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Urban Logistics; a Key for the Airport-Centric Development - a Review on Development Approaches and the Role of Urban Logistics in Comprehensive Airport-Centric Planning

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Abstract

Airport-centric development is relatively a new concept in globalized urban and regional development while airports are experiencing a radical change in services they provide to users. Increasing reliance on non-aeronautical potentials, besides the traditional aeronautical services, grants the opportunity to business providers and logistics actors to enhance their profit and guarantee their business life. City logistics can play an essential role in airport-centric urban system and should be integrated in planning process. The main focus of this research revolved around issues related to this approach and its evolution. As well, the structure and function of city logistics and urban freight as well as airport-centric development has been considered.

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Keywords: Airport-Centric Development; City Logistics; Urban Freight; Urban Competitiveness; Comprehensive Planning

1. Introduction

According to the World Urbanization Prospects (UN, 2014) 54 percent of the world's population lives today in urban areas, increased from 13 percent in 1900 (UN, 2006), a proportion that is expected to increase to 66 percent by

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2050. Projections show that urbanization combined with the overall growth of the world's population could add another 2.5 billion people to urban populations by 2050. Urbanization as one of the dominant trends of socioeconomic change of the 20th century has imposed new growing problems and challenges on the expanding cities. Increasing demand for freight transport and commercial services, as a result of urban growth, is among the major challenges.

The importance of urban areas, and transport systems within them, derives from the increasing proportion of every country's population living there at least some of the time, the greatly increased proportion of economic value-added being produced within them, and the steadily increasing reliance of modern and modernizing societies on mobility and transport, based on the comprehensive approach of Simon (1996) to the urban transport. The great importance of urban freight transport and city logistics has been recently through different kind of studies analyzed and its role in strengthening the urban competitiveness affirmed. The functioning of urban areas, historically, relies on urban economic activities those should be supported with production, movement, and consumption processes which all are considerable within today's metropolitan borders.

In line with the mentioned approach of Simon, Rodrigue et al. (2006) in their book emphasize that cities traditionally viewed more than locations of utmost human interactions with intricate traffic patterns linked to commuting, commercial transactions and leisure/cultural activities. Besides that, it should be noted activities like production, distribution, and consumption happen in urban areas which cause the movements of freight, as well as the related services, from the producers to the final consumers. Benjelloun and Crainic (2009) present clearly the importance of urban goods transport in the way that for the city inhabitants, it supplies stores and places of work and leisure, delivers mail and goods at home, provides the means to get rid of refuse, and so on. For firms established within city limits, it forms a vital link with suppliers and customers. Indeed, there are few activities going on in a city that do not require at least some commodities being moved.

Besides the absolute contribution of urban freight and urban logistics, in quality of urban life, yet nevertheless many problems and inefficiencies are remained as unsolved or less-treated while the contribution of this urban sub-system in negative effects of urban transportation systems is still remarkable. A broad set of inefficiencies and level of contribution of complex urban logistics systems in negative economic, social, and environmental effects has been investigated so far. Compared with urban passenger transport, less focus has been placed on the urban freight transport, but recent efforts show that this realm of research has attracted much consideration, as it merit.

The complexity of city logistics and urban freight can be presented from different approaches. It consists of different actors and their network of interactions. Naturally each element or sector of urban logistics network tends to maximize its revenue and efficiency. The existence of conflicting interactions makes it hard the needs of each actor be completely covered. As well, city logistics interact with many other systems in urban, regional, and even international scale. Linkages between urban logistics and urban transportation systems, social system, environment, land-use, regional and urban economy, and regional transportation infrastructure are among these interactions.

Notwithstanding the conflicting nature of interactions, the internal interactions of urban logistics and its linkages with other inner- and outer-urban systems might be seen also as potentials and opportunities. Investigating the potentials of integration between urban logistics and other systems is not a completely new effort, but in recent studies much efforts has been devoted to that (e.g. Priemus et al., 2001, STRATEK, 2005; C. Richardson, 2005; Russo and Comi, 2012; Lindholm and Behrends, 2010). Considering the fact that for cities seeking to compete in the globalized economy, effective freight transport services are a key success factor (Docherty, 2004), this paper is the early results of a review on the role of city logistics in comprehensive airport-centric planning approach.

2. City Logistics; A System of Conflicts and Interactions

Responding to the main known challenges of the growing demand to freight transportation and distribution in the urban areas, city logistics concept has been introduced and developed in recent decades. Big share of urban activities are accompanied by movements of freight and services due to the needs of inhabitants. For example, according to the previous studies, the share of pick-up and delivery operations, which often take place in urban areas, on the total door-to-door cost is in combined transport about 40% (ETH, 1996), Urban freight represents 10 to 15% of vehicle equivalent miles travelled on city streets and 2 to 5 percent of the employed urban workforce, 13% of Shanghai's GDP is value added by logistics (Dablanc & Rodrigue, 2009), and the share of trading and logistics in Hong Kong was 24.6% of GDP in terms of value-added in 2012 (HKTDC, 2015).