URBAN FREIGHT DISTRIBUTION: WHICH FUTURE FOR THE ACTION OF LOCAL AUTHORITIES

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INTRODUCTION

Industry and retail logistics operations are analysed from a long time. "Urban logistics" appeared only in the 90s. The analysis of the urban logistics is highly complex due to the number of its components, as numerous as diverse, but however totally inter-dependent: housing environment, town planning, economic activities, urban management, regulations, transport and logistics.

Transport and logistics are essential for a city: delivering shops and residents to maintain economic activities. Within this framework, public local authorities need to know actions they can develop to anticipate, in an optimal way, the urban distribution change in the coming 10 - 20 years, in order to reach a high quality urban logistics. Even if changes may appear in the current logistic organisation, the aim is to create value and employment.

More and more pressures have an influence on urban logistics. Logistics organisations need to be more efficient in order to satisfy more customers, integrating new technologies of communication and data exchange. Cities must take up this challenge and find ways to better perform services offered while taking into account all town planning and environmental rules. In all cities, land cost is a major problem to uphold logistics activities.

The objective of a 20 % greenhouse gas effect decrease by 2030, recommended by the Kyoto agreements, introduces a heavy brake and seems in the current context, difficult. It is urgent to elaborate a strategy for future logistics taking account all these pressures. In this context, public authorities need to know actions they can develop to anticipate, in an optimal way, the urban distribution change in the coming 10 - 20 years, in order to reach a high quality urban logistics. Even if changes may appear in the current logistic organisation, the aim is to create value and employment.

A forward-looking analysis for 2030 is difficult in a context of big change. The economic and financial worldwide crisis, the expected shortage of the fossil energy, the household behaviour modification in the most of developed countries can lead to a break.

This paper presents the results of a research realised for the PIPAME[1] by Daniele Patier, LET, Interface Transport and Gérardin Consulting in 2009.

(Inter ministerial pole of prospective and anticipation of economical transformation, Ministry of Industry) [1]

The first part presents the methodology developed to highlight the key variables and to identify actions that local authorities can develop to promote a high urban quality logistic to optimise movement of goods and to create added value and jobs.
The second proposes one of the elaborated scenarios by developing the various variables in a forward-looking perspective for the urban distribution in 2020-2030,
The third part gives a list of recommendations to the local authorities for the actions they can undertake today in order to anticipate the changes and to obtain a very good performance of the urban logistics, close to an ideal scenario.

METHODOLOGY

A methodology of forward - looking analysis has been adapted to the urban logistics in order to elaborate scenarios for 2030. The methodology is based on the following phases:

- Identification of the urban system determinants, census and analysis of innovations in urban logistics. These two works were run simultaneously, interactively.
- Interviews of experts chosen for their ability to analyse and to throw light on one component of the system.
- Determination of the key variables considered as levers to improve the current urban logistics.
- Brainstorming for building scenarios and to give recommendations to public local authorities.

A critical analysis of all experiments carried out in urban distribution in Europe and a brainstorming exercise in a pilot group gave possible the construction of a scenario with a systemic view.

Identification of the determinants

Eleven determinants of the urban system have been identified because of their interaction in the urban logistics.

1. **Political** (State, Local authorities) strongly affect the urban logistics. They step in numerous fields: town planning, infrastructures, land preserve, circulation, delivery areas, environmental measures, trade. They set up regulations control. They can try to involve them in new implementations on urban logistics through subsidies and facilitating. They have to introduce urban goods in their Mobility Master Plans and create training for delivery staff members. They are in charge of the development of news technologies and new energies and their distribution. They have to adapt and harmonise the regulation in order to answer the needs of the users.
2. **The city** is a complex system in which architecture, urbanism, land, property and planning interfere. Each part of components affects the logistics organisation. The setting up of economical activities and their location have a direct effect on the

number of deliveries necessary to their functioning, the type and the number of vehicles involved. The price of the land in the city strongly affects the type of activities able to stay in. This is particularly sensitive for the activities of transport and logistics.

