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« Réévaluer le rôle du grossiste dans la logistique urbaine »

RÉSUMÉ – Les acteurs traditionnellement étudiés en matière de logistique urbaine sont les collectivités locales et les prestataires logistiques, ayant mis en place des plates-formes urbaines pour réduire les impacts négatifs d'un développement anarchique des flux de produits. Peu de travaux ont abordé la position centrale occupée par les grossistes. L'objectif du point de vue est de discuter la manière dont ils ont développé une expertise logistique essentielle qui pourrait être utile aux collectivités locales.

MOTS-CLÉS – Logistique urbaine, autorités locales, services logistiques, distribution de fret urbain, grossistes

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« Reassessing the wholesaler role in urban freight distribution »

ABSTRACT – The actors who are traditionally examined in the context of urban freight distribution are the local Authorities and the logistics service providers, who have implemented urban platforms to reduce the negative impacts of an anarchic development of product flows. Very few works have studied the central position of wholesalers in the urban freight distribution. The aim of this viewpoint is to discuss how wholesalers have developed an essential logistical expertise that could be useful for local Authorities.

KEYWORDS – City logistics, local authorities, logistical services, urban freight distribution, wholesalers

REASSESSING THE WHOLESALER ROLE IN URBAN FREIGHT DISTRIBUTION

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INTRODUCTION

The wholesaler is usually considered as an intermediary who improves the operation of distribution channels regarding costs and service quality (Rosenbloom and Andras, 2008; de Leeuw *et al.*, 2013). More precisely, it resembles a marketing middleman existing for a sole reason: it can perform one or more marketing and logistics functions, usually by combining the volume of a number of manufacturers and/or retailers more efficiently than themselves (Mallen, 1977). The aim of the intermediation activity is to ease the matching of offer and demand through the linking of several channel members with complementary interests, by taking advantage of both a transactional dimension (organization of trade) and a logistical dimension (management of flows). Hence, the wholesaler exercises a variety of intermediation functions in upstream

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(production and/or importing activities) and downstream (delivery of convenience stores, restaurants, craftsmen). The four main expertise it implements are as follows:

- *The understanding of products and clients.* The central role occupied by the wholesaler guarantees a perfect understanding of products as well as an excellent understanding of clients' needs and expectations. At the heart of the markets, nowadays, trade professionals are an important source of innovation, communication and training, participating in the growth of sales activity.
- *The provision of products.* Received, sorted and stored, the products must then be dispatched on time, in the right quantity, whatever the volume, the diversity and destination. Nowadays, logistics represents an important differentiation factor for wholesalers regarding the competition.
- *The guidance.* The perfect understanding of products, associated to the understanding of the specific needs of each client, guarantees customized recommendations and an optimized contribution of solutions (market studies, technical studies, etc.). In wholesaling, relationships are built over time, allowing a permanent adjustment of the services offered.
- *The creation of customized solutions.* Wholesalers create added value to the extent that they provide adapted solutions to each situation. They are capable of making proposals based, in particular, on the development of digitization, to improve customer relationship.

For decades, wholesalers have had an important position in the urban freight distribution (Dugot, 2000; Pardo and Paché, 2015). Indeed, their professional clients find themselves within the main concentration of economic activities, as well as the concentration of populations and city centers. At the level of France, the activity of wholesalers represents 5 million movements a week, that is to say 4 movements per week and per employee, and approximately 39 movements per week and per facility. If we express this activity in the number of vehicles, there are 58,000 vehicles circulating each day to make deliveries. In the city center, the activity of wholesalers represents approximately 15 % of its

daily movements (22 % in Paris) (Sirjean and Boudouin, 2017). The understanding of wholesalers' practices regarding deliveries in the urban area has not yet given rise to in-depth research in Europe, except for Morganti's research (2011). The actors who are traditionally examined are the local Authorities and the logistics service providers, who have implemented urban platforms to reduce the negative impacts of an anarchic development of urban freight distribution. However, wholesalers are historical operators who, for a century, have been very involved in the supply of small city center shops. After having underlined the key issues of city logistics, regarding both public management and management of companies, in particular wholesalers, the two evolutions we may foresee in the near future will be presented in this viewpoint.

