CiViTAS
Cleaner and better transport in cities

MOBILIS
TOULOUSE • VENEZIA • LJUBLJANA • DEBRECEN • ODENSE

How to Change Mobility in your City

Policy Recommendations

THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
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Foreword

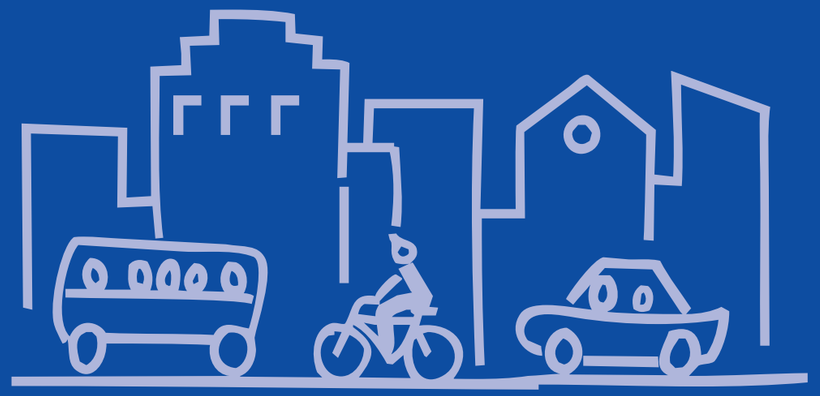
The CIVITAS-MOBILIS has come to the end. In each of the MOBILIS cities Toulouse, Venice, Odense, Debrecen, and Ljubljana a long list of very diverse measures has been implemented. Many improvements to the transport system in these cities were achieved. Some measures did not work, but we have learned from them and know how to do things better in the near future. MOBILIS has been an excellent laboratory experiment with new technologies, services and to demonstrate the added value of integrated policy making. Now at the end of the MOBILIS project, the cities are planning to extend their CIVITAS experiments to other parts of their cities - we call this "upscaling" MOBILIS.

However, other cities and regions in Europe which have not participated in CIVITAS-MOBILIS can profit from this project. In a time where we can be sure that demand for mobility will be increasing in almost each European city, while energy and climate problems will pose very serious challenges everywhere, we also need to give a clear message that "change is possible" – and we hope that projects like MOBILIS will help other European cities avoid making mistakes, to learn lessons and to transfer successful concepts. Transfer certainly is not a simple process, because cities in Europe can differ considerably from each other. Nonetheless, this policy recommendation document, together with the final brochure, evaluation report and all the other MOBILIS material will give an input and guidance to other cities and regions.

Based on our experience we have developed a focused set of policy recommendations for local and European politicians and policy makers that from our point of view will help each European city to realise a sustainable urban mobility culture.

At the end of the project, the MOBILIS team would like to express its sincere thanks to all partners of CIVITAS-MOBILIS, for their outstanding commitment and excellent support! Furthermore we would like to wish a lot of success to the five new CIVITAS projects of "CIVITAS Plus" and hope that they are the first to benefit from our recommendations and achieve a change.

The MOBILIS team



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Summary

The quality of life of the citizens of most European cities is suffering as a result of congestion and pollution. There is a need to adopt a sustainable mobility culture favouring alternative mobility in their city centres and sub-urban areas.

In 2004, the cities of Toulouse (France), Debrecen (Hungary), Ljubljana (Slovenia), Odense (Denmark), and Venice (Italy), and their main local mobility stakeholders established a European partnership for “Implementing Mobility Initiatives for Local Sustainability” – of which the CIVITAS MOBILIS project is the physical result. MOBILIS aims to implement radical strategies for clean urban transport in all five cities and to create a new culture for clean urban mobility in the wider framework of sustainable development. The project enables the involvement of all relevant stakeholders and the transfer of good practice to other urban communities across Europe.
The change in culture achieved in MOBILIS has only been possible through a profound commitment and close involvement of the local politicians and policy makers.

Each MOBILIS city had a different point of departure in their search for a new mobility culture. Several factors which are partly formed by the policies of the European Commission, national and local governments influence these starting points. Some cities have experienced congestion in their historical centres for some years now, others just recently. Some cities have a long standing bicycle culture, while others until recently favoured private car use. Also factors such as geographical characteristics, national fiscal policies or longstanding traditions of institutional cooperation influence the “starting point” of a city.

In line with the CIVITAS themes the MOBILIS project experimented with 49 innovative measures ranging from clean vehicles to the improved use of Global Navigation Satellite Systems like GALILEO. The most outstanding of the CIVITAS MOBILIS achievements were:

- Demonstrating the large-scale application of alternative fuels
- Widening experience with EGNOS/GALILEO services and implementing ITS applications for improving traffic conditions and public transport services;

- Managing the accessibility of sensitive areas through innovative zoning approaches;
- Demonstrating two new approaches to clean urban logistics and implementing one new freight distribution centre operating with clean vehicles;
- Ensuring social inclusion by enhancing accessibility (physical, psychological, economic, informational) of mobility services;
- Enhancing public transport quality and integration with other transport modes substantially (private car, bicycle) through innovative planning and service development;

- Providing new targeted mobility services changing dominant concepts of vehicle ownership and use (carpooling and car-sharing, mobility card schemes);
- Promoting sustainable mobility, modal shift (walking, cycling, public transport) and behavioural change through targeted and personal marketing, service development, information, dissemination, education and training;
- Contributing to Europe-wide evaluation and dissemination of the results to be put forward through the CIVITAS initiative.

The MOBILIS politicians discussed during four Political Steering Group meetings the importance and nature of integrated local policies for the successful introduction of a new mobility culture. Based on the MOBILIS work and these discussions the MOBILIS project identified four distinct types of policy tools:

- Provision of political, policy and regulative support,
- Availability of financial means and economic logic,
- Creation of institutional cooperation and stakeholder involvement,
- Increase of user participation and awareness.

The in-depth discussions on these policy tools and the evaluation of the MOBILIS outcomes resulted in overall policy recommendations for local and EC policy makers and practitioners, which are presented in this document.

What MOBILIS politicians have to say

Toulouse

Over four years, the local mobility stakeholders of Toulouse have formed a strong partnership in order to implement a set of about twenty measures with the objective to achieve a radical step towards the improvement of the mobility conditions of the inhabitants of the greater Toulouse area. Beyond the convincing and outstanding concrete results, I consider that the most important success of the project lies in the commitment of everybody in favour of an alternative and sustainable mobility culture.

While Toulouse has just opened its second metro line and is getting prepared to inaugurate its first tramway line, our city has never been so well prepared to turn our development project into a real urban project. Among the most significant measures of the MOBILIS project in Toulouse, I want to underline the commitment made by Tisséo-SMTC towards the development of a clean public transport fleet, the development of mobility services based around the mobility agencies and the successful reconfiguration of the city centre as part of the arrival of the line B of the metro. Through this report, I am joining my colleagues from the four other MOBILIS partners cities in order to share with you our recommendations coming from the work that we have all accomplished in this four year period.

Quatre années durant, les partenaires toulousains du projet CIVITAS MOBILIS auront fait le pari de s'associer pour mettre en œuvre plus d'une vingtaine de mesures innovantes visant à améliorer les conditions de déplacement des habitants de l'agglomération. Au-delà des résultats concrets du projet, c'est surtout dans l'engagement de tous en faveur du développement d'une mobilité alternative et durable que réside la principale réussite d'une initiative telle que CIVITAS MOBILIS. Alors que Toulouse vient d'ouvrir sa deuxième ligne de métro et se prépare à inaugurer sa première ligne de tramway, jamais notre agglomération n'aura été aussi bien armée pour faire de notre projet de développement un vrai projet de ville. Parmi les mesures marquantes du projet MOBILIS à Toulouse, je souhaite souligner les engagements pris par Tisséo-SMTC en faveur du développement d'une flotte de bus propres, le développement des services à la mobilité centrés autour des agences de mobilité ainsi que la reconfiguration réussie du centre ville dans le cadre de l'arrivée de la ligne B du métro. Au travers du présent ouvrage, je m'associe à mes collègues élus des quatre autres villes partenaires du projet MOBILIS pour vous faire partager nos recommandations issues des travaux que nous avons menés ensemble depuis quatre ans.

Stéphane Coppey
President of Tisséo-SMTC - Toulouse

Venice

The CIVITAS MOBILIS project has allowed the City of Venice to take yet another important concerted step in the direction of sustainable mobility.
The various measures implemented and evaluated work to ensure the sustainable mobility of our citizens, whether this be in the canals of island Venice or the streets of mainland Venice. This has taken place by making public transport cleaner and more attractive, strengthening and communicating the benefits of alternative transport modes and controlling access to the city centre and to island Venice. A most interesting initiative, with great scope for transferability to other cities, has been the differentiation of tourist coach tariffs based on the energy efficiency of the coaches. Euro IV coaches benefit from a lower tariff than other more polluting coaches. This has truly significant environmental advantages for a city such as ours in which tourism is one of the most important economic activities.
I strongly hope that the experience of CIVITAS MOBILIS, as summarised in this document in the form of recommendations, can assist you in your quest for sustainable mobility.

Il Progetto CIVITAS MOBILIS ha consentito al Comune di Venezia di compiere un altro passo concertato nella direzione della mobilità sostenibile.
Le misure attuate e valutate mirano ad assicurare la mobilità sostenibile dei nostri cittadini, sia nei canali veneziani sia lungo le strade della terraferma. Queste attività infatti mirano a rendere i trasporti pubblici più puliti ed attraenti, rafforzando e pubblicizzando i mezzi di trasporto alternativi e controllando gli accessi a Venezia e al centro di Mestre.
Un'iniziativa molto interessante, che può essere facilmente trasferita anche ad altre città, è stata la differenziazione delle tariffe per gli autobus turistici sulla base della loro efficienza energetica. Gli autobus EURO IV beneficiano di tariffe agevolate rispetto a quelli più inquinanti. Tale strategia ha dei vantaggi ambientali veramente significativi per una città come la nostra nella quale il turismo è una delle principali attività economiche.
Spero fortemente che l'esperienza di CIVITAS MOBILIS, come riassunto in questo documento sottoforma di raccomandazione, possa esservi di aiuto nella ricerca di una mobilità sostenibile.

Enrico Mingardi
Deputy Mayor for Sustainable Mobility
City of Venice

Ljubljana

MOBILIS in Ljubljana has been considered an opportunity to rethink urban mobility. The focus of the Ljubljana project partners was on bio diesel production and testing it in city public transport fleet, supported by information and dissemination activities. Recent global developments in the bio fuel field and local circumstances led us to the conclusion that bio diesel is not a challenge to the City any more. We furthermore realised how very important it is to build and maintain partnerships and to engage citizens in mobility measure planning. Therefore, the CIVITAS MOBILIS experiences are invaluable and have lasting impacts. Our final aim is to create better living conditions for all citizens in Ljubljana.

Projekt MOBILIS je Ljubljani dal priložnost da ponovno razmisli o urbani mobilnosti v mestu. Osrednji namen ljubljanskih partnerjev v projektu je bila proizvodnja biodiesla in njegovo testiranje na avtobusih javnega potniškega prometa. Aktivnosti pa so vključevale tudi širjenje informacij o izkušnjah v projektu. Nedavna globalna dognanja na področju biogoriv ter lokalno okolje sta nas pripeljala do zaključka, da biodiesel mestu ni več izziv. Skozi projekt smo spoznali, kako zelo pomembno je vzpostaviti in ohraniti partnerstva ter vključiti meščanke in meščane v načrtovanje mobilnostne politike. Zato je bil projekt CIVITAS MOBLIS za nas učna ura s končnim ciljem ustvariti boljše pogoje za življenje za vse meščane in meščanke v Ljubljani

Zoran Janković
Mayor - City of Ljubljana

Debrecen

By raising the standards of urban mobility in Debrecen, the measures of the CIVITAS MOBILIS project are major contributions to our attempts to improve the quality of life of our citizens. The smooth cooperation between local actors proved to be the way to create a well-organized sustainable mobility framework for all transport modes. This is one of the most important local mobility achievements that was facilitated by the MOBILIS project. The politicians and stakeholders realized the importance of involving all the different actors in the process of sustainable development and being able to address the transportation challenges ahead in Debrecen. In the frame of the CIVITAS MOBILIS project a mobility workgroup was established that brought together all local actors in the field of city transportation. I do hope that by reading and applying these policy recommendations you will also be able to foster a sustainable mobility culture in your city.

A CIVITAS MOBILIS projekt intézkedései nagymértékben hozzájárulnak a debreceni életminőség fejlesztéséhez a városi közlekedés színvonalának emelésével. Megítélésem szerint, egy fenntartható, valamennyi közlekedési módozatot felölelő, jól szervezett közlekedési rendszerhez vezető legfontosabb út az érintettek közötti gördülékeny együttműködésen alapul. Ez az egyik legfontosabb, MOBILIS projekt által érintett kérdés. A politikusok és döntéshozók felismerték, hogy ahhoz, hogy kezelni tudjuk az előttünk álló kihívásokat a debreceni közlekedés terén, gondoskodni kell valamennyi közlekedési szereplő bevonásáról a fenntartható fejlesztés folyamatába. A CIVITAS MOBILIS projekt keretében felállításra került egy mobilitási munkacsoport a városi közlekedésben érintett szereplők bevonásával. Szívből remélem, hogy ezen ajánlások olvasásával és alkalmazásával Ön is képes lesz elősegíteni a fenntartható közlekedési kultúra kialakítását városában.

Zoltán Pajna
Deputy Mayor – City of Debrecen

Odense

As local politicians, we have a unique obligation and challenge to develop sustainable policies and practical solutions to create an economically and environmentally viable city for our citizens. One of our political goals in the City of Odense, in relation to city planning, is to “create a city for the people living in it” – to put people first instead of cars.

Over the past four years the MOBILIS activities have added great value to our long tradition of promoting soft modes through campaigns, citizens’ involvement and new concrete developments in the field of cycling and public transport.

The purpose of the MOBILIS initiatives is related to behavioural change and has focused on altering habits and emphasising the positive advantages of alternative modes of transport. We acknowledge the importance of a strong political commitment, an integrated administrative framework and pro-active citizen participation.

In Odense our modern Cycle City provides a wide range of positive benefits for our citizens. These include healthier citizens, more independent children, fewer road accidents, savings on health and rehabilitation costs, a cleaner environment, global responsibility and not least a higher quality of city life through greater liveability for all.

The theoretical basis for Odense’s efforts to encourage cycling is based on the idea that success for a change in modal split starts with changes in behaviour and mobility culture.

Som politikere har vi den helt særlige forpligtelse og udfordring at understøtte bæredygtige politiker og praktiske løsninger, som bidrager til udviklingen af en økonomisk og miljømæssig sund by for vores borgere. Et af de politiske mål i Odense, i forhold til byplanlægning, er at skabe en by for borgerne – en by, hvor menneskene kommer før bilerne.

I løbet af de sidste fire år har Mobilis aktiviteterne bidraget væsentligt til vores stærke traditioner i forhold til at promovere bæredygtig transport gennem kampagner, borgerinddragelse og konkrete tiltag inden for cykling og offentlig transport.

Formålet med Mobilis aktiviteterne er at påvirke adfærd og har i høj grad været fokuseret på at ændre vaner og understrege fordelene ved alternative transportformer. Vi anerkender vigtigheden af et stærkt politisk engagement, et tværgående administrativt system og aktiv borgerinddragelse.

Odense som Cykelby tilbyder borgerne en lang række positive elementer så som øget sundhed, fokus på børns trafiksikkerhed, færre trafikuheld, besparelser på sygdoms- og rehabiliteringsområdet, et renere miljø, global ansvarlighed og til sidst men ikke mindst et godt byliv med højnet livskvalitet.

Det teoretiske fundament for Odenses indsats i forhold til cykling er baseret på den overbevisning, at positive ændringer i modal split starter med ændringer i adfærd og måden, vi transportere os på.

Anker Boye
Deputy Mayor – City of Odense

What is CIVITAS about?

CIVITAS - cleaner and better transport in cities - stands for CIty-VITAlity-Sustainability. Through the CIVITAS Initiative, the EC aims to generate a decisive breakthrough by supporting and evaluating the implementation of ambitious integrated sustainable urban transport strategies implemented by cities, able to make a real difference to the welfare of European citizens.

The CIVITAS initiative aims to promote and implement these sustainable, clean and energy efficient urban transport projects through the implementation of integrated packages of technology and policy measures in the field of energy and transport in eight policy fields. It seeks to build up critical mass and markets for innovation.

