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# City Logistics and Pooling Solutions: Obvious, Environmental friendly, Good acceptability, Winner-winner Strategies: Why Think more about it ?

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City logistics and pooling<sup>1</sup> solutions: obvious, environmental friendly,  
good acceptability, winner – winner strategies?

Why think more about it?

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City logistics projects and research on pooling logistics activities, especially in urban area, are nowadays on the agenda of land use planners and transport economist researchers. In the literature and dedicated press, a lot of researches, case studies and scientific publications, are now available (Allen J., Thorne G. and Browne M. (2007) ; Dablanc, L., 2008 ; Gonzales-Feliu Jesús, Morana Joëlle, 2010 ; Muñuzuri, J., Larrañeta, J., Onieva, L., Cortés, P., 2005 ; Kummer S., 2010 ; Gonzales-Feliu, Morana, Semet, 2014 ; Patier D., Routhier J.-L., Ambrosini C. (2010). There is a general agreement on the relevancy, success and implementation of these strategies: acceptability of urban population is good, as (diesel motorized) trucks entering cities are considered as damaging the environment and generating strong nuisances on the

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Many thanks to Katrien De Lange (University of Antwerp) for her comments.

<sup>1</sup> In France, we refer to “mutualisation” (Gonzales-Feliu Jesús, Morana Joëlle, 2010), in Germany, we mention more carefully “koordinierte Versorgung” (Zehle, 1997, p.3 and p. 98 mit Beispiel ISOLDE Nürnberg), “Kooperationslösungen”(Kummer, 2010, p.291) oder „Kooperationspotentiale“ (Kummer, 2010, p.171). In English, we mention „collaboration” and “pooling” (Gonzales-Feliu, Morana, Semet, 2014)

neighborhood. Local politicians and public policy designers have integrated these projects in new urban plans and future city modelling (Lyon for instance with a new urban consolidation center starting in 2012 around Cordeliers area). On the side of the business' actors, shippers, transport companies, distributors, gain in efficiency and cost reduction can be achieved. Quality of service can be improved too: more frequency, more services with high load factor in trucks, which can have an impact on costs too. Do we face a "happy winner – winner organization" for all member of the urban club? How are the gains shared between all the members of the urban club? Does this system keep a good level of innovation in transport and logistics companies? Is it sustainable in a long term perspective, facing different modal alternatives, rail for instance? Do we have to take into account the long term impact on innovation and possible distortion of competition and cartelization?

Few contributions are investigating these issues. Even if the objectives are obvious for the quality of city life and policy action against pollution, we have to think of the implication of such a decision on economic activities in a larger perspective than the city scale, on the motor of innovation in the transport sector and on the power of competition to pressure costs – for the benefit of the customers and taxpayers - and limit rent seeking and cartels opportunities. We also have to analyze the recommendation towards the pooling of logistics and trucking activities in cities, especially if these recommendations imply a burden of public budget through subsidies, which can mean a future increase of taxes for the taxpayers. From the beginning, the idea of pooling strategies is challenging the basic economic theory, because it suggests a complex trade-off between competition and institutional organization of the market in a winner-winner perspective for all actors of the urban clubs.

## A great winner – winner idea at first glance?

On one hand, it is a necessity now, for environmental objectives and quality of life but also in terms of efficiency, to limit the freedom of trucks entering city centers for delivering products. But we need to act very carefully and make no mistakes in these new policy designs. Cities are now representing 50 % of the world population – and 75 % in France. They are key players of social and economic life, especially in Europe where there is a long tradition of urban analysis and comparison between Member States of the European Union<sup>2</sup>. Cities are now facing huge up-to-date issues: sustainable development balancing competitiveness/business and quality of life/protection of the environment. Transport plays a key role but city action is facing today scarcity of public finance, unemployment and social matters (exclusion, ghettos, inequalities, poverty, sometimes riots). Learning from each other is a key success factor for further development toward sustainable cities (Guihery, Weidner, 2010). And transferring experiences at the level of the European Union could be a good mean to improve the quality of life of European citizen in a "best practice" strategy. Pooling strategies, linked with city logistics strategies, have to be understood in this way.