3. **Individuals** are alternately citizen, customer, resident, user or tourist. Their behaviour can be totally different depending different status they are considered. As consumer and resident they have an essential role. People are in the centre of the local councillors' concerns because he votes; for the retailers whose they are a source of income, for the operators of transport to whom they have requirements in supplying. Modification of the size of households, the ageing of the population and the behaviour change linked to the development of new technologies influence the logistic organizations. The demand is more and more split; the "playful purchase" prevails on the "chore purchase". So the keen interest for the suburban hypermarkets decreases for the purchase in convenience stores, the e-commerce and the home delivery. New sophisticated logistics organisations have to be imagined.
4. **Trade** consists in numerous types of commercial activities which live together and need logistics organisation more or less sophisticated. Large volume distribution, proximity business, crafts, services do not have same needs. It has an essential role in the city. It creates more than a third of global deliveries (source: French National Urban Goods Movement Survey). Some are delivered in just in time, several times a day, with small quantities. The transfer of the storage areas to a sale area, because of the land cost, increases these practices. The upstream logistics organisation depends of the production system, often high-performance. The urban logistics undergoes the constraints of the industrial upstream logistics and those of the urban last miles distribution system. Few establishments possess deliveries areas. Half of the deliveries are realised in own account and with less than 3,5 tons light commercial vehicles which are not concerned by strong regulations.
5. **Labour**: the quantity and the quality of jobs, trades and training determine the ability of the system to adapt it to the demand. The density of employment determines the number of deliveries by activity (about one delivery/job/week, source: French National Urban Goods Movement Survey).
6. **Freight transport operators** and logistics are the heart of the system. The sector is very competitive. They need new technologies to exchange data, in real time, with shippers and consumers. They operate on the last miles in the urban area with strong constraints (time, regulation, security…). So, the carriers are more and more reluctant to operate the «last mile delivery». Some specialists of urban distribution and integrators (who can subcontract the least lucrative part) share the market. The number of platforms has been reduced little by little from cities towards more and more distant suburbs. That increases the length of the first leg and the costs, and decreases the capacity to optimize the loading rate of the vehicles. They have to answer to their purchaser's requirements.
7. **Shippers** (Industry, Large volume distribution, services) choose the operators of transport, and they dictate their requirements. Often they impose their rules according to their own logistic organization, the location of their platforms.
8. **ITC supplier (info logisticians)** is the organisor. Most of the time, its role is unknown or forgotten while his role is essential to facilitate the communication between each

urban freight stakeholder. It creates new adapted procedures to the plenty of different situations. Its role allows the real-time information and communication from the stakeholder to consumers via all the intermediaries.

9. **The suppliers of electricity or gas** have a primordial role for the vehicles of tomorrow. They have to create a large distribution network.
10. **The commercial vehicle manufacturers** have to adapt the new model to the economical needs and to the new environmental constraints.
11. **Financial organisms** orchestrate the global system, at each level. Today, they are reluctant to help innovations in logistics

A system analysis was realized by taking into account those eleven domains which interfere in the urban logistics.

Choice of experts

The determinants being identified, the analysis is based on the knowledge gained by the authors during the 15 years of the “Urban Goods Movements French Programme” and their involvement in European projects. 30 experts were chosen in varied disciplines and diverse statutes (academics, logisticians, forward-looking specialists, sociologists, researchers, truck manufacturers, local authorities, the Post, Web specialists, suppliers of electricity, hauliers). They were interviewed. A steering committee was created with members of the Ministries of Industry and the Employment and the Ministry of Transport and Environment.

Some statements

Within the framework of the European network Bestufs (BETS Urban Freight Solutions, www.bestufs.net), the LET was in charge of a workshop " Data collection and Modelling ". For 4 years a census of the collected data and the models concerning the urban logistics was realised thanks to a network of experts' hundred of in 27 European countries. We noticed a crucial lack of quantitative data.

