COMPETITIVE AND SUSTAINABLE GROWTH
(GROWTH)
PROGRAMME

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Shared-cost RTD and
Demonstration project

Deliverable 4.4
Policy Recommendations

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Project full title: Transport & Environment aLLianc for Urban Sustainability

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26th of January 2006
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1 INTRODUCTION

1.1 CIVITAS AND TELLUS

CIVITAS (City – Vitality - Sustainability) is a European Commission (Commission) initiative to promote cleaner and better transport in cities. Through the CIVITAS Initiative, the Commission aims to generate a decisive breakthrough in clean and better urban transport by supporting and evaluating the implementation of ambitious integrated and sustainable urban transport strategies that make a real difference for the mobility and quality of life of citizens (source: www.civitas-initiative.org).

CIVITAS started in early 2002 within the 5th Framework Research Programme and includes 19 cities clustered in four projects (MIRACLES, TELLUS, TRENDSETTER and VIVALDI). Following the success of the first phase of the Initiative, CIVITAS II was launched in 2005 to support 17 cities in a further four projects. The overall budget of these 36 cities for implementing urban transport strategies comprises more than 300 M Euros including a contribution of about 100 M Euros from the Commission. In November 2005 at the CIVITAS Forum held in Nantes, the Commission announced its commitment to continue with the Initiative’s programme beyond 2007 and to prepare CIVITAS III.

TELLUS is a complex integrated project carried out in the cities Berlin, Bucharest, Gdynia, Göteborg and Rotterdam. Within the TELLUS project 48 demonstration measures were to be implemented, which varied regarding contents, type and underlying policies. Particular local circumstances, specific city characteristics as well as needs expressed, problems faced and priorities given shaped the selection of a specific set of innovative transport measures in each of the TELLUS cities.

The number and spectrum of measures differed from city to city according to the focus identified as relevant for the respective city and the city’s role within the CIVITAS-Initiative (leading cities and followers). Rotterdam implemented 26 measures, Berlin ten, Göteborg eight, Bucharest four measures, and Gdynia implemented one measure.

The TELLUS demonstration measures were not an isolated attempt to improve the living conditions of the citizens, but they were integrated into the cities’ urban transport policies and plans. In general, the focus of the TELLUS project was on translating urban transport policy into practical implementation of innovative measures.

The TELLUS project ran from February 2002 until January 2006. During this period of four years a team of over 20 contract partners and their subcontractors co-operated enthusiastically to make the project a success.

1.2 The goal and approach of this report

The goal of this report is to summarize the most important lessons learnt from the TELLUS project and to provide policy recommendations to other actors in the field of clean urban transport. It is therefore a condensed report building on the many experiences during the four years of the project’s duration. The main sources of information for this report were the TELLUS Final Evaluation Report and internal reports on “main lessons learnt” from the site-management teams of the TELLUS cities. A draft version of this report was discussed during a final TELLUS workshop in Bucharest on the 12th of January 2006.

The report consists of three main sections:

- TELLUS main messages (Chapter 2);
- Lessons from the CIVITAS approach (Chapter 3);
- Policy recommendations (Chapter 4).
In **Chapter 2** the main messages from the TELLUS project are presented. This overview of main messages was obtained by asking the participants of the Bucharest workshop to list their five most important messages from the TELLUS project. The individual lists from the 21 representatives of the five TELLUS cities have been summarised into six main messages.

**Chapter 3** is considering the lessons from the experience of working for four years in the CIVITAS initiative. This includes lessons on the integrated approach, project management and co-operation. The contents of the chapter were based on the Final Evaluation Report and the internal reports from the site-management teams.

In **Chapter 4** the policy recommendations are presented. The chapter starts with recommendations on the process, first targeting new CIVITAS cities and then addressing the EU level.

In continuation, a thematic approach is taken to present the recommendations originating from the implementation of the TELLUS policy measures. For this purpose 5 thematic clusters of measures were selected from the in total 8 CIVITAS policy fields and 48 TELLUS measures. A choice was made to only produce recommendations for those thematic clusters with more then four individual measures and with implementations in at least two TELLUS cities. It is believed that only for these clusters valuable recommendations on the European level can be provided. As a result not all the 48 measures are considered in this report. Complete information on barriers, drivers, outcomes, impacts, future scenario's and recommendations for each individual measure are taken up in the TELLUS final evaluation report.

For this report on Policy Recommendations individual measures from several cities were grouped into the following five thematic clusters:

1. Promotion of Clean Vehicles;
2. Distribution of Goods;
3. Innovative Mobility Services;
4. Parking Management;
5. Increasing the attractiveness of Public Transport.

For each thematic cluster first the concerned measures are described shortly. Then an overview of the relevant drivers and barriers for the measures in the cluster is provided. During the Bucharest workshop 8 harmonised categories for drivers and barriers to successful implementation were used in a working session. 18 representatives indicated the relevance of these barriers and drivers for each of the measures in their city. This way the common barriers and drivers for the thematic clusters were identified and presented in an overview table.

