



CiViTAS

Cleaner and better transport in cities



**CIVITAS
THEMATIC LEADERSHIP
PROGRAMME**

**CITIES OF LA ROCHELLE AND NORWICH
GOODS DISTRIBUTION
AND CITY LOGISTICS**

DRAFT



Content

The urban dimension of freight logistics	4
--	---

How to optimise and find solutions in medium-sized cities?	6
---	---

Case studies from CIVITAS cities:	
ELCIDIS Platform (La Rochelle)	8
Services and Stakeholder Involvement (La Rochelle)	9
Freight Forums (Preston)	10
Freight Partnership (Ploiesti)	10
Freight Consolidation and Efficiency (Norwich)	11

Scope of goods distribution in Europe:	
CIVITAS cities	12
Other projects	15

Lessons learned	17
-----------------------	----

Innovative measures of 36 demonstration cities	19
--	----

Contacts	20
----------------	----

DRAFT



THE THEMATIC LEADERSHIP WITHIN THE CIVITAS INITIATIVE

Thematic leadership is a program that aims to extend the horizontal exchange between the CIVITAS cities beyond the project borders. The program involves CIVITAS II cities or a group of CIVITAS II cities (joint leadership) who exercise a leading role or possess a special experience in one of the thematic fields of CIVITAS. They will be called thematic leaders. The thematic leader is a forerunner of a certain theme, who organizes technical workshops, acts as a contact point, is responsible for knowledge sharing and for producing printed information.

This brochure is a product of the thematic leadership for “Goods distribution schemes” edited by the Cities of La Rochelle (Dominique Breuil), and Norwich (David Sprunt). It aims to give a broad overview and lessons learned on demonstrations which have been conducted by CIVITAS Cities without forgetting other European initiatives in the same topic.

Thematic leader cities (up to six) will be supported by CIVITAS-GUARD. The support includes production of the information material (folder or brochure) or support for printing and translation costs.

The information generated in the thematic leadership will be disseminated via the CIVITAS website (www.civitas-initiative.eu). A dedicated section on the website provides contact details of all the thematic leaders. The website will also offer a registration tool for potential technical workshops. Furthermore, a program for expert visits will be established with the support of CIVITAS-GUARD.

The program is designed for technicians from CIVITAS Forum cities and potential follower cities, who will benefit from the existing experience of the thematic leaders. Genoa, Odense, La Rochelle/Norwich, Preston and Ploiesti have already announced their strong interest to become thematic leaders for a certain topic.

Currently, there are two thematic leadership projects ongoing:

- ★ Flexible on demand transport systems, City of Genoa
- ★ Good distribution and city logistics, Cities of La Rochelle & Norwich

Another leadership is under development:

- ★ Urban bicycle traffic, City of Odense

Two are in elaboration:

- ★ Access control & pedestrian environment, City of Preston
- ★ Real time information & vehicle location, City of Ploiesti

If you are thinking about becoming a thematic leader please contact:
Karl Reiter (CIVITAS-GUARD): reiter@fgm-amor.at



The urban dimension of freight logistics

Freight logistics has an urban dimension. In view of stakeholders, any urban mobility policy must cover both passenger and freight transport. Distribution in urban areas requires efficient interfaces between long-haul transport and short distance distribution to the final destination. Smaller, efficient and clean vehicles could be used for local distribution. Negative impacts of long distance freight transport passing through urban areas should be reduced through planning and technical measures.

GREEN PAPER, "Towards a new culture for urban mobility", Commission of the European Communities 25/09/2007

DEFINITIONS

Several definitions have been proposed to describe the extent of activities which can be qualified as part of an urban freight system. In "An overview of the European research and policy", European commission proposes this definition.

"Urban freight transport and logistics operations are concerned with the activities of delivering and collecting goods in town and city centres. These activities are often referred to as 'city logistics' as they entail the processes of transportation, handling and storage of goods, the management of inventory, waste and returns as well as home delivery services."

Then in its larger meaning, transport of goods in cities refers to three types of movements:

- ★ to commercial and industrial establishments, to tertiary sector or service industries;
- ★ by individuals for shopping;
- ★ other flows designated as „supplementary“ flows generated by other activities such as transport of waste, the internal needs of public service, relocations, home delivery, postal services and hospitals.

MAIN IMPACTS

Some figures issued from the "Sustainable Urban Transport Plans" published in September 2007 characterise the importance of urban freight:

- ★ Urban freight is typically between 20% and 25% of road space use (space used x hours)
- ★ Urban freight typically contributes to between 10% and 20% of urban road traffic (vehicle x kilometres)
- ★ In 2030, 45% of the transport related energy consumption is predicted to be due to freight transport
- ★ By 2030, freight transport tonne kilometres are expected to grow by 63%

Even if urban goods transport is essential for the delivery of goods and therefore for the local economy, it produces equally numerous problems by increasing the pollutant emissions (example NO_x), the green house effect (example CO₂) and noise.

Considering the proportion in traffic flows, the flow of goods contributes in a disproportionate manner to the pollution and thereby reduces the quality of life in the city. In fact, even if the vehicles represent only 10% of the transport in the urban sectors, they produce more than 40% of the pollution and noise generated by local traffic (COST 321, 1998). The use of vehicles unsuited to urban areas influences road safety statistics unfavourably and slows down the flow of other means of transport.