*The city at the cornerstone of transport, business, quality of life and dynamism*

The urban analysis among researchers, from city planners to economists and urban scientists, has now investigated the evolutions of urban dynamism, mainly from a more sceptical point of

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<sup>2</sup> For example, in 1909, Victor Cambon, French Ingenieur travelling often in Germany, was comparing, in his book – Cambon V., l'Allemagne au travail, 1909 – the city of Leipzig and the city of... Lyon, in terms of public goods, public finance, transport networks, high education and economic activities.

view than in the seventies: increase of car mobility which leads to pollution and scarcity of space in urban areas, urban sprawl which implies huge environmental damages, but also social damages of spatial exclusion in a long term perspective are on the agenda of city scientists. City logistics is coming from this evolution. Urban thinking towards sustainable development started in Stockholm in 1972, which is not surprising if you consider the experience of Scandinavian countries in environmental analysis. In June 1990, the European Commission delivered its first Green Book towards urban development and Environment. This report is showing a clear European experience and history towards “urban culture” and a good level of cooperation between cities. In Rio in 1992, the agenda 21 adopted by 173 chiefs of state and governments is highlighting the crucial role of urban sustainable development. In 1994, the Charta of Aalborg, the European Conference on sustainable cities, is considering cities as a key actor for implementing policies against environmental damages. In March 1996, a report is published giving us some definition how it can work: refusal of a too centralized top down approach and interest in a bottom up approach. Then the **famous Charta of Leipzig** was adopted in May 2007 and focused on integrated urban development and less developed suburbs. But the Charta of Leipzig is also proposing tools to achieve these goals on a European level, which asks for policy action and recommendations. In Marseille in November 2008, the ministers in charge of urban development of the European Union discussed on “sustainability and solidarity in cities” and have proposed a common framework to get in more operational actions : “Reference framework for sustainable cities”, which will be available in 2011. In Toledo, on the 21st and 22nd of June 2010, a meeting of the European Ministers in charge of urban action and housing has highlighted again the role of the Urban Integrated Plan (Declaration of Toledo). All these elements are showing the large agreement on urban sustainable development and are expressing, once again, the importance and the relevance of European Community spirit. Key elements are urban management and co-management, political integration, cooperation and partnership. We can integrate the thinking of an environmentally friendly freight transport system in cities and complex interactions with urban passenger transport, quality of services in cities in this perspective.

*City logistics and pooling strategies: obvious, great and acceptable...*

The idea of pooling strategies is, from the beginning, obvious and welcomed. It refers to basic human behavior where living in community, sharing goods and services, connecting with people and institutions, having a social life are common roots of human being (Tversky A. et Kahneman D., 1979<sup>3</sup>). It offers an optimization of freight deliveries in the city, sometimes less costly than a decentralized organization of urban freight transport<sup>4</sup>. It is compatible with the sustainable development strategies of European member states and implemented in cities. To remember, the new objectives of the environmental policy of the E.U. are impressive (see results of the European Union meeting of October, 24<sup>th</sup>, 2014):

- Reducing greenhouse effects by 40 % until 2030, comparing to 1990 (last target was 20 % toward 2030)

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<sup>3</sup> The Behavioral Economics research program (Nobel Prize in Economics for Kahneman in 2001) has developed interesting researches in the field of transport.

<sup>4</sup> Alain Borri (BP2R, promoter (“parrain de promotion”) of the Master degree TLIC in 2013-2014), one of the leading experts in France for proposing pooling strategies in the transport sector (not mainly in the urban field), often in the relation between producers and distributors, has assessed that the benefit is between 15 and 30 % in costs reductions.