The common categories of barriers and drivers are:

1. Framework conditions
2. Legal
3. Finance and economic efficiency
4. Technology
5. Co-operation with stakeholders
6. End user acceptance/ User needs
7. Commitment (within the organisation implementing the measure)
8. Accompanying city policy measures
Finally, the specific policy recommendations for the cluster are listed. The recommendations are directed at the following target groups:

- Cities
- National governments
- European Commission

1.3 Sources for more detailed information on TELLUS

While this report is summarizing the most important lessons, more detailed information on the TELLUS project can be found in other sources. The TELLUS demonstrator fact sheets\(^1\) contain descriptions of each of the TELLUS measures. Detailed evaluation outcomes and information on implementation processes on the city and measure level can be found in the TELLUS Final Evaluation Report\(^2\). More information on these and other reports can be found on the TELLUS website: [www.tellus-cities.net](http://www.tellus-cities.net).

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\(^1\) See [www.tellus-cities.net](http://www.tellus-cities.net), and the Annex of the TELLUS Final Report

\(^2\) TELLUS deliverable 4.3 Final Evaluation Report, submitted the 21\(^{st}\) of December 2005
2 TELLUS main messages

The starting phase of a CIVITAS project is crucial for its success

While designing the project in the proposal and inception phases introduce a common integrating vision and strategy and take the following into account:

- Formulate clear and realistic objectives both on the project and on the measure level;
- Process related qualitative objectives should complement quantified objectives and products;
- Use existing experiences from previous CIVITAS and other EU projects;
- Identify the most important risks, for example the legal framework;
- CIVITAS measures should be integrated in the local transport plan;
- Look for useful accompanying measures to reinforce your main policies.

Good quality co-ordination is at the very heart of your project

Assure good co-ordination by:

- using an experienced team of professional people;
- defining clear and practical management and communication structures;
- limiting the number of partners and measures in your project;
- limiting the number of required internal and external reports.

People do matter

Find the right management structure and build an enthusiastic group of partners that fit well into the project on all levels. The project team makes the difference. Do not forget to have fun after a hard day’s work.

Place the user at the heart of your project. Only by knowing what your customers think, need and accept, and by adapting the service to the findings you can create something that they will use.

Evaluation is a demanding but valuable task

A successful project requires a sound evaluation concept as an integrated component of the measure design already in the very start of the project. A period of at least three months is necessary to set up a common implementation and evaluation framework for the project in order to increase the efficiency and effectiveness of the implementation process. Ample budget is a prerequisite for this task.

Process evaluation and impact evaluation are of equal importance for the evaluation of innovative transport measures.
Evaluation is more than assessing – it is questioning the objectives and results, monitoring the outcomes, reflecting on the processes and learning from the results.

**Good communication is one entry point for project success**

Good and open communication in all project phases, at all project levels and between all stakeholders is crucial. Talk to the right people at the right level and not to the boss only.
Inform potential users clearly and openly and in time to assure the right level of user awareness, needed for good user acceptance.
Communicate your successes and lessons learnt, disseminate the results and exchange experiences.
Devote enough resources for communication activities.

**Political support matters**

Get commitments right from the start and assure active and ongoing political support.
Politicians can learn from CIVITAS Initiative through their participation in site visits, political meetings (e.g. PAC).
3 Lessons learnt from the CIVITAS approach

This chapter summarises the experiences made and lessons learnt from four intensive, challenging, often rewarding and sometimes strenuous years of work in the TELLUS project. The main sources of information were the TELLUS Final Evaluation Report and internal reports on "main lessons learnt" from the site-management teams of the TELLUS cities. The lessons learnt are presented in six sections covering the following aspects:

- Why the TELLUS cities participated in the CIVITAS Initiative;
- Project Management and Design do matter;
- Local Co-operation is one entry point for success;
- International Co-operation can motivate and enrich;
- Integrated Approach is crucial for success, and
- Objectives do matter.

3.1 Why the TELLUS cities participated in the CIVITAS Initiative

With the participation in the CIVITAS Initiative the cities associated and gained added values.

Expected added values:

The expected financial and political assistance were important motivators to apply for participation in the CIVITAS Initiative. With these forms of assistance the cities thought to have the possibility to implement “radical measures” in order to reach challenging goals, to initiate, test and experiment innovative approaches, as well as to overcome barriers. This applied to cities as well as to smaller private partners, and also to measures that needed a ‘trigger’.

On top of the assistance, cities expected to benefit from new possibilities for networking in order to exchange experiences with other cities that encounter the same or comparable problems and to receive advice for the selection of workable solutions.

The aspirant partners expected some improvements in image by ‘being part of an European project’; it was expected that this participation would open doors more easily, e.g. when contacting companies and organisations outside the project.

By participating the cities expected to be able to improve to some extent European policy in a practical way. The implementation of measures in the cities and the evaluation of the effects were supposed to show whether or not European regulation would work or whether changes or stimulation are necessary.

Furthermore it was expected that the co-operation of cities throughout Europe would have the potential of being able to influence industries, like the car industry, by creating a large market.

Gained added values:

Many demonstration measures benefited considerably from joining the TELLUS project. They would otherwise not have been started at all, or would have been only partly implemented, delayed or cancelled.

Both measure managers and city representatives benefited from participation, by learning from each other, especially from highly innovative approaches and measures.
For some cities joining TELLUS improved the communication of their demands and problems towards the EC. This effect was increased further for some partners by having their politicians elected as member in the Policy Advisory Committee of CIVITAS.

In several cities the city transport policy moves in the direction of wider promotion of measures, initiated by the TELLUS Project.