STAKEHOLDERS

Four key groups are identified (Taniguchi et al. 2001):

- ★ Shippers (manufacturers, wholesalers, retailers)
- ★ Freight carriers (transporters, warehouse companies)
- ★ Residents (consumers)
- ★ Administrators (national, state and city level)

Obviously all these stakeholders do not hold the same points of view to improve the whole system and conflicts of interests arise quickly.

However, a strong trend is forming among citizens and also among several stakeholders to search for new ways of transporting goods in urban areas.

As a consequence of all these factors, urban goods transport is taking a more and more important place in the strategic design of urban mobility and in land use planning. The efficient distribution of goods has become a criterion by which to assess sustainability strategies between cities.

PROBLEMS

Problems arising from urban freight are quite various and have been many times pointed out in projects as shown in the next pages. According to the stakeholders they range from congestion and loading/unloading durations to fuel taxes, aggressiveness of drivers etc.

Environmental and accessibility problems, whether related to the transport of passengers or the distribution of urban goods, endanger the viability and the sustainability of urban areas. Besides, the efficiency of Goods Distribution in cities is itself hampered by congestion, which can depend on the level and success of public measures foreseen for reducing the problems.

Solutions to these problems are numerous and can be classified accordingly in four categories:

- ★ Functional impacts which address the city as a whole and more particularly the technical response to the needs for circulation while integrating flows of goods in the total traffic;
- ★ Consequences in economics, since the performance of goods transport is related to the quality and the effectiveness of the service road;
- ★ Integration in land use planning, because the frequency and occupation of space are indeed closely related to accessibility for both people and goods;
- ★ Social and environmental impacts which have direct effects on the quality of life.

Taking into account these various types of solutions, optimization methods are necessary to satisfy the convergent needs for each area: effective distribution generating a better local business community and minimizing the impacts on those who live in, work in and visit urban areas. These methods should not lead to stand alone experiments unconnected to overall transport management because the interactions between freight transport and other urban transport activities are underestimated .





How to optimise and find solution medium-sized cities?

URBAN FREIGHT OPTIMISATION

During the last twenty years, 2 types of approach have been used to identify and implement solutions to urban freight problems.

One approach relies on practical experimentation. Several projects have been launched by cities themselves or in the framework of European programmes; these constituted the basis of the knowledge on urban goods distribution. As a consequence, a first list of measures describing the impacts of urban freight was prepared by COST 321 Action in which 60 measures were identified and classified according to 8 categories: logistics measures, modal choice, price measures, infrastructure and physical planning, traffic management, technical measures concerning the vehicle, measures concerning driving behaviour and “other measures”. Subsequently the European Commission launched several actions including the BESTUFS network (see page 15).

The other stream is based on modelling. Although the first model of urban goods movements was developed in 1974, more realistic approaches have been set up since the beginning of 1990's. They can be split into two categories: models based on goods and models based on different dynamics.

More recently, macro-economic models appeared simulating the spatial distribution of goods between various zones of the city and generating trip Origin-Destination matrices. This led to the design of software-based simulation tools, among them FRETURB® (France), GOOD-TRIP® (Netherlands) and WIVER® (Germany), all three based on a different dynamics.

Research has developed tools for improving the efficiency of door-to-door transport of goods by providing both demand and supply side information systems. These tools enable and support planning decision both for private and public operators where tours, network structure, traffic regulation measures, etc, are concerned.

All these approaches are built on the exploitation of statistical data coming from various sources which do not exactly reflect real behaviour and operator practices. They led to satisfactory results thanks to significant numbers of parameters (or variables?) and data but they reach their limits when the size of the agglomeration is small, i.e. less than 300,000 inhabitants. Since the tool is based on statistical goods movements associated to trade types, if the size of the sample is low, statistics cannot be applied. This is related to the fact that there are fewer businesses and operators involved in goods movements in smaller cities and their behaviour can vary because the detail of the city's layout takes a more important role in the decision making process.

THE FUTURE

Urban freight optimisation clearly offers a large number of applications for new technologies and new concepts. Freight transport has been considered only recently and current technical or organisational solutions are just improvements of existing techniques, often in technological continuity.

Urban freight design is fully integrated in land use planning. To have liveable and attractive city centres in the future, new ones as well as older ones, and to avoid citizens wasting energy to get them, it is necessary to bring in goods, to have craftsmen working easily and to facilitate shopkeepers activities.

So new concepts have to be invented, new solutions and new organisation must be implemented.



For instance on the technical aspects, the development of RFID technologies will completely change the relationship with the transported goods. Since the products will have a kind of little intelligence, they will have the possibility to act or react on their travel conditions, alert in case of damage or wrong orientation, etc. a bit more like a human passenger.

New modes may be deployed like Rotterdam's system of pipeline transport of chemicals in the industrial zone in the port area which contributes to a reduction of transport by road. Robotics and automation will also influence freight making it possible for goods to be transported automatically in specialised networks, at any time to the right places.

On the organisation side, the Private/Public debate will probably find appropriate solutions according to the habits and legal aspects in each country. But the future operational organisation for urban goods transport is still to be invented; standardisation will contribute, but just like long distance passengers transport is different from city transport, there will be specialised companies to handle this aspect of freight movements.

GOODS DISTRIBUTION IN MEDIUM-SIZED CITIES

Although long debates have taken place about the precise dimensions of small- and medium-sized cities, it is obvious that there are differences in urban logistics between large conurbations and a large number of typical regional European cities.

Freight transport in such cities depends, like in larger ones, on the topology, the organization of the city, the urban structure and the Local Authority's strategies. Many of the logistics problems are common to both types of cities, so some knowledge transfer or adaptation of best practices can be considered, but the dimensions (spatial, social, economic, normative, ...) generate specific conditions for goods transportation in medium-sized cities.

