



25 Years City Logistic: Why failed the urban consolidation centres?

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Abstract

The paper considers projects to improve the delivery traffic in European cities during the last 25 years. The projects were strongly influenced by the research programs of the European Union. The paper identifies the conditions under which the projects were successful. The authors explores the obstacles to get the desired consolidation of freight. Examples from Paris and Bristol are given.

Introduction:

In European countries and world wide a long series of city logistic projects were carried out over the past 25 years, starting with the pioneering study of Browne et al. 1988. The aims of these projects were the reduction of traffic jam and pollution in the cities caused by delivery traffic.

Main Text:

There is a wide range of regulations that local authorities can impose on delivery vans in the inner city to reduce traffic and pollution. Following Danielis et al. (2010) and Lindholm (2013, p. 15) one can distinguish the policies of regulation in the following manner:

1. Freight vehicle time-access regulations. They restrict the deliveries to certain time windows and have the aims, to improve the quality of shopping experience of the final customers of the shops by separating the delivery from the main shopping hours and to preserve the silence at night.
2. Restrictions of the delivery vehicles. Only light vehicles are allowed, noise reduced or pollution reduced vehicles. There are certain contradictions in these aims, because several small vehicles induce more traffic than one heavy, as in the literature several authors already pointed out.
3. Traffic policy can open bus lanes for vehicles of freight transport.
4. Loading; unloading and transshipment policies. In the city zones to unload or load a delivery vehicle are scarce or not available at all. So vehicles stop on the street alongside parking cars and block passing cars. The definition of loading zones, their

reservation and the behavior at the loading zones, for example reservation via internet, are important policies. Since 2006, in the city of Paris all stakeholders of freight transport could voluntarily sign up a charta on good practices of delivery (Nea 2011, p. 31). Local authorities could make reservations of certain transshipment points in the city to transship the consignments from heavy to light vehicles or to electric bicycles. For example the city of Paris provides certain parking space beneath the Place de la Concorde (Dablanc 2011, p. 247).

5. Financial policies comprise both taxes and subsidies. Subsidies set an incentive for the stakeholders in the supply chain to participate in a coordinated manner in order to improve the quality of delivery, for example a subsidy for running an UCC. The cities could also give incentives for night delivery with noise reduced vans. But they have to cover the costs that the final receivers of the deliveries have to carry for additional staff as a study of night delivery in New York City reveals. Otherwise the receivers would not take part in night delivery. Night delivery without staff most of the clients did not accept (Holguin-Veras 2010). Taxes could be set as congestion charge for entering the city. Whether a congestion charge has an impact of delivery traffic is seen as controversial (Holguin-Veras 2010).

Besides measures of regulation of entering the city one measure in the city logistic projects was to deliver the city from an urban consolidation centre (UCC), also called urban hub. Many empirical studies showed the low load factors on average of the delivery vans entering the city. So the idea to consolidate the deliveries to full vans is obvious. The storage of an UCC is fed by deliveries carried by heavy trucks. The distribution of the consignments to their final destination is made by pollution and noise reduced light trucks or by cargo bicycles. By using heavy trucks to feed the UCC the number of trips into the city by light trucks is reduced and also traffic jam. Janjevic, Kaminsky and Ballé Ndiaye (2013) give an overview over the current UCC-projects. During the last 25 years in Europe 150 UCC projects were started, but only 5 projects survived (Sugar 2009, p. 249). So the UCC projects had a failure rate of 96%. This paper explores the reasons why these projects failed. It is based upon the best practices handbooks of the EU-programs BESTUFS, BESTUFSII and SUGAR, the results of the several city logistic conferences of the Tokyo Institute for City Logistic with more than 100 published papers (Conference 2009, 2011) and additional papers. Further, this paper uses empirical findings of a survey among shop owners and forwarders the author had carried out.

The idea to consolidate was linked to an urban consolidation centre (UCC) where in a warehouse the consolidation takes place. To establish an UCC has the aim to consolidate the formerly independent delivery trips of the different forwarders to one single forwarder that delivers the shops in the city from an UCC. This single forwarder should employ pollution and noised reduced vans. The consolidation was even twofold: one across different forwarders and one across the shops to be delivered (Bestuf 2003, p. 87).

The success of UCC solutions depends on the structure of consumer choices and settlement patterns. The critique of Verlinde et al. (2012) on trucks that enter cities which are not fully loaded apply better in the Netherlands where the cities are closely located. So a truck can start in one city fully loaded, unload a part in this city and can drive not fully loaded to a neighbor

city and then even to a third city. But in countries with a large extension as Spain, France, Italy, Poland or Germany the medium distance between cities is large and round trips of trucks are rare cases. Also maintain special conditions in the Netherlands in the grocery shops where the items are concentrated on canned food and on deep frozen food (like in the UK). Under these conditions of a small choice of fresh items the concepts of city logistics can apply better. In Germany and in the mediterranean countries the consumers have a broad choice of fresh vegetables and fruits that is complicated to handle.

The model of an UCC is very convincing at the first sight. Studies showed a potential of 20-30% of reduction of delivery traffic (Klein-Vielhauer 2001). The city of Leiden expected a reduction of even 80% (Bestuf 2003, p. 112). But why were the UCC not successful? There are several reasons, but I focus here on two reasons.