Cities with little experience in international co-operation and in preparing and implementing large projects experienced added values in fields such as: 1) project management knowledge that could not be learnt elsewhere; 2) establishment of contacts with foreign entities – setting up links for future co-operation; 3) ideas for new proposals; 4) learning from the experiences of others.

As a result of participation in TELLUS and CIVITAS and based on project experiences, partners have prepared new project proposals, and they have strengthened their international co-operation.

3.2 Project Management and Project Design are important issues

Most of the demonstration measures could reach their objectives and outputs. If this was not the case for the quantified objectives those measures could give important impulses for further development processes. Many products developed could reach the state of readiness for marketing. The demonstration measures are seen as a successful contribution to reaching the goals of the local transport strategies.

The basis for success is laid in the initial phase of the project, in it’s design. The TELLUS participants learnt that unrealistic objectives or unrealistic assumptions regarding the (supporting) framework conditions made a successful implementation for some of the measures difficult.

Participation in a European project like TELLUS requires a lot of effort and matching financial resources. This applies to both management parties (like European and site managers) and leaders of demonstration measures. Particularly in relation to co-ordination tasks, administration and reporting, dissemination activities and attendance of meetings, the actual level of required involvement was much higher than expected and budgeted.

In some cities – those with a larger number of measures – it was the intention of the site management to operate as programme manager and to be involved on policy level. This however, could not be put into practice: all effort had to be focussed on the mere coordination of reports and finances. Difficulties in understanding and following agreements, deliverables, accounting rules and dissemination obligations as well as preparing contract amendments only intensified those efforts. Furthermore, heterogeneity and the lack of integration demanded a great share of the project efforts for dissemination activities and institutional co-operation.

For small private partners the extensive administrative reporting was considered a very big burden or even an implementation stopper. The fact that EC procedures are time consuming and labour intensive, for instance resulting in late intermediate payments and difficult amendment processes, adds to the difficulty of participation by SME’s.

3.3 Local Co-operation is one entry point for success

The most important outcome from participating in the TELLUS project is the new or intensified co-operation on all levels; European, national and local. New ways of co-operation, co-ordination and communication were established contributing to the success of TELLUS in the cities. Furthermore the participation resulted in experiences gained and contacts established that have been important for developing new concepts and will be important for future work.

Those measures that invested in co-operation developed over the time a better understanding of goals, approaches and achievements.
Co-operation between providers and customers of transport services in the cities has increased as a result of TELLUS and has been seen as very positive from both sides.

Because of TELLUS the institutional co-operation within the cities has advanced at least partly. A better understanding of each other’s role and position and knowledge about ‘who is working on what’ could be reached. This ameliorated co-operation is beneficial for the measures since it increases the back-up for and from individuals within the public authority, and this is crucial to success.

The public-private co-operation implemented within the TELLUS project is considered as quite successful. Especially the involvement of the entire “value chain” of the products delivered, taking manufacturers, transportation companies, authorities and end users into the boat, promoted the good results achieved by TELLUS. Furthermore a multiplier effect could be noticed, for example in Berlin for every Euro spent by the state, 4 Euros were subsidised by the EU and further 5 Euro invested by private project partners.

3.4 International Co-operation can motivate and enrich

The exchange of experience among the European partners, the building of networks and the chances to present experiences of the cities on an international level were perceived as being motivating and enriching, but also as challenging.

On the other hand, the co-operation on European level between measures with similar design, objectives and problems was quite limited. To some extent, this can be attributed to the fact that the focus of demonstration measures differed from city to city (e.g. goods transport, passengers transport, public transport or physical measures). On the other hand, it can also be attributed to some extent to the administrative burden within the project as a whole: measure leaders needed a lot a time for things like reporting, reducing the time available for setting up contacts with other measure leaders.

The complexity of the CIVITAS approach made it more difficult for the demonstrators to get an overview on the measures and related approaches and therefore to establish easily an exchange of experiences.

Joint efforts on the CIVITAS level of some demonstration measures to communicate demands and problems towards the European Commission were so far perceived not to be very successful.

3.5 Integrated Approach is necessary for success, but not sufficient

The TELLUS project can be characterised by heterogeneity and variety: In the participating cities the number of measures differs as well as the spectrum. These features made it difficult to reach a fully integrated project strategy and to make TELLUS a project with a common and motivating vision, common goals and with a member-of-the-TELLUS-family feeling. Local transport plans - although the foundation for the TELLUS demonstration measures - could not provide a sufficient integrating framework for that purpose. The complexity proved to be too high. Yet, the integration of TELLUS measures into local transport strategies is necessary in order to have a chance to achieve ambitious objectives in the medium or long run.

3.6 Objectives do matter

During the implementation process it showed, that the quantified objectives stated at the beginning of TELLUS were by far too ambitious to be reached within the timeframe, and with the chosen mix of measures and the specific measure designs, even if more money would have been spent. Many measures had a limited scope and a relatively small and local impact which was mainly due to their innovative approach. Furthermore objectives addressing attitude and behaviour changes need time to be reached. The project period of four years is to short for those changes.
4 Recommendations

The following sections provide recommendations drawn from the experiences made within four years work in the TELLUS project. The first section provides general recommendations for cities aiming to join the CIVITAS Initiative. The second section provides recommendation on the EU level. The third presents recommendations on five thematic clusters implemented within the TELLUS project.

4.1 Recommendations for new CIVITAS cities

How to structure and prepare a CIVITAS project

A new CIVITAS project needs a clear common integrating and motivating vision.