Therefore, a few number of articles in newspapers (excepted in specialist magazines) deal with problems connected to the urban logistics. Only are discussed the problems of car park, of public transportation, of town planning or regulations concerning, most of the time, essentially the mobility of person but not the goods movements

The local councillors meet difficulty to estimate the important stakes of urban goods movements. They show a total indifference and have no cultural background and information about the subject. The elected representatives focus their actions on passenger transport, the urban planning, and traffic. They often take measures in order to solve local problems without having a global and transverse view of the city. They see in the distribution of the goods only the negative aspect of the truck, which holds up the traffic, causes the insecurity, and gives a bad image of the city. So, trucks were not welcomed in towns.

The transport-logistic role is not well-known by media, or planners. So there is few political involvement in this theme (in Europe, London, Barcelona, Paris and Emilia-Romagna are good pilots). In the town technical services, numerous people are in charge of the public road

infrastructures, the garbage dump, and the public transportation. Only some cities have a service dedicated to the urban logistics.
The “city of tomorrow” is a city with soft mobility where life is enjoyable. The first review suggests that whatever the changes in society as a whole, people continue to have the same needs for clothes, food and basic consumables. So, orders can be placed electronically but the goods ordered will continue to need physical delivery. It is advisable to stay realistic.
The orders can be dematerialized but the ordered products have - and will always have - to be physically delivered. The virtual illusion does not have to make forget that the flows of goods cannot decrease: food consumption, household refuse, building materials. As a result, the urban logistic system is rigid, enslaved in an economy of “flesh and blood”. It is advisable to stay realistic.
The critical analysis of all implementations in urban distribution and the brainstorming exercise carried out in the pilot group enabled the choice of key variables. The identification was realised thanks to the analysis of the various innovative practice in urban logistics and their context (objectives, background, resources/infrastructures, involved actors, financial instruments and results.) Innovation in the European cities (see European programs: BESTUFS, CIVITAS, SUGAR, French UGM program) all had the same objectives: decreasing congestion, polluting emissions, greenhouse gas emission. This has an impact on consolidation of the flows of goods; they cause often-expensive transhipments (to compensate). They require a public / private partnership, to adapt the regulations and need a project manager and punctual financial supports. The main measures concern regulation (stop to deliver, hour, and access for clean vehicles…). Then, the new logistics areas have been set up (Urban Logistic Zone, UCC, proximity logistic space, electronic lockers or pick up points). Others are based on new organisation using technology and actor’s game (return of virtual freight desk). Some of them used new vehicle concept (electric cargo cycle, electric trolleys). The modal split known many experiments, few of them are efficient today. Concerning the trade, numerous actions try to keep a commercial diversity, to restore disadvantaged districts, to do the city centres more dynamics, to create artisan poles.
The result in 2010 is that there are visible implementations with restricted effects, the global measures of regulation are few; but there is a field for the future. If the quantitative references arise from only French national inquiries on the Urban Goods Movements, analyses are based on the knowledge acquired on the analyse of all the European practice.

Key variables

Five strategic variables have been retained: consolidation, vehicles, logistics land, delivery-vehicle reception, commercial structure.

Consolidation

The logistics spooling concerns delivery-vehicles, delivery area, platforms, technical means or data exchange.
A vehicle for several customers permits to increase the filling rate and to reduce the cost. The problem is the loss of contact between shippers-customer and carriers in charge of last

mile distribution and the consignee. The stake is the mastery of the demand. New concept can be developed at the *upstream consolidation* (shippers or distributors).

> For example, in 2004, Benedicta firm created a Supplying Mutualised Management with the firm Nutrimaine. FM logistic realises for both of them the supplying of some warehouses of Carrefour. Their goods are grouped together on a multi-customers platform. The logistician decides with the two manufacturers a same hour of delivery. The results are 10.5 % decreasing of storage, an increase of 12 % of frequencies with a same rate of service.

Regarding the *downstream consolidation* a same operator (logistician, carrier) deliver goods of different senders. We can go farther by obliging the actors to consolidate their logistic organization (concept of urban logistic spaces).