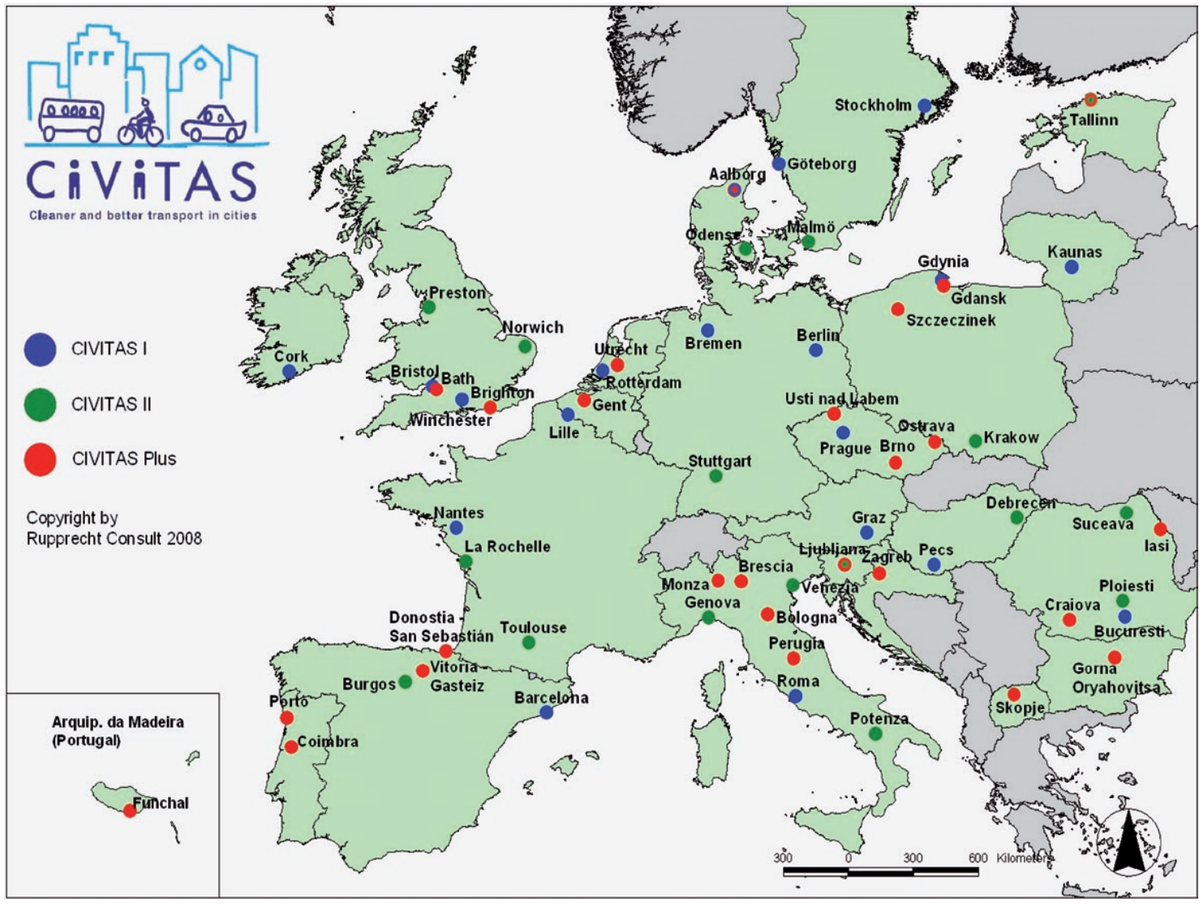
The eight policy fields which have been identified as the basic building blocks of the strategy are:

1. Energy efficient, cost effective and clean public and/or private vehicle fleets and the necessary infrastructure
2. Demand management strategies based upon access restrictions to the inner city areas and other sensitive zones
3. Demand management and revenue raising strategies based upon integrated area wide pricing strategies
4. Stimulation of collective passenger transport and the quality of service offered to passengers
5. New forms of vehicle use and/or ownership and less car intensive lifestyles
6. New concepts for the distribution of goods
7. Innovative soft measures for managing mobility and demand
8. Integration of transport management systems and related information services

Within CIVITAS I (2002-2006) there were 19 cities clustered in 4 demonstration projects, whilst 17 cities in 4 demonstration projects have taken part in CIVITAS II (2005-2009). A new group of CIVITAS projects have recently joined the family as a result of the CIVITAS PLUS call. In addition, the CIVITAS CATALIST initiative was established in 2007 with the aim of validating, exploiting and disseminating the results of the CIVITAS Initiative and, more importantly, of stimulating new cities in the adoption of sustainable, clean and energy efficient urban transport with the intent of accelerating the multiplier effect.

The City oriented demonstration projects are supported by horizontal projects which work on the cross-site evaluation and Europe wide dissemination in co-operation with the demonstration projects and the development of policy recommendations for a long-term multiplier effect of CIVITAS. The horizontal projects also organise the annual CIVITAS Forum, which provides a platform for the exchange of ideas and experience between the participating CIVITAS II demonstration cities, and other cities that are committed to introducing ambitious, clean urban transport strategies.

Map of CIVITAS Cities



The European Policy Context

Introduction

When the European Council adopted the Lisbon strategy in 2000[1] and linked it to an integrated set of environmental policies in Gothenburg[2], the creation of the most dynamic and sustainable knowledge based economy became the driving force of the European course of action.

Despite the European Commission's efforts to break the link between economic growth and transport growth, this link still leads in most European cities to severe congestion, causing a loss of 100 billion euros, or 1% of the EU's GDP annually, and environmental damage. Urban traffic is responsible for 40% of CO2 emissions and 70% of emissions of other pollutants arising from road transport.

Investing in public transport infrastructure and clean alternative modes will help to re-launch the European economy

Knowing that over 60% of Europeans live in urban areas and that just under 85% of the EU's gross domestic product is created in urban areas[3], sustainable development and mobility in European cities became an important item on the European agenda. Investing in public transport infrastructure and clean alternative modes of transport will not only improve the quality of life of most of the European citizens, but also help to re-launch the European economy.

The topic of clean urban mobility is at the European level driven by five sets of European themes: bio fuels and clean vehicles, energy, clean air, information technology for road, and

(1) European council, Lisbon, March 2000.
(2) European council Gothenburg, June 2003.
(3) European Commission, Green Paper, "Towards a new culture for urban mobility", Comm (2007) 551.

the development of a new urban mobility culture. The EU energy policies form an important driver of the CIVITAS initiative. All alternative vehicle propulsion options are promoted through the EU energy package of 2007. This package set the ambitious objective to reduce greenhouse-gas emissions and bring up renewable energies to 20% by 2020[4]. Yet especially the EU policy developments regarding a new urban mobility culture are closely linked to CIVITAS.

The near future of EU policy in the field clean urban transport

Following the mid-term assessment of the 2001 White Paper "Time to Decide" [5] in 2006, it became clear that additional efforts had to be made in the field of urban mobility. A wide consultation resulted in the Green vpaper "towards a new culture for urban mobility"4 in September 2007. It identified 5 courses of needed actions:

- Free-flowing towns and cities;
- Greener towns and cities;
- Smarter urban transport;
- Accessible urban transport, and
- Safe and secure urban transport.

The related Action Plan has not yet been presented, yet some of its actions are already announced and include an inventory on "green zones"; an investigation into how the integration between transport modes can be improved; coordination in relation to the procurement of clean vehicles; and the development of a future CIVITAS Programme. These policies formed the basis of the work which has been done in the five MOBILIS cities.

(4) EU energy package (2007).
(5) European Commission "European transport policy for 2010: time to decide." COM (2001) 370.

The MOBILIS project

In 2004, the cities of Toulouse (France), Debrecen (Hungary), Ljubljana (Slovenia), Odense (Denmark), and Venice (Italy), and their main local mobility stakeholders established a European partnership for “Implementing Mobility Initiatives for Local Sustainability” – of which the CIVITAS MOBILIS project is the physical result. MOBILIS aims to implement radical strategies for clean urban transport in all five cities and to create a new culture for clean urban mobility in the wider framework of sustainable development. The project enables the involvement of all relevant stakeholders and the transfer of good practice to other urban communities across Europe.

Altogether 33 partners work on a range of mobility improvements through 49 measures within eight technical and five policy themes during the four year lifetime of the project.

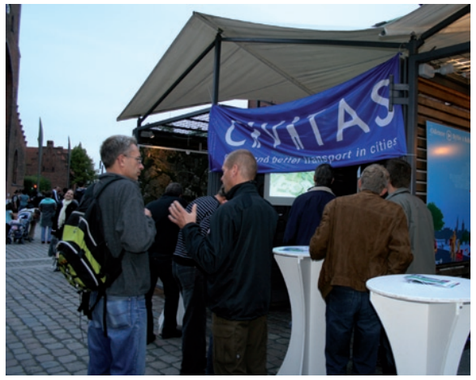
More specifically, the CIVITAS MOBILIS goals have been to:

- Foster a transition process towards the use of alternative fuels and clean energy efficient vehicles;
- Promote modal shift away from the use of the motor car towards sustainable transport modes;
- Improve the quality and fair share of public space;
- Create transport minimising urban structures;
- Foster safety, security, social inclusion and equity in urban mobility;
- Reduce noise and improve air quality in urban areas;
- Support economic development and competitiveness;
- Advance efficient planning, management implementation processes and coordination between mobility stakeholders;
- Increase participation of civil society in environment and mobility related decision making;
- Raise awareness for sustainable mobility and promote behavioural change;
- Improve innovation and creativity capacities of local mobility stakeholders.

The most outstanding of the CIVITAS MOBILIS achievements were:

- Demonstrating the large-scale application of alternative fuels;
- Widening experience with EGNOS/GALILEO services and implementing ITS applications for improving traffic conditions and public transport services;
- Managing the accessibility of sensitive areas through innovative zoning approaches;
- Demonstrating two new approaches to clean urban logistics and implementing one new freight distribution centre operating with clean vehicles;
- Ensuring social inclusion by enhancing accessibility (physical, psychological, economic, informational) of mobility services;

- Enhancing public transport quality and integration with other transport modes substantially (private car, bicycle) through innovative planning and service development;
- Providing new targeted mobility services changing dominant concepts of vehicle ownership and use (carpooling and car-sharing, mobility card schemes);
- Promoting sustainable mobility, modal shift (walking, cycling, public transport) and behavioural change through targeted and personal marketing, service development, information, dissemination, education and training;
- Contributing to Europe-wide evaluation and dissemination of the results to be put forward through the CIVITAS initiative.



Specific MOBILIS activities have focused on the promotion and integration of several policy themes across all sites and measures.

The MOBILIS cities

Toulouse

With more than 800,000 inhabitants, Toulouse is an attractive pole for workers, students, leisure and customers in the Region. Due to the high annual growth rate of the conurbation of Toulouse (1.6% - one of the highest in France), public transport and traffic management are some crucial issues in the objective to avoid congestion of the city centre. Some of the particularities of the city centre of Toulouse are its mixed urban structure (commercial-residential-industrial/services-tourist) and the fact that a large area of Toulouse is structured with narrow streets where it is essential to preserve the typical quality of life.

With the opening of the 2nd line of metro in June 2007, the CIVITAS Toulouse partners have undertaken numerous accompanying projects in order to achieve a radical change towards the development of an alternative mobility culture. The city centre has been entirely redesigned and the attractiveness of the public network has been reinforced through different improvements of the quality of service such as the development of the contactless ticketing system.

The preponderance of private vehicles in the streets of Toulouse entitled the CIVITAS partners to undertake some important and innovative actions in order to increase the modal share of public transport and other alternative soft modes. Some of the most outstanding actions were the continuation of the development of the CNG public transport fleet, the realization of a biodiesel experimentation, the implementation of a new parking management policy, the improvement of the quality of service of the bus network through the development of dedicated bus lanes and of the bus priority system, the launch of the contactless ticketing system or the launch of a mobility agency.

All together, these measures have contributed to achieving a significant leap ahead in the development of an alternative mobility culture in a city where cars have always dominated the streets.

Venice

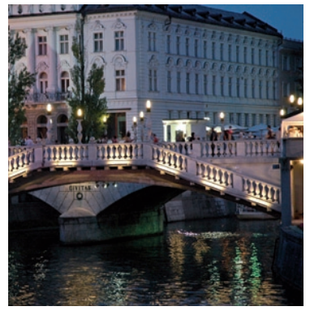
The City of Venice is unique. It was founded 1500 years ago as a temporary settlement on the islands of the Venetian lagoon. The population estimate of 272,000 inhabitants includes 62,000 in the historic City of Venice, 176,000 on the Mainland, mostly in Mestre and Marghera, and 31,000 on other lagoon islands.

As the regional capital, and one of Europe's most historically established cities, Venice is compact, well situated and well connected. Venice has developed a good technological infrastructure and is an innovation site.

Critical issues for transport on the mainland concern congestion and number of private cars used even for short journeys instead of walking and cycling and traffic due to tourism. The water traffic problems in the canals of the island city regard the high number of boats and their technical characteristics in addition to problems of parking and delivery services.

The CIVITAS MOBILIS measures have focused on achieving sustainable mobility both on the mainland and island Venice. Special emphasis has been placed on the improvement of public transport, the promotion of alternative mobility modes, the mitigation of traffic and congestion, the improvement of access management in the city centre, access to disabled users, the promotion of the use of the bicycle and the expansion of the car sharing scheme.

Ljubljana



Ljubljana, the largest city and the capital of the Republic of Slovenia is an important political, cultural and economic centre. It has more than 270,000 inhabitants but together with neighbouring municipalities the population rises to over 500,000. Ljubljana has faced steady traffic growth and an increasing number of commuters, reaching 130.000 daily commuters today. A modal split ratio between public transport and individual modes of transport is in favour of the latter.

Ljubljana has anticipated problems such as congestion, a fall in the use of public transport and continued decline in the level of car occupancy. Walking, cycling and other more sustainable transportation/mobility modes are increasing but the City has recognised that more supporting action can be given.

MOBILIS in Ljubljana has been considered an opportunity to rethink urban mobility. The focus has been on linking urban and traffic planning, promoting the use of public transport, alternative mobility and low emission vehicles, facilitating civil society engagement and improving traffic infrastructure with one goal: to create better living conditions for all citizens in Ljubljana.

Debrecen

Debrecen is the second largest city in Hungary after Budapest with a population of 204,000. The city is the regional centre of the Northern Great Plain region and the scientific, cultural centre of the eastern part of the country. It has been the stronghold of Protestantism for a long time, which is why Debrecen is often called the “Calvinist Rome”. The city is also regularly mentioned as the town of festivals, schools and even the town of permanence. Debrecen is one of the most vivid and coziest nooks in Hungary: this city is a unique and outstanding whirlpool of a dynamic cultural and intellectual heritage and of an effective and successful economic life.

The main goals of the project partners of Debrecen are to maintain the current modal shift and to create a well-organized sustainable mobility framework for all transport modes. During the process Debrecen focuses on environmental and economical but also on social aspects, as it is necessary to identify, understand and satisfy the specific needs of different social groups. The MOBILIS project measures are thus major contributions to improving the quality of life for the citizens of Debrecen by raising the standards of urban mobility. With the help of the MOBILIS project an automatic vehicle location system and real time passenger information system was installed for the tram and trolley bus network. This is an important tool for making public transportation more appealing, effective and competitive with car using. In order to enhance the cycling culture in the city Debrecen made important steps towards creating an integrated cycling network, by using alternative, low-cost models.

Odense

Odense – reputed to be named after the Nordic God Odin, is a very old city with roots back to the Iron and Viking Ages. Odense is the birth place of the world famous story teller Hans Christian Andersen and the composer Carl Nielsen.

With its 186,000 inhabitants, the City of Odense is the 3rd largest city in Denmark. Odense is located centrally in the middle of Denmark and is a major traffic terminal for road, rail and bus traffic. Over 26,000 commuters travel to Odense each day. The city is one of the largest university towns with over 17,000 students enrolled at academic level and approx. 13.000 students on other courses. Odense also hosts the largest single university hospital unit in Denmark with approx. 8.000 employees. Once a heavy industrial city, Odense has now developed into a centre for small and medium-sized firms with a wide range of supporting service enterprises.

Odense is a relatively low-rise city with a low urban density and ideal topographical conditions for cycling. Cycling is a natural part of daily life in Odense, and in 1998 Odense was elected as the National Cycle City of Denmark and given extraordinary funding for cycle research and demonstration activities by the Danish Government. Cycling now covers more than 30% of the trips in the city and in central areas it exceeds 50%. Several of the activities in the MOBILIS measures have aimed at continuing the successful development of a cycling culture through campaigns, child education and infrastructure improvement.

The City Council of Odense has prioritised the development of a coherent and vital city centre where developments within traffic and mobility prioritise walking, cycling and public transport. The MOBILIS project has contributed greatly to the development of Odense’s new traffic and mobility plan.

CIVITAS created a new urban mobility culture in all MOBILIS cities

Introduction

To improve the quality of life of their citizens, all European cities need to adopt sustainable mobility culture favouring alternative mobility in their city centres and sub-urban areas. Ever increasing traffic congestion and pollution of the urban environment have to be countered. Economic life and accessibility have to be maintained. Road safety, security and equity among citizens have to be strengthened. A change in the general mobility behaviour can help to achieve these goals.

The MOBILIS project considers that a real change towards a true co-modality can only take place through a convincing set of integrated policies. This includes land-use, mobility planning, social policies, health policies, and alternative mobility favouring actions, each adapted to the "unique" local context.

Different local contexts but common issues

Like every European city, each MOBILIS city had a different point of departure in their search for a new mobility culture. Despite the differences of culture and present mobility issues the MOBILIS Political Steering Group which was formed by politicians of the 5 participating cities recognised 5 common issues that need a high level of attention on the part of the local policy makers. Issues that are probably of importance for every modern European city that wants to move towards a sustainable mobility culture.

I) Strive for social inclusion and equity in mobility
The city should be accessible for everyone. Mobility is a valuable asset in the contemporary city: it determines citizens possibility to take part in social and economic life. Besides the need to support the local economy and counter environmental degradation, a new urban mobility culture should aim at an improved access for all.

II) Plan and organise mobility at agglomeration level
Urban mobility does not stop at administrative or institutional boundaries. In order to enable a new mobility culture, seamless travel including alternative modes is crucial. This demands an integration of mobility planning with urban development and institutional cooperation. Planning and organising mobility efficiently at agglomeration level has thus been a particular focus of CIVITAS MOBILIS.

III) Understand and change mobility behaviour
How to address people's hearts and minds? Citizens choose the transport mode which suits them best. CIVITAS MOBILIS has placed emphasis on measures which adopted public participation and consultation to better understand and ultimately change individual mobility behaviour.

IV) Adopt transition strategies towards alternative fuel production and use
Alternative fuels can contribute significantly to improving urban air quality and noise levels, cut transport costs and increase energy efficiency. CIVITAS MOBILIS sought to develop transition strategies guiding technology choices and their implementation processes.