-Renewable energy must reach at least 27% of the energy mix (20 % in the previous target)

-27 % of the energy saving (20 % in the previous target)

In a theoretical perspective, we can find some interesting inputs from the transaction costs theory (Coase, 1937, Williamson, 1985) that supports the idea of integrating the transport and distributor sector in cities. This can help to understand the relevancy of pooling: integrating different companies will reduce asymmetry in information and improve global efficiency through a better transfer of knowledge and information. But this theory is mainly focused on an intra-firm analysis, we face here a complex issue of links between different companies, sometimes in competition on other segments of markets.

Pooling is benefiting at the same time from scale and scope economies (Curien, 2005), but also from indirect and direct club externalities (Buchanan, Tullock, 1962; Rowley Charles K., Tollison Robert D., Tullock Gordon, 1989). The integration of transport companies in a large platform will generate scale economies (high load factor of trucks) but also scope economies (integration of different services in the same tour). In a first analysis, every member of the club is benefiting from knowledge from the others: direct club externalities. The success of the organization will generate indirect club externalities: improvement of the services and ideas of new services, increase of warehousing, implementation of new solutions.

It implies the participation of a lot of actors, from private operators to city authorities and local agencies: this mix of actors seems “perfect” from a first analysis but our analysis will try to look more deeply in the relevancy of this mix of actors, especially if such strategies are linked with a lock-in of the market of delivery in cities (Shapiro, Varian, 1998), looking for rent seeking at the cost of the local citizens – taxpayers and creating cartels.

In cities, strategies of pooling and logistics platform are obvious. The importance of the shipping of small parcels, the increase in delivery for e-commerce, the new strategies of retailers and department stores of limiting stocks – in the current time period of financial constraints and an economic crisis in the South of Europe, and France – means new strategies for logistics and transport<sup>5</sup>. The cost of land property, cost constraints, the issue of congestion – lack of investment in new infrastructures due to scarcity of public money- are motors for developing strategies of pooling. Today researchers assessed that 10 % of the traffic in cities is linked with city logistics transport (Schulte C., 2013). And 2/3 of the deliveries occurs between 8h and 12h.

Some products are excluded from these strategies: chemical products but also food, fresh and frozen products, which have a good perspective for development. One of the main resistances for pooling of transport is the mentality of actors, which is complicated to change and to convince. Everyone must be ready to make concessions to find an agreement between the actors, which is not easy. Transport companies are very sensitive with respect to this issue, which is also linked with freedom of business, free mobility and free opportunities.

On the opposite, it also seems that acceptability from the population for implementing city logistics strategies is quite good. Nevertheless some neighbors could be opposed to a launch of a logistics platform near their home. The access of pedestrians' areas, often an issue for delivery, can be solved by transferring parcels to soft mode dedicated solutions.

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<sup>5</sup> Can we argue maybe that pooling strategies are a child of the economic crisis?

We seem then to face a win-win strategy between urban population, politicians and actors for logistics and transport. Why then thinking further of this issue?

*Limiting freedom of mobility in cities: the need of strong justifications*

Concerning the free access to city, strong justifications have to be proposed. Free mobility in is one of the foundations of modern democracies and every limitation of free mobility has to be justified in deep and clear argumentations, even for trucks. If some limitations of free mobility have to be proposed, some exemptions have to be proposed, for example facing cultural events in cities where trucks are welcomed for delivering music stages and open air festival infrastructures. If removing single and small trucks implies delays in delivering, increase in cost, or a lack of quality of service (because of a lack of competition among the actors of the urban freight delivery club), we can question the relevancy of pooling and transport logistics in a long term perspective.

We also have to integrate the possibility of innovation in the trucking sector, such as electric delivering vehicles that can freely enter the city, because they are not as huge as carbon motorized trucks and are often silent running. We often forget in the analysis to integrate the motor of innovation in the thinking of transport on a certain period of time, which is fixed and given in terms of transport. But as we know from history and Behavioral Economics, it can change rapidly.

If a complex organization of logistics and delivery in cities implies a limitation of innovation, the setting up of barriers to entry and the justification of grandfather rights, we can put some doubt on the success of the policies in a long term perspective, even if, in a short time, it implies an improvement of the level of congestion and quality of life because of less emission in the cities.