Most of these cities are built around an historical city centre; commercial and/or industrial zones have grown up in the surrounding areas, but the city centre is quite often rich with several types of shops as well as craftsmen and small industries. Moreover, the trend in many of them is to motivate various types of professional to move back into the city in order to increase urban vitality.

Among the specificities of medium-sized cities which are of some importance, their global surface and the human size of relationships in such cities are the most relevant as well as the investment capacity.

Smaller sizes lead to shorter distances and goods carried out quickly. That facilitates the transit from one zone of the city to another. So the organization of deliveries is easier as well for the choice of vehicles as for the planning of the trips. In the same way, other goods flows are facilitated and short. This makes it more difficult to look for improvements and to convince stakeholders to modify their behaviour which they may have optimised from their own point of view.

However, even if in absolute terms the time wasted in congestion is less, in these cities it still feels significant, and the ratio between trip duration and time wasted is more or less the same as in larger cities; so the impacts are subjectively as important as in larger cities.

The smaller size allows also a better control of goods flows. Since gateways are few, it is easier to supervise city centre access.

In medium-sized cities citizens are often closer to their neighbourhood, more active in city life, closer to the local authorities and politicians than in larger ones. Consequently, the impacts (positive or negative) of the improvements are quickly analyzed and the decisions of adjustment can be made with an active participation of the concerned people.

But the sensitivity to normative or regulatory actions is also increased; if, for example, the access of goods in the city centres is more difficult then quickly shops will migrate to the outskirts and craftsmen will not accept to work in the city centre or at very high costs.

The last aspect concerns the financial investment capacity of these cities. The critical mass of the improvements is more difficult to reach, particularly if they are considered separately. To justify goods transport changes often requires the adoption of a global view of the whole transport operations in the cities. For instance in La Rochelle, freight platform, vans and car sharing and other mobility services are operated by the same company and at a global level, profitability is guaranteed.



LA ROCHELLE CASE STUDY

ELCIDIS Platform

SITUATION BEFORE

La Rochelle Urban Community launched the ELCIDIS experimental hub in February 2001 as part of the ELCIDIS European project. The objective was to optimise goods distribution in the city's historical centre with an environmentally friendly approach. The ELCIDIS platform engages in two distinct types of activities: delivery of parcels and auxiliary services with electric vehicles. ELCIDIS was designed not only to promote delivery using electric vehicles, but also to relieve traffic congestion in the centre by reorganising deliveries. To that end, a new traffic regulation was passed: heavy freight-delivery vehicles (i.e. GVW exceeding 3,5t) are (only?) allowed to deliver within the perimeter between 6:00 and 7:30 a.m. By the end of 2005, the results of this experimentation were generally satisfactory, although there were several constraints related to organisation, vehicles size and age, delivery areas, services etc which limited the possible extension and life of the whole system.

OBJECTIVES

Since severe barriers were identified, the objectives were not only to solve the problems they generated or to improve the whole system, but to redesign the ELCIDIS organisation taking into account a larger scope of goods and services, using new technologies and anticipating their development.

ACHIEVEMENTS

The first actions aimed to consolidate ELCIDIS activities in the overall goods transportation approach in La Rochelle. It was then decided by the Local Authorities to delegate the operational tasks to a private company which will implement the ELCIDIS strategy development and report on several points. This Private/Public Partnership was initiated by a call for tender which was the first of its type in France. The new management was set up in late 2006; after a short analysis period, several types of activities have been identified to give a new boost to the whole system.

The main activities are:

- ★ A large consultation with carriers; several of them had in the meantime found ways to deliver goods in the city centre with small vans. The aim was to demonstrate the benefits (time and money) they could obtain in subcontracting the last kilometre.
- ★ Adaptation of vehicles. Existing electric vehicles were ageing; none of them was able to carry several pallets or large parcels. A survey has been conducted to find clean (electric or hybrid) utility vans which could match this requirement and transport large loads.
- ★ Implementation of a new supervision system able to localise in real time the vehicles and to communicate with the driver in order to adapt the delivery round as demand changes.
- ★ Diversification of the activities realised in the hub. Like all logistics suppliers, ELCIDIS can provide room for shopkeepers to store their goods for a short period. This may be completed with some pre-retail activities such as sorting products, labelling, tuning, ...
- ★ A new campaign of promotion towards shopkeepers in order to motivate them to use or to make their suppliers use ELCIDIS for transport and for above diversification activities.
- ★ Sharing part of the fleet with customers; since the same operator is in charge of the car sharing system (LISELEC) light utility vehicles may be offered to subscribers for their own goods transportation.
- ★ Reinforcement of the control of freight traffic regulation.

EXPECTED RESULTS

After 6 months, there is an obvious increase of goods flows inside ELCIDIS. Several contracts have been made with carriers and new shopkeepers participate. This trend should grow in the coming months and the objective of 500 parcels per day should be reached within next year. If these results are achieved, then other activities in the platform could be set up such as the storage and transportation of cold or fresh products.



LA ROCHELLE CASE STUDY

Services and Stakeholder Involvement

SITUATION BEFORE

At the launch of ELCIDIS, the main target was goods travelling to and from the city. In order to improve its profitability, ELCIDIS included some other services for professionals; activities were initiated such as delivering flowers, carrying goods from supermarket or transporting restaurant tablecloths to dry cleaners. But due to a poor quality of service, these activities have been decreasing in recent years.

