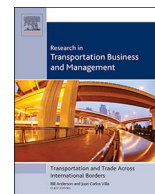




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## Urban freight transport in city strategic planning

Maja Kiba-Janiak

Wrocław University of Economics, Nowowiejska Street No. 3, 58-500 Jelenia Gora, Poland

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### ABSTRACT

The issue of urban freight transport in city strategic planning is discussed in this paper. There are two main purposes of the paper - a theoretical one and empirical one. The author's concept of maturity levels of cities in planning and implementing activities in favor of urban freight transport is the theoretical objective, while the empirical objective deals with the analysis of selected European capital cities in terms of urban policy in creating long-term plans in the area of urban freight. In order to achieve these objectives the author has conducted a survey among selected European cities. As a result of the conducted survey, the description of the process maturity levels of studied cities with the use of a taxonomic measure in the field of planning and implementing urban freight transport actions has been proposed. The concept of process maturity of cities in the field of planning and carrying out actions in urban freight transport may be a practical tool for local authorities willing to self-improve and develop in this field.

### 1. Introduction

Urban freight transport (UFT) deals with all flows of materials and goods in a city organized by professional institutions (Dablanc, 2007). Despite the fact that it is a vital element of economic development of the city, it is becoming a growing concern for the health and the quality of life of city residents. According to Dablanc (2007) it represents about 20–30% of vehicle kilometers and generates from 16% to 50% of air pollution emissions in the city. According to the European Commission, a significant number of European cities lose EUR 80 billion every year due to chronic congestions. Frequent road accidents also constitute a problem. Over 38% of all road accidents in EU countries take place in urban areas (European Commission, 2013a, 2013b). Urban freight transport is one of the sources of this problem. Nevertheless, a large number of cities still pursue the out-of-date policy in this field (Dablanc, 2007). According to the Special Eurobarometer survey (European Commission, 2013a, 2013b) it is possible to observe an increasing “urban mobility gap” between European cities. Some of them stand out as far as the level of progress in the process of planning and implementing UFT actions is concerned, while the majority of them do not have any experience in this field or their experience is negligible. In the opinion of respondents local authorities should be responsible for the road traffic reduction (both passenger and freight) in the city (European Commission, 2013a, 2013b). However, according to research in many EU cities long-term transport plans concentrate primarily on public transport and transport infrastructure, omitting freight transport (Allen, Browne, & Holguín-Veras, 2015; Kiba-Janiak,

2015; Lindholm, 2012; Lindholm & Browne, 2013). Therefore, it is essential that local authorities include not only passenger transport but also freight transport into city strategic planning and then carry out actions facilitating this field in accordance to the plans.

In this paper two objectives have been presented - a theoretical one and an empirical one. The author's concept of maturity levels of cities in planning and implementing activities in favor of urban freight transport is the theoretical objective, while the empirical objective deals with the analysis of selected European capital cities in terms of urban policy in creating long-term plans in the area of urban freight. In order to achieve these objectives the author has conducted a survey among selected European cities. The survey helped to elicit answers to the following questions:

- What is the role and place of urban freight transport in the strategic plans of EU capital cities?
- Are there any differences among European capital cities in terms of including long-term freight transport planning into the city policy and if so, what are the reasons behind them?
- What are the differences among studied cities in implementing projects in the field of urban freight transport?
- Which EU capital city has the potential to become a benchmark for other cities in terms of strategic planning in the field of urban freight transport?

As a result of the conducted survey, the description of the process maturity levels of studied cities in the field of planning and implement-

E-mail address: [maja.kiba-janiak@ue.wroc.pl](mailto:maja.kiba-janiak@ue.wroc.pl).

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ing urban freight transport actions has been proposed. There is one innovative feature which distinguishes this concept from others a quantitative and holistic approach to the assessment of a city maturity level in the field of planning and implementing urban freight transport.

The paper is organized as follows: the first part presents the objective and the scope of the paper. The second part deals with the essence of urban freight transport in city strategic planning. Furthermore, it focuses on trends and changes which will take place in the future and will have a significant impact on UFT. The next part of this paper presents in a brief way the most important documents drawn up by the European Commission which contains the guidelines for European cities on how to formulate long-term objectives in the field of urban freight transport. Section 4 focuses on the author's concept of maturity levels of cities in the field of planning and implementing UFT actions. The next two parts of this paper present a research method and the results of the conducted questionnaire, including the identification of process maturity levels of cities in the field of planning and implementing UFT actions. The final part of the article put forward conclusions and pointers for further research.