Following points have to be discussed within the scientific community:

*City logistic and pooling: a way for getting more subsidies in the transport system?*

The first point concerns the use of subsidies for implementing such solutions. Some experimentations and case studies show that such a platform can be implemented without subsidies: the Nurnberg I.S.O.L.D.E. GVZ (UCC in German) for example was established without subsidies (Schulte C., 2013). It seems relevant to start from this perspective for implementing logistics platforms in cities: logisticians, transport companies and maybe customers<sup>6</sup> should cover the cost of this new infrastructure in cities. Following the principle of equivalence in Public Finance theory (Musgrave, 1959), users who benefit from the infrastructure should cover the costs. This result is linked with the recommendation that transport must cover its social costs, it means private costs and external negative costs, especially for road freight transport (White Paper, 2011). On this issue, we also have to think in terms of spillovers of this new platform: who is benefiting? We have then to adjust the cost of the financing with the spillover of the platform on the urban scale (user-payer principle).

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<sup>6</sup> Fair pricing in the transport system implies that all actors cover the social cost of transport (White Paper, 2011): private and external costs, mainly negative for road freight transport. There are few justifications in the economic theory of putting transport costs equal to 0 in the B2C business.

*Pooling strategies: motor for more innovation or braking innovation?*

The main motor of customer satisfaction is innovation. Incentives towards more innovation in the transport sector, for more environmentally friendly transport, should be at the center of the recommendation of experts and public policy designers facing the issue of pooling. Strong incentives in this direction have to be imposed to the logistics platform : the 2014 Nobel Prize in Economics was awarded in 2014 to Jean Tirole precisely because of his work on modern measures for putting efficiency pressures on a monopoly – because logistics platforms will be a type of monopoly in the end. Will a UCC be the place of sparkling innovation? Information technologies are the cornerstone of success of these development but it is also needed that integration of Information Systems should be strictly limited to supply chain data and not linked with data on cost of production, which can have an impact on the level of competition and can open the door to cartelization and then control and enforcement of anti-trusts authorities.

*Competition for the market, intermodal competition, spatial competition: three motors of pooling and city logistics?*

All experts on these issues consider that competition for the market – tender for the management of this city logistics platform – is a key issue for strong incentives on cost efficiency and quality of services. They recommend a period of time of three years before a new tender will be launched. The rules of transparency and fairness for such a call must be clear and enforced. As we have noticed, transport activities in cities – non-discrimination in the quality of service, respect of privacy of parcels, independency, few barrier to entry - is part of “the freedom endowment” of each citizen and strong control and protection must be enforced. Why not setting up a regulating agency in charge of controlling the **market power** of the logistic platform?

In this perspective, new researches are launched to examine the relevancy of railway freight transport in urban areas (De Langhe K., 2014): the idea is to think intermodal in urban freight transport systems. Cities are looking with great interest at the local railway network and try to assess, with the infrastructure manager, the level of congestion on this network, to see if tracks are available for implementing freight trains for delivering urban city centers. In Brussels for instance there is 163 km of railway tracks that could maybe be used (Lebeau P., Macharis, C., 2014, p. 9). Tramway networks are also used in this perspective (the famous Dresden case, Tramfret Paris).

The dynamism of the research is linked with the different packages of the Railway Reform managed by the European Union, based on the split between the infrastructure manager and service operations. This opportunities allow newcomers to enter the market with lean business models for new freight train operations, for example in the urban area. In France, governmental programs are supporting « Opérateurs Frets de Proximité » (OFP). We can fancy that some rail freight transport operations will start in cities.

In many cities, rivers and waterways are part of cultural and historical heritage<sup>7</sup>. Intermodal transport has to be developed using waterways for freight transport and for delivering urban business actors. This is the case for Paris (Franprix managed by Norbert Dentressangle<sup>8</sup>).