(1) The consolidation was not seen in a competitive environment but solely as a technical procedure to fill a delivery van to its limit as Verlinde et al. (2012) do. Already Laetitia Dablanc (2005) pointed to this narrow view. In the UCC projects only 20% of the shop owners participated (Patier and Browne 2010 on the case Bristol), as long as municipalities do not enforce strict delivery regulations like in the Vicenza case (Dablanc et al. 2010). For small or medium sized shops consolidation touches their central asset in a competitive economy. The relations supplier – carrier – shop the owners regard as confidential. With special offers drawn from special sources the shops can differentiate their position to competitors. In a coordination project as an UCC the information could trickle to competitors. The same adverse position to UCC is true for small or medium sized forwarders. From which suppliers they get an order is a trade secret of the forwarders which in an UCC cooperation could be revealed to competitors. The forwarder trade is extremely competitive with thin margins. The transport companies believe that UCC-transshipment involves extra costs, risks and delays in delivery. So shop owners and forwarders are reluctant to cooperate. In addition, the transports that are performed by suppliers or shop owners on own account cannot be included in an UCC solution, because they do not want to carry over their transports to forwarders. Food store owners and restaurants owners prefer to procure at the local market hall or at cash&carry markets to pick the best products for their business and to transport their consignments with own vans. Danielis et al. (2010, p. 119) report the high percentage between 50% and 80% of consignments that are delivered by own account in Italian cities. There are special economic advantages for suppliers to transport by own account in a competitive environment concerning marketing aspects as already known in the literature (Vahrenkamp 2012, p. 84):

1. Immediate availability of vehicles compared to engagement of a forwarder, i.e. reduction of “transaction costs”.
2. Immediate availability for express deliveries or delayed deliveries at night.
3. Customer loyalty due to delivery by the same driver, creation of mutual trust, driver’s access to customer’s court or warehouse.
4. The company vehicles (including the driver) bear the company’s logo – advertising in motion on the streets. These advertising function is important for breweries and food producing companies
5. Delivery trips are seen as “customer service”.

6. The truck driver as expert can advise the customer on the use of his products or can take over additional services, as installations or instructions.
7. The truck driver could collect money from the final receiver according to the bill.
8. The truck could load return of empties.

So delivery is not a simple act moving cargo between two points but implies more skills and tasks. And there is an additional economic advantage of the delivery by own account as became evident by the survey among forwarders the author had carried out. When a supplier delivers by a forwarder, the latter gets notice of the customer structure of the supplier: Which kind of merchandise the customers receive, how many customers the supplier delivers and where they are located. The forwarder could use this knowledge at a disadvantage for the supplier. For example, the forwarder could sell the customer list to a competitor of the supplier. With a transport by own account the supplier can keep the customer structure confidential. And in addition, the forwarder could give a customer which he delivers a hint to a better source at the disadvantage of the supplier. These considerations of competition play a role only for small or medium sized companies. The large retail chains are so strong that they do not fear the trickle down of information.

(2) The share of traffic an UCC solution can catch is only small. The grocery chains, the chains of department stores, the chains of restaurants, as e.g. McDonalds, and the parcel services have already optimized delivery systems and do not see gains in cooperation. A study of the German retail association showed that 64 % of the deliveries (measured in tons) to shops went to department stores (Hallier 1993, p. 12). The freight study of the city of Reading in 2003 revealed, that a large amount of deliveries were performed by trucks owned by the retail chains (Browne et al. 2010, p. 5961). Another large part of freight transport in the city is made by deliveries to construction sites that cannot be consolidated across different sites, because their constructions are built independently. Only in special cases a consolidation succeeds. In London, the delivery to four concurrent major construction sites were consolidated and savings in delivery times and delivery cost could be realized (Patier et al. 2012, p. 25). But the after the finish of the constructions the consolidation center was closed (Sugar 2009, case 11). Besides construction traffic there are deliveries of heating oil that are already optimized by the supplier to full truck loads by software of vehicle routing. Then there are many trips of delivery vans for service activities, as cleaning and repair which are not suitable to consolidation. So the UCC solution only can catch the deliveries to the independent shops that do not belong to a chain and the deliveries to independent cafes and restaurants. But this is only a small fraction of the overall deliveries. Empirical studies showed that delivery traffic only accounts to about 10% of the traffic in the city (Lindblom 2013, p. 2). So UCC solutions could only reduce this share of 10% a little bit. One can conclude, the UCC solution does not have a substantial impact as it catches only a very small part of the delivery cake. But they can serve as a “symbolic policy” that the cities take measures to improve the quality of air and to reduce traffic jam. In the UCC of the city of Parma (Italy) the reduction of traffic was estimated to 1 % (Dablanc et al. 2010). Also the Bestuf II policy recommendations shows a reduction as small as 1 % (2005, p. 6).

As a main result of the city logistic projects over the past 25 years one has to state that traffic reduction and economic gains of consolidation were only small. The gains do not cover the

costs the projects impose. To make the projects economic feasible the cities had to carry a share of the cost. This was the case for all UCC solutions in the UK, France, Netherlands and Italy. The weak position of UCC became evident when public money was canceled and the UCC had to close.

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