The freight improvements concerned only carriers and all the other transported goods were not taken into account. For instance flows involving craftsmen were not in the scope although, like in many cities, almost half of their movements are related to goods transport.

OBJECTIVES

Therefore the objective was to improve all the goods flows in La Rochelle, involving all the stakeholders. From a pure Business to Business approach as in ELCIDIS, some Business to Customers movements or even movements Customers make on their own behalf should be studied and optimised.

ACHIEVEMENTS

2 main targets were identified to begin with:

- ★ The extension of services provided by ELCIDIS
- ★ Cooperation with craftsmen

As soon as the new ELCIDIS was made operational, past stakeholders which had stopped their co-operation, were contacted in order to identify their requirements and to start better more bespoke services. Several services were considered; the first to be studied has been the delivery of goods to subscribers of Park

and Ride sites. A survey among users showed that many would appreciate the option of having purchases waiting for them in secure boxes when they come back from work to the P+R site. For the craftsmen, a global study of the possible requirements has been conducted among the various types of trade, by interviews of the representatives and professional organisations. Some are well organised and the deliveries are strictly programmed (ex newspapers, drinks), other transport very valuable goods (ex cigarettes, jewellery, ...) etc.

In La Rochelle, the building trade represents a large proportion of good flows. So, a detailed survey has been launched with the support of the trade associations. The first result was the real willingness of most of the craftsmen to cooperate and their awareness and willingness to decrease their number of trips.

3 types of improvements were identified:

- ★ To facilitate the city centre traffic circulation, 2 ways were considered. The first involved providing information about roadworks, temporary traffic blockage and was solved within the City Hall website. The second is still under consideration and is related to pre-paid on-street parking.
- ★ To use clean vehicles; although this was difficult to set up due to the lack of vehicles on the market at the time and their costs, the situation has improved because several vehicle types are now available. Moreover funding schemes for the innovative part of such vehicles may be developed with the help of governmental agencies. Partnership with ELCIDIS is also one additional solution.
- ★ To improve planning and synchronisation between craftsmen. This is more a transversal axis but will save a lot of unnecessary travel to the wholesalers located on the outskirts of the city.

EXPECTED RESULTS

For the services aspects, the P+R deliveries will be implemented in the coming months. The objective is to provide such services for 10% of the subscribers in the first year. From the awareness and involvement of the professional syndicates, results should appear in the next year in the building area and 2 or 3 craftsmen could drive clean utility vans.

During these months, the campaign will be extended to other trades.



PRESTON CASE STUDY

Freight Forums

SITUATION BEFORE

Preston has a population of 250,000 combined with South Ribble. It is an ancient place, with a strong economic and retail base in which freight transport has always been an important activity for the city life. The main characteristics of this freight were:

- ★ Little interaction between local authorities and freight industry
- ★ Conflicts between goods distribution and pedestrians/cyclists/other traffic, particularly in city centre
- ★ Problems caused by drivers unfamiliar with the city getting lost

OBJECTIVES

The main objective was to improve the freight control over the city centre and to give stakeholders tools which will help them to contribute actively in this.

ACHIEVEMENTS

A strategic plan for city logistics has been developed, using the experience of La Rochelle and other CIVITAS cities. A freight map has been created in order to avoid the use of inappropriate routes in and around the city centre; this increases efficiency in route planning. A Freight Forum for Preston and South Ribble has been established to share best practice and the creation of a Freight Quality Partnership (FQP) for central Preston. The FQP in Preston was set up in Sept. 2006 and has been successful in forging a partnership between the private sector freight operators, retailers and the public sector/local government actors in the Preston area.

EXPECTED RESULTS

The FQP is heavily involved in defining and signing of freight routes around Preston and the production of a freight map to illustrate and promote selective freight routes.

A freight strategy for Preston and South Ribble, which will complement the Local Transport Plan, will provide guidance for progressing the challenges of the freight sector in a sustainable way.

PLOIESTI CASE STUDY

Freight Partnership

SITUATION BEFORE

Ploiesti City (237420 inhabitants) faces problems regarding its street network, parking, public transport and goods transport. It is therefore imperative to find a sustainable balance between mobility and necessary access, on one hand, and environmental protection, on the other. Shops and minimarkets are located in the city centre, but several small companies are also quite near the heart of the town.

All of these lead to pollution and congestion because of uncontrolled freight transport. No policy regarding freight transport was designed before the launch of CIVITAS SUCCESS.

OBJECTIVES

The main objective is to improve the freight partnership, routing, signing, within a dedicated system to provide information in real time to freight operators.

ACHIEVEMENTS

- ★ Creation of a zone in the West area of Ploiesti for Business to Business services (Ploiesti Industrial Park) and another one in the North area for the distribution of goods for a hypermarket.
- ★ The freight transport charter has been established, taking into account only interior and access traffic.
- ★ 62 companies involved in various activities of urban freight has been interviewed. Analysis of the damage level of the streets with important traffic of goods suppliers, bearable capacity and functioning period has been carried out.