I. AN OVERVIEW ON CITY LOGISTICS

The issues linked to city logistics have progressively appeared over the last twenty years, in relation to the social and urban changes (Taniguchi, 2015). The concentration of people in cities increases each year. This is not necessarily interrelated with the presence of economic activities in urban zones, and in particular in city centers. Indeed, the property pressure often leads economic activities in trade, service and crafts to leave city centers for the periphery. Companies resisting this centrifugal movement are led to re-think their storage methods given the scarcity and costliness of available space: when space is scarce, selling will be preferred over storing, as shown at an early stage by the Japanese case (Jausaud, 1992). This leads to implementing restocking systems in JIT, and multiplying the transport in smaller quantities. The phenomenon is even more emphasized by the evolution of the consumers' demand, with the ability to access a variety of distribution channels (small shops, large retailers, Internet), and to which the companies offer as large a mix of products as possible, in order to place itself in a very competitive system. Innovation, whether regarding the product or the sales relationship (access to orders, as well as directions for use), further increases the pressure on the activities, and even more in city centers.

Over a long period, the flow of goods was considered as a simple outcome of the economic and social organization; for example, the globalization of markets after World War II was directly at the root of the development of shipping containers (Levinson, 2016). Now, the observers of the operation across territories agree on the central role of spatial planning, whatever the geographic scale taken in consideration (Hesse and Rodrigue, 2004). This is notably the case for urban entities as, evidently, the quality of the deliveries completed by wholesalers impact the life of the inhabitants (through the costs and reliability of their servicing), productivity of services (often dependent on a multitude of products). The major role of products in city life is found in a more general manner in all that comes under urban governance as this latter must rationalize flows with the ambition of reducing their negative consequences, maintain the activities that justify the idea of “living together”, offer the space necessary to companies, and implement a regulation on deliveries and collection of products (Anderson *et al.*, 2005). Indeed, the capacity of trading in good conditions has become a key element of city productivity and attractiveness, in the sense of “community of actors”. Thus, we can say that the dynamic of flow of goods is a good indicator of the vitality of urban areas.

With this general framework, ironically, it has become obvious that we are witnessing a rejection of logistical activities towards the outskirts of cities (Dablanc and Andrianakaja, 2011). Formerly placed in urban areas, the platforms on which the consolidation and distribution of products is done are increasingly moved to the periphery. The same applies to all the storage sites participating in the regular servicing of dense residential areas, while the frequency of deliveries (or collection), as well as the timeliness constraints, campaign for a positioning at the closest of the barycenter of the zones to supply. This “loosening” is due to two main reasons: (1) the difficulties of logistics professionals to find urban spaces capable of accommodating them in accordance with their priorities (dimension, accessibility, cost); and (2) the people’s unwillingness to see the installation of equipment destined to activities that are considered synonymous of deterioration of their environment (essentially as a result of visual and acoustic pollution). Moreover, the negative stances are often relayed by political and administrative decision-makers, leading to an urban planning strongly limited in its installation opportunities.

Consequently, the plans in force to service cities must take into account the loosening and specific constraints of each city. Numerous plans, in particular those relying on mail transport, are based on the bulk breaking in periphery, followed by a distribution thanks to small delivery vehicles. The result is a multiplication of flows in the cities with crowded access roads because, for example, to replace a 17-ton vehicle, it is usually necessary to have 10 3.5-ton vehicles (Sirjean and Boudouin, 2017). These adverse effects are similar for the exit of products and the waste treatment (Gonzalez-Feliu *et al.*, 2014). Other plans, in particular those of wholesalers, will associate the relative proximity of a storage and flow processing site and the organization of delivery rounds, with small or large vehicles depending on the case. Thus, the bulk breaking is usually combined with value creating activities (advice, service, quality control).

Beyond the functional aspects, the economic (additional charge for activities placed in a dense area) and environmental impacts (increase in CO₂ emissions) weaken the urban system as a whole (Blanquart *et al.*, 2010), becoming increasingly less compatible with a green logistics approach. Therefore, it may be useful to seek how to resettle buildings sheltering logistical functions as close as possible to the areas they serve. To do so, a variety of actions are possible. Some actions can be authoritative and resulting from an extremely directive logistical area defining policy: welcoming sites and companies are forced to settle in these areas. Other actions can be based on a very strict regulation regarding the use of infrastructures: for example, traffic can be forbidden at certain times in certain place and for certain types of vehicles, which would mechanically lead companies towards urban logistical areas that will take different forms, according to the needs in terms of frequency of delivery or type of products (Ville *et al.*, 2013).