V) Identify the benefits of using new technologies in transport
Satellite navigation (GALILEO), electronic ticketing systems or public transport priority schemes can substantially improve the efficiency and quality of urban transport. This CIVITAS MOBILIS policy theme thus sought to explore the true costs and benefits of new technologies in transport.

In line with the eight policy fields of the CIVITAS initiative the MOBILIS project tried to advance these local issues by implementing integrated packages of technology and policy measures in the field of energy and transport.

Different local contexts but common instruments

Some cities have experienced congestion in their historical centres for some years now, others just recently. Some cities have a long standing bicycle culture, while others until recently favoured private car use. Also factors like geographical characteristics, national fiscal policies or longstanding traditions of institutional cooperation influence the "starting point" of a city. External factors which are partly formed by the policies of the European Commission, national and local governments also influence these specific local contexts.

The MOBILIS politicians discussed during four Political Steering Group meetings the importance and nature of integrated local policies for the successful introduction of a new mobility culture. The achievement of the priorities passes through the realisation of an integrated packages of innovative measures and no standard solutions or tools are available. Nevertheless the MOBILIS project identified four distinct types of policy instruments:

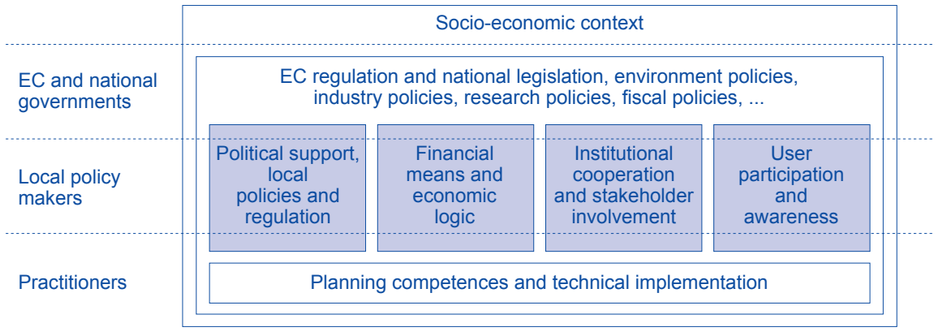
- Provision of political, policy and regulative support;
- Availability of financial means and economic logic;
- Creation of institutional cooperation and stakeholder involvement;
- Increase of user participation and awareness.

The use of these instruments should be adapted to the local situation. The following scheme visualises how these policy tools are embedded in this local context.

Local policy makers should use these tools to create a fertile context for the best implementation of an

integrated package of mobility improvements that lead to a changed urban mobility.

The following four chapters are dealing in more details with the different policy tools and describe how they could improve the general urban mobility culture at the level of the city and conurbation.



Policy tools embedded in the local context

A

Provision of political, policy and regulative support

Introduction

During the MOBILIS project it became clear that the provision of political, policy and regulative support was crucial for the success of the project and the realisation of the integrated measures. It facilitates the effectiveness of the other policy tools of financing, institutional cooperation and public participation. At the policy level the realisation of a new mobility culture can be influenced by the local policy makers at 5 different stages of realisation[6]:

- Setting of the local policy agenda,
- Definition of the objectives,
- Choice of the mobility measures,
- Realisation of the integrated package of mobility measures,
- Wider take-up based on promising evaluation results.

The discussion during the Political Steering Group meeting, technical workshops and evaluation of the measure outcomes and implementation process resulted in a set of recommendations on political, policy and regulative support which can positively influence a change towards a new urban mobility culture.

Recommendations for local policy makers

Place the issue of a new urban mobility culture on the policy agenda.
Support from the broadest possible spectrum of local politicians and decision makers of all local parties, institutions and administrations, is decisive. The bicycle policies of the city of Odense are successful as they are endorsed by all political parties. The joint development of a sustainable urban mobility plan in Debrecen which included all authorities with mobility competences proved to be successful as it was backed by the municipal council.

(6) Adapted from “A framework for policy comparison”, CMPS, UK.

A new urban mobility culture is an integral part of wider policy making.
The change of an urban mobility culture can help to achieve several policy goals. When addressing public health, a new mobility culture should be part of the policies as is the case in Odense. When striving for social inclusion and equity, access to public transport and alternative modes should be placed on the policy agenda. The accessibility works on the waterbuses in Venice contribute to a wider accessibility plan for disabled citizens.

Set realistic but ambitious objectives.
Depending on the policy objectives the mobility measures are chosen and objectives are set. The city of Toulouse decided to create a pedestrian zone in its city centre which reduced the number of private vehicles in its historical centre by 5000 daily trips, while Venice provided mobility training with a focus on bicycle use to 2100 school children. These measures are examples of ambitious MOBILIS experiments that made a real impact at city level. The “participatory planning” experiment in Ljubljana was set up as a small scale experiment, yet its positive results proved the possibility to set ambitious objectives in follow-up activities.

Closely support innovative high interest measures.
A key element for success, especially for “visionary” measures is the backing of a political frontrunner. The bio fuel measure in Ljubljana, considering the full life cycle from production-to-wheel is considered as a good practice example in the MOBILIS project. It showed the true advantages and disadvantages of local farm production of bio diesel and its use in public transport.

The lack of enabling national legislation and European norms and regulation hindered the wider promotion of LPG after a finally successful testing of 10 LPG boats in the canals of Venice and of the real use of biogas in CNG buses in Toulouse.

Policy makers should join these successful advancements to foster a wide take-up. A small freight delivery experiment with electric vehicles in the congested city centre of Toulouse promoted at the political level proved to be a successful measure that could be scaled up to make a real impact at the city level. Access control and parking management are sensitive measures attracting high citizen and stakeholder interests and therefore need guidance from the political level.

Recommendations for EU policy makers

Create a CIVITAS "Erasmus" programme for local politicians.

Among others it was recognised during the MOBILIS Political Steering Group meetings that policy coordination is a key requirement for successful planning and realisation of innovative measures leading to a new urban mobility culture. This means coordination within mobility policies, but also coordination with social, health and urban development policies. Initiatives like the "Erasmus" programme for policy makers should receive the strong support of the Urban Mobility Action plan to guide local decision makers.

Introduce a CIVITAS quality label.

CIVITAS should become a "quality label" for cities that adopt an integrated approach towards a more sustainable urban transport. The attribution of this quality label could be based on the presence of an integrated approach and the implementation of a multi-annual sustainable mobility improvement strategy. Periodical assessments should lead to a reconfirmation of the label over time. This will enable local politicians to promote the adoption, and communicate on the need of a new urban mobility culture. It could be a type of "agenda 21" for urban mobility.

B

Availability of financial means and economic logic

Introduction

The present economic crisis shows the importance of the availability of financial means for the European economy and its sectors. This is also true for the sector of urban mobility. The availability and well-balancing of European, national and local funding would facilitate a necessary change in urban mobility. Funding is increasingly scarce and the rare resources available have to be distributed among a large set of city priorities. Investing in clean urban transport proves to support the local economy, and reduces costs in terms of public health and social conditions. The Urban Mobility Green Paper[7] of the European Commission recognised this lack of financing for a new urban mobility culture. In evaluating the experimentation the MOBILIS project evidence found that it is worth freeing financial resources for a new mobility culture and to set a favourable financial context for alternative mobility options. It was also shown that the adoption of an economic logic through cost-benefit analysis can lead to better value for money of investments in alternative mobility.

Recommendations for local policy makers

Free funding for soft measures.
Depending on the urban structure the investment in a new metro line costs about 90 million euros/ Km, a tramline costs 20 million/ Km and around 5 million/km is necessary for a separated bus way[8]. Innovative soft measures as promoted within the CIVITAS initiative are much less expensive while being in relative terms much more effective.

Nevertheless, still today the experience shows that the financial means are relatively easier to obtain for main infrastructure projects than for effective soft measure initiatives. Depending on the urban structure a new car sharing service can be made profitable within 5 years with an initial investment of 500,000 €. The promotion of walking and cycling can be carried out with a few thousands of euro annually.

(7) European Commission, towards a new culture of urban mobility, (Com) 2007, 551 final, Brussels, September 2007.
(8) Tisseo White book, 2007.

Introduce an economic logic to favour soft measures.
An insight into the costs and benefits and the development of a business case proved to be an important facilitator for the development of new urban mobility culture. Aiming at a “100% clean” bus fleet, Toulouse committed to use natural compressed gas, and in the future biogas based on cost-benefit analysis. In the “creating alternative mobility options” measure in Odense, the economic benefits for the participating families showed how this alternative mobility choice can result in great savings for both the private and the public economy. Run according to the logic of supply and demand, car sharing in Venice is consideredas a good practice example that fulfils for a reasonable cost part of the mobility needs of citizens, companies and local administration.

Create a favourable financial and fiscal context.
The availability of increased financial means for new urban transport mobility also passes through the creation of a favourable financial context. That means that the local policy makers should explore, for example, the possibilities to find new sources of funding for alternative mobility and reduce related unnecessary costs. The introduction of new soft measures often also means the search for new business models. In Toulouse the introduction of public bicycles was financed with the making available of publicity space for the bicycle operator. New information services and ITS technologies like the provision of wireless internet at info hot spots in Odense could be self financing, just like the provision of proximity services in main multimodal stations, as is the case in Toulouse.

Search for a cost effective organisation that also considers the environmental costs.
Sometimes a “simple” reorganisation might be enough to improve the environmental benefits of alternative urban mobility without direct cost increase. The Chronopost experiment of clean urban freight delivery with electric vehicles in the city centre of Toulouse showed that without extra costs 15 tons of CO_2 was saved and allowed the private freight operator to assume a 16% increase of freight delivery. Search for a cost effective organisation that also considers the environmental costs.

State your financial investments in a Sustainable Urban Mobility Plan.
A clear financial chapter in an integrating sustainable urban mobility plan, covering both infrastructure and soft measures, based on cost and benefit analysis can shape a favourable environment for a new mobility culture. This financial chapter will enable local decision makers to get a full overview and integration of the investments in alternative mobility for a new urban mobility culture.

Recommendations for EU policy makers

Make CIVITAS a “quality label” for European structural funding and financing.
All cities that would like to use European structural funds or financing, as for example through the loans

of the EIB, should have a CIVITAS quality label. This means that in order to qualify for funding and financing the receiving city should have a sustainable urban mobility plan and integrated packages of hard and soft measures as in the spirit of the CIVITAS initiative. This will not only allow new public transport infrastructure to be built but also guarantee its embedding in a strategy of sustainable mobility.

Create a dedicated EU support programme for financing clean urban transport activities[9].

Following the statement in the "Urban Mobility" green paper the MOBILIS project would like to stress that it agrees with the EC and that the CIVITAS "approach" should pave the way for a dedicated EU support programme for financing clean urban transport activities outside the research framework. This programme should concentrate on actions on a larger scale, focussing on the integration of innovative actions in towns, cities and their periphery.

(9) European Commission, "towards a change in urban mobility", (com) 2007, 551 final, Brussels, 2007, Page 21.

C

Creation of institutional cooperation and stakeholder involvement

Introduction

All European cities need to create an attractive agglomeration that brings investments for the local economy and maintains a high quality standard of life for its citizens. Finding ways to resolve local transport dilemmas is one of the key issues in this regard. To be effective they need to achieve strong policy coordination between all authorities at the level of the agglomeration. There is a clear need for integration within local mobility planning. There is also a clear need for integration between mobility planning and areas like urban development. Local stakeholders should be involved in the planning and implementation to best integrate the mobility measures in the local context and to avoid strong opposition. From this perspective enforced institutional cooperation and stakeholder involvement is essential.

Recommendations for local policy makers

Reinforce integration of mobility planning and urban development for example through corridor access plans.

Many European cities provide urban development and urban transport plans, yet thematic and surface coverage, legal obligations, funding and validity vary considerably. In some cases even various plans with complementary content exist in parallel without being coherent. To overcome a certain incoherence the city of Toulouse tries to develop so-called “corridor access contracts” for new urban developments. This means that any new urban development to be served by public transport needs first of all to be developed at specific locations (close to already existing public transport infrastructure) and secondly needs to take into account certain provisions such as, for example, the number of parking spaces created.

Reinforce the integration of mobility planning and health policies[10].

During recent decades, chronic diseases caused by inappropriate nutrition and lack of activity have strongly increased in Europe. By commuting and travelling actively, i.e. walking and cycling instead of using the private car, one can not only save money and CO_2, but contribute a lot to his personal wellbeing and health. As it has just been stressed in the White Paper on a European Strategy on Nutrition, Overweight and Obesity[11], there is a clear link between chronic diseases and lack of activity. An increased integration of mobility planning and health policies could enforce adequate and pleasant infrastructure and environment for such exercise activities. Cycling and walking is still linked to recreation only, for many citizens. They need to be encouraged to commute by bicycle or walk, possibly in combination with public transport.

(10) See also MOBILIS Training report, Transport and Health, Odense, July 2007.
(11) White Paper on a Strategy for Europe on Nutrition, Overweight and Obesity related health issues, European Commission, (Com) 2007 279 final, Brussels, 2007.

Reinforce the integration of different mobility planning and management.

In most European cities effective and coherent mobility planning means coordination at the level of the agglomeration. It is a challenge for local administrations to cooperate effectively together. The creation of mobility workgroups for the development and implementation of a sustainable mobility plan has in the MOBILIS project proven to deliver positive results and real improvements. The new mobility group created in Debrecen bringing together all local stakeholders that jointly worked on the development of a set of sustainable mobility measures (e.g. new access restrictions in the city centre) proved to be successful.

The use of mobility work groups will enforce monitoring and management during the implementation of Sustainable Urban Mobility Plans. Topic related taskforces, such as for bicycling could strengthen the realisation of the specific thematic area. The task force for the joint development of new bicycle policies in Toulouse has already demonstrated its usefulness beyond the lifetime of MOBILIS (e.g. bicycle lane continuance policy, bicycle parking policy and bicycle rental policy).

The operational management of mobility and traffic can be obtained by the constitution of a so-called General Mobility Management System (Système de Gestion Global des Déplacements SGGD in French). This is a strategic partnership in which the different

management systems and sometimes also services are physically integrated. This was experimented in Toulouse with the development of a multimodal information system.

Integrate local stakeholders in the planning and implementation of clean urban mobility initiatives.
Local stakeholders are often directly affected by the realisation of a clean urban mobility measure. Like the users participation their engagement is often crucial for the success of the measure. The involvement of the local hotel owners in the access for tourist coaches was a decisive factor for the outcome of the measure. The involvement of the local Chamber of Commerce in the development of the area-based commuter plans helped to develop effective communication towards the local companies.

Recommendations for EU policy makers

Foster exchange between local authorities for example through the "ERASMUS" for politicians and senior decision makers.
The MOBILIS project recognised that local authorities play an important role in implementing mobility influencing environmental legislation from the EU. Integrated approaches to urban management depend on daily decisions which are guided by a strategic vision and objectives. An exchange between European cities on potential and obstacles for integration at the political level will help to guide senior officials in promoting co-operation and co-ordination in the development of new strategies for implementing action plans.

Assist new Member States with the development of Sustainable Urban Mobility Plans.
The MOBILIS politicians emphasise the necessity to recognise better the needs and expectation of the cities in the new Member States. These cities underline their commitment towards a clean urban mobility and forms of stakeholder cooperation and involvement. However, their experiences in managing mobility under different political frameworks in the past need to be better reflected and put in context in relation to the present challenges.

D

Increase of user participation and awareness[12]

Introduction

The MOBILIS project acknowledges the importance of information and citizens' engagement. Many of its activities were aimed at this goal. Approaches to public involvement differ in the individual city or country according to the principles, standards and the level of participatory democracy established. The most important factor in determining the intensity of public involvement is in general the nature of the individual measure and the relevance of informing and public involvement for its success and effectiveness.

As regards to the intensity of communication and impact on decision-making, we distinguish between several levels of participation:

- informing / educating / raising awareness – lowest level of participation, one-way, top down;
- consulting / gathering information / discussing – one step up from informing, citizens are consulted, their views are taken into account, but not necessarily considered and acted upon;
- deciding together / engaging – those affected by an issue are invited to learn about the issue, discuss and become part of the final decision-making process (clear boundaries are set on the level of influence to avoid unrealistic expectations);
- acting together / partnership – shared decision-making process and shared responsibility for implementing decisions.

From very technical measures, like Argos in Venice and Global Navigation Satellite Systems in Toulouse that used articles and presentations to create awareness, to the "Living street" experiment in Odense which searched for citizens' partnerships, all MOBILIS measures tried to interact to a certain degree with the local citizens and users of alternative mobility. Our analysis of public participation and awareness in the 5 partner' cities highlighted that a high level of user consultation is in general a prerequisite for proper implementation.

(12) Mainly based on the Public Participatory report of the MOBILIS project prepared by REC, 2009.

Recommendations for local policy makers

Engage citizens in mobility planning and implementation.
Citizens' engagement brings the knowledge on the problems and needs in the planning phase, raises awareness on behavioural modes, enables the feedback on acceptability and usefulness of implemented measures, increases the community cohesion and the ownership in relation to the action. Involve citizens in the early stage and throughout the whole process in order to build trust for future actions. The "living street" experiment of the City of Odense is considered in this respect as a good practice example.

Different types of mobility measures require different levels and different timing of citizens' involvement.
Not every mobility measure needs the same level of citizens' involvement. The level of involvement ranges from informing / awareness raising to consulting with citizens and deciding together, from early engagement to consultation in later stages. It is however recognised in the MOBILIS project that involvement is in general lower than it should be for a successful result. A good practice example is the new parking management scheme in Toulouse. The introduction of paid parking for almost 7000 parking places in the city centre was successful because of an extensive user consultation and explanation of the outcomes.