A future CIVITAS project should contain cities with similar characteristics and the measures within the project should preferably be of similar character in order to reduce complexity and to have a sound basis for comparability and exchange of experiences.

The demonstration measures should be distributed evenly preventing that one city is overloaded with a large number and some cities deal with a small number of measures.

Project objectives, administration, finances, activities and reporting need a careful and realistic planning. Process-related qualitative objectives should complement quantified objectives and outputs. Quantified objectives need additional preparation efforts and detailed studies.

In order to increase the success of the project the preparation time for joining, formulating the project objectives and strategies, selection of appropriate measures and understanding the consequences of involvement should be sufficient and based on a participatory process.

Organizing the co-ordination

Adequate management, co-operation and communication structures are prerequisites in order to minimise administration and co-ordinating efforts and to maximise the success.

Reporting effort should be concentrated in the horizontal work packages and project partners should be facilitated to focus on successful implementation of their measures.

Do not underestimate evaluation

Because of the diverse and innovative character of the TELLUS measures the evaluation was faced with a high workload. In future projects it would be advisable to either allocate more resources to a horizontal evaluation work package or to require a sound evaluation concept as an integrated component of the measure design already at the very start of the project. In either case a lead time to set up a common implementation and evaluation framework for the project is a valuable means to increase the efficiency and effectiveness of the implementation process.

Process evaluation and impact evaluation are of equal importance for the evaluation of innovative transport measures complementing each other.

The importance of dissemination

Before starting a project a more adequate provision has to be made for the means of information and dissemination. Information for the public, clear messages and simple language are essential.
To achieve a comprehensive description of the TELLUS measures fact sheets have been developed and produced. These one page abstracts of the demonstrator activities (describing objective, rationale, implementation, further planning/results, involved partners and contacts) have been regularly updated. This product is useful to easily describe the measures and thereby fostering the insight into parts of your project.

The implementation of innovative transport measures

Identification of drivers and barriers for the implementation of innovative projects as well as the initiation of communication processes and the stimulation of co-operation on different levels are crucial for successful implementations.

Changes in framework conditions, which can not be influenced directly, should be considered and if possible backed up by appropriate risk management.

Experiences made with transport innovations in other cities and/or different contexts should be taken into account before the plan for a demonstration or pilot project is being drawn up.

Backup and support given from city administration are essential for the realisation of measures.

Personal and institutional commitment is a factor that can be decisive for the outcome of a measure and the project.

In order to minimise stagnation of implementation processes a good understanding of national legislation and the time-consuming process of changing this is required.

4.2 Recommendations on EU level

The focus of CIVITAS

The CIVITAS Initiative should put in future strong emphasis on realistic objectives and less on outputs. In addition, user-orientation should be stronger promoted and be a focus of the programme.

Dissemination and spreading of knowledge, experiences and ideas need information in a wide variety of languages. Meeting the needs of the EU and the needs of the public on local level internal EU documents and documents to be suitable dissemination should be available in at least two languages, English and the local language. Additional funds for dissemination could ease the problem of translation.

The EC should strengthen the process orientation especially for management and evaluation. The analysis of the implementation process plays an important role in the evaluation of innovative urban transport measures. The identification of drivers that promote successful implementations and barriers that hinder the demonstration measures in reaching their potentials are highly relevant for further development of the measures and future policy decisions.

The EC should provide more opportunities and budget for approaches applying ‘soft measures’, putting emphasis on marketing, knowledge creating, awareness raising, dissemination and knowledge exchange activities.

To lower the coordination overhead the EC should design the programme of the CIVITAS Initiative promoting projects with a smaller number of partners and demonstration measures.

The rules of the framework programme

Faster action in case of necessary contract amendments and extended dialogue between local and EC – levels is urgently required.
The large amount of bureaucracy demanded by the EU has been a substantial burden on all partners of TELLUS Project. A considerable reduction of bureaucratic load in future projects is required especially when involving small and medium size partners.

**Action on common problems**

Cities welcome fast assistance in case of common problems from the EU-level. The Commission should take a more active role in identifying common problems and necessary action whenever possible. Experiences with the clean vehicle dossier form a good example. This approach should also be implemented for other themes like environmental zones.
4.3 Recommendations by thematic clusters

4.3.1. Promotion of Clean Vehicles

In total 13 TELLUS measures were directed at promoting clean vehicles. Most of these concentrated at directly co-funding the implementation of clean vehicle technology. Another part of the measures introduced supporting initiatives like promotion, monitoring of environmental impacts and financial models. The introduction of around 400 clean vehicles is the direct outcome of the TELLUS measures. Furthermore the supporting actions lead to the introduction of another 3200 clean vehicles.