EXPECTED RESULTS

The consequences of previous actions will lead to

- ★ Reduction in traffic congestion
- ★ Reducing the negative impact of urban goods transport
- ★ Extending the lifetime of asphalt roads
- ★ Reducing NOx
- ★ Increasing quality of life in the urban environment



NORWICH CASE STUDY

Freight Consolidation and Efficiency

SITUATION BEFORE

The Norwich area has a population of approximately 250,000 and is recognised as a centre where growth will be focussed with some 33,000 additional dwellings and 35,000 additional jobs by 2021. In 1994 Norwich developed a transportation strategy aimed at reducing the reliance on the car. This document is regularly reviewed, recently in 2004, and details all of the aims and objectives for the development and implementation of an integrated transport strategy for Norwich. The strategy identified a number of areas where improvements to better manage goods distribution could be made and these included:

- ★ Lack of input from the freight industry into the development of freight strategies/measures for the city
- ★ A need to encourage hauliers to upgrade to cleaner vehicles
- ★ A need to reduce the numbers of HGVs accessing the city centre

OBJECTIVES

The main objectives are:

- ★ To involve stakeholders in the development of strategies/measures to ensure that they are 'signed up' to the process
- ★ To provide incentives for hauliers to upgrade their vehicles to make them less polluting
- ★ To reduce the impacts of HGVs on the city centre

ACHIEVEMENTS

A number of measures have been developed to meet the objectives and these include:

- ★ The development of freight users club (FUC)
- ★ Provision of an Freight Consolidation Centre (FCC)
- ★ Use of bus lanes by eco-friendly HGVs from the FCC
- ★ Electronic traffic information provided to hauliers in exchange for their involvement in eco-driving

EXPECTED RESULTS

- ★ The FUC has already helped in bringing forward hauliers to take part on the various measures. Further use of the club is expected to assist in developing the civitas measures.
- ★ The FCC is now operational and the retail industry is now being contacted by the operator and some initial success has been achieved. Contact with the retail industry will continue to ensure the sustainability of this measure.
- ★ The use of bus lanes by the FCC is expected to become operational early in the new year to provide additional benefit to FCC vehicles, particularly in the peak traffic periods. This should add to the benefits that retailers have in receiving deliveries especially during the peak periods.
- ★ Information is to be provided to hauliers on a range of traffic issues covering roadworks and delays and they have agreed to take part in eco-driving to reduce their emissions and also save fuel.





Scope of goods distribution in Europe: CIVITAS cities

CIVITAS cities are concerned with urban freight. Many of them have launched projects in order to improve the goods transportation in their own town centre. The table below points out the most relevant measures which are or will be operating in CIVITAS world.

Actions are related to 6 key issues:

- ★ Strategic planning
- ★ Partnerships
- ★ Information for carriers
- ★ On-street improvements
- ★ Urban distribution centre
- ★ Clean vehicles

Of course, cities' individual projects are always built from a combination of these key activities.

STRATEGIC PLANNING

The first entry for improving goods transportation is the integration of future actions in the overall urban transport strategy. The distribution scheme is defined according the objectives of the local transport authorities and fixes the principles and constraints which will guide all the decisions which will follow the deployment of this plan. It is also a regulation scheme which aims to set up a better control on all goods traffic in the city. All cities which have a strong involvement in urban freight optimisation began with an approach based on overall integration; they first elaborated on integrated planning, leading to an unitary and coherent regulation for the movement of commercial vehicles in the target areas.



CIVITAS CITIES	Strategic planning	Partnership	Carriers information	On street improvement	Urban distrib. centre	Clean vehicles
Barcelone	X				X	
Berlin						X X
Bremen	X			X		X
Bristol	X			X		
Burgos	X					X X
Genoa	X	X				X
Gotenburg	X	X	X			
Graz	X	X	X			X X
Krakow	X				X	X X
Malmö	X	X	X			X
Rotterdam	X	X			X	
Stockholm	X				X	X X
Toulouse	X					X
Venice	X	X	X	X		
Winchester	X			X		

PARTNERSHIPS

Cities have experimented with several types of partnerships for stakeholders. There are numerous PPP models used in the transport domain. Many vary in terms of the degree of control they provide the private sector and each require a unique mechanism to set-up, manage and deliver the PPP. Their main advantages regarding urban freight lie in the higher efficiency, the accountability for public service and their ability to achieve a greater integration. This can involve agreements, contracts formalising public/private cooperation with logistics operators sometimes reinforced by accepted regulations (ex access control) as well as extended services for citizens, shop keepers or tradesmen.

Many of the actions are aimed at raising the awareness of the stakeholders, for example leading to eco driving training (Malmo), using new clean vehicles, new services like distribution centres (Norwich) or providing an alternative delivery address for purchases in convenience stores (Winchester).



INFORMATION FOR CARRIERS

Information to freight distributors is one of the key points in the optimisation of goods related flows. It is preferable to set a way to tell drivers and their company the best ways and times to enter city. All cities have been improving their links but some of them (see table) have dedicated large projects to this topic.

One of the most popular actions are web sites based information systems in which all carriers may find information on the city's accesses, the places to park or deliver goods and all types of real time data such as road works, temporary changes.

For instance in **Malmo**, a satellite based system has been installed for delivering cars and vans which allows an efficient two-way communication between the traffic-dispatch and vehicles. This is completed by an IT based logistics tool containing seasonal planner, ordering and confirmation and logistics co-ordination system which will be developed.

Simpler tools may also be quite relevant, for instance, in the **Bristol** urban area an Atlas was launched in March 2003 which enables freight vehicles to find the most appropriate routes (including the presence of height and weight restrictions).

Another way is to set up specific street signing adapted to carriers and leading them to the best routes in the city.



URBAN DISTRIBUTION CENTRES

Different types of logistic platforms have been trialled in CIVITAS. From the hub from where goods are distributed to city centres shops to small "proximity warehouses" where small goods may be temporarily stored for traders or customers, several examples give a good knowledge of the efficiency of these solutions.