Identify the key citizen target groups, and understand their interests and needs.
Identify carefully the stakeholders that are relevant for a specific mobility measure and study carefully their needs and interests. The city of Debrecen carried out a marketing study to identify the target group of its carpooling measure. Knowing well the targeted stakeholders and understanding their life styles can help in selecting appropriate methods and approaches and can increase the efficiency of the communication with and engagement of citizens (especially when we target young people). Tisséo, the public transport operator of Toulouse, used representative usergroups to asses the potential of its marketing plans and tariffs.

Informing citizens is two-fold (technical information and information on the consultation process in cases when citizens are involved).
When the aim is citizens' engagement, besides the technical information - related to the mobility measure, information on the process should also be available - related to the whole engagement process, including the objectives, calendar of consultation events, deadlines and milestones, help for citizens, ways on how the comments will be considered, etc. The best way to inform well and to engage the citizens is to prepare a structured Citizens' Engagement Plan. A detailed engagement process was developed for the new cycling strategy in Ljubljana.

Enable inclusive, transparent, interactive, continuative participation processes; ensure the involvement of the city administration, and employ opinion leaders, teachers and others that can help.
Enable open and well-facilitated debates with clear objectives. Use the consultation forums that give you the best interactiveness. Take due account of the citizen comments and proposals, provide them feedback. Use key actors to relay the information and to support the measure activities. The ABiCi project of the city of Venice was directly promoted by the Deputy Mayor for Sustainable Mobility.

Select innovative and most effective communication and engagement techniques, tools and channels that are tailored for specific target groups.
Every group of citizens has its own set of information

and communication channels (entertaining activities for children, internet forums for students, etc.). The use of innovative communication tools, like events and new information technologies not only help to reach the young, but also give a modern image to the measure itself. Based on a preliminary study the carpooling in Debrecen was marketed among other through handouts and the university intranet NEPTUN.

Consider citizens' comments and proposals when making decisions and give them the feedback on their impact on decisions taken.
Really use collected citizens' comments and proposals in the decision making. Planned improvement of cycling infrastructure in Ljubljana was changed after citizen consultation. Almost a standard rule but often forgotten, citizens appreciate to being timely informed on how their comments and proposals are used in the final decision making. Feedback is important to maintain support during the realisation of the measure.

Learn by doing, share experience and contribute to inclusive governance in sustainable mobility planning and implementation.
Learn from experience and be flexible enough to adopt new strategies and proposals due to changed views based on citizens' involvement. The outcomes of the first consultation round for a new bicycle strategy in Ljubljana made the project team decide to enlarge the topic from the placement of new bicycle infrastructure to a more general bicycle strategy.

Recommendations for EU policy makers

Strengthen the citizens' participation in clean urban mobility.
The European Commission committed itself in the Green Paper to set up a new culture of urban mobility. This task, however, cannot be implemented without the proper engagement of citizens and city users as key actors in mobility. The European Commission should impose citizens' engagement in urban mobility changes in the different European citizens' rights charters, such the European Charter on Pedestrian Rights or the Charter of Fundamental Rights of the European Union article 26 integration of persons with disabilities. The Commission should promote the development of citizens' engagement urban public transport charters.

1

Thematic Area "Clean Vehicles and Alternative Fuels"

Introduction

The use of "clean" vehicles and alternative fuels is one of the major themes in relation to the development of a sustainable urban mobility. It will help to achieve the EU's Kyoto objective of a green house gas GHG emissions reduction of 8% by 2012. At present there are several options to replace the fossil diesel run buses by vehicles that are operated with alternative energy sources:

- Bio fuels (Bio diesel, vegetable oil, biogas, bio ethanol (small vehicles), biomass to liquid);
- Alternative fossil fuels (Natural gas like CNG, LNG and Propane LPG);
- Electric drives (Electric vehicles, Hybrid electric vehicles, fuel cell (Hydrogen), trolley buses, solar powered vehicles).

Even if the latest Euro IV, V and EEV diesel bus technologies are considerably reducing the environmental gap with alternative fuel technologies, a lot of efforts are placed on the use of bio fuels by the European Commission. According to a 2003 EU directive, bio fuels should represent 5.75% of all fuel use by 2010[13]. The EC allows for tax exemptions in EU Member States to promote bio fuels[14]. All alternative options are promoted through its EU energy package of 2007. This package set the ambitious objective to reducing greenhouse-gas emissions and bring up renewable energies to 20% by 2020[15]. However, as discussions about the sustainability of bio fuels are still ongoing there is at present no clear guidance from the EC on the issue of bio fuels. The MOBILIS project experimented with the latest technologies in the field of bio fuels and alternative fossil fuels and uncovered the advantages and constraints of the use of clean vehicles and alternative fuels in the local urban context.

Bio diesel

New generations of bio fuels are expected to come on the market within the coming 10 years. The so-called second generation of bio diesel will be derived from agricultural waste and therefore should not compete with food production. Tests with algae could bring a third generation of bio fuels.

In the MOBILIS project several blends of first generation bio diesel were tested (10 to 50% mixtures in Debrecen, 30% in Toulouse and 100% bio diesel in Ljubljana). Seen from a "field-production-usage" approach, bio diesel should reduce the greenhouse gas emissions and air pollution. The intended objective of the EC is to consider bio diesel only, like other bio fuels, when they reduce emissions by 35% in comparison with normal diesel by 2011 and 50% by 2017.

The use of bio diesel could stimulate the creation of a biomass industry (new jobs, stronger agricultural markets, new markets), which is of particular interest for European cities and regions with a local potential to produce bio diesel. It reduces the dependency on oil and gas imports although its potential seems to cover only a small part of the total demand.

At present there are several reservations about towards first generation bio diesel. They appear to be partly responsible for the rise in global food prices, may lead to harmful monocultures, increased deforestation and biodiversity loss. There are uncertainties about the energy-balance and the production costs are still relatively high. At the local level this influences the price of the fuel, but maybe more importantly gives a troubled image to the general public. It is at present uncertain if bio fuels are a sustainable solution.

Alternative fossil fuels, CNG, LPG and biogas

In the MOBILIS project the CNG share of the bus fleet in Toulouse (+68 buses), Debrecen (+7 buses) and Venice (+35 and 5 mini buses) was

(13) EU biofuels directive (2003/30/EG).
(14) EU directive on taxation of energy products and electricity (2003/96/EG).
(15) EU energy package (2007).

expanded. A new CNG bus station was constructed in Toulouse and a CNG pipeline was constructed in Venice. The use of LPG as an alternative fuel for boats was tested in Venice. There are several alternative fossil fuels on the market, like compressed natural gas (CNG) or liquefied petroleum gas (LPG). These alternative fuels have some limits. They are not considered to be a long-term solution. In addition the investment and maintenance costs of the CNG buses proved to be higher than for normal diesel buses. Although with the present subsidies the lifecycle costs can be brought to almost equal levels. On the other hand in comparison to normal diesel these fuels have some environmental advantages. They emit less greenhouse gas emissions (-23% GHG emissions for CNG and -15% CO_2 emissions for LPG[16]) and cause less air pollution.

The use of CNG will also lead to a strategic diversification of a sustainable fuel supply. Toulouse conducted a thorough study on the possibilities to run on biogas in the near future. If there is a local production of biogas as in Lille (France), or if the biogas can be injected in the general gas network this renewable fuel can replace fossil CNG.

CASE STUDIES

Bio diesel from local farm-to-wheel

From production to usage, bio diesel experiments formed a large part of the MOBILIS project. Toulouse executed an analysis of the potential environmental, social and economical benefits. The bio diesel measure in Ljubljana was composed of three main actions:

- The testing in two locations in Slovenia of the production and use of bio diesel from rape seeds at small farms.
- The improvement of the quality of bio diesel production,
- The deployment of bio diesel in Ljubljana Public Transport (LPP) bus fleet (20 vehicles).

The development of equipment for efficient pressing of rape seeds by farmers to support decentralised production was promising. The production provided additional income for the farmers, even if due to logical cost-effectiveness reasons it is better to centralise the etherification of crude oil, i.e. at industrial plants. The bio diesel produced at local farms has, like industrial produced bio fuel; on average an 8.5 % lower energy value than classical diesel. Several promising techniques were tested to improve the quality of the bio diesel, especially by reducing the amount of water, free fatty acids and phosphorus in the raw material.

(16) Evaluation of LPG measure in Venice, and CNG measure in Toulouse.

From CNG to biogas

In 2004, Toulouse already had one of the biggest CNG public transport fleets in France (100 vehicles). During the CIVITAS MOBILIS project, the Public Transport Authority (Tisséo) decided to go ahead with its CNG policy by constructing a new CNG filling station (capacity 125 vehicles) and purchasing 68 new CNG buses.

The public transport operator performed a thorough cost-benefit analysis of its vehicle operation including external costs calculations, which showed that under equal running conditions the costs of the CNG fuel is still slightly higher than running with a diesel bus[17].

Cost-benefit analysis for CNG and for Diesel usages

Overall operating costs for CNG vehicle Euro 3	36 005 €
Overall operating costs for Diesel vehicle Euro 3	32 622 €
Difference in external costs between CNG and Diesel	2 048€
General extra costs for using a CNG Euro 3 bus	1 335 €

Calculated for equal mileage of 45 554 Km per bus per year

Based on a multi-criteria analysis the public transport authority of Toulouse chose to continue its investments in the field of CNG. The acquisition of CNG buses is not an isolated policy. The various satisfaction surveys conducted by the authority show a positive attitude of the inhabitants of Toulouse towards the CNG buses, which benefits the whole public transport. They are seen as « more respectful » for the environment with their significant reduction of CO emissions (16.76 tons of CO for 28 buses). The following table compares the emissions of HC, CO, Nox and particulates per 1000 km between a CNG Euro 3 bus and a diesel Euro 3 bus.

Emission per 1000 Km of operation in grams

Bus	Diesel Euro 3 with Soot filter	CNG Euro 3
Nitrogen oxides (Nox)	52 911	53 404
Carbon monoxide (CO)	22 223	5 516
Hydrocarbons (HC)	6 984	2 688
Particulates	529	47

(17) 28 Euro 3 CNG bus compared with 28 Euro 3 Diesel for the period 2008

Recommendations for local politicians and technicians

The experiments focused on biodiesel, alternative fossil fuels and future use of biogas. Even if the present bio fuels as well as other alternative fossil fuels are considered short- to medium-term solutions, they are for the moment a good alternative to the normal diesel bus in public transport.

Measure and set environmental objectives.
The MOBILIS cities are of the opinion that public transport also has a social and environmental role to play. Every public transport operator should measure its environmental performance and within its budget and bus life cycle constraints set objectives for improvement over time. Besides long term investments in clean vehicles and fuels the local public transport operator should also focus on energy efficiency, for example through the promotion of “eco-driving” with its drivers.

Bio diesel and public transport, do not start, or do not stop.
At present the use of bio diesel is for the local public transport operator a little more expensive than using normal diesel. The environmental advantages of bio diesel depend on their specific life cycle characteristics, not only on its usage in public transport. The local decision to start or continue bio diesel use is at present a political choice and should be based on the following considerations:

- potential to use local sustainable produced bio diesel, stimulating the local economy;
- potential to procure elsewhere sustainable produced bio diesel;
- A comparison of the general long term environmental benefits of using bio diesel in comparison with the usage of normal diesel.

When already using bio diesel, it would be worthwhile to check the production conditions of the procured bio fuel. A stimulation of the bio diesel market by local authorities toward a second generation expected in the next years together with the European efforts for the adoption of sustainability criteria might lead to a viable niche market bio diesel and assure a strategic diversification of fuel supply.

Invest in alternative fuels, CNG and biogas.
The integration of alternative fuels in local public transport is a policy decision that contributes to the successful adoption of general social and environmental strategies for a city to improve the quality of life of its citizens. Investing in alternative fuel driven vehicles and fuels is also a management decision that will help to make public transport less independent on one fuel type and supplier, and help to prepare the organisation to adapt to future fuel and vehicle technologies.

Recommendations for EU policy makers

Adopt the highest possible emission savings criteria for bio diesel.
The direct costs for using bio fuels in public transport are higher than for normal diesel. The decision to run the buses with bio diesel is at the local level at present an environmental policy decision. A favorable attitude from the policy makers, public transport users and citizens can only exist if there are clear guidelines on the minimum CO emission savings from well-to-wheel of bio fuels. The MOBILIS cities recommend that the EC supports the objective of the European Parliament to consider only bio fuels that make a 45% emission saving compared to fossil fuels by 2011 and 60% by 2015.

Develop sustainability production criteria for bio fuels.
There are several signals that the EU bio fuels directive’s target of a 5.75% market share for 2010 is not likely to be achieved. The EC should stimulate the market, yet only focus on sustainable produced bio fuels. Negative effects on changes of land use (e.g. deforestation, food prices) and social working conditions should be avoided. The MOBILIS cities ask the EC for clear sustainability production criteria for bio fuels, including a threshold for producers in order to avoid that their non-sustainable bio fuels are sold outside the European Union.

Build a coherent EU policy for bio fuels.
The MOBILIS cities ask the EC to develop a coherent bio fuel policy favouring sustainably produced bio fuels. Only such a policy will result in a real take up of bio diesel usage at the local level by public transport, assuring a real greening of mobility and necessary energy diversification.

Aim at energy efficiency for private cars.
MOBILIS supports the idea of “co-modality”. The usage of bio fuels by private cars will give the wrong signal to its users. It will give them the idea of being environmental-friendly constraining them to change towards alternative more sustainable mobility modes, like public transport, cycling and walking. The focus of the EC should be on energy efficiency of the private car.

Support CNG, LPG and biogas.
Even if compressed natural gas is only an intermediate solution it brings a more sustainable urban public transport. CNG fuel is less polluting than the diesel buses. The EC should advocate the use of CNG in order to reduce CO emissions in the urban environment. The development of a CNG market will also foster the development of biogas usage.

In 2007 only 14 European cities were using biogas as a fuel for their captive fleets of which a well-known case is the City of Lille (France). The injection of

biogas in the general gas network could allow a local authority to conclude a so-called “green energy” contract as already exists in the electricity sector.

Several countries do not yet allow the injection of biogas in the general gas distribution network. This is constraining its use, among other by public transport. The EC should remove these constraints. The use of LPG as a fuel for boats can decrease the pollution of inland waterways and canals. The EC should stimulate its use and take an active approach in the lifting of all constraining national legislation and regulation. In the larger part of the EU Member States, if promoted for private vehicles or boats these alternative fuels will need a new distribution infrastructure.

The diversification of fuels will not only allow for the development of clean fuels but also provide the EU with a strategic diversification of fuel supply.

MOBILIS activities

The following activities carried out in the MOBILIS project in the field of clean vehicles and alternative fuels in comparison with fossil diesel use.

Site	Activities
Toulouse	Analysis of potential use of biodiesel by the local public transport operator and experimentation by using bio diesel (Diester30%) for a fleet of 81 buses; Analysis of the potential use of locally produced biogas by the CNG bus fleet; Extension of CNG bus fleet with 68 vehicles and construction of a new CNG filling station with a capacity for 200 vehicles; Demonstration of a new type of small-scale CNG compressors for households; Equipment of 87 EURO III buses with last generation soot filters.
Debrecen	Analysis of a potential use of bio-diesel; Analysis of potential use of locally produced bio-gas; Conversion of 7 conventional diesel buses to CNG Demonstration of bio-diesel usage in PT buses.
Ljubljana	Research on the optimization of bio-diesel production and performance; Experimenting of local bio-diesel production (50.000t/year) on small farms; Demonstration of bio-diesel operation with 20 public transport buses.
Venice	Demonstration of CNG use with the procurement of 35 new CNG buses and 5 new mini buses; Connection of the CNG filling station to the natural gas network; Demonstration of LPG operation with 10 boats.

Promote the dissemination of coherent operational and financial performance data on alternative fuels.
There are few complete studies available for public transport operators on the life-cycle costs of alternative fuels and fleet management taking into account the external costs. It was difficult for the MOBILIS cities to obtain objective environmental, operational and financial performance data of alternative fuels. The EC should endorse the availability of such data.

Make long term decisions on the vehicle technologies supported.
Investments in new vehicle technologies of local public transport operators have to be undertaken for 15 years, which is on average the lifetime of the vehicles and infrastructure. The European Commission should make clear that it will support chosen vehicle technologies over a longer time period than it presently does. This will give some clear signals to the local operators on which technology to invest in and create a more stable investment environment. This will allow a situation where the real investments are more in line with European policies.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Clean vehicles and alternative fuels	Bio diesel production*			-	-			
	Bio diesel use*			-	-			
	CNG infrastructure*	-	-	-	-			
	CNG vehicles*			-	-			
	Biogas production		-	-	-			
	Biogas use*			-	-			
	LPG boats*			-	-			
	Soot filters		-	-	-			

* In comparison with fossil diesel use

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

2

Thematic Area "Access and parking management"

Introduction

All across Europe, increases in urban traffic volumes are observed. This causes busy city centres and neighbourhoods to suffer from even more congestion and consequently from worsening air and noise pollution. Considering furthermore the growing number of road traffic accidents, a development which goes along with increased urban traffic; it is safe to say that the quality of life is adversely affected by such urban traffic developments.

Concrete economic figures exist which illustrate the negative consequences of the ever increasing traffic in Europe's urban centres. The European Commission's Green Paper "Towards a New Culture for Urban Mobility" states that nearly €100 billion (or 1% of the EU's GDP) are lost every year to the European economy due to negative effects of chronic congestion and the associated delays and pollution in town and city centres.

The Green Paper is suggesting a controlled access and parking management of private cars and freight transport in sensitive areas based upon their emission levels and access regulation as part of the solution[18]. Urban access and parking management might also be an adequate response to a necessary control imposed by the new EU Directive on clean air[19] of urban pollution. The MOBILIS cities experimented with access control as well as with new parking management policies.