<table>
<thead>
<tr>
<th>Location</th>
<th>Measure Number</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Berlin</td>
<td>9.4</td>
<td>New forms of financing-contract for NG vehicles</td>
</tr>
<tr>
<td></td>
<td>12.6</td>
<td>Introduction of CNG-powered vehicles</td>
</tr>
<tr>
<td>Bucharest</td>
<td>12.5</td>
<td>Clean &amp; silent public transport fleet</td>
</tr>
<tr>
<td>Göteborg</td>
<td>5.7</td>
<td>Environmental zone for heavy duty vehicles</td>
</tr>
<tr>
<td></td>
<td>6.6</td>
<td>Incentives for purchasing of CNG heavy duty vehicles</td>
</tr>
<tr>
<td></td>
<td>7.6</td>
<td>Environmental optimised ferry shuttle</td>
</tr>
<tr>
<td></td>
<td>12.7</td>
<td>Introduction of clean vehicles in public and private fleets</td>
</tr>
<tr>
<td></td>
<td>12.8</td>
<td>Introduction of clean waste collection vehicles</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>8.1</td>
<td>Electric two-wheelers</td>
</tr>
<tr>
<td></td>
<td>12.1</td>
<td>Clean &amp; silent public transport fleet</td>
</tr>
<tr>
<td></td>
<td>12.2</td>
<td>Electric vehicles for the distribution of goods</td>
</tr>
<tr>
<td></td>
<td>12.3</td>
<td>Cleaner vehicles for waste collection</td>
</tr>
<tr>
<td></td>
<td>12.4</td>
<td>Electric vehicles in public fleets</td>
</tr>
</tbody>
</table>

In **Berlin** two interrelated measures were introduced to enhance the market penetration of CNG vehicles. An innovative leasing model for CNG vehicles was developed and complemented by a website, which provides information about the advantages of CNG-vehicle leasing and supports potential customers in finding partners (9.4). This measure was related to demonstration measure 12.6, which aimed at the introduction of CNG-powered distribution lorries by financial support to lower extra purchase costs, and by technical assistance for the customers during the introduction phase. During the TELLUS demonstration period 144 CNG lorries, 9 CNG buses and a CNG filling station were introduced.

In **Bucharest** the tram infrastructure was modernized to increase the energy efficiency of tram transport and the environmental and energy impacts of the introduction of 60 new trolleybuses and 8 new trams were monitored (12.5).

The city of **Göteborg** introduced a package of 5 measures that promoted the introduction of clean vehicles in different ways and re-enforced each-other. A proposal for a further design and enlargement extension of the environmental zone for heavy duty vehicles (5.7) was developed in co-operation with the stakeholders and presented to the city council for decision making. The development of new criteria for entering the Environmental Zone was undertaken in co-operation with Stockholm, Malmö and Lund. The final proposal, agreed among the four cities, entails that non euro-classed vehicles are allowed to enter the Zone, provided they are no older than 6 years. The exceptions to this rule are
based on vehicle emission. If the vehicles are euro-classed they will be allowed to enter the Zone even if they are older than 6 years, but there will be a limit for each euro-class. Euro IV are allowed for 9 years and Euro V are allowed for 10 years.

Through the measures 6.6 and 12.7 the additional costs of the introduction of clean vehicles were co-financed. One CNG/CBG filling station was realised. During TELLUS 2 large (1 Mercedes Economic and 1 Scania) and 16 lighter (14 Mercedes Sprinter and 2 Ford Transit) CNG/CBG distribution vehicles were introduced. Furthermore, 4 Mercedes CNG/CBG waste collection trucks with additional equipment from Norba AB are operating on a daily basis in the Göteborg city centre. A programme of promotional actions and incentives (12.8) supported the introduction of 3000 new private clean vehicles and 200 clean municipal vehicles during the TELLUS project period. The planned introduction of a CNG ferry (7.6) was cancelled because of the high costs of the technology and the success of an alternative river crossing service by express bus.

In Rotterdam the additional costs of clean vehicle technology was co-financed through 5 different measures. This led to the introduction of:

- 80 buses fitted with the SCR filter technology leading to EURO IV/V standard (12.1);
- 2 electric distribution vehicles Mercedes-Benz 308 E Sprint with ZEBRA batteries (12.2);
- 20 sweeping machines with Catalytic Particulate Oxidizer (CPO) filters (12.3);
- 2 waste collection trucks with DAF active regeneration filters (12.3);
- 40 E-CRT filters fitted on waste collection trucks (12.4);
- 16 Clean vehicles in the municipal fleet: 5 Toyota Prius, 1 Honda CIVIC IMA, 6 special electric vehicles, 1 electric shuttle-bus and 3 Ford Focus flexi-fuel (12.4).
- 48 electric two-wheelers (8.1)
WP 5.7 Information panel on the Environmental Zone in Göteborg

WP 9.4 website on new forms of financing-contract for NG vehicles

WP 12.5 energy efficient trams in Bucharest

WP 12.6 Introduction event gas buses in Berlin

WP 12.8 A new clean waste collection vehicle for Göteborg

WP 12.3 one of the electric vehicles used by commercial distribution company in Rotterdam

WP 12.1 Introduction of clean filters on buses in Rotterdam

WP 8.1 Electric two-wheeler and vehicle show in Rotterdam

WP 9.4 new financing concepts for NG vehicles to further stimulate use in commercial companies

WP 6.6 New fuelling infrastructure as CNG vehicles
**Drivers and barriers**

The city authority itself was a main driver behind the introduction of clean vehicles, both by buying vehicles for the municipal fleet and/or by organising promotion campaigns and providing other incentives. In Berlin the Natural Gas Company GASAG played a central role in the implementation.

A common barrier experienced in Rotterdam, Göteborg and Berlin was the limited market availability of clean vehicles.

