

Urban Consolidation Centers: State-of-the-art, best practices and operational challenges

A.Gialos¹, A. Ntzoufas¹, V. Zeimpekis^{1,2}

1. OPTILOG Advisory Services

{agialos; antzoufas; vzeimp@optilog.gr}

2. Department of Financial & Management Engineering, University of the Aegean

vzeimp@fme.aegean.gr

Abstract

Due to their large populations and extensive commercial establishments, urban areas require large quantities of goods for commercial and domestic use. The increasing requirements for supply of urban areas, leads to direct connection of freight transport with the economic and social development of urban areas (Brownea, 2012; Paddeu, 2014). Indeed, freight transport in urban environment, plays a significant role in the development of cities, but also represents a serious drawback in terms of negative externalities. In fact, urban freight transportation is responsible for a series of negative social, environment and economic impacts including air pollution (greenhouse gas emissions), traffic congestion, noise pollution, accident fatalities, and so forth (Nordtømmen, 2015).

The mitigation of negative externalities requires the implementation of sustainable strategies and regulations, which constitute a challenge for policy makers and local authorities. The last decades, the concept of Urban Consolidation Centers (UCC) appears to be an encouraging solution for the limitation of negative externalities caused by last-mile freight transport, despite the state subsidies usually needed in order to be operational. The concept of UCCs were examined for first time, in the late seventies (Rooijena, 2010), while in Europe today over 60 UCCs are operating successfully (Nordtømmen, 2015). A UCC is described as a logistics facility that is situated in relatively close proximity to the geographic area that it serves as a city center, an entire town or a specific site, from which consolidated deliveries are carried out within that area (Gonzalez-Feliu, 2011). The main aim of a UCC is to carry out consolidated freight deliveries using environmentally friendly vehicles (CNG, LPG, hybrid, electric) with high loading factor. UCCs create sustainable systems for urban deliveries and provide higher value logistics experience for their users, however their use is not widespread due to a series of barriers for their implementation.

This paper reviews the state-of-the art in environmental friendly city logistics operations and presents a significant number of best practices of UCCs that operate in Europe. Furthermore, the paper presents the operating challenges that a UCC faces, the prerequisites needed in order for the UCC to be viable, as well as the role of local authorities and transport stakeholders.