Access Management

An increasing number of European cities are engaged in access management policies for urban centres and other sensitive areas[20] often together with the enhanced offer of more sustainable alternative modes. Depending on the chosen exclusion criteria, as well as the alternative offer and marketing and communication approach chosen they aim at the creation of environmental or clean zones (living streets), limited access zones, pedestrian and/ or car-free zones. In the MOBILIS project the cities of Debrecen and Toulouse implemented new pedestrian zones. The former city experimented also with a traffic count-down system to make city traffic more fluid.

The example of the City of Venice shows that issue of congestion is not limited to the use of the car. Equally problematic, the increased boat traffic led to congestion and pollution on Venice Island. Venice demonstrated an access control system for buses and a city centre restriction system through the installation of some electronic access points at the main entrances of Venice mainland (Mestre). In turn, the City of Odense created an environmental zone in its city centre and so-called "living streets" in two residential areas. The idea of a "living streets" zone is to restrict access for motorised vehicles, thereby to reduce their negative impact and to allow for the urban space (previously occupied by automobiles) to be used for social interactions or simply for a safer possibility to walk or cycle.

Parking management

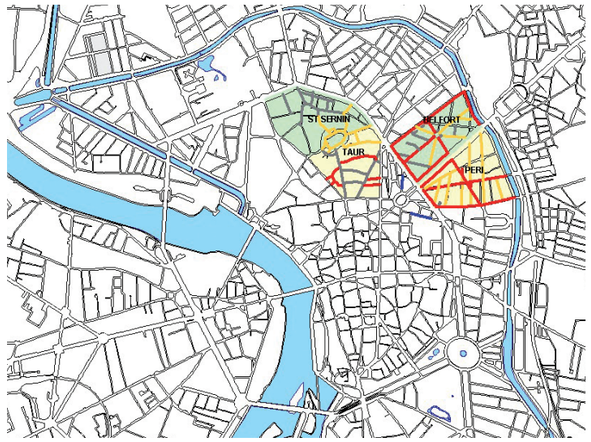
Parking management in MOBILIS can be separated in two distinctive groups; parking management within the urban centre (Toulouse), and Park and Ride management (Venice and Debrecen), though Venice also implemented a new parking tariff scheme during the project). Especially the first is a flexible tool that can be fine-tuned to enforce the favoured mobility behaviour of different groups of drivers in the urban centres, e.g. residents, visitors and freight distributors. Along with a redesign of urban public space in the city centre, Toulouse introduced a new parking management policy during the MOBILIS project to counter the traffic-related negative effects of increased population growth (+12.000 inhabitants annually). Venice and Debrecen introduced several innovative new parking strategies linked to their Park and Rides.

Obviously, and the MOBILIS experimentations listed above illustrate this, it is not possible (or even desirable) to completely restrict accessibility to a city centre as, for example, residents, customers, shopkeepers and carriers will require at least a minimum level access to the area by private car and freight delivery.

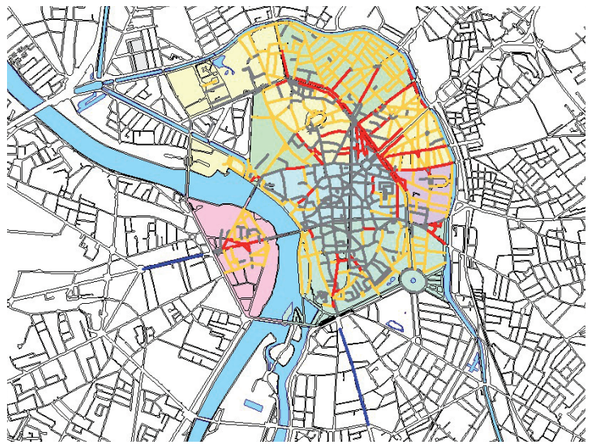
The competing demands for urban space and the various reasons for seeking access, especially in inner city areas, requires careful consideration when access and parking management measures are planned and then implemented. MOBILIS responded to these challenges through innovative measures in the areas of parking management.

(18) EC, Green Paper "towards a new culture for urban mobility", COM(2007) 551 final, Brussels, 25.9.2007.
(19) EC, Directive "On ambient air quality and cleaner air for Europe" 2008/50/EC, Brussels, 21.5.2008.
(20) METEOR, D6 Cross site evaluation, for the EC, Rijswijk, The Netherlands, November 2006.

CASE STUDIES



Districts covered by the end of 2006 (Source: AUAT)



Districts covered by the end of 2007 (Source: AUAT)

Introduction of resident parking

The City of Toulouse with its 12,000 parking spaces in the centre offered a range of predominantly free car parking facilities till 2005. The lack of alternatives or incitements to use other modes led to significant pressures caused by the demand for parking. This situation resulted in widespread illicit parking practices and conflicts of use between shopkeepers, residents, commuters and visitors to the city centre.

In response to this situation and in order to allow city centre residents and customers of shops to park more easily, the City of Toulouse decided to introduce a pay parking scheme for residents in four central sectors.

By May 2006, the streets in these first four sectors switched over to pay and “resident” parking schemes (2,156 places). After a successful implementation and on demand of the local politicians and residents the new parking policy was extended in phases and at present covers almost the whole of the city centre.

The introduction of paid parking dissuaded commuters and long-stay visitors from using their vehicles for journeys to the city centre and encouraged them to use public transport, bicycles, or to walk. The main result of the new parking policy is a drop of 17% of occupation of the parking places and less congestion in the city centre. Even if they also had to pay for it themselves, the fact that residents could more easily park their car was one of the reasons why the residents were asking for paid parking. Residents of neighbouring areas asked for the paid parking measure to counter the parking of the visitors that still came to the city centre with their private vehicles.

Living streets

To increase the health and the quality of life for both residents and visitors in Odense the city implemented alternative environmental zones through the establishment of 2 zones with 30 km/h speed limit in two residential areas. By reducing the impact of motor vehicles the city wanted to make clear that the urban space can be used for many things other than traffic. To make it a success a high level of citizens’ involvement in the Living Streets projects was assured.

The public had the opportunity to give input to the size of the zone, the targets and the legal rules. A citizens’ project work group was established in both areas. A webpage: www.levendeveje.dk was launched. Several leaflets were distributed to the citizens in the two residential areas during the project period and posters placed in visible places. Several local campaigns and events were organised together with an intensive use of the local press during the project.

A key result was the drop in the average speed by 12 % in Korup and 22 % in Bolbro. A drop of 35% of through traffic was recorded in the latter area. In relation to the residents perception 61 % of the residents consider that the traffic speed has dropped and consider crossing the roads now as safe (up from 24 %). In the area of Korup cycling has increased by 62%.

Most important was the strong increase in local identity and local civic pride and an increase in social interaction and interdependence between residents. As part of the coming plan for traffic and mobility, Odense City wants to copy the principles from Living Streets to all the residential streets inside the Ring Road.

Recommendations for local politicians and technicians

In line with several European cities the MOBILIS partners have experimented with access and parking management measures. Based on our experience, evaluation of the results and in-depth discussion, among other during a parking workshop, a set of recommendations has been defined.

Measure the environmental and economic effect of access and parking management.

Especially in the case of sensitive measures such as access management and new parking policies it is of extreme importance to present objectively the effects of the actions. A new parking or access management in the city centre influences directly the commerce of local shop owners, as with the creation of pedestrian zones in Toulouse. Hotel owners were considered stakeholders in the case of the access management of tourist buses in Venice. The cities use the measured effects in their communication with these stakeholders.

So, besides the transport impacts, measure also the environmental and economic effects. For this a well-defined observatory is considered crucial. It was noted that environmental benefits are important, but for most local stakeholders the economic ones are prevailing.

Communicate on the positive effects of access and parking management.
Access and parking management measures are in the mind of the citizen linked to a "negative" control and restriction. Positive effects should be highlighted when communicating with citizens. Access and parking management lead to liveable places as was shown in Odense, clean areas and centres where it is a pleasure to go shopping as happened with the closing of the city centre of Toulouse, or to have a conference as is the case in the area around the new conference centre in Debrecen.

Develop and maintain a close interaction between policy makers and technicians, wherewith the politician should take the lead in relations with the citizens.
As mentioned before, access and parking management are sensitive measures and should be carefully implemented. Especially in the case of parking and access management initiatives, one of the main key success factors is the existence of a close interaction between the politicians and technicians as, for instance, took place in Debrecen. Being close to the citizen the politician should assist the technician in the strategy of implementation and take the lead in relations with the citizens. In Toulouse the politicians headed the user consultations. This was identified as a key driver for success.

Make sure that regulation and administrative steps are well planned to avoid long delays and idling.
Especially in relation to access and parking management initiatives that involve a lot of communication and user consultation it is important to avoid long periods of standby due to regulation or obligatory administrative steps. These periods could affect the citizens' adhesion and cause doubts about its real implementation, as, for example, was experienced in the successful "living street" experiment in Odense.

Involve the different stakeholders in order to be able to go beyond expected outcomes.
The information meetings organised within the different cities were considered as absolutely necessary to inform the citizens on the real overall and individual benefits. Toulouse informed each shop owner of the city centre individually on the effects of the new pedestrian zone. There might be conflicting interests, so when searching for the overall best result it is important to be aware of the effect on the individual groups of stakeholders.

The living street experiments in Odense showed that stakeholder involvement can lead to effects beyond the reduction of speed or mobility changes; i.e. the increase in civic responsibility.

MOBILIS activities

Site	Activities
Toulouse	Redesigning of the public space and implement new parking policy and reducing the number of parking lots in the centre by 2000; Demonstration of a redesigning of public space oriented at sustainable mobility and a mobility plan in the Blagnac area; Implementation of two high-quality bus corridors and network of dedicated PT bus lanes in the centre.
Debrecen	Implementation of traffic control and a parking management plan for the city centre; Elaboration of an accessibility plan for the new conference centre and a pedestrian zone.
Venice	Demonstration of an access management system for the city centre for tourist coaches Demonstration of an electronic control of the Mestre restricted access zone through the installation of electronic access points; Demonstration of innovative parking strategies; Implementation of an access and traffic management system in the Grand Canal through ARGOS.
Odense	Implementation of environmental zones in the city centre and two housing areas.

Transferability, look at your local context but do not overestimate the difficulties.
Due to the strong link between the measure and the specific local context, the direct transferability of an access or parking management measure to another city seems often rather difficult. Every city should put together its own "package" of access restriction, parking and accompanying measures.

Due to the sensitivity of the parking and access management measures, policy makers are often too cautious on any implementation. However, it is felt by the MOBILIS cities that nowadays most citizens are in favour of strong and innovative measures. An efficient access and parking management can be a tool to increase the overall image of a city.

Recommendations for EU policy makers

Enforce the air quality measures promoted by the Clean Air Directive.
The MOBILIS cities want their citizens to live in a high quality urban

environment. The EC should promote innovative access and parking management within urban centres and other sensitive zones as a good practice to counter air pollution. Objective measurements of existing schemes should be used to make a case.

Promote innovative access and parking management measures through the Urban Mobility Action plan.
Innovative access and parking management schemes should be promoted within the urban mobility plan. The dissemination on new technology, services and enforcement methods will assist the EC to reach its clean urban mobility objectives.

Assess and adapt Member State Legislation that are constraining the implementation of an effective realisation of access management and environmental-friendly parking policies.
Several parking and access management measures embraced by the local citizens are delayed by administrative procedures and regulation, putting implementation at risk. The EC should assess Member State legislation and take action to allow for the rapid implementation of sustainable urban mobility measures, including access and parking management.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Access and Parking Management	Restrictive parking *				-			
	Restrictive access*				-			
	Environmental zones*				-			
	Pedestrian zones*				-			
	Bus lanes				-			
	High quality infrastructure for bus				-			

* Effects on the local area

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

3

Thematic Area “Integrated pricing and ticketing strategies”

Introduction

The usage of dedicated ticketing and pricing strategies are important marketing tools of public transport. During the last decades, advanced ticketing solutions have seen a fast development in Europe: from the first machine-readable magnetic tickets in the 1960ies towards contactless smartcards, internet and mobile phone ticketing today. These systems have contributed to replacing conductors by automatic gates, are able to count passengers and to record their travel behaviour and often offer additional, useful functionalities - like an electronic purse for example.

Passengers also favour seamless ticketing, no matter which operator they are using or in which municipality they are entering. In addition, new mobility services (car sharing, public bicycles, park + ride) need to be integrated into the pricing structures in order to enable seamless travel.

In a multimodal and multi-operator environment, intelligent integrated ticketing is a key to user-friendly transport and fair share of revenues between operators. Authorities and operators want to increase revenues from PT, renew outdated technology, and achieve interoperability (incl. further extensions). Together with their respective ticket form the single, multi-ride, periodical and concessionary fares have to respond as closely as possible to the users’ mobility needs and city mobility policy to maintain existing, and attract new users.

In the MOBILIS projects together with the opening of its second metroline the public transport authority of the City of Toulouse introduced a new general ticketing system and experimented with new ticketing and corresponding fare concepts that should better match with its users’ needs.

CASE STUDY

Ticketing and tariff strategies in Toulouse

In June 2007, Tisséo launched its new contactless ticketing system. Since this date, the “Carte PASTEL” has entered into the life of the public transport users. In parallel, some important works are being carried out in the framework of interoperability with the regional public transport authorities. Soon, the Carte Pastel will enable everybody to move on the different public transport networks of Toulouse with one single transport card.

In addition, Tisséo experimented with some new tariff products that could be made available thanks to the functionalities of the new smart card. The first product targeted companies with commuters that use or could frequently use the Tisséo network. The product is called ACTIVEO and consists of an annual subscription where the reduced fare is automatically debited at the beginning of each month. This specific fare has been experimented with 6 companies that adopted a commuter plan.

The second concept experimented within CIVITAS MOBILIS is an “anonymous card” that permits to charge a limited number of single trips tickets (from 1 to 100 at 1.17 € a ticket), an impersonal monthly or weekly fare for a fixed rate. This concept is oriented towards the non-frequent users and users who don’t want to proceed to a personalised subscription.
Based on the experiments, their evaluation and a dedicated thematic workshop the project formulated a number of policy recommendations.

Recommendations for local politicians and technicians

The MOBILIS consortium is of the opinion that advanced ticketing systems will boost the development towards sustainable, multimodal transport in European cities, moreover removing bit by bit the barriers between public transport and neighbouring concepts, such as car sharing and public bicycles.

When planning new ticketing technology do not forget the marketing and organisational issues.

Once the technology is implemented it will implicitly put constraints on the organisational flexibility and marketing of the public transport network. It is important to define upfront the different marketing and organisation requirements.

Tariff integration should be the main driver of new ticketing.

The public transport authorities and operator often only focus on their parameter of competence, while the traveller reasons from origin to

destination. Full tariff integration, featuring a zone-model (or similar) and offering intermodality (in terms of fares) of all local transport must remain the main objective of any new ticketing. Tariff integration is a means to overcome certain administrative burdens that sometimes make a public transport journey complicated. Having one single ticket / card for moving around in the entire city / region facilitates and fosters the use of public transport and/or alternative sustainable transport modes.

MOBILIS activities

Site	Activities
Toulouse	Implementation of multi-modal and interoperable PT ticketing and services; Launch of a dedicated product for Commuter Plans (so-called Activeo); Launch of an "anonymous" smart card that can used by several persons; Carry out individual marketing through differentiated tariffs and ticketing.

Create inventive and innovative fares and products.

The use of the smart card technology permits addressing a wide range of possibilities for the creation of dedicated fares and products. Frequent and non-frequent public transport (or alternative transport modes users) should find in each city the best and most attractive solution for their mobility needs.

Use "easy to use" standardised ticketing.

Nowadays, many cities are experimenting with integrated ticketing. Standardised new technologies, like smart cards and e-ticketing, should make ticketing more comfortable for the user and foster enhanced integration between operators, local authorities and modes. The customer perspective is crucial to success – "easy to use" systems will prevail, no matter which technology they are using.

Recommendations for EU policy makers

Promote the development of business cases in the field of electronic ticketing.

It is difficult for the individual local authority to calculate cost-effectiveness and the benefits of electronic ticketing. Many cities opt for it as they have to renew their old equipment anyway. Nevertheless the implementation of electronic ticketing is a financial burden.

Local authorities need a clearer view on benefits and costs, which would ease their strategic decisions in this field. The EC should promote the development of business cases that show the benefits of such a system and allow for new business models to arise.

Promote European standards in E-ticketing.

European standards in e-ticketing are crucial, particularly in the actual frame of liberalisation and formation of European players. While International standards exist (for example ISO 14443 for contactless smartcards and ISO 15693 for contact smartcards), national standards are developed in parallel. These are standards such as the CALYPSO (France) or VDV (Germany). Even if these national standards are based on ISO, real interoperability proves to be difficult.

Moreover, rapid technological developments require fast adaptation of standards. For example France has just seen the third standard within little more than a decade.

The EC should strongly guard the privacy of the European citizen as foreseen in the ITS for Road Action Plan[21].

Privacy is an important issue in relation to electronic ticketing. For example the present "check in – check out" systems, such as used in London and introduced in the Netherlands could lead to implications concerning privacy and might reduce acceptance among citizens). The EC should strongly push the privacy thresholds, as foreseen in its ITS for Road action plan.