The combination of incoming and outgoing deliveries avoids the empty returns (often the vehicle delivers but does not collect). It is the case of a messenger van or skips (logistic reverse)

The consolidation of transport capacities, via a platform of information as a taxi reservation station, permits to give to the senders the available transport capacities. New offers can be added as the private individuals' vehicles, taxis … A project is in progress which concerns the sharing of the delivery areas, professionalised and booked (via a virtual booking station).

Clean vehicles

An hypothesis is made: a transition will be already begun towards electric and gas vehicles. Diesel engine will have still made progress (Euros 6-7-8-9). The new bio fuel generation development could reduce the consumption of diesel oil for the diesel utilitarian stock in 2030, considering the life expectancy of the vehicles and the slowness of the actors' behaviour. The gas light commercial vehicles allocated to the urban logistics could be feed by the bio fuel from the fermentable waste treatment. That would participate to reduce the greenhouse effects. Significant progress can be realized on the horizon 2030 to improve the ergonomics of vehicles and to facilitate the work of the delivery drivers (less wide, low floor, large visibility). The loads would be conceived modular (mini-containers, mini--roll) to facilitate the modal transfers towards the river, the railway, the tramway. The new vehicle less noisy is an important stake for the night deliveries. Some experiments are in progress in the European programme PIEK. The generalisation of memory chip (RFID) will permit to improve the in real time follow up of the goods.

The combining of incoming and outgoing deliveries avoids the empty returns (often the vehicle delivers but does not collect). That concerns in integration of reverse logistics.

Note that the clean vehicle improves the gas and pollutant emission but it has not effect on the congestion. The development of the consolidation appears. The logistics pooling allows obtaining high loading rate, favourable in a modal transfer. The mixed freight/passenger transport could be envisaged.

Logistics land,

The lack of land for logistics facilities is a strong brake in dense urban areas to maintain or improve the level of logistics activity and its performance. The logistic activities have been pushed aside, little by little, further from city centres because of the land cost. The setting up of the logistic land in city centre is a strategic variable organised around:
- Identification of land reservations assuring, in urban zones, the availability of sufficient spaces and reasonable prices for logistic activities.
- Development of new concepts to facilitate the urban fright operations: logistics hotels (the logistic hotel is an establishment grouping together the activities of transport-logistics and services, which depend on it. The objective is to reconcile economic profitability and that of the land, the building, and the sustainable development. He insures three additional functions: quality of the property project, the upstream accessibility and the distribution approval in clean vehicle, and a function "interfaces" connected to the urban dynamics), city hubs
- Development for new concepts of logistic: hotels, city hubs. In these concepts several functions are required: “quality of the project” (building, environmental preoccupation, added value of offered activities in order to cancel out the cost of the land, upstream accessibility in own site and distribution with clean vehicles”, the accessibility have to be multimodal (if possible, and interface, linked with the urban dynamic.

Delivery-vehicle reception

The delivery area is the first urban logistic equipment. Particular cars often take it and the deliverymen stop their vehicle in double park, causing congestion. Their productivity is affected. Delivery areas are often not adapted to the sizes of vehicles, or badly situated. This situation creates conflicts between the various actors (residents, operators of transport, the storekeepers or craftsmen who transport products in own account). The deliveries being concentrated in time slots forced by the opening hours of establishments, the management of the areas of delivery is difficult. The operators do not often know the reserved places and the regulations which are bounded up with it. The fact to permit only “professionals” to use those delivery areas can be envisaged providing that the operators agree to pay this service in order to win in efficiency. The system could be efficient only if the controls are effective, either by technological means, or by the creation of squad of surveillance as in Poitiers, France and Barcelona, Spain.
Other functions can be offered on the delivery areas as borders of electric refill which can to prevent somebody to park cars.One of the way to follow is the dynamic booking system which will permit to optimise the rounds, to create jobs and to do the city more pleasant

Commercial structure

Generally, business and logistics are thought separately while they are strongly interdependent. Businesses supplying and the home deliveries are also concerned by the logistics activities. Collaborative sharing and synergies need to be found.