II. STAKES FOR THE PUBLIC DOMAIN

The notion of public domain refers to city managers (politicians and technicians) and users (as well as their representatives). The motivation linked to the research of an efficient and sustainable organization of freight

distribution can be classified into three complementary dimensions: environmental dimension (quality of life of inhabitants), economic dimension (general dynamics and ability to attract value creating activities), and functional dimension (smoothness of trade and meeting needs). All these elements are often interconnected together – for example, flows that take place without difficulty generate little nuisance and reinforce the city's attractiveness – and is mostly within the disciplinary field of urban planning:

- *Environmental dimension.* If we consider that the energy balance is an appropriate indicator to measure the effects of the logistical activity on the environment, it must be emphasized that the delivery of products participating in urban freight distribution make up for approximately 30 %, and represents 20 % of CO₂ emissions (Russo and Comi, 2012). A study carried out in France by the ADEME on the emission of pollutants shows 40 % of nitrogen compounds and 45 % of small particles, notably linked to diesel engines (Sirjean and Boudouin, 2017). This data is directly linked to the people's health and can no longer be ignored by politicians. Overall, the effects of vehicle traffic are noticeable to urban dwellers who are more likely to severely criticize the political choices made where the environment's conservation did not truly belong. However, allocating the entire negative externalities to road freight transport is reductive, to the extent that private vehicles represent 70 % of urban traffic.
- *Economic dimension.* On average, the costs of supplying a product represent, for the sole urban area, between 3 and 4 % of the product's value. For the shipment of low-priced products, the sum can amount to 10 % of the sales price. This proves that wholesalers bear high costs in their urban delivery activity, which makes an efficient organization of logistical activities even more vital. This is especially true as the increase in the delivery costs for their clients leads them to move to the periphery of cities. While many observers agree on the necessity to increase the density of cities while evolving towards a larger diversity of its components, the local Authorities must favor the products' penetration in dense areas; the balance and attractiveness of city centers depend on it.

- *Functional dimension.* A small van parked in front of a small shop, a heavy truck delivering equipment to a construction site, a vehicle collecting waste are all examples of urban life. No one questions this obligation to ensure urban logistics activities, but the inconvenience resulting from it is often recalled (Allègre and Paché, 2014). Also, any ambition of economic development of the city, necessarily leading to a more important freight distribution, must be coupled with measures enabling to meet dispatching needs, or else the general operation of the city would suffer environmentally, as well as economically, as shown by the increase of traffic jams that paralyse a portion of the activity. The challenge is significant, as approximately 20 % of the road occupation by motor vehicles is attributable to freight (Sirjean and Boudouin, 2017), of which half is linked to the consumers' trips to make their purchases.

III. STAKES FOR THE WHOLESALERS

While aiming at the same components of the urban system, the professionals' perception is different. Here, the question of competitiveness is a fundamental element to explain their choice in an institutional context, of which they control only a portion of the factors (Lindholm, 2012). This is the case for all wholesalers, whatever their involvement: direct, when making the delivery themselves; indirect, when they charge a service provider with city logistics operations, totally or partially. In all cases, they are forced by urban-planning choices and the markets to service. The practices cannot be analyzed without taking into consideration the costs, in a context where the time value is constantly present. The extreme diversity of products and types of wholesalers lead to a variety of cases dependent on urban realities (infrastructures, levels of traffic congestion, regulation). However, it is possible to define the main challenges as perceived by the wholesalers, with the same grid as previously adopted:

- *Environmental dimension.* Companies, and in particular wholesalers, taking into account the environmental impacts in their organizational choices, come together today with economic targets, what Hesse (1995) underlined as from the mid-1990s. Companies committed to citizen initiatives, while remaining actors who need to make profits: their survival depending on it. They are aware that the environment increasingly interferes in the competition and some wholesalers develop clearly aggressive tools in that area (use of “clean” vehicles, management of packaging, display of carbon footprint). The tightening of rules defining the acceptable levels of air, or noise, pollution campaigns in favor of the creation of systems enabling a better environmental coordination of urban flows.
- *Economic dimension.* It is the genuine motor of the wholesalers’ behavior as their competitiveness is largely related to their aptitude to display an efficient logistics (Rawwas and Iyer, 2013). The quality of dispatch, usually measured in terms of observance of scheduled timetables, as well as the compliance of product quality, is a key element for their development. In this context, the geographical position of platforms from which delivery rounds are organized is prominent. The establishment of urban logistical spaces supposes that the induced bulk breaking does not lead to a significant increase in delivery costs and a deterioration of service quality. It must also take into account the multiple intermediation functions that are performed by the wholesaler (Pardo and Paché, 2015). That is why an intervention of local Authorities is often desired, in an indirect way (support in the use of techniques) or in a direct way (decrease in land price), in order to maintain a low level of rates charged.
- *Functional dimension.* To regulate the trade of products and control time, the presence of urban logistical spaces in dense areas, very close to the city center, can appear necessary. Indeed, transport infrastructures are often congested, in particular at times when the logistical demand is high (between 7 AM and 10 AM), and local Authorities seek to regulate their use by limiting traffic and parking conditions of utility vehicles.