Overall assessment of achievements

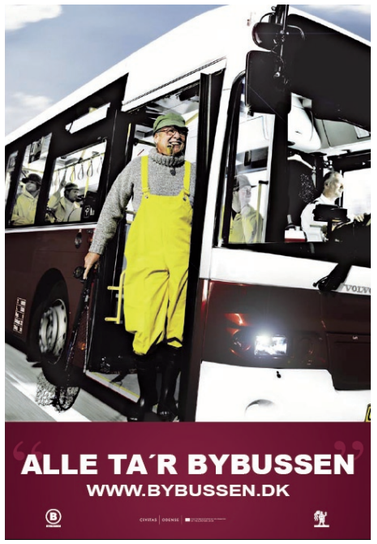
	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Integrated pricing and ticketing strategies	Integrated pricing							
	Ticketing systems and smart cards	-	-					

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

(21) ITS for Road Action plan, European Commission COM(2008) 887, December 2008.

4

Thematic Area "Stimulation of Public Transport Modes"



Introduction

Public transport ensures that cities are accessible and liveable and contributes to a sustainable transport system. At the user level a performing public transport is a service that meets the mobility needs of the citizens, while at societal level it contributes to the quality of life and local economy. The European Commission recognised public transport already in their "Citizens Network" as a crucial service for the citizens, *"Ideally, public transport should be accessible, affordable and available to all citizens. Financial and technical considerations may constrain this, but the Commission believes that the goal is important and worthy of debate...."*[22] In the last decade the provision of public transport changed in most cities radically from a general public mission to a service for its users. As a consequence several service improvements and related issues became more important. The following services and related organisation were experimented in the MOBILIS project.

'Quality' is an important aspect of public transport services, which ranges from perceived quality to performance quality, including certification and the introduction of measurement systems. Toulouse experimented with a performance measurement system that embedded in a quality strategy should lead to the certification of part of its public transport network.

Safety and security have become an important topic in public transport. Vandalism or safety incidents pose threats to the perceived image of public transport and have an impact on the users' perception of safety. Debrecen developed safety and security training for its bus drivers.

As mentioned above, public transport also has a social function, accessibility for all citizens including the physically challenged should be guaranteed. Based on their travel patterns and accompanied by a dedicated communication the City of Venice worked on the accessibility of its waterbuses. The City of Toulouse improved its transport on demand services, prepared a network accessibility plan and realised a number of its envisaged accessibility improvements.

Information and accompanying services are crucial for the use and attractiveness of the public transport network. Toulouse developed a new concept of proximity services at its main interchange station. Odense experimented with a new service strategy that combined amongst others a new mobility card, traveller information services and bike & ride facilities.

(22) DGTREN, „The Citizens Network", Office of publication of the EU, Luxembourg, 1996.

CASE STUDIES

A new strategy to integrate sustainable modes in Odense

Through an integrated strategy Odense tried to remove these institutional barriers that constrain the positive choice of alternative mobility options (buses, bicycles, taxis and car sharing). The package consisted of a GPS-based bus priority scheme, on-board Information screens, interactive information points, SMS ticketing and wireless internet information services. A large public transport image campaign improved the local image of its public transport.

WAP application for downloads of time tables concerning local buses have been in use for 2 years and 10,052 users have been registered, equivalent to 419 users monthly. The SMS information system was used each month around 3700 times, while around 5,100 SMS tickets were sold per month during the first year. The latest figures of the system show daily sales of 182 tickets. The weekly growth is at 4%; the tickets sold by SMS now cover 4-5% of the total sale. Finally the 4 information screens at the bus terminal are used on average 5,588 times per month.

A remarkable outcome of the evaluation was that even after the large communication efforts, 55 % of the population declared not to be aware of the marketing initiatives for the local public transport. It became clear that information campaigns have to continue over time.

To get a hold on the younger generations within the information campaign it was mainly the street posters and the free drinking water bottles (gadgets) which proved to be most effective. Besides being very cost effective, the creative use of mobile phones for ticket sales and information provision showed to fit with their lifestyle.

Gimmicks like handing out umbrellas and bottles with drinking water are a very good way to motivate the users of public transport. Public transport and buses especially need much better promotion, not only to attract new customers but also to raise the perceived image for the present users.

Accessibility of public transport in Venice

The City of Venice introduced 18 new waterbuses (motoscafi) with greater passenger capacity, lower environmental impact and suitable for the transportation of disabled passengers in a crucial boat route (from Piazzale Roma to Murano island).

The new waterbuses allow passengers with disabilities to travel to and from the bus terminal of Piazzale Roma (the main Venice access/departure point from/to the mainland) faster and in safer conditions. The improved accessibility to waterborne public transport facilities for disabled users and the reduction of travel time from/to Murano is an important step in integrating the needs of people with disabilities into local public transport policies and planning in Venice. Local associations for people with disabilities have been involved in the measure.

In terms of new technology there was an optimisation of the space on board in order to offer suitable secure areas for the transport of disabled passengers (in particular those with wheelchairs). Particular attention was paid to innovative solutions that allow a safe transport for reduced mobility passengers. The boarding space was adapted to wheelchairs and the vertical height difference between the docks and the boarding area was reduced.

Especially of interest is that the new service for disabled passengers fit in an overall policy for disabled travellers of the City of Venice. It is estimated that currently almost 70% of the historic city centre is accessible to people with reduced mobility. The Venice City Council has created the Informahandicap service.

Recommendations for local politicians and technicians

Measure the performance and perceived quality of the public transport network.

To improve the quality of public transport and to make it a priority, it is important to measure the quality. Performance quality can be partly measured by so called “floating bus” measurement systems, wherewith a number of buses are equipped with electronic measurement equipment. These measurements can form the frame of a network certification. Measure also the perceived quality of both users and potential users. This can be done through user surveys and complementary polls.

Use environmental performances and new technologies to create a high quality image of public transport.

Use “perceived quality” information and lifestyle trends of the users when designing a marketing campaign. New private cars are equipped every new season with the latest technologies. Implement and highlight the new transport facilities and technologies, like SMS ticketing, wireless internet, proximity services to upgrade the image of public transport. Communicate on the environmental performance of the new fleet and make a link with the users’ need to adopt a “green” lifestyle.

MOBILIS activities

Site	Activities
Toulouse	Implementation of a strategy for improving the quality service of the bus network; Development of a proximity services linked to public transport network; Definition of the framework for a fully accessible public transport network and implementation of an accessibility chart; Development of Demand Responsive Transport solutions including the launch of a new booking system.
Debrecen	Carried out targeted safety and security training for public transport drivers.
Venice	Developed and is operating 18 low-emission access for all waterbuses.
Odense	Demonstration of participative PT planning and implementation of bus priority scheme, SMS ticket, SMS your bus.

The use of transport on demand services can bring a reduced cost public transport closer to citizen.

Transport on demand services exist in many forms. The experiments carried out in the MOBILIS project by the public transport authority of Toulouse showed that it improves the perceived public transport quality for a reduced cost in comparison to a regular bus line.

Create a local observatory on disabled passenger travel data.
The access to disabled traveller data and reliable statistics at the local (city and regional) level should be improved. The local authorities should identify travel patterns of disabled people and gain an understanding of key transport issues facing disabled people early on in the planning processes of all urban development including public transport planning.

Cooperate with local disabled citizens' organisations.
Good collaboration with the local disabled citizens association is crucial. These citizens have firsthand experience of the local constraints of disabled passenger travel. In Venice, in order to get suggestions of improvements and feedback on boat suitability, the trial tests for the first waterbus were done in collaboration with the local disabled people's association. In Toulouse extensive trials of the new ticketing system took place with the local disabled travellers' associations.

Recommendations for EU policy makers

Support good practices of public transport promotion.
The EC should promote the good practices of public transport promotions and should allow for credits for the procurement and installation of new technical equipment through its regional funds. This is especially for equipment which will help to improve both performance and perceived quality of public transport.

Develop standards for the level of accessibility of public transport
The EC should develop standards for the level of accessibility of public transport, especially in relation to infrastructure and vehicles. This will provide a structuring level of accessibility of the local public transport networks.

Contribute to the realisation of accessibility plans at local level.
The EC should enforce the preparation of local accessibility plans for disabled travellers. In general the realisation of these accessibility plans are costly operations. The EC should free funding to assist the local authorities in their obligations to offer a 100% accessible public transport to disabled travellers and other travellers that need assistance.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Stimulation of public transport modes	Quality measurement systems				-			
	Proximity services	-	-					
	Accessibility measures	-	-	*				
	Demand responsive services**							
	Safety and security training	-	-					
	Integrated public transport services	-	-		-			

* For physically handicapped travellers
** in comparison with a regular outskirt bus line

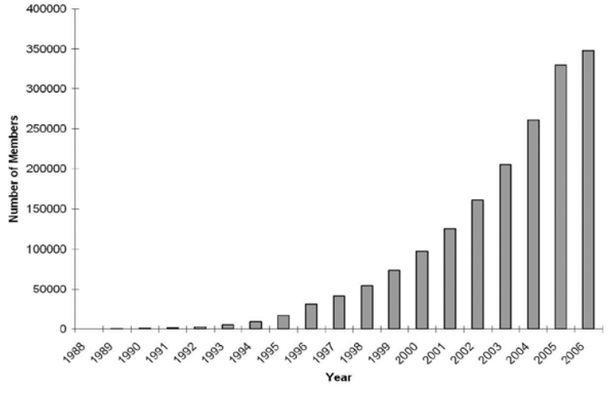
Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

5

Thematic Area "New Forms of Vehicle Use and Ownership"

Introduction

Car sharing and carpooling are initiatives that are expanding in several European countries. They often cover only a small part of the trips in a city, yet in combination with the other alternative mobility offered (public transport, taxi, bicycle and walking) they can become a real substitute of a large part of the trips made by private vehicle.



Car sharing

The fundamental principle of car sharing is that the actual use of a car does not have to be directly linked to the ownership of a car. According to this principle a car has multiple users instead of one or two and is therefore used much more efficiently (i.e. more than once a day) in contrast to the current use of most cars which is approximately 1 hour per day[23] [24].

Even if car sharing is growing fast, at present only for a small percentage of citizens car sharing is a full substitute for the private car. Car sharing can replace the concept of the private company car used for business trips in the region. For most travellers car sharing becomes a real option when offered in combination with other alternative modes, e.g. public transport, taxi and bicycling. Especially in cases of transport of merchandise, large luggage or for destinations outside of the reach of the public transport network car sharing is a real alternative. The use of the private vehicle should not be a "natural reflex" anymore.

The different studies and experiments show the following positive outcomes for both user and city[25]:

- One car sharing vehicle can replace 6 private vehicles which reduces the number of parking places necessary;
- Every car sharer reduces the number of vehicle kilometres by a quarter with results in energy saving;
- Increased use of the other alternative modes, e.g. public transport;
- Reduction of pollution by using clean (-er) car sharing vehicles.

The City of Venice developed and diversified existing car-sharing services within the MOBILIS project. It targeted at an additional 1000 subscribers but actually acquired many more. The public transport authority of Toulouse carried out a feasibility exercise for a local car sharing service and created the conditions for the realisation of car sharing services by 2009.

Carpooling

Car-pooling is a concept closely related to car sharing, the main difference is that when one is carpooling, the driver is the owner of the car (in contradiction to car sharing where a car does not belong to one person), and has several passengers on a regular basis.

Car pooling can be organised by individuals, yet often local organisations are set up to foster this alternative mobility option. These organisations are in general based on three organisational principles:

- Targeting specific user groups – there is often a focus on specific users categories like (1) people living in peripheral areas with low public transport coverage (2) specific low income categories, e.g. students, or (3) commuters on congested travel corridors.
- New organisational arrangements and relationships need time and need often to be renewed the organisation uses personalised advice for mobility and in addition set up dedicated communication tools (Internet site, subscription form, discussion meetings...) that enable a promotion over time.
- Use of advanced technology - at present dedicated car pooling software

(23) Meteor D6 Cross site evaluation, R20060281/1360000/phi/cgr, produced for the European Commission, Rijswijk, The Netherlands, November 2006.
(24) The carsharing graph is taken from SHAHEEN, Susan and Adam COHEN (2006): "Worldwide Carsharing Growth: An International Comparison"; retrieved from www.carsharing.net/library/UCD-ITS-RR-06-22.pdf.
(25) Feasibility study of car sharing in Toulouse, internal work report.

exists which based on a cartographic database allows from the data of carpoolers (journeys, timetable, address and comments) to form new carpool groups. This software can be integrated with the present public transport network.

Within the MOBILIS project the City of Debrecen set up a car pooling service for its students, while Toulouse extended its existing carpool services and worked on its integration with public transport.

Integrated approaches to promote alternative modes and vehicle use

Together with 160 families with old cars the City of Odense developed a personal mobility management service to change from private car use to alternative modes, like public transport, taxi, walking, cycling and car sharing. The measure focussed especially on reduced use of the private vehicle.

CASE STUDIES

Car sharing in Venice

The city of Venice wanted to reduce the use of private vehicles and foster alternative modes at the same time. Due to the particular location of Venice on a lagoon, many households do not possess a car. Car owners have to store their vehicles at public car parks at relatively high prices. Other citizens live in densely built-up areas but still own 2-3 cars per family. In other words, there is a relatively high potential for carsharing in Venice. In the long term, this should contribute to more energy efficiency, lower air pollution, less congestion and better use of public space.

The City of Venice expanded Within the MOBILIS project the City of Venice expanded its local car sharing scheme, introduced corporate car sharing and procured 2 vehicles suitable for customers with disabilities. All of the cars purchased with MOBILIS funds are clean CNG vehicles.

The expansion activities carried out by ASM, the local company which manages mobility services, were based on an in-depth customer survey. Especially its green image was pushed by procuring a number of clean vehicles. Special interest was given to the procurement of vehicles suitable for disabled passengers with wheelchairs.

As a result of ASM's efforts 18 alternative fuel vehicles have been added to the fleet, as well as 2 new vehicles for the transport of disabled passengers. The car sharing has exceeded its expected results as there are at present 1.864 contracts in force and 4.468 users (valid member cards). Also the disabled passengers' cars are used regularly.

All in all 9 big public and private organizations signed corporate car sharing agreements while 494 smaller firms signed up for car sharing as an alternative to taxi or public transport. Their motivation is primarily that car sharing is cheaper and more convenient.

Since there were no cars on the market directly suitable for wheel chair users, regular cars had to be adapted to make them accessible. The local Artisan Association helped to adapt two Fiat Doblò. All the disabled people's organizations were involved in the promotion process and provided a direct communication line to potential users.

Benefits in term of emissions of the expansion efforts could be quantified in at least 113 t/y of CO_2, 259 kg/y of CO, 29 Kg/y of NOx and 27 kg/y of HC.

Alternative mobility options for old car owners in Odense

One effect of the high vehicle taxation in Denmark (180%) is that the average age of motor cars is higher than the rest of Europe. These older cars pollute more and use more energy than newer ones. In optimal circumstances where mobility alternatives exist, these car owner/user types might be persuaded to choose an alternative mobility pattern.

To make the participants join the MOBILIS experiment a campaign was developed to attract families. Large posters in the city, TV-coverage, press release and articles for different websites not only attracted the volunteers, but also served as a first communication toward the general pubic. Some 160 families joined the campaign.

All participating families received a campaign package including:

- A one month travel free pass for the local city buses,
- A Membership of Odense's car sharing club,
- Access to taxis paid in arrears on a monthly basis without interest,
- 25% rebate on the purchase of bicycle for own use,
- A journal to register daily trips.

The measure targeted a relatively small group of families, yet the whole population was involved through the local television broadcasting of the participants' daily lives once trying to live without their private car.

The direct results were finally relatively modest. One notable result was the participants' weight. Their Body Mass Index was reduced from 24.18 to 23.80 and according to their own perception their well being improved by 9% on a scale from 1 to 5.

The real objective and probably real result was the change in the personal view of the participants toward their mobility pattern. It was shown to the whole population how individual citizens can make a change and make their own contribution to a liveable city.

Recommendations for local politicians and technicians

Focus on the needs of (potential) users.
All three levels of customer relationships should be established, i.e. upfront research, involvement and communication.
(1) Upfront research: car sharing in Venice showed that, in order to improve the service and to promote its use in an appropriate manner, a comprehensive survey on the needs, acceptability and satisfaction of the (potential) users is crucial.

(2) Involvement: the cooperation with students' representatives in the carpool experiment of the City of Debrecen proved to have a considerable impact on the success of the service. In the City of Odense the real objective of the "personal choice" measure was to change the participants' mobility behaviour by involving them directly in the activities. It showed the whole community how individual citizens can make a change and contribute directly to a liveable city.

(3) Communication: The lack of an adequate amount of advertisement may result in a disappointment of users. The feasibility study for a car sharing initiative in Toulouse showed that almost 50% of the first three years budget should be used for communication.

MOBILIS activities

Site	Activities
Toulouse	Develop and promote car-pooling services integrated with public transport; Develop and implement a car-sharing service.
Debrecen	Develop and demonstrate new car-pooling service for students;
Venice	Expand and diversify existing car-sharing services (target: 1000 subscribers by 2006).
Odense	Create and promote integrated mobility alternatives (public transport, bike, car-sharing, taxi) for owners of old cars (target: 400 households).

Integrate new forms of vehicle and car ownership in local traffic and urban development planning.
Foster collaboration between the public transport system and other mobility services by integrating car sharing and car pooling into local traffic, mobility and urban development plans. During the planning of local traffic have a special look at any infrastructural, urban development and behavioural " constraints that could prevent car pooling and car sharing form being a real success.

Strive for professionalism to get an optimal result in car sharing and carpooling.
The primary lesson learned with the car sharing and carpooling experiences is that the difference between success and failure can be found in many cases in the level of professionalism; resources raised and targeted efforts put into communication with the different target groups.