## 2. The significance of urban freight transport in city strategic planning

Urban freight transport, understood as all flows of materials and goods in the city organized by professional institutions (Dablanc, 2007) plays a significant role in the functioning of the city. Increasing needs and consumption habits of the city inhabitants cause the increase in the demand for freight transport, which in turn largely contributes to the increase in congestion and environmental degradation. The solution of these problems requires that the city authorities set and achieve long-term goals, including not only the present needs of particular stakeholders of urban freight transport, but also future trends and changes (Iwan & Kijewska, 2014). Among these trends and changes one may identify:

1. Challenges concerning environmental protection (European Commission, 2009) - there is a growing need for reducing the negative impact of the transport sector on the environment. In 2008 the European Union adopted the climate and energy package which set objectives concerning a 20% reduction of greenhouse gas emissions in the EU compared with 1990. TERM Report 2008 published by the European Environment Agency shows that many Europeans are still exposed to high levels of air and noise pollution. In particular, concentrations of airborne particulate matter PM<sub>10</sub>, the main source of which is transport, exceeds recommended limits in many places in Europe (European Environment Agency, 2009).
2. An increasing shortage in fossil fuels – in the coming decades fossil fuel prices will be higher and the demand will rise, which, as a consequence, may result in higher prices. The necessity of the transformation to a low-carbon economy and growing concern about the safety of energy supply will cause higher demand for a renewable energy supply which is cheaper thanks to modern technological solutions and mass production (European Commission, 2009).
3. The growing population in cities (growing urbanization) - the current inhabitants of EU cities represent over 70% of the whole population (www.ec.europa.eu, 2015). It is expected that this figure is set to rise to 84% in 2050 (European Commission, 2009). The growing city population will also cause an increase in the demand for freight transport which is projected to rise by over 80% by 2050. It is expected that in 2050 in the EU countries road freight transport will continue to play a dominant role (European Commission, 2009).
4. The increase in innovative and ecological solutions - in connection with a wider access to advanced technology and as a result of EU requirements concerning environmental protection, transport com-

panies will make more use of innovative and ecological means of transport, e.g. electric vehicles. Due to this fact there is a need to construct the infrastructure allowing the functioning of these means of transport in the city by e.g. the construction of electric car charging stations (for example, Berlin is planning to construct 400 electric car charging stations in the near future (Berlin Municipality, 2015).

5. The development of solutions in the field of ICT - recently an increased access to cutting-edge IT solutions has been observed. The solutions may largely facilitate urban freight transport. Nevertheless, the effective implementation of such solutions in the field of freight transport requires the implementation of such standards in the whole of Europe.

Tendencies and changes presented above indicate the significant role of local authorities in shaping urban freight transport. Unfortunately, for many local authorities freight transport is still a marginal issue (Ballantyne, Lindholm, & Whiteing, 2013), while according to Lindholm (2012) and Ruescha et al. (2012) they should be leaders and initiators of actions performed in favor of UFT. Local authorities in many countries (Lindholm, 2012; Witkowski & Kiba-Janiak, 2014) are responsible for the control of the traffic system in the city, the security of the inhabitants or environmental protection, etc. Therefore, taking into account the objectives concerning freight transport in strategic documents of the city should be taken as given. Cities carry out their tasks on the basis of the development strategy including the mission, vision and main long-term goals (Fig. 1).

The city development strategy should include various city spheres in a holistic way so as, in the result of its implementation, to enhance the quality of life and the competitiveness of the city. In order to carry out the strategy in an effective way the local authorities should develop tools and procedures allowing its implementation, assessment and improvement (Kiba-Janiak, 2015). On the basis of the main strategic document the local authorities draw up various functional plans, such as transportation plan, the education development plan, labor market plan, etc. The transportation plan should include long-term goals regarding both passenger and freight transport. Next, on the basis of the transportation plan the detailed plans for freight transport, passenger transport and ICT systems should be drawn up. In some cities the transportation plan is so detailed with regard to both passenger and freight transport that drawing up further plans is not necessary. It is important that transportation plans need to be drawn up by the local authorities with the participation of such UFT stakeholders as: residents, shippers, receivers, transport companies, public transport operators and other institutions such as: associations, institutions and companies established by local authorities, etc. It can be done within a Freight Quality Partnership (FQP) as it is practiced for example in London. On the basis of detailed plans particular projects concerning urban freight transport may be carried out with the participation of other stakeholders.

The necessity of taking into account long-term goals in the field of freight transport results not only from the need to enhance the quality of life in the city but also from the guidelines of the European Commission.

## 3. The EU guidelines for formulating long-term goals in the field of urban freight transport

The problem of city pollution caused by freight transport was noticed by the European Commission which drew up many documents including guidelines formulating long-term goals in the field of urban freight transport. Local authorities should be aware of those documents, which on the one hand can serve as guidelines enabling the improvement of UFT and on the other hand show the restrictions which can be introduced in the future. It is not possible to present in this paper all of those documents, therefore a limited number of them have been

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