One of the most significant example is the reorganisation of the entire distribution system of the largest department store of Graz. Goods were consolidated in a distribution centre outside Graz and efficiently transported in containers to the store. The containers were used to transport waste material out of Graz.

But several cities have also set up different variations on this topic:

- ★ **In Stockholm** a logistic centre has been set up nearby the Old Town, from where a clean vehicle co-transport the goods from several delivering companies.
- ★ **In Berlin** a trimodal interchange platform helps to shift the modal split between navigation and railway traffic.
- ★ **In Toulouse and in Krakow**, distribution centres are studied and will be implemented in coming months.
- ★ **In Norwich** a Freight Consolidation Centre has recently been set up outside of the city to consolidate goods in clean vehicles to deliver to the city centre to a wide range of retailers both individual and within the major shopping malls.



> Scope of goods distribution
in Europe: CIVITAS cities

ON-STREET IMPROVEMENTS

Signing is part of these improvements. However, quite often loading/unloading bays are located in the city without any real link to commercial activities, and moreover they are blocked by cars or other types of vehicles.

One action is to apply parking regulations, but it is also important to determine the right zones and the right sizes. New information technologies may be used to control these zones and to anticipate their occupation by vans.

For instance in Venice, a complete information system for the management of permanent and temporary parking along canals will reduce the possibility of boats competing for the use of the same dock, reduce the waiting time to obtain concessions for parking spaces

Another approach was developed in Barcelona. A number of solutions involving flexibility in the times and locations where delivery is given priority (and enforced) have been trialled with active participation of the Municipality and the enforcement agencies; these actions involved changing the operation of the street during the night, converting on-street parking spaces into unloading spaces during the prescribed hours.

CLEAN VEHICLES

Several types of clean vehicles have been tested in CIVITAS cities, with various power trains from electric to natural gas.

However it has been difficult up to now to have a full experimentation feed back since the clean vehicles which were used were not quite fit for all their missions. The lack of availability of utility vans and especially 3,5t weight mainly penalises the deployment of clean vehicles for urban freight.

However, some progress has been achieved and vehicles are now on the market or will be in the coming months, electric, gas or hybrid. The main difficulties will lie in the national homologations and costs. So, in both cases, solutions must be found with the help of local and/or governmental authorities.





Scope of goods distribution in Europe: other projects

Since the 5th Research Framework, several projects related to urban freight have been launched under the auspices of European Commission. Sometimes goods transportation is one topic of the whole transport programme in which it is integrated, as in the “urban transport benchmarking initiative”.

Since the integration of freight in urban transport had become more and more significant and important for city development, a specific programme was launched, called BESTUFS.

BESTUFS

The European Co-ordination Action on “**BEST Urban Freight Solutions**” (BESTUFS) is funded by the European Commission (Energy and Transport Directorate-General) and has been active since 2000 with a planned finish in 2008. The main objective is to identify, describe and disseminate best practices, success criteria and bottlenecks of urban freight transport solutions. Furthermore, BESTUFS aims to maintain and expand an open European network between urban freight experts, user groups/associations, ongoing projects, the relevant European Commission Directorates and representatives of national, regional and local transport administrations and transport operators.



The project team organises regular workshops and conferences all over Europe and reports about interesting urban commercial transport related developments, demonstrations and events on European, national, regional and local level. BESTUFS made a considerable impact on practitioners as well as researchers and all information is publicly available via the website www.bestuufs.net

BESTUFS identifies best practices in urban freight projects and edits reports on the state of the art, recommendations and good practice guides which point out the different solutions set up by the partners.

208 projects are under consideration and classified according to the following criteria:

- ★ Intelligent transport systems
- ★ E-commerce and urban freight distribution
- ★ Public private partnership
- ★ Road pricing
- ★ Urban platforms
- ★ Waste logistics
- ★ Environmental friendly vehicles

38 of these projects are realised in CIVITAS cities like Graz, La Rochelle or Prague.

BESTUFS recognises that both small and medium cities, and the freight transport problems related with them, have received very little research attention in recent decades. In fact, of all the mentioned projects very few are in cities with less than 400,000 inhabitants.

Therefore, it is recommended that further research is carried out to develop a better understanding of what is meant by small and medium-sized cities and to determine where the differences and similarities are between freight transport problems and potential solutions compared to bigger cities.

Compilation of case studies of freight transport solutions implemented in different small and medium-sized cities is also to be realised.

IEE - INTELLIGENT ENERGY EUROPE

The **Intelligent Energy – Europe programme** is the EU’s tool for funding action to improve to save energy and encourage the use of renewable energy sources in Europe and move us towards a more energy intelligent Europe. Among the transport projects launched in 2007, the START projects groups cities which will take a short term approach and combine actions such as access restrictions, consolidation centres and incentives.

Intelligent Energy  Europe



> Scope of goods distribution in Europe: other projects

As well as the projects intending to demonstrate new ways for urban freight, two other types of projects were launched during the past years:

- ★ The first type is oriented towards the analysis of existing measures, point out best practice, proposing recommendations for new installations or giving some prospective hints to the future of urban goods transportation.
- ★ The second type concerns future vehicles and equipment as well as software.

In those projects, consortia are mainly constituted with research institutes, consultants and professional organisations.

Some significant projects are:

COST 321

COST 321 “Urban goods transport” was the first project which really summarised the various aspects of urban freight. Closed in 1998, it provided guidance to local public authorities on how to select the most suitable measures.