### Drivers clean vehicles

<table>
<thead>
<tr>
<th>City</th>
<th>Workpackage No.</th>
<th>Measure title</th>
<th>Framework conditions</th>
<th>Legal</th>
<th>Finance economic efficiency</th>
<th>Technology</th>
<th>Co-operation with stakeholders/complexity of stakeholders</th>
<th>End user acceptance/ User needs</th>
<th>Commitment (within the organisations)</th>
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Different types of drivers were important for the implementation of the measures in the clean vehicle cluster. The three drivers that somewhat stand out from the others are “finance and economic efficiency”, “end user acceptance and user needs” and “co-operation with stakeholders”. The first driver refers both to the financial incentive provided by TELLUS subsidies and by the economic
efficiency in the operation of clean vehicles. Comfort for the public transport passenger was an important driver for the introduction of clean and silent PT vehicles in Bucharest. For the environmental zone the acceptance by the transport sector was crucial for the enlargement. Stakeholders that the City co-operated with include for example leasing companies, transport companies and truck manufacturers.

**Barriers clean vehicles**

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The main barriers for the introduction of clean vehicles concern the high purchase costs and the market availability of different types of clean vehicles. The city of Rotterdam encountered technical problems with the filters systems and electric distribution vehicles. The pilot with the electric distribution vehicles was stopped while for the filters an alternative technology was found. In the last stage the city also decided to introduce other types of clean vehicles (not only electric) in the municipal fleet. The city of Rotterdam over-estimated the market demand for electrical two wheelers and the Berlin partners
had to increase marketing activities to convince the transport companies of the benefits of CNG trucks and CNG distribution vehicles. Taking up emission levels in the new regulations of the environmental zone lead to the necessity of changing national laws and therefore to a delay in the implementation. In addition, a third party made a complaint to the European Commission stating that the regulations of the zones are in contradiction of the European competition laws.

Policy Recommendations

**Cities should continue a dialogue on the availability of a broad range of clean vehicles**

*TARGET GROUPS: cities, national governments and EC*

At the moment one of the barriers to using clean vehicles is the insufficient range of vehicles available. A dialogue on the part of policy makers with the relevant stakeholders, especially the car industry, could help to enlarge the number of vehicle types.

**Cities should help in creating the market for clean vehicles**

*TARGET GROUPS: cities, national governments and EC*

Through converting their own vehicle fleets and organise promotion campaigns for the uptake by other organisations and private persons cities can play an important role in creating a market for clean vehicles. In cases where the city is tendering public transport services it can include environmental requirements in the procurement procedures of the services. Co-operation between cities within CIVITAS and actions for joint procurement can lead to a critical mass of demand.

**Availability of an area-wide network of filling stations should be assured**

*TARGET GROUPS: cities and EC*

The user surveys in the framework of TELLUS show, that one of the most important requirements is an area-wide network of CNG filling stations. So the dialogue with the CNG-supplier should be retained. The infrastructure is necessary for a breakthrough. Also more fuel stations for biogas are needed.

**Governments should introduce and maintain a reduced fuel tax (up to 2019)**

*TARGET GROUPS: national governments and EC*

The reduced tax rate for CNG in Germany is an important condition for the diffusion of CNG engines and should be held on to. Other member states should take similar initiatives in providing a clear long term market situation.

**Actively combine your clean vehicles activities with accompanying measures**

*TARGET GROUPS: cities, national governments and EC*

The introduction of cleaner vehicles should be enforced by measures like environmental zones or road pricing linked to the PM_{10} and NO_{2} emissions. Another incentive for the purchase and use of cleaner vehicles could be special parking areas with for example lower parking fees for vehicles fulfilling low
emission standards. The authorities are crucial when it comes to benefits and taxes. It is important to have long-term strategies for incentives to make clean vehicles become an economical option for purchasers and for the expansion of the infrastructure of alternative fuels.

**Establish a common European definition for “clean vehicle”**

TARGET GROUP: the EC

A common definition would facilitate the development of subsidy schemes and accompanying measures. From an environmental point of view the incentives for cleaner vehicles should be designed on the basis of their emission levels and not for a special technology.

**Appreciate the complexity of clean vehicle measures**

TARGET GROUP: cities

The modernization of a vehicle fleet is a complex equation and consequently includes more variables which have to be considered as transport demand, the architecture of urban space, the environmental factors, etc. Implementing new technologies is not the only solution: Improvements in tram infrastructure can for example lead to considerable gains in energy efficiency and related emissions.

**Communicate combined information on ecology, economy and infrastructure**

TARGET GROUP: cities

To increase the clean vehicle fleet, companies require other arguments such as financial rather than environmental. Emphasis is placed on lifecycles rather than purchasing costs. Knowledge about vehicle models and infrastructure of fuels are arguments that work. Also for individual customers, only providing information about emissions from clean vehicles is not going to influence more than a handful of vehicle buyers. The good lesson learnt is that if you combine information on the ecology, economy and infrastructure, and address it towards selected target groups, you can influence buyers to choose vehicles with lower emissions if the overall running costs and function is similar to the standard vehicle. If so, sooner or later the local car dealers will notice an increase in interest in cleaner vehicles, which in turn encourages them to be more active in their marketing activities.

**Co-operate closely with car dealers and fuel suppliers**

TARGET GROUP: cities

It is necessary to co-operate with car dealers and fuel suppliers. Virtually all decisions that the customers make about vehicle purchase are made up in contact with a retailer. The retailers must be able to give accurate information about running costs and environmental aspects if their customers are to feel confident with a new and cleaner car technology. Both retailers and customers need help to analyse the near future, for example if there are any future taxes on high emitting technology or incentives towards cleaner vehicles.