SCENARIO URBAN LOGISTIC 2020-2030

The construction of scenario has been realised with a systemic view and the objective to be able to give recommendations for public action. Variables being identified, three possible states of variables have been chosen (the number is low in order to avoid the multiple combinations and to find a coherence) and the scenario can be built. We have a vision of the breaks which could intervene in coming 20 years.

Different states of the variables.

The scenarios were been built in three phases.

Consolidation: The first two stages of the consolidation concern the '" upstream" (shippers) and " downstream" (last miles distribution, reverse logistics (carriers, own account) supply chain segments. The upstream consolidation concerns large volumes of freight which, once consolidated, could be transferred on railroad or river from the works or platforms to the city. The "downstream" consolidation concerns the delivery of numerous parcels to very various addressees, dispersed in the city. The third stage rests on new logistics organisations and new concepts of vehicles.

The *clean vehicles* stages show more contrasts. The first one takes into account the strong pressure regarding regulation and energy resulting from the lack of availability of clean vehicles. That can result in an "underground economy" (for example rickshaws).
The second one is more optimistic. The energy, and regulation pressure may encourage the creation of new jobs, new high performance vehicles concepts (e.g. the electric tricycle) but most of the time not adapted to the demand because of their low payload. The third one is based on a real alternative choice in clean vehicles. Truck manufacturers fit vehicles to energy constraints and offer a large choice of medium and large size with electric or gas motorization.

Regarding the logistic *town planning* there are three steps which are the "micro–stocks" development, the use of storage facilities in the back of shops and the development of "Urban Logistics facilities".
In first step, networks of little storage areas and pick up points are developed and mesh the urban territories, offering to the logisticians and storekeepers new capacities of storage.
In a second step, face to new rules and to increasing of the cost of transport, the rear of shops come back for storage.
The last step consists in the setting up of UCC, which permit consolidation and rationalisation of the last miles.

The *delivery vehicle reception* can be keep as today, occupied by individual cars, or pull down (little vehicles replace the usual delivery trucks), or the delivery area are managed in real time with booking service that ensures compliance with regulations by the carriers and an optimisation of trips and vehicle use. This in turn allows carriers to optimise their

deliveries either using their existing pattern of operations or by making the most appropriate changes.

The commercial structure can change in various contrasting ways: (i) the outlying stores may continue to be part of a poorly planned and poorly controlled urban sprawl, (ii) there may be a revival and revitalisation of the city centre and (iii) there may be a pattern of commercial 'islands' spread across the urban area.

The different states being defined, a desirable scenario can be built as shown in the following table.

Key Variables	Stage 1	Stage 2	Stage 3
Consolidation	Upstream	Downstream	Downstream adapted
Clean vehicles	"Underground economy"	"High performance gadget"	Alternative range
Urban logistic land	Micro stocks	Back of stores	Urban logistics areas development
Vehicle reception point	Dynamic delivery area	Extinction of delivery area	Current
Commercial structure	Suburban hypermarket survival	Recapture of city centre	Commercial archipelagos
			Basic scenario

Table 1. The states of the key variables

This analysis allows building different scenarios.
The scenario presented is virtuous:
Shippers and\or retailers elaborate a logistics spooling (upstream and downstream of the logistics chain). Either shippers consolidate their sending, what is favourable to the modal transfer from road to less pollutant modes, or the retailers come to collect with shippers the freight with 40-50 tons road vehicles, respecting the standards of polluting emissions and benefiting from better filling rate improved by the collaborative transportation sharing. This consolidated freight goes through an urban logistic space.

The urban logistic area is adapted to the volume and the distance to be run. From this platform, the urban distribution can be realised with clean vehicles. The drivers- deliverers reserve, from a booking station, time slots on delivery areas situated near the points to be delivered. They take advantage of certain stops to reload their vehicle in clean energy. Certain operators having chosen "low noise" vehicles can deliver at night.