Recommendations for EU policy makers

Car sharing and car pooling setting up needs financial aid.
At least during the start up, car sharing initiatives need public assistance to cover initial investments and communication. The MOBILIS project is not aware of any large scale carpooling initiatives that generate enough income to cover its costs. During the start-up period financial aid and incentives have been important to the success of new forms of vehicle and car ownership in the MOBILIS project. Car sharing in Italy benefited from a national policy of 1998 that included a 9 million € programme to strengthen car sharing. The European Commission should free European funds to assist in the set up of car pooling and car sharing initiatives.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
New form of vehicle use and uwnership	Car sharing							
	Car pooling							
	Alternative mobility							

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

6

Thematic Area "New Concepts for Goods Distribution"

Introduction

Urban freight distribution is vital for the economic and social life of our city centres, yet is also a cause of congestion and pollution. According to the COSTS 321 initiative[26] 40% of the air pollution and noise emissions in the urban area is caused by goods transport. Several environmental protection measures are still to be taken in this field of urban mobility. An optimisation of urban freight distribution can be obtained by reducing the number of small loads and trips made with polluting vehicles.

The general literature[27] identifies several often overlapping solutions of which the following in the frame of the CIVITAS initiative are considered as important; guided routes for goods delivery and regulation, bundling of goods delivery, use of clean vehicles and use of new information technology.

Most European cities restrict the access of freight delivery to their city centre. This restriction is in general based on the size of the vehicles, weight of the merchandise and/ or time of delivery. Specific loading and unloading areas are designated and specific routes are indicated. The City of Toulouse experimented within the MOBILIS project with a new freight regulation.

Most of the gains in terms of efficiency of the delivery and decreased pollution can be found in the bundling of goods. Nowadays especially the use of an urban freight centre is promoted as an impending solution, yet many questions remain in relation to its most efficient operation[28].

Urban freight delivery is often done by small trucks that make frequent stops. The use of clean vehicles adapted to this schedule could reduce the resulting pollution. Toulouse tried to promote its usage through the introduction of an environmental freight delivery charter and conducted an experiment with Chronopost focussing on the use of electric vehicles. Finally the use of new information technology can help to make considerable efficiency gains. The City of Venice experimented with a new freight delivery boat parking permitting system, which should counter the increasing congestion of its canals and help to protect its historical centre.

(26) COST 321 statement cited in Literature Review WM9: Part I - Urban Freight Transport; Green Logistics Project; Transport Studies Group, University of Westminster, January 2007.
(27) A.o. BESTUFS, www.bestufs.net.
(28) Urban freight and logistics, an overview of European research and policy, European Communities, Belgium, 2006.

CASE STUDIES

Distribution of freight with clean vehicles in Toulouse

In 2005, the daily traffic in the city centre of Toulouse exceeded 10.000 vehicles per day which increased by around 3% on the main axes. Combined with the enlarging of pedestrian zones this resulted in a measured rate of 50% of non-respect of the freight delivery regulation. To counter the congestion caused by freight delivery, amongst other the City of Toulouse set up a small experiment with Chronopost for the creation of a micro platform in the city centre to allow for a freight delivery with clean vehicles, i.e. CNG and electric vehicles. The City of Toulouse put a micro platform at the disposal of Chronopost from where they could initiate mail and parcels delivery with small electric vehicles in the pedestrian areas of the city centre.
Before the MOBILIS project, Chronopost delivered mail and parcels in the city centre coming from Blagnac (a city in the suburb area) with 6 gasoline commercial vehicles of 10 m^3 capacity in the morning and with four in the afternoon. The average distance between Blagnac and the centre areas is 9.5 km.

The new organization is as follow, a heavy lorry (10 or 12T) and a large CNG commercial vehicle (Citroen Jumper 10m^3) carry the mail and parcels from Blagnac to the City platform. The morning rounds from the City to six areas are provided by three electrical commercial vehicles (Citroen Berlingo 3 m^3), one CNG commercial vehicle (Fiat Doblo Cargo 5 m3) and two Chronocity that are electrical self-propelled moved by a walking deliveryman. If necessary a CNG commercial vehicle does one more round for large parcels. The afternoon organization is close to the morning one, but only the three electrical vehicles and the CNG one are used. The parcel collection remained unchanged.

The cost of the new organization with clean vehicles is roughly the same as the cost of the previous organization with diesel vehicles. On the contrary the new organisation allowed Chronopost to adapt to a 16% increase of the activity.

The environmental gains are a 75% of the CO_2 emissions decrease due to the use of the clean vehicles, wherewith the CO_2 emissions represent 99.6% of the total weight of the studied pollutants. The CO_2 emissions reduction represents a saving of around 15t per year.

Creation of a web-enabled information system for the management of freight delivery in Venice

In the last decade waterborne traffic in Venice has increased tremendously, worsening motor boat wake (the so-called “moto ondoso”) and causing traffic congestion in the historical centre. In particular inner canals are experiencing congestion problems due to the interference between daily waterborne traffic, local deliveries and the presence of parked boats along the docks.

The City of Venice experimented with the creation of a web-enabled information system for the management of temporary and permanent parking spaces along the inner canals in Venice among other to improve the local freight delivery.

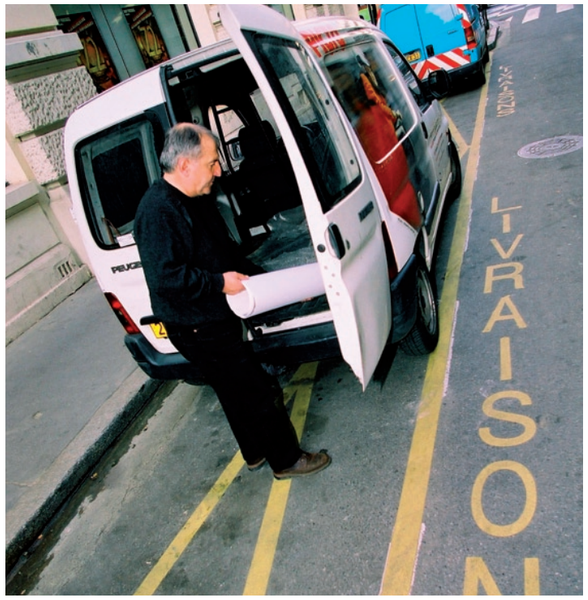
In addition this new tool should provide support to decision-makers for the integrated management of boat traffic and circulation, during ordinary and extraordinary situations.

In this way, waterborne parking and the use of docks will be managed in a planned and controlled manner, having a positive impact on the traffic congestion as well as on wake motion and noise pollution in Venice canals.

In order to develop the new tool firstly a dock use survey and analysis was conducted. Based on the outcomes of this analysis a temporary and permanent parking permit management system was designed. The system was tested with the Water Mobility Office staff in order to collect opinions and ideas on the final work and to study its functionalities with the stakeholders.

The system is based on web-based technologies to facilitate password-controlled access to a multiplicity of end-users. The main interface consist of a GIS map, zoom-able down to individual canals in the heart of the historic centre of Venice, and a series of functionalities that will enable the user to visualize parking-related data both alphanumerically (in tables), graphically (in graphs) and geographically (on maps).

This new system not only increases the efficiency of parking in Venice, it also decreases the time necessary to obtain an overnight permit. With this new system the process for obtaining a permanent permit will take only a few days instead of the initial 9 months. Moreover the present parking planning will become more sophisticated in terms of efficiency, accuracy, time restrictions, and integration of parking within numerous boat traffic issues. This allows for more fluid freight delivery, which decrease the present wake and noise pollution.



Recommendations for local politicians and technicians

Use participative management to introduce new freight delivery plans, charters and regulation.

The MOBILIS demonstrations proved the importance of a participative management of its freight delivery measures. Intensive contacts between local authorities, transport trade associations, and local shop owners were established to involve local stakeholders and gain their acceptance about new freight delivery permit systems like in Venice, or charters and regulation like in Toulouse. It should be pointed out that the local authority should find the balance between a visionary strategy on clean urban freight delivery and the commercial interest of the stakeholders.

Local freight distribution regulation and charters can be used to replace polluting freight vehicles by clean vehicles.

The city of Toulouse used the introduction of a new “clean freight delivery” charter to encourage the local freight deliverers to invest in clean vehicles. By introducing different access restrictions for clean vehicles and polluting diesel trucks in local regulation, a city can foster the practice of clean freight delivery.

MOBILIS activities

Site	Activities
Toulouse	Implementation of a new clean urban logistics regulation and charter. Introduction of micro-freight platform and clean vehicles with Chronopost.
Venice	Development of a Web-based parking permitting system for goods delivery in Venice.

Introduce a web-based freight delivery parking or access permit for protected urban centres to favour environmental freight delivery.

The introduction of a web based freight delivery parking or access permit could increase the acceptability of an administrative fee for temporary parking and access to the city centre. The system could especially be a tool to favour environmental freight delivery through price differentiation based on time, load and type of vehicle.

A small clean urban freight delivery experiment can lead to a wide take up.

The case of Chronopost in the city of Toulouse showed that a small initiative motivated by the wish to experiment in favour of the environment can lead to a wider take up. The city's support to a private company allowed the creation of an example that encourages the other freight delivery companies to implement similar cleaner urban freight delivery behaviour. An objective evaluation of each initial experiment should prove to all local stakeholders the environmental benefit for the city and commercial benefit for the freight deliverer.

The development of an urban freight centre can only be the result of a long process of cooperation, assessment of the environmental problems, its recognition as a solution by the stakeholder, and public awareness.

The activities for the development of an urban freight centre in Toulouse showed that a real success can only be obtained after a long process of involvement, cooperation and preceding clean urban freight delivery policies, charters, plans and regulations. The local stakeholders have to be "mentally" ready for the realisation of such a centre. In addition there should be a thorough analysis of the costs and benefits for the individual stakeholders and the community as a whole.

Recommendations for EU policy makers

Continue the promotion of good practice clean urban freight delivery.

The European Commission should continue to support good practices of clean urban freight delivery and show how these can be transferred to other cities. This theme should be strengthened in a new CIVITAS call. Special efforts should be undertaken to create awareness among the different stakeholders, like local politicians, freight distributors, chambers of commerce.

Allow for European financing of start-ups of urban freight centres through regional funding.

The European Commission should allow for the financing of clean urban freight centres through the regional development funds, which will provide an initial financial incentive to the commercial stakeholders.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
New concepts of goods distribution	New freight regulation and charters				-			
	Micro platform and clean vehicles				-			
	Web-based delivery management				-			

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

7

Thematic Area "Innovative Soft Measures"

Introduction

The overall objective of the measures in this thematic area is to commit the citizens and local stakeholders to sustainable mobility. It includes all activities that help the citizens to adopt alternative travel options in their mobility behaviour. These are activities that can take place at the institutional level by establishing a new "mobility culture" in all partner cities based on policy integration, stakeholder consultation and participatory planning. These are also measures that are placed at a more operational level through targeted marketing, information dissemination and assistance in the modal choice of the citizens. Altogether these measures can be referred to as mobility management.

Policy integration, joint planning and management

At the local level there are several authorities that have competences and interests in transport and mobility, like the regional and city administrations, urban planning agency, public transport authority, operators, local police and associations. For reasons of congestion, accessibility, support to the local economy, environment and health these entities are working together to reach a more sustainable mobility. This cooperation can consist of the joint development of an overall mobility plan, which was experimented in Debrecen, or a mode-related cooperation as was experimented in Toulouse with the definition of new bicycle policies, or area-related cooperation as was the case for the "Canceropole" in Toulouse. The set-up of a mobility agency in Toulouse is an example of realisation of an organisation that can make the link between strategic plans and mobility management at the operational level. The participatory planning measure in Ljubljana aimed to better involve the needs of the local stakeholders.

Provision of mobility services

At the operational level there are several possible activities of the authorities to help the citizens to change their mobility behaviour. This can be done through information provision, awareness raising and educational services. Ljubljana experimented with the information provision on the use of clean vehicles, while Odense provided interactive bicycle training for school children. Venice promoted bicycle usage on the mainland (Mestre). Mobility services can also consist of a direct assistance to a group or individual citizens with the organisation of mobility. The MOBILIS project experimented with the development of area-based commuter plans in Toulouse, and direct marketing in Odense. The development of large company and administration commuters plans were realised in Toulouse.

MOBILIS activities

Site	Activities
Toulouse	Carry out an large marketing study in order to assess local mobility behaviours towards public transport; Demonstrate cooperative bicycle planning and develop integrated cycle network; Implement a mobility agency (target:1000 visitors/month); Develop and implement a mobility plan for the employees of the City of Blagnac; Develop and implement commuter plans for companies and activity zones.
Debrecen	Develop and implement integrated cycling network, including 300 new racks Demonstrate cooperative planning and implement new sustainable mobility strategy;
Ljubljana	Demonstrate participatory mobility planning and carry out awareness raising campaigns; Carry out promotion of bicycle use and implement minimum 40 new racks; Implement 2 info-points on clean vehicles and alternative fuels;
Venice	Implement strategy for promotion of cycling, including 3 school cycle plans, 100 new safe bicycle racks
Odense	Development of interactive traffic training tool for school children and realisation of trainings with 4000 pupils in 40 schools; Carry out personalised transport choice marketing (target: 25.000 inhabitants).

CASE STUDIES

Cooperative planning in Debrecen

Before the year 2004, transport planning in Debrecen was done ad hoc when problems arose. The decisions about what solution to choose were made by the politicians without advice from experts and without taking sustainability into account. That changed when the Mayor of Debrecen invited different transport stakeholders to join the city in the development of a sustainable urban transport plan. A mobility work group was set-up which drew up the sustainable urban transport plan. In 2007 the plan was voted by the municipal council. The process has changed the way city planning is done in Debrecen.

The mobility workgroup consisted of all local authorities with transport competences, i.e. the public operators, road maintenance company, supervisor company of public premises of Debrecen, the Directorate of railroad transport and the Mayor's office Main Department of City Development. As it is a citizens association the Cycling Civil Society

did not participate in the meetings of the workgroup but was consulted regularly.

The mobility workgroup was part of the entire process and all supported the final plan. The plan is now being implemented according to the annexed action plan. The mobility workgroup is still active and is now used by the politicians as an expert adviser group.

Cycling in Venice

On island Venice riding bicycles is forbidden as the particular physical structure of the city cannot support the use of this mean of transport due to the number of bridges and small streets.

On the contrary Venice mainland (176,000 inhabitants,) has seen a significant growth in bicycle use. Citizens are becoming increasingly aware of the convenience, enjoyment, health and environmental benefits of cycling. In 2006 a large modal split survey of the City of Venice estimated that on the mainland, thanks to a network of over 50 km of bicycle lanes, trips by bicycle represented 16% of all resident trips. Preliminary figures show that at present this share is up to 19%.

This rapid increase in bicycle use seems only to have been possible due to the integrated approach of bicycle promotion. There is strong political support and cooperation with schools and associations, in particular with the Italian Federation of Urban Cyclists and Bicycle Tourism (FIAB). In November 2006, the City of Venice formally approved and published the “Bicycle Master Plan” which foresees to double the extension of the bicycle network routes by connecting existing bike lanes and by identifying 16 continuous cycling routes connecting the Mestre city centre to the other main mainland urban districts. Already in 2002 the City of Venice created a specific office for the promotion of cycling mobility called “Ufficio Biciclette” (Bike Office). The MOBILIS project represented an important contribution for achieving the Bike Office objectives.

The main results of the MOBILIS project are the positioning of 100 new safe bicycle racks around the Mestre city centre. It enabled the realisation of the ABiCi campaign providing mobility education particularly focusing on bicycle use to 2100 primary school children. In addition the Biking School Bus (BICIBUS) demonstration was carried out involving 100 children accompanied by families and volunteers. Finally it allowed for the signage (horizontal and vertical) and safety improvement works for home school routes concerning 3 schools.

Recommendations for local politicians and technicians

The introduction of innovative soft measures should be more than only gadgets and the MOBILIS project is of the opinion that a real change can only be achieved if they are embedded in a general mobility strategy and cooperative planning including authorities, citizens and their representations. The MOBILIS project defined per experimented type of measure a set of policy recommendations.

The creation of local mobility workgroup fosters the realisation of a Sustainable Urban Mobility Plan.

Almost all large and medium sized European cities have developed a sustainable urban mobility plan. The MOBILIS experiment in Debrecen proved that the institutionalisation of a mobility workgroup bringing together all authorities with mobility competences helps to develop a strategy and to realise the action plan. An annual monitoring of the advancements will help to manage its realisation.

The “participatory planning” experiment in Ljubljana showed that a legally enforced participatory planning based on regular stakeholder consultation could strengthen the successful implementation of the sustainable urban mobility plan.

Create a dedicated agency to coordinate the mobility services.

There exist several names for organizations responsible for mobility promotion, e.g. bicycle promotion office (Venice), clean vehicle info points (Ljubljana), mobility agency (Toulouse), or even time management agencies (Maisons du temps). A key lesson is that they are useful entities to coordinate the promotion, education, consultancy and organization of operational mobility activities with the citizens. Among others the experiments in Toulouse showed that they should have the right tools (e.g. internet site, publications and animators) and actively promote sustainable mobility. The personnel have to be “mobilizing agents”.

The MOBILIS project is of the opinion that they should have clear multi-annual quantified objectives for example in terms of improved modal share, evaluating their work and receiving corresponding financing. Policy makers should remain closely involved in the activities to guarantee best results.

A commuter plan for a geographical area, grouping several companies could give each local business and administration its own travel plan.
Large companies and local administration have the capacity to develop their own commuter plan. They can be assisted by the local authorities through the provision of information, questionnaires, analysis, planning advice. A commuter plan only works if its promotion is assured over time.
Small and medium enterprises can generate over 50% of all commuter and business travel[29]. Nevertheless they are often more difficult to reach by the entities responsible for the promotion of commuter plans. A solution could be the development of so-called area based commuter plans, as has been experimented in Toulouse. Assisted by the local mobility agency, small and medium-sized companies were enabled to develop their own commuter plan and to improve the mobility of their employees. The local mobility agency gave all small companies an information package. This package consisted of an area specific analysis of the mobility and traffic situation, and a set of tools for the local companies to develop their own commuter plan.
In the promotion of commuter plans to commercial companies it is important to show the economic benefits of the adoption of a more sustainable mobility. The mobility agency should organise periodical evaluation moments to maintain the interest and efficiency of the commuter plans. The provision of financial benefits for the company and employees like the development of reduced public transport commuter fares can help to promote a commuter plan.