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<sup>7</sup> Lyon is interesting in this perspective (Rhône, Saone).

<sup>8</sup> Experts are considering that Norbert Dentressangle is losing money in this business but the impact in terms of communication – greening the city – is quite good.

**Intermodal competition** could then occur *within the city* between road freight transport, urban railway transport and waterway transport.

We can finally investigate the relevance of supporting **spatial competition** between different urban logistic platforms. Such a strategy could improve the level of quality of service and push logistics operators and transport companies towards more innovation, both in services and transport technology. Why not suggesting to city planners and local politicians to implement two or three pooling platforms and open some spatial competition among them, for reverse logistics too.

One of the main objectives for urban transport policy both for passenger and freight is achieving seamless transport that means reducing time of interconnection and improving these interconnections (European Union, 2011). This is obvious for passenger transport but this should also be the main objective of city logistic policy design: it is not easy for freight, as parcels are dispatched in a very complex system of sub delivering and logistics.

*And what can happen if local politicians, local transport companies and distributors decide to lock-in the system?*

Setting up an organization between shippers, transport companies, logisticians, supported by local authorities, needs a clear and rigorous analysis.

As transport in cities is one element of crucial importance – basic endowment of freedom – because it deals with our privacy, connects citizens and companies with the others and fosters projects, business and opportunities, it is very important to try to analyze all the implications of local decision of pooling and city logistics.

The first question to try to answer is the impact on competition, which has for objectives to limit the costs of service production for the citizens- taxpayers but also to provide different “sources” of transport and logistics services. It is also a way to guarantee free access to transport services, and multimodal competition in this perspective could be a good way to maintain a good level of prices and quality if services but also incentives towards **innovation and differentiation**. A clear contract must be signed among the actors, fair tender has to be organized – for instance every three years - and barriers to entry have to be removed. The issue of sunk costs and free access to essential facilities (see the debates on Essential Facilities Doctrine) also have to be analyzed, in order to avoid lock-in strategies (Shapiro, Varian, 1998). Nondiscrimination, welcoming newcomers are core elements of the success of the project in a long term perspective. All these basic results of industrial economics suggest the setting up of a regulating agency, linked with a competition authority or anti-trust policy with having an overview of the solution and system implemented locally. We suggest representatives of the central state on the board of this regulating agency and representatives of the European Union for clear transparency in tender procedures.

The second question refers to the level of jurisdiction which is better suited for implementing such a solution: local, regional or national? Following the fiscal federalism theory (Oates, 1971), we can suggest that local authorities must be at the center of the organization. But as Rodden and alii (2004) noticed, we have to be careful of irresponsibility at policy design at local level, because of a lack of expertise and long term view: overspending, unlimited use of subsidies, local social networking which brings inefficient results and services, rent seeking strategies, corruption and club strategies, are possible and must be controlled. As expressed before, why not integrating regional authorities, even national and European Union



representatives, but also regulating agency representatives, competition authority representatives in the board of such an Urban Consolidation Center?

The last point concerns the open door to corruption in such a locked system (Boehm, 2007). What can happen if local politicians connected with local transport companies limit the access to the market to newcomers and new companies, then limiting innovation? What happens if local networks of transport service providers control the information of all shipping, parcels and deliveries within the cities, and are connected with local politicians? On this issue, it is up to the citizens and all actors of public life to remain watchful to protect our rights and freedom.

## Conclusion: city logistics 2.0 and beyond: urban tolling maybe?

Beyond the development of city-logistic platforms, we can imagine a direct collaborative synergy 2.0 between shippers and customers. Customers could organize on their own the delivery of parcels, using all modes of transport available through social network and collaborative networking. Next research would maybe investigate this issue of City Logistics 2.0 where all actors are implemented and will participate, from taxi drivers, local public transport to pedestrians on the go between a shop and a delivery point.

There is also interesting synergies to notice in a common development of logistic platform and the introduction of urban tolling systems. Next researches could be welcomed to develop this point.

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