The freight became a public service. Numerous cities established a delegation of public utility. New organizing authorities are created with new operators of multimodal transport, persons and freight. The homogenization of the territory replaces the model of suburban

hypermarkets. At the same time, a mixed activities/housing decreases considerably the number of movements and the distances covered to realize purchases.

The results

The winners
The upstream consolidation generates important savings in transport. In case the distributors come to collect, the shippers do not have to take in charge the transport.
The distributors receive only one carrier instead of about ten before. They win in organization.
The consolidation allows the transfer of a part of the freight from the road to the river or the railroad.
The development of urban logistic spaces lead to a new interest for new operators who generate new high added value jobs and the new technologies attract a more motivated new workforce;
The manufacturers of commercial vehicles have a market for the clean vehicles; a real range is available.
The delivery-drivers find parking area, their working condition is improved and the recruiting is easier, the security is increased for all;
The local authorities think in terms of urban productivity. The city is quiet because of the decreasing of double park and the associated nuisances (congestion, pollution, noise);
Urban high environmental quality and designed platforms become integrated into the city;
The architects take an interest in the urban logistic field and some are specialized;
New jobs appear in order to answer the numerous services which go with the modernization of the urban logistics. Trainings in urban logistic are created in parallel, what lead to create jobs.
The losers: the carriers who did not be able to adapt their performance lose market share. Some transport companies disappear, but it is possible that they would have disappeared through the interplay of the concentration in the goods road transports sector.

RECOMMANDATION FOR PUBLIC ACTION

The previous exercise allows bringing out recommendations allowing the local authorities to take the good measures to anticipate the changes of the urban logistics in coming 20-30 years. The recommendations can be presented according to seven axes:

Act on the structure of the market:

Actions on the market can be for three levels. The first one concerns the improvement of the exchanges between all the actors of the city, the second carries the development of service companies in urban logistics, and the third consists by facilitating the outsourcing of the transport

1. To create a new job “urban logistics manager” face to the necessity of organizing better deliveries and pick ups with three objectives: to reduce the operating costs of

the last mile, to do lower energy consumption and greenhouse gas emissions, to look for the synergies with the other activities. The added value created by the manager can be important because the cost of the last mile management is high. A narrow link would be necessary with public authorities.

2. To develop service companies in urban logistics. Numerous services of at home delivery and accompaniment have been developed these last years. These services would be the interface between the social economy and the market economy. Either the services can be based on a private business model (when the beneficiaries are able to pay the value of the service), or the economic equilibrium can be found thanks to subsidies relating from the social economy. It is much more economic and much more developing for the quality of life to maintain at home old or handicapped persons by offering them services of delivery or accompaniment that to create medical reception facilities.
3. To facilitate the transfer from own account third party transport. The creation of an aid fund for the firms could help the small business to make a diagnosis of their logistic organization and to study one possible outsourcing to the third party

Deliver-drivers training

The profession is under valued. The deliver has an important economic and social role in the relations BtoB and BtoC. The development of the e-commerce, home delivery and deliveries with installations requires to improve the training and to make the job more professional in order to answer better the demand. It seems essential to reinforce the training options. Considering the increasing demand of new services, this field can create thousand of jobs.

A stable regulation

The urban logistics regulative environment must be coherent, precise and relevant. It is an essential but difficult axis. Some rules are dictated by the European Commission (Euros standards for vehicles), other ones by States (conditions of circulation, size of the authorized vehicles, conditions to have a carrier activity), the others by the local authorities (car park, schedules of deliveries). That creates difficulties to harmonize and to be the rules coherent.