**Devote time and resources to networking within (and outside) the CIVITAS initiative**

TARGET GROUP: cities

The CIVITAS initiative provides good opportunity for networking. The networking creates knowledge and competence, the feedback is important for avoiding making the same mistakes again.
### 4.3.2. Distribution of Goods

In total 8 measures were directed at the distribution of goods. It included regulative measures like pricing and access restrictions on the one hand. On the other hand also new logistics concepts were introduced.

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<tr>
<th>City</th>
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<td>Rotterdam</td>
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<td>9.2 Implementation of multi-core tube logistics</td>
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In **Berlin** two measures were planned. The first measure (6.5) was concerned with developing conceptual approaches for an emission-based road-pricing scheme for heavy duty vehicles. The rationale behind this measure was the internalisation of external costs of transportation. The concept development in TELLUS was a step to conceptualise and evaluate several options of pricing strategies in Berlin. BEHALA, the Berlin Port Authorities started operating a tri-modal logistics centre (9.3). The moving company Zapf demonstrated successfully five prototypes of the container tracking system of Krupp Timtec that enable a safer and smoother container transport in the future.

The measures on goods distribution in **Göteborg** are all linked to the environmental zone (5.7.). As described above, the environmental zone regulates the entry of heavy duty vehicles into the central parts of the city putting demands on their emission levels. A pilot project with 8 vehicles (9.5) experimented with additional criteria for entering the inner city zone (included in the environmental zone). Here the criteria for distribution vehicles are a combination of a 65 % load factor and the time comparison between stop time and running time. This was a complement to the demands on emission levels in the existing environmental zone. The drivers participating in this scheme were rewarded with positive incentives like use of bus lanes and dedicated loading zones. The third measure was directed at rationalizing the demand for goods transport (10.5). 19 purchasing companies from the Lundby area and 5 suppliers of office material participated in this voluntary demonstrator in which the number of trips for office supplies was brought down.

In **Rotterdam** three measures were related to the distribution of goods. A new policy called “Quality network” (5.1) was developed in close co-operation with the stakeholders from the transport sector. First a map with the most important economical destinations and the roads best designed to handle large quantities of freight traffic linking these destinations was defined. Then requirements on safety, accessibility, comfort, liveability (noise, air pollution and nuisance) for the roads within the network were established. The Quality network forms the framework for future projects directed at solving the identified bottlenecks. The E-commerce logistics concept (9.1) was introduced by a small company and consisted of using the strategically located P&R terrains as distribution points for different types of goods and this way reducing the need for car trips into the city centre. Unfortunately because of financial problems in the start up phase the concept could not be rolled out to the intended size. MultiCore Tube logistics is a new concept for underground pipeline transport in the port area. Transporting chemicals underground through the industrial zone of the port area can contribute to a
reduction of transport by road and water. During TELLUS 4 Companies had leased part of the pipeline over the distance they required.
Drivers and barriers

Drivers goods distribution

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The most important drivers for goods distribution are the co-operation with stakeholders, in this case mainly the transport companies, the perceived user needs and the commitment of the individuals and organisations implementing the measures. The concept for HD vehicle road pricing was initiated because of the German law on road tolls.

Barriers goods distribution

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Some of the more important barriers for this cluster are in the same categories as the most important drivers: Co-operation with stakeholders and end-user acceptance. Co-operation with the freight sector is important but takes time and can be complex because for some issues the interests differ among the stakeholders. The measure related to pricing in Berlin and the two more commercial initiatives in Rotterdam depend strongly on the acceptance of the end users. Other important barriers were framework conditions (for example no rail traffic to the defined demonstration area in Berlin) and financial barriers (for example lack of venture capital for the E-commerce logistics concept in Rotterdam).

Policy Recommendations

It is important to take size of the potential user group into consideration

TARGET GROUP: cities

New logistics concepts can only be economically viable and contribute to an appreciable easing of the burden on the environment if they are used by as many customers/participants as possible.

The measure design should include economic benefits for users/ customers

TARGET GROUP: cities

For each innovative measure on goods distribution economic benefits should be part of the concept because private organisations are the main actors, and for those stakeholders economic benefits are important drivers.

Create an interest by allocating time and resources to information and marketing campaigns

TARGET GROUP: cities

To gain customers/participants for goods distribution projects large-scale information and marketing campaigns addressing all industrial and business sectors are necessary. Try to persuade reporters at the local newspaper to write an article about the measure. Look for other partners that can give
synergies in the communication effort for example similar measures that target the same target group. There is no universal tool for communication; use a combination of them, personal letters, phone calls, personal visits, seminars, workshops, etc. Use other companies in the area as good examples in external communication. Company management listens more to practical examples than theoretical.

**Pay careful attention to communication: it is important from start to finish**

TARGET GROUP: cities

Good communication and establishing an open dialogue are essential for developing and maintaining a good relationship between the municipality and the private sector. The idea behind the measure has to be presented early on to the managers of hauler companies, the municipality and other partners that might be involved somehow during the project period. Workshops that involve not only managers, but also lorry drivers and other personnel at the transport companies are very much appreciated, and help along successful measure implementation. It is a good idea to introduce a special web page for the measure. On this web page it is possible for the project management to present updated information throughout the project period.

Do not forget information to the public. Signs or stickers on the vehicles that are involved in the project together with signs in the areas where the project are carried out are recommended.