PLUME aimed

PLUME aims to facilitate the transfer of innovation in the field of planning and urban mobility from the research community to end-users in the cities of Europe in order to improve urban quality of life. One of the actions concerned urban freight.

CITYFREIGHT

CITYFREIGHT was one of the most significant projects. The project ran from early 2002 to late 2004. This project aimed to identify and analyze the promising logistic schemes in seven countries in order to build a list of criteria and a common method to evaluate such schemes and the accompanying policies.

MOSCA

The project aims to improve the efficiency of door-to-door transport of goods in urban areas by providing both demand and supply side information in a system. The results are software modules enabling and supporting planning decision both for private and public operators where tours, network structure, traffic regulation measures, etc. are concerned. This set of tools implements services for shortest path finding, vehicle route planning, on-line vehicle routing planning, urban shop delivery planning, etc.

IDIOMA

IDIOMA explored a large panel of innovative solutions for freight transport, from container shape to alternative fuels and provided comparison between several types of related actions.

Larger lists of European projects related to freight transport can be found in the Thematic Research Summaries on Urban Transport (DG TREN) or in EUROFORUM.

Alongside European funded projects, several cities did improve their goods flows and achieved significant results. Of course, all the larger ones like Paris, Bordeaux, London, Milano, Budapest Warsaw or Thessaloniki launched specific projects, but also medium-sized cities organised their urban freight.

The list would be too long since there are examples in all countries; they usually developed appropriate sets of measures, adapted to their size and specificities. However the main implementations concerned distribution platforms, regulations improvement.



Lessons Learned

IS THERE A STANDARD
METHODOLOGY?
WHAT ARE THE BEST
PRACTICES?



Several projects have issued propositions or recommendations describing a methodology dedicated to urban freight implementation.

Based on the experience of the projects led by the different CIVITAS cities and other references, it is clear that there is no “absolute best practice; it often depends on the framework conditions which can make the transferability of results difficult” (Cityfreight project). However, among all the recommendations that can be proposed, four points clearly appeared to be mostly relevant for small- and medium-sized cities (SMSC). If one of them fails, the project will also fail.

POLITICAL INVOLVEMENT

This is obviously the starting point. However, it is not only the decision to launch projects in that domain but a real implication in the progress of implementation. This is most important in medium-sized cities where politicians and local authorities are close to the citizens and where party conflicts may be forgotten in such matters.

It begins with the integration of freight organisation in land use planning; once the main principles are defined, public authorities must determine clearly the objectives to be reached, the general framework (identification of main relevant stakeholders, actors), the role that they will take in the implementation. This may include high quality problem analysis, data collection, benefits assessment, networking among stakeholders, facilitating exchange of information, and even financial support.

TARGET GROUPS

Once objectives and framework are fixed, and since the methodology will require a global approach and stakeholder participation, it is compulsory to identify target groups which will facilitate the design and implementation of solutions. These are built according to the type of goods flows or/and activity sector.

Of course, they will provide state of the art analysis, requirements, but their main role lies in other activities:

- ★ To establish consensus because solutions will rarely be the best for each individual target groups
- ★ To help to find appropriate detailed solutions
- ★ To facilitate their implementation among citizens they represent

Target groups mechanism is quite efficient in SMS Cities since members of different target groups often know each other, work together and are more eager to reach a global compromise.

METHODOLOGY

Of course, the global approach of urban freight is easier in small and medium cities to larger ones, and the same for the integration in a global organisation of transport in the city. This must consider the flows of parcels and pallets as well as the tradesmen, waste logistics or any other good. Sometimes problems are separated which lead to unsatisfactory solutions.

However, this advantage can be turned into an inconvenience due to the proximity of each stakeholder, from the citizen to the mayor.

So it is necessary to have a strong and rigorous classical project management and methodology, which set up milestones and objectives in order to measure the progress of the project and identify the barriers.

When several solutions have to be implemented, corresponding to various target groups, the main question is about the advantage and risks of simultaneous sub projects.



> Lessons learned

Relative pro and cons may be discussed for ever but in the end, the organisation depends on political choices, tradition and culture of the city. Money by fundings does not influence so much since as far as urban freight is concerned, a large part of the operational and investment costs are covered either by private funds or by benefits.

The diagram on the right shows the importance of the coordination/synchronisation when they are all sub-projects conducted at the same time. In the contrary, when the choice is to launch them in sequence, it is important to keep a global coherent overview all along the implementation time and to establish temporary organisation or intermediate states (for instance in regulation, organisation of delivery bays, ...)

3 other items must be considered:

- ★ In the case of SMS Cities, it is necessary to take into account the inter city flows which influence largely internal flows.
- ★ The city life generates quick, significant evolution in the goods flows; so monitoring must take place and solutions must be designed to accept evolutions.
- ★ Cost of solutions, investments and operation must be proportionally lower than in larger cities since the critical mass level cannot be reached in many cases; this also leads to simple and efficient solutions, easier to set up but often longer to design.

MODELLING

The design and the adaptation of organisational and technical solutions must be based on a reliable representation of the reality, although this has to be built according to the local context and the objectives of local authorities. Several techniques are available, mixing statistics and dynamic analysis, hierarchical or network organisation of components (stakeholders, resources, ...), or else internal / intercity flows, but they are all based on a capital aspect: the reliability and accuracy of data.

Irrespective of the efficiency of the model, to be of any help it must be constructed from realistic information. Even if the collect of data is long and expensive, it is compulsory to have relevant data to dimension the alternative solutions, to simulate their costs, their impacts and to validate the changes. This model must also be the source of the adequate indicators which will measure the progress and the benefits of the implementation of the solutions.



