer expectations and retain the leader position in a highly competitive market.

However not just the cities could be benefited from such cooperation, collaborative city logistics projects could also have a positive impact on postal service providers. For example, cost saving and efficiency gains (as materially benefits from improved pavement conditions and as a result a decreasing of vehicle deterioration, less frequent repairs and reduced fuel consumption). Furthermore, the appropriate city logistics system in the city is aiming to improve traffic flow, so the postal provider's drivers would spend less time in traffic congestions and by that improve the service of delivery on time for customers [7]. In case of saving time to ensure last mile delivery, postal service providers could also provide effective reverse logistics. At the present time, reverse logistics is taken as a big challenge and costly ineffective area for logistics providers as well for society as a whole, because of externalities. Logistics companies, that have to ensure the flow of goods from the customer to the place of origin, are losing incomes and time. Some posts around the world already offering a reverse logistics services to the customer, but the efficient reverse logistics system as a part of sustainable city logistics is still missing.

Another benefit from cooperation for postal service provider could be, as was pointed out before, in similar initiatives like to cut down carbon emissions. Helping cities meet their emissions goals would help posts meet their own emissions goals, for example updating the over 20-year old fleet of delivery vehicles, which are becoming costly to maintain and out-of-date with the current technology. Increasing of a goodwill among customers and stakeholders, including legislators and revenue generation as the city logistics project could also be taken as a benefit and a business opportunity the postal operators services [7].

3 THE USE OF POSTAL SERVICE IN CITY LOGISTICS

In cooperation between postal service and city logistics some of the postal assets are very valuable for cities. To this category belong vehicles, letter carriers and stationary assets. The vehicles could be used mainly for placing sensors or cameras, which can collect information about air quality, traffic patterns, road and bridge integrity. Putting the sensor on the postal vehicle would improve its function by giving the sensors mobility. Carrier could be used for putting the data, which couldn't be collected passively. For example, data about fallen trees, damaged public property or streets and snow-covered sidewalks in winter. Daily presence of carries around the town can guarantee quick detection of a problem. The last category of valuable assets could be stationary objects of postal services providers. This includes collection boxes, home mailboxes and post offices. They could be used more in the smart city project, like facilities for community engagement [7].

Postal offices, on the other hand, could be used for the purpose of city logistics needs. The importance of warehousing and order fulfilment is rising in response to the growth of e-commerce, due to some indicators, the speed of order's delivery is a major factor in e-commerce retail supply chain. [9]. The quickest way to satisfy times requirements of the customers is to use the inventory stores near the towns or more effective in the city center. Thanks to the warehouses in city center, retails have an opportunity to compete with tigers like Amazon and also reduce transport costs and time and improve inventory turnover. The warehouse needs are rising due to the rising logistics requirements, which is a result of an increasing variety of products of different value, weight, and size. It seems like the appropriate warehouses' location could determine not just the competitive position of the company, but also the effectiveness of the whole system of city logistics. A suitable warehouse means an efficient way of using supplying trucks in the city, which can lead to the reducing of urban traffics in cities and all the benefits follow from it. Due to an increasing demand for warehouse space in the cities, it is on the lowest level since 2001 and at the same time, the retail demand causes building of new warehouses near and into the cities to providing ultra-fast delivery, which does not exactly match the goals of city logistics. A vast network and an available space can be the key to resolve the warehousing problem [9]. In order to create functional city logistics system in cooperation with the postal service sector, the use of the available space should be done with understanding all details and, above all, in order to create a functioning system of city logistics, not to meet the needs of individual retails companies, for which the only aim is to increase revenues. That is why renting the places of the postal service sector in highly ineffective. Those places should be used for supplying cities in an efficient way, for example with vehicles, that use alternative fuels. The creation of urban consolidation centers in the available spaces, where the postal service provider could be the largest and most important provider of supply to the city could be the biggest contribution of the postal service sector to the city logistics situation. It may be against the rules of fair trade and competition, but as was found out, the system, with a lot of delivery companies just makes the city logistics situation worth and unsustainable for the future.

Nowadays another city logistics problem is an effective reverse logistics, which at the present time is complicated and costly due to the lack of an efficient reverse logistics system. The process of returning goods or reverse logistics have more and more considerable impact on city logistics due to the rapid growth of return goods as a result of e-commerce rising volumes. The biggest issue is that developing and growing industry like reverse logistics still don't have a set standard solution or best practices. The lack in this can represent another area of contribution of postal service to city logistics system. Postal service provider in Amerika (USPS) already provides return logistics. The biggest competitive advantages are that USPS deliver to nearly every address in Amerika six days a week and by that, it is the least expensive provider of last mile delivery and first mile pick up. Again, postal offices and boxes are very useful and serve as a collection point across the country. Reverse logistics is generally more complicated process than forward logistics process. During the last one, retailer knows exactly how much inventory they have, its status and locations.