1. Harmonization and coherence are necessary. The municipal orders have to be connected with the objectives “goods” of the Mobility Master Plan.
2. The regulation in mater of urban logistic can be enlarged to the environmental protection.
3. The regulations can be completed by facilitating the professionalization of the delivery areas in order to avoid private individuals which are parked on. The introduction of the standards of emission and noise would oblige the carriers to buy less polluting and less noisy vehicles. Another progress would be the possibility to deliver in the absence of the consignee. It is often easier to create a new regulation than to do respected those previously elaborated. The experiments led in the European cities were effective only when adapted regulations were set up with a serious and lasting control (case of multi use lanes Barcelona).

4. The valuation of virtuous logistics and transport companies would revaluate the profession.

The land

The land is rare, expensive and coveted for multiple more prestigious uses than the logistic function. It is necessary to demonstrate the utility and the feasibility of a back of the logistic function in the heart of cities, linked with the commercial policy and the town planning. Three actions would be useful:

1. To list the urban wasteland (railroad, military land, manufacturers). The urban wastelands are often situated near railroad or river. It is necessary to list them and to watch their short and medium-term availability for a future affectation connected to the urban logistics.
2. To apply the pre-emption law in order to keep the proximity shops. The preservation of a dense tissue of convenience stores is an essential element for the economic dynamism and the quality of life in the urban zones (in city centres and in the suburbs). He can be useful to use the right of pre-emption to facilitate the preservation of the proximity businesses
3. To facilitate the setting-up of the businesses on the transport junction. The hubs of transport of persons (railroad stations, bus stations) are going to become important commercial poles and thus generators of traffics important for the urban logistics, both for incoming and outgoing flows. The demand is strong on behalf of the urban travellers, the storekeepers, the groups of the large volume distribution, as well as the developers of station and multimodal hubs. The grouping of businesses in the same place allows to experiment integrating supply chains, for everything or a part of the journey, the infrastructures dedicated to the passenger transportations.

   For example numerous studies are carried out in Paris in order to use RER (Regional Express Network) and recently the tramway for supplying shopping centres in city centre and in Amsterdam “the Cargo tram” experiment has been attempted.

The vehicles

The question is to set a strategy of development of new materials. The recommendations concern vehicles but also handling equipment, the idea is to approach the question under the angle of the systems analysis. Nothing serves that a vehicle is silent if the noise provoked by the elevating tailgate or the refrigeration unit cancels the efforts made on the vehicle. (see the European PIEK program)

1. Anticipate the transfer on clean mode: the objectives of reduction of greenhouse gas emissions impose a fast transfer towards clean vehicles. The vehicle fleet is old. The life cycle is 7 to 15/20 years. It is urgent to act. The electric solution is not really operational for the more than 3,5 tones vehicles. It is necessary to develop transitory solutions based on the gas which would allow a 20 % reduction greenhouse gas emissions and much more of NOx and particles.
2. Anticipate the research in H2 propulsion.

The new logistic organisation

The operators of transport begin to think about new logistic organizations. A number of them experiment new supply chains consolidating the upstream flows to an urban logistic space near the dense urban zone (logistic hotel, UCC, city hubs). The new logistic warehouse is with positive energy. The surplus of energy can be used by battery-driven vehicles for the terminal deliveries.
Multidisciplinary researches are in progress concerning a multi-logistics pooling of the services with a cooperative management of the urban logistics. Manufacturers, distributors, logisticians, ITC suppliers, technicians of the city are involved. It shows a real will to answer the requirements for a sustainable city. The role of public authorities is to lead and to promote such actions.

CONCLUSION

The research shows that the future urban logistic constitutes one of the big stakes of tomorrow's cities. If the mobility of the persons is in the heart of the current thought, the goods movements will occupy elected representatives and technicians the decades to come. Concepts and tools allow managing the mobility of the persons. They have to be invented for the freight which constitutes a powerful control lever to the tomorrow's city. The economic, environmental, social, societal stakes put public authorities in duty to transform an activity of " back office " into a "high value-added structuring service activity". The role of politics is to determine performance indicators and the objectives.
The urban logistics sector, underestimated, with negative image, showing risks of impoverishment, can become a very strong potential economic and social sector, a component of an future dynamic economy, if public authorities know how to use the control levers which are at their disposal.

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