CONCLUSIONS

Basic causes and visible impacts of urban freight are quite similar in small- and medium-sized cities as in larger ones.

But problems are set differently regarding the specificities of these cities in which these various facets (space, people, politics, ...) can be handled all at once more easily.

Solutions and improvements are based on the same principles as those deployed in larger towns; however, their extent, implementation modes as well as their costs have to be adapted.

Small- and medium-sized cities appear in many cases as most fit for innovation, regarding their constraints or specificities but also because they are more reactive and flexible; so they are more likely to initiate break through experimentations.

Innovative measures of 36 demonstration cities

GET DEPTH KNOWLEDGE AT THE CIVITAS WEBSITE

The CIVITAS-website is based on a CIVITAS dissemination database that contains different sections. This website gives you information about CIVITAS-related news and events, the CIVITAS projects and the CIVITAS cities.

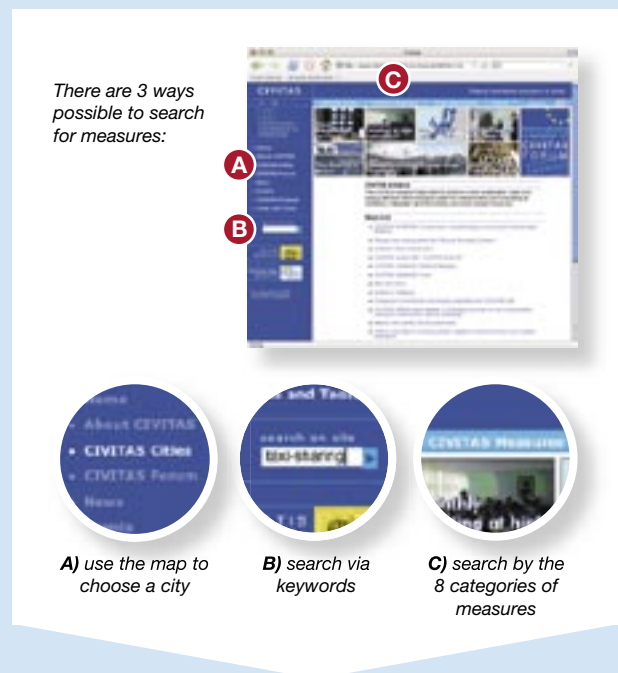
All contact details of people working within CIVITAS are stored in the “people database”. Moreover, you can access in depth knowledge about the innovative measures of the 36 demonstration cities.

Eight categories of measures have been identified as the basic building blocks of an integrated strategy. Each CIVITAS city chooses an appropriate set of measures from those building blocks and combines them in order to form integrated solutions for clean urban transport in cities. In addition, the city puts in place the appropriate planning framework, ensures political involvement and support, and establishes the necessary partnerships to ensure delivery of the plans. More than 300 measures can be found by searching the website in the relevant CIVITAS city, via keyword or in the assigned “Dissemination Measure Fact Sheet”.

DISSEMINATION MEASURES FACT SHEETS

The “Dissemination Measure Fact Sheets” are the core product for the CIVITAS dissemination activities. In order to achieve knowledge transfer between experts, each measure will be described on one single page and consists of a heading, picture, picture text, measure objective, measure results, measure implementation, expected results and related measures. Additionally each Dissemination Measure Fact Sheet includes contact details (e-mail address) of the measure leader so a direct contact with this person can be established immediately.

www.civitas-initiative.eu



Dissemination Measure Fact Sheet





Jean Marie GRELLIER, Head of the Mobility and Transport Department,
Urban Community of La Rochelle (Communauté d'Agglomération de La Rochelle)
6, rue St. Michel, 17086 La Rochelle, France, e-mail: Jean-marie.grellier@agglom-larochelle.fr



Dominique BREUIL, Directeur de la Recherche, 26 rue de Vaux de Foletier,
17000 La Rochelle, France, e-mail: dominique.breuil@eigsi.fr

David SPRUNT, Norwich Area Transportation Co-ordinator, Norfolk County Council,
County Hall, Martineau Lane, NR1 2SG Norwich, United Kingdom,
e-mail: david.sprunt@norfolk.gov.uk



Stuart WRIGLEY, Director Strategic Planning & Transport, Guild House, Cross Street,
Preston PR1 8RD, United Kingdom, e-mail: stuart.wrigley@env.lancscc.gov.uk

Cozia-Roxana GEORGESCU, Head of European Integration Department,
Bd. Republicii nr. 2-4, 100066 Ploiesti, Romania, e-mail: pci@ploiesti.ro

David BLACKLEDGE, Corporate Director, Minster House, Minster Pool Walk, Lichfield,
Staffs. WS13 6QT, United Kingdom, e-mail: david.blackledge@ttr-ltd.com

www.civitas-initiative.eu

The CIVITAS INITIATIVE is co-funded by the Energy and Transport parts of the EU's RTD Framework Programme. Neither the European Commission, nor any person acting on behalf of the Commission, is responsible for the use which might be made of the information contained in this publication. The views expressed in this publication have not been adopted or in any way approved by the Commission and should not be relied upon as a statement of the Commission's views.

Layout: FGM-AMOR – Austrian Mobility Research. All photos are provided by the CIVITAS cities and the CIVITAS GUARD team (unless otherwise noted) and approved for reproduction in this publication.
Printed in Austria.



THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

CIVITAS