In reverse logistics the customer is the one who decided if the product will be returned or not, how it is going to be pack and when the return starts. Also, the friendly return is considered as a quality standard, the return should be fast, free and easy for consumer [10]. Simplifying such a complicated process as pickup goods, deciding about the destination of returned goods and their subsequent processing, can help reduce costs and achieve goals of city logistics. As was pointed out before, use of postal service provider for reverse logistics seems to be the most effective way of returning good. But the postal providers' role doesn't have to be done by that. The postal service provider could provide added services to both sides of the return market by collecting unboxed returned goods in post offices. The process of returning goods can starts with evaluation unboxed goods by a postal services worker or authorized person, who can analyze goods condition, decided where returned goods should go and sort the items into large polybags or boxes going to the same destination [10].

3.1 Already existing cooperation between postal service sector and the city logistics

As tab. 1 shows some countries and cities that are already using the postal service providers in order to achieve city logistics goals. Most of the cities used postal service vehicles as a moveable base for different sensors or cameras. The collected data could contribute to the knowledge about city logistics problems as bad air quality, traffic congestions or pavement conditions, but they are not directly contributing to the solution of that problems. More important cooperation, as the creation of parcel locker or consolidated delivery to the city center, has a bigger impact on city logistics situation in the city, but, on the other hand, is costlier and requires a different level of cooperation between cities and postal service providers.

Tab. 1 Cooperation between postal service sector and the city logistics

Country	Cooperation of postal service sector and the city logistics
Spain	Air quality monitoring sensors placed on postal vehicles
France	La Poste plays the role of the data collector and analytics services
USA	Digital cameras on postal vehicles monitor a pavement condition
USA	Air quality monitoring sensors placed on postal vehicles
Singapore	Three-story facility with warehousing space, reverse logistics solutions, automated parcel sorting and loading docks for customers across Southeast Asia
Belgium	City logistics program runs by that reduces the number of separate deliveries in the center by consolidating packages at facilities nearby prior to delivery
Finland	500 parcel lockers terminals in stores and malls, where a customer can receive online orders, try them in store and return it back to the locker if they are not satisfied

Source: USPS, 2016

4 CONCLUSION

Nowadays the situation of city logistics is very similar in all European Union countries. Efforts to create a functioning city logistics system have lasted for several years, but only a small number of cities have succeeded in an achieving a sustainable system of city logistics. Meanwhile, most cities are still unable to solve old problems such as congestion, air pollution and security. The situation of the post-liberalized postal sector is also very similar in the states of Europe. Maintaining a competitive position and finding new opportunities are the main tasks of postal operators across Europe. Some states (Belgium, Spain, Finland) have already found a possible joint solution for both situations, such as cooperation with the postal service sector and the city logistics. While in the United States there are several studies about possible cooperation and its outcome, and in the

above-mentioned European states the first steps have been taken to establish co-operation, there are no references in the Czech Republic about this topic.

It follows from the above that the first step in further possible cooperation is to create the corresponding studies in order to determine the possibilities of the postal service sector (especially Czech national postal service provider - Czech Post) to provide its resources for the purposes of city logistics. Possible cooperation can be started gradually, for example, by creating an efficient reverse logistics system in some cities through postal service sector. As was pointed out before, reverse logistics can be a big opportunity for logistics provider, who can ensure its efficiency, with the required level of costs. Creating an efficient reverse chain within the city can be quite a challenge, but fast, free and friendly reverse logistics can earn customers' loyalty. In some countries, postal services providers already ensure some reverse logistics activities, but the general and efficient system is still missing. However, researches have shown that a good system of logistics returns can make a significant contribution to an improvement of the city logistics situation, especially in the future. Reverse logistics is seen as a result of growing e-commerce, which will raise in the next few years. This means the need to create not only an efficient system of last mile delivery in the city, but also an effective system of reverse logistics. Just as in the case of creating a functioning logistics system, to create appropriate reverse logistics system, it is necessary to find suitable and main partner of the city. Last mile delivery and return logistics represent the main field of cooperation of city logistics and postal sector. The creation of the last mile delivery system and the reverse logistics system in cooperation with the Czech Post could be the first step towards the creation of urban consolidation centers, the creation of which in the Czech cities would be a major step forward and the achievement of the basic goals of city logistics.



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