Develop a clear strategy, integrated planning and attractive promotion to advance bicycle use.
The experiments in all MOBILIS cities showed that there are no miracle solutions to achieving a higher modal share for the bicycle. Depending on the geographical structure and starting point, every city can set its own bicycle ambitions. In all cases only the integrated approach over time delivers real results.

- Integration in terms of organisational aspects, e.g. development of a strategy (Toulouse), Masterplan (Venice), cycle traffic model (Odense), Bicycle promotion office (Venice), but also
- Integration of features, e.g. Bicycle racks (Debrecen and Venice), infrastructure (Toulouse and Venice) or education and training (Odense and Venice).

Health is an argument that is more and more used to support bicycle initiatives. The introduction of public bicycles, or campaigns like BICIBUS (Venice), Fil Vert (Toulouse), B-Game (Odense) can help to strengthen the use of the bicycle in a city. Involve all stakeholders as early as possible to make your activities a success.

Personalised direct marketing has a real effect.
The personal choice marketing in Odense showed that citizens are normally very positive about personal contacts as long as it's voluntarily and without any commercial pressure. Already the provision of a combined package of basic information can produce in an efficient way positive behavioural effects. It creates citizen involvement and ownership. The concept also underlines that citizens themselves can do just as much as the local authorities just by changing a few trips per week.

Recommendations for EU policy makers

Assist the cities in the setting up of local mobility agencies.
Besides the necessary public transport infrastructure subsidies of the European Commission, assistance in the setting up of local mobility agencies can help to successfully realise them through the EC promoted adoption of Sustainable Urban Mobility Plans. They are important tools to ensure local accessibility and the urban environment, reinforcing the local urban economies. The EC could treat the setting up of local mobility agencies, as

(29) See among other Roadsafe magazine, spring 2008.

has been done with the promotion of local energy agencies, through the STEER initiative.

Create and European "CIVITAS" agency on urban mobility.
The European Commission should continue to support and promote good practices of mobility management and services through initiatives like CIVITAS and ECOMM. A permanent European Agency on Urban Mobility could help to do research on urban mobility, develop strategies and disseminate good practices. This agency should cooperate at the member state level with institutes, like CERTU in France or KPV in the Netherlands.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Innovative soft measures	Awareness campaigns for sustainable mobility							
	Individual marketing for sustainable mobility							
	Mobility agency and personalised information							
	Commuter plans assistance							
	Bicycle use promotion and development strategy							
	Bicycle infrastructure	-	-		-			

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

8

Thematic Area "Telematics"

Introduction

Intelligent Transport Systems (ITS) or Telematics in urban mobility receive high attention at the European level. They are considered as a tool to fulfil the EU Sustainable Development Strategy of 2001[30] and are identified in the 2005 review process as needing a stronger support. ITS in mobility should boost the EU objective to improve transport demand management and reduce by half the number of road deaths by 2010.

Also in the European Commission Communication on Greening Transport of July 2008[31], ITS is seen as a priority. As a result, in December 2008 the Commission presented its Action Plan on ITS for Road[32]. As stated the Action plan should be *"accompanied by a legislative initiative setting out a common approach to getting existing technologies onto the market and in use. In addition, using existing infrastructure more efficiently will mean that less new infrastructure will be needed, avoiding habitat fragmentation and soil sealing."*

Especially in relation to urban mobility the Action Plan should enforce development of an ITS architecture, including an integrated and multi-modal approach for travel planning, transport demand and traffic management. A single architecture should enable the availability of all necessary data for mobility management services and foster its exchange between the different control centres. The MOBILIS project experimented with several improved transport management and information services through ITS.

Innovative traffic management, public transport management and passenger information through ITS

Global Navigation Satellite Systems (GNSS) are technological tools that could enable a specific support to surface public transport exploitation systems. A dedicated experiment with the EGNOS and future Galileo navigation systems has been carried out in Toulouse. An improved performance of the navigation equipment installed in the buses could promote the wide use of the new services or organisation of existing services.

Bus and tram priority, often seen as a very technical measure, can provide substantial benefits in terms of travel times and improve regularity of the bus service. A recent study conducted for the public transport authority of Toulouse showed that an increase of one kilometre of average commercial bus speed would result in an additional income of 2 million euro. Furthermore the psychological effect of bus priority should not be underestimated. It shows a clear willingness to favour public transport over the private vehicle. New ITS technologies as experimented in Toulouse and Debrecen showed the potential in terms of improved performance.

Complementarities between modes have to be supported by multimodal information provision towards users. The development of passenger information systems as experimented in Toulouse and Debrecen help to improve the level and quality of the multimodal information for travellers and users of the public transport network.

MOBILIS activities

Site	Activities
Toulouse	Demonstrate the use of Galileo/EGNOS for PT management; Implement and test bus priority solutions; Implement multimodal traveller information services.
Debrecen	Implement AVL (Automatic Vehicle location) system for tram and trolley bus fleet (31 trolley buses+18 trams); Implement tramway priority scheme (At 2 junctions); Develop traveller information services at the stops (23 stops) (via VMS).
Venice	Implement a GPS/GPRS based water traffic control system for the lagoon area; Develop and demonstrate water traffic management decision support system; ARGOS (Automatic Remote Grand-Canal Observation System).

Integration of traffic management through ITS

Most cities have several travel planning, demand management and information services that are supported by ITS. The experiences in the MOBILIS cities show that their integration is crucial for optimal daily management planning of the transport system. The city of Venice integrated the ACTV public transport operations centre with the Municipal Police control centre in order to optimise the boat traffic in the Venice lagoon. The city of Toulouse worked on system architecture to allow multimodal information sharing at the strategic level between the different mobility actors. This system architecture was enabled through the strategic cooperation between mobility actors (SGGD Système de Gestion Global des Déplacements/ General Mobility Management System).

(30) EU Sustainable Development Strategy adopted by the European Council, Gothenburg, 2001.
(31) Communication on Greening Transport, European Commission (COM 2008(433), July 2008.
(32) ITS for Road Action plan, European Commission COM(2008) 887, December 2008.

CASE STUDIES

A real-time passenger information system for Debrecen

With MOBILIS, Debrecen became the first city in Hungary to have a network-wide public transport real-time passenger information system for its tram. The tram network of Debrecen serves as the north-south axis of the public transport grid of the city. The level of quality of the tramline has a very substantial impact on the overall usage of local public transport.

The public transport operators installed a passenger information system for all vehicles (on board) and at all stops that are capable of announcing the time remaining until the next vehicle arrival. All trolley buses have been equipped with an on-board computer system for vehicle location.
In addition a network-wide vehicle location system has been installed for tram and trolley bus vehicles. The system is able to fulfil several functions, such as automatic vehicle location for trams and trolley buses, complete fleet management for the vehicles and handling priority requests of tram vehicles at traffic signals.
At 23 tram stops electronic information display systems have been installed which announce the time remaining till the next vehicle comes and the trams and trolleys have been equipped with LCD information displays. The system is based on the automatic vehicle location and the electronic schedule system.

The overwhelming majority of the respondents during a dedicated evaluation showed a large increase in the perceived quality of the public transport. They consider the digital information system as a better source of information compared to other information provision. Almost 58% of the tram-users are only using the digital passenger information system when travelling.

Argos (Automatic Remote Grand Canal Observation System)

ARGOS is an innovative water traffic navigation control system on the Grand Canal, capable of executing an efficient automatic monitoring of navigation and functioning as an effective deterrent against law breaking, thus rationalizing the need for Local Police presence. One of its effects is the reduction of wave motion in crucial points of the City of Venice. This system, based on digital image processing collected by sensors installed along the Grand Canal, is able to supply a continuous control and real time boat traffic monitoring. The system's in-depth analysis functions allow to automatically obtain useful information about flows and traffic density in any time interval, as well as to highlight any illicit behaviour on the part of boats. Moreover, the system allows to run through the recorded situations instant by instant, in a synthetic way, in order to rationalize any decision related to traffic regulation.
ARGOS also makes it possible to check specific areas, such as the dockings or all places where mooring is forbidden, in order to ensure control, safety and the observance of navigation rules.
An empiric test was carried out using the ARGOS system in order to control the position of the boats in the Grand Canal. In October 2007, the test was conducted at the Municipal Police control centre. Some crafts transiting in the Grand Canal were selected and their geographical position was controlled using ARGOS real time visualisation system. The results showed that all selected boats were successfully tracked.

Recommendations for local politicians and technicians

Optimal usage of GNSS services needs performing ITS.

The experiment in Toulouse showed that better performing communication means were necessary between buses and the monitoring centre to fully exploit the possibilities of Global Navigation Satellite Systems (GNSS). The location frequency report of the buses used in the experiment was too low with respect to attended GNSS accuracy. Optimal usage of future GNSS like Galileo requires better performing ITS that is able to make optimal use of improved navigation services.

Consider future GNSS services when investing in new network management systems.

Due to necessary investments, evolutions of the network management system are planned over long periods (10 to 20 years). New network management systems should consider future GNSS services for example the ones of GALILEO to be able to make optimal use and to avoid additional investments or under performance in comparison with the technological capabilities.

Bus and tram priority systems have to be flexible for local particularities.

The experiments in the MOBILIS project showed that bus and tram priority systems have to be flexible, i.e. there is a need to have at disposal a set of solutions which can be adjusted to the local context and avoid the obligation to apply a single solution at all junctions, lines and during all periods.

Integrated public transport information is as important as the public transport service itself.

A public transport network without sufficient information provision is like a network that does not exist. Information provision using ITS, showed in the MOBILIS project to improve considerably the

perceived quality and attractiveness of the public transport system. A customer is reasoning from A to B not per single public transport mode. They need integrated information, or information approaching a high level of integration, enabling them to make the trip in a multimodal manner with sustainable transport modes.

The development of integrated multimodal information and management decision support systems needs a clear strategy, objectives and strong collaboration.

The development of multiple travel management, decision support, like in Venice and multi modal information systems, like the SGGD in Toulouse is a complex process. Such a multifactor partnership can only reach its aim when people accept to work together and to go beyond their own company's interests. Clear objectives have to be defined upfront.

Recommendations for EU policy makers

Local authorities should play a major role in the implementation of the priorities of ITS for the Road action plan.

Local authorities as being both main manager and user of ITS for roads should have an important role to play in the EC support activities as defined in the ITS Action plan. The EC should focus on the proposed Action plan option[33] to concentrate on co-ordination and create synergy between measures.

Assist the local authorities to construct the necessary integrated ITS systems for a sustainable urban mobility.

The EC should make available research funds for local authorities to test new ITS and regional funds to build the necessary integrated ITS systems to improve urban mobility towards co-modality and increased use of alternative mobility modes.

Assist the local authorities in evaluating the impacts of integrated ITS systems for sustainable urban mobility.

Most integrated ITS systems do not in general work as well as is thought especially when there is a poor exploitation of the databases. The expected impacts are often not in line with the real outcomes. The EC should assist local authorities with the evaluation of the real benefits of integrated ITS systems. This will allow the local authorities to strengthen the basis of their investment decisions in the expensive infrastructure that structures their ITS system for the coming decade.

(33) See ITS for Road Action plan, December 2008.

Overall assessment of achievements

	Categories	Emissions	Energy	Mobility	Social	Implementation Time	Investment costs	Operational costs
Telematic application for Mobility management	Use of GNSS in transport management	-	-		-			
	Bus and tram priority				-			
	Multi modal information systems	-	-					
	Automatic observation systems	-	-		-			
	Global Mobility Management concept	-	-		-			

Positive effects on Emissions, Energy, Mobility and Social issues	Implementation time	Costs for cities
Small	Short	Low
Medium	Medium	Medium
Large	Long	Large

Thoughts for the future of CIVITAS

CIVITAS today

MOBILIS and the other CIVITAS projects have been highly successful "urban laboratories" where new policy concepts were tested, where the value of innovative systems and services for citizens was demonstrated, and where new forms of cooperation between stakeholders have come to life.

CIVITAS-MOBILIS and its three sister projects CARAVEL, SUCCESS, and SMILE, are being finalized and therewith the second project cycle of the CIVITAS Initiative completed. At the same time, five further projects have recently started as part of a new CIVITAS round which we have named "CIVITAS Plus". Within CIVITAS PLUS (2008-2012) 25 cities in 5 demonstration projects are taking part.

When asking ourselves what will be the future of CIVITAS we should look at what the European Commissioner for Transport and Vice-President of the European Commission had to say about it during the CIVITAS II final conference: *"Today Europe is facing serious economic recession - we must turn this into an opportunity. We must invest in innovative new policies and technologies to make our cities work better - that means reducing congestion, promoting public transport as well as healthy modes of transport such as cycling and walking. We will launch a series of concrete actions this year. They follow an integrated approach on sustainable urban mobility. We want to work in partnership with the cities and national governments to achieve this"*.

The future of CIVITAS will be based on the Action Plan and its outcomes. So far the Commissioner detailed that it will include actions to assist public authorities with the implementation of a new Directive for promoting clean and energy-efficient vehicles, as well as funding support for pilot projects and studies on various aspects of sustainable urban mobility.

Five future CIVITAS branches

The MOBILIS project would favour five future directions of CIVITAS that could and should coexist one beside the other.

A CIVITAS Quality label for Structural funds and European loans

Firstly CIVITAS should become a "quality label" for European structural funding and financing. All cities that would like to use European structural funds or financing, as for example through the loans of the EIB, should opt for a CIVITAS quality label. This means that in order to qualify for funding and financing the receiving city should have a sustainable urban mobility plan and integrated packages of hard and soft measures, as in the spirit of the CIVITAS initiative. This will not only allow new public transport infrastructure to be built but also guarantee its setting in an overall strategy of sustainable mobility.

A dedicated CIVITAS Chapter in the Structural funds

Secondly, the European Commission should create a dedicated EU support programme for financing clean urban transport activities[34] that could be embedded in the structural funds. In line with what is stated in the "Urban Mobility" green paper, the MOBILIS project agrees that the CIVITAS "approach" should pave the way for a dedicated EU support programme for financing clean urban transport activities outside the research framework. This programme should concentrate on actions on a larger scale, focussing on the integration of innovative actions in towns, cities and their periphery.

A European CIVITAS Agency on Clean Urban Mobility

Thirdly, the European Commission should support and promote integrated approaches to clean urban mobility. A permanent European Agency on Urban Mobility could help to do research on urban mobility, develop strategies and disseminate good practices. This Agency should cooperate at the member state level with institutes, like CERTU in France or KPV in the Netherlands.

(34) European Commission, "Towards a change in urban mobility", (com) 2007, 551 final, Brussels, 2007, Page 21.

A CIVITAS exchange programme for policy makers

Fourthly, CIVITAS should directly support policy makers in placing urban mobility on the local agenda. It was recognised during the MOBILIS Political Steering Group meetings that policy coordination is a key requirement for successful planning and realisation of innovative measures leading to a CIVITAS promoted new urban mobility culture. This means coordination within mobility policies, but also coordination with social, health and urban development policies. Initiatives like a CIVITAS exchange programme for policy makers based on the “Erasmus” concept should be part of a future CIVITAS. The CIVITAS forum and the Political Advisory Committee (PAC) could evaluate this.

Export CIVITAS

Finally, opportunities should be explored to bring CIVITAS beyond the European boundaries and use the CIVITAS experiences to allow third counties to profit from the CIVITAS lessons. These exchanges should be used for the participating European partners to create export opportunities for local and European industries.

Whatever direction the CIVITAS Initiative will take in the spirit of the famous American newspaper editor, author and politician William Allen White (February 1868 – January 1944) the CIVITAS MOBILIS project would like to state that:

“We are not afraid of the future of CIVITAS, for we have seen its past, still love it today!”

THE CIVITAS MOBILIS CONSORTIUM

TOULOUSE (FR) www.tisseo.fr
- Tisséo – Public Transport Authority and Operator
- Grand Toulouse – Great Toulouse Authority
- SICOVAL – South East Toulouse Authority
- City of Toulouse
- City of Blagnac
- *Connex Toulouse – Public Transport Operator**
- Gaz de France
- CETE du Sud-Ouest (ZELT)
- AUAT – Urban Planning Agency
- CECILE – SME groupment specialised in GNSS technology

VENICE (IT) www.comune.venezia.it
- City of Venice
- ACTV – Public Transport Company
- ASM – Mobility Company
- *VESTA – the local environmental services company**
- AGIRE – Energy Agency
- *CDG TALV – The Offi ce of the Commissioner delegated by the Government for Waterborne Traffic**
- Forma Urbis – an engineering and architecture SME

LJUBLJANA (SL) www.ljubljana.si
- City of Ljubljana
- LPP – Public Transport Company
- *TEOL, Kemična industrija, d.d.**
- *SAVA d.d.**
- Pinus Rače d.d.– Bio Diesel Producer
- FME – University of Maribor
- KIS – Agricultural Institute of Slovenia
- REC CEE – Regional Environmental Center for Central and Eastern Europe

DEBRECEN (HU) www.debrecen.hu
- City of Debrecen
- DKV – Public Transport Company
- HV – Hajdú Volán – Regional and Urban bus services
- HBM ÁKK – County State Road Maintenance Company
- UoD – University of Debrecen

ODENSE (DK) www.odense.dk
- City of Odense

SUPPORTING PARTNERS
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