According to the configuration of the area to deliver, we will try to get as close as possible to the clients in order to perform the last link with less troublemaking means (by foot, tricycle with electrical assistance, “clean” vehicles) (Thompson, 2015). In other cases, the optimal answer will be, on the contrary, to resort to a vehicle enabling to group several deliveries. In any case, we must imagine differentiated answers, taking into account the living conditions of the inhabitants, judged acceptable by the public players who enact regulations.

IV. WHAT ARE THE FORESEEABLE EVOLUTIONS?

Regarding sustainable city logistics, the foreseeable changes in the wholesalers’ practices are linked to mutations expected in the two components of the system regulating urban freight distribution: on the one hand, flow management; on the other hand, the organization of the city of the future. These two parties present are nowadays on the eve of deep transformations because of the digital transition of logistics and the ecological transition of the city. The commercial and public stakeholders cannot ignore these evolutions and they must adapt, through a constant dialogue, to the future setting in which they will need to position themselves, as pointed out by the Triple Helix model by Verlinde and Macharis (2016).

TOMORROW’S LOGISTICS

Logistics, at the heart of wholesalers’ activity, is strongly influenced by new digital tools. The latter are accelerators of flow, information and products, enabling to meet a constantly changing demand, quantitatively as well as qualitatively. The digitization becomes essential to match supply and demand at a time when loyalty to a company is gradually less stable as it is easier to compare the offers and to find alternative answers to needs. This influences the overall process: resources available, financial aspects, available teams and/or providers, stock management, all of which is being coordinated by customer data. The individual, who,

previously, was not part of the BtoB relationship, has now become a key player in the global approach of supply chain management of which the wholesalers are only a component. Thus, the digital revolution opened the supply chain upstream and downstream, the globalization of trade and Internet sales are a few iconic examples. Linked to the digitization, other major changes lie ahead: automation in warehouses, driving assistance software in transport, and the Internet of things in logistics, the central role of which for a smart city is now mentioned (Zanella *et al.*, 2014). The current evolutions will generate different relationships to space and time because of the multiple interconnections, upon which wholesalers should build.

TOMORROW'S CITY

The regulatory constraint aims at reducing the impact of the traffic and the parking of utility vehicles in the city, and particularly in city centers. They must be designed with a systemic approach, by integrating the interactions of the various players of the system, in particular the interactions between commercial vehicles and private vehicles. Restricting the access of large vehicles to city centers, beyond the physical constraints of access that are widely taken into account by transporters and shippers by favoring “small” vehicles, risks multiplying congestion points. Not taking into account the system of constraints and idealizing some measures risks leading to a construction of partial regulations, with significant risks of adverse effects, regarding the environmental dimension as well the economic dimension. Undoubtedly, this will continue and develop under the pressure of public demand in terms of living conditions. The development of the smart city contributes to this management of logistical operations implemented by the companies supplying the city. Passenger transport, just as product transport, is often perceived as the key challenge of the new sustainable management of public spaces, wholesalers must position themselves as a preferred contact as they are at the crossroads of vital needs of servicing (obligation to provide products essential to craftsmen, businesses and services), political ambitions to revitalize city centers (support and growth of activities and housing), and an increased energetic efficiency (adaptation of the organization of shipments to meet the demand).

CONCLUSION

To please both the public players and the wholesalers, it is essential to engage with these two partners in order to share a common knowledge of the challenges. At a time when urban freight transport is known as a key element of urban policies, while several studies are carried out in the main Western metropolises, the wholesalers' representatives should position themselves as preferred contacts offering satisfactory environmental solutions, as it seems to be the case for the UK's leading food and drinks wholesalers (Jones *et al.*, 2015). Cities expect the involvement of professionals in the testing of innovative organizations capable of improving a situation often deemed troublesome, both on economic and environmental levels. Indeed, several questions remain: what facilities should be developed? What supporting measures should be implemented? What funding is needed? Depending on the cities (size, topography, economy) and nature of products (perishable, bulky, high added value), the solutions will undoubtedly be different, given that the aim is to make the exchanges freer flowing while the demand supported by the transport infrastructures is increasingly significant. Wholesalers represent approximately 20 % of the urban freight transport, that is to say approximately as much as the parcel delivery services, for far less nuisances. Indeed, the delivery times, the types of vehicles used, and the optimization of delivery rounds enable a better productivity of the means used and a high creation of value. Therefore, this proves that wholesalers, sometimes perceived as useless intermediaries, participating in an illegitimate increase of the consumer's sales price, could ultimately play a central role in the implementation of a more sustainable urban freight distribution.

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