**Actively combine your activities for goods distribution with accompanying measures**

TARGET GROUPS: cities and national governments

Through accompanying measures (for example a motorway toll for lorries), the shift to environmentally-friendly means of transport can be stimulated. This is primarily a task for the government. At the same time, new measures might lead to an increased environmental burden on local level (for example the potential increase in road traffic from distribution activities because of the introduction of a inner city logistics centre). This negative effect could be outweighed by taking accompanying measures like appropriate planning and promoting the use of clean vehicles.

In order to facilitate combining of activities you might consider working from a Mobility Centre. This provides a lot of synergy effects. One of them is the opportunity to use the same contacts at the companies for different measures.

**Secure the legal status of the environmental zone as an important instrument for creating liveable cities**

TARGET GROUP: the EC

Environmental zones can be a very effective measure in reducing the inner city emissions of truck traffic. This is also recognized on the European level. There is however a discussion about the compatibility of environmental zones with European competition laws. TELLUS recommends DG TREN to secure the legal status of the environmental zone as an important instrument for creating liveable cities.

**Actively participate in national debates and working groups**

TARGET GROUPS: cities and national governments

Co-operation on the national level, directly with the national government and among major cities in a country is recommended when developing restrictive policies like the environmental zone.
Take time to look for the right contact person for every step in the measure; it pays out

TARGET GROUP: cities

It is not always the president of the company, the board or the steering committee that is the best source of information when you want to find out information about problems or possibilities. That is of course the right path when introducing new concepts and involving new companies into projects, but when creating the measure and finding out the best solutions it is often better to talk to the persons “on the floor”. For example, the most creative ideas in the load factor project in Göteborg came from the lorry drivers. It was also natural to speak to the drivers of the vehicles when finding the load- and unloading zones for the measure, since it is the drivers who know best where those are needed.

See if your measure has a safety aspect and use it in your promotion campaign

TARGET GROUP: cities

An important driver for the multi-core tube logistics measure in Rotterdam was the focus on safety. Underground transport is less vulnerable to accidents and calamities when compared to road and water transport (which of course has economic aspects as well). This advantage should be “exploited” when developing similar measures elsewhere.

Check the legal framework and the legal possibilities right at the start of your work

TARGET GROUP: cities

When a project idea is designed it is necessary to check the legal possibilities. A voluntary agreement with no restrictions for those who do not join the measure is often easier to implement than a measure with restrictions, which might require changes in traffic legislations.

Carefully look for the appropriate size of your pilot area

TARGET GROUP: cities

To create delimitations makes it possible to see the benefits of implemented measures within certain areas. To have a measure area that is too big can create sub optimisations that are not wanted. It is important to consider the measurements and see to that the results are based on the information needed.

Monitor your measure promotion activities

TARGET GROUP: cities

Monitor the activities you undertake in communication. For example, use an annual questionnaire to see if you reach out to the intended target group, and with the message you wanted to send.
4.3.3. Innovative Mobility Services

Six of the TELLUS demonstration measures could be categorised as measures dealing with innovative mobility services. Some of these measures focused on actually developing and implementing new concepts. Others tried to find appropriate ways of significantly stimulating the use of already existing services, either by ameliorating the conditions or by targeted promotion activities.

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Berlin attempted successfully to make commercial vehicle fleets available for car sharing by private individuals. At the end of TELLUS 350 vehicles will be available for this Metropolitan Fleet Car service. Berlin did also test a new collective taxi service, Car Modal. The technology functioned satisfactorily, but the usage of the service during the demonstration period was low. A new market segment has been found, coupling the Car Modal technology to transportation for elderly and disabled people.

In a successful Public Private Partnership Rotterdam implemented the water taxi service, offering 6 boats that cover a network of 30 landing stages, scattered along the banks of the river Meuse (7.3). Rotterdam introduced a new mode of transportation, the Automated People Mover, providing a connection between a large transport hub and a business district. With a schedule of one trip every 15 minutes these driverless vehicles provide an impulse for the use of public transport in this area that otherwise is poorly accessible by other forms of PT. Private company Vipre tried to expand the number of operational van-pools in the Rotterdam region. It successfully lobbied for PT status of the van-pool vehicles, for the use of bus lanes, for special taxation and so on. The Rotterdam based company Greenwheels planned to expand the car sharing service in the outskirts of the city. It was only a limited success, resulting in only 13 new locations and only a limited number of new participants.
Drivers and barriers

Drivers innovative mobility services

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Innovative mobility services are driven by many factors, but mostly only on a small scale. The most important drivers are “Finance and economic efficiency” in terms of economic efficiency and “user
acceptance”. The first is clearly visible in Berlin where vehicle fleets are used for car sharing that would otherwise stand unused during certain parts of the day and week. The last is very obvious in Rotterdam where the demand for water taxi services is boosted because of the fun element. In the case of the ‘automated people movers’ the commitment of the implementing partners as well as the innovative technology played an important role.

### Barriers innovative mobility services

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Unlike the drivers within this cluster the number of barriers is smaller and barriers can be found in different categories compared to the drivers. Legal conditions and status can be strong barriers like it has been for van-pooling in Rotterdam, and it should be addressed in the beginning. End users acceptance can be a strong driver but at the same time a strong barrier: In the case of expansion of car sharing the fact that changing customer attitude takes time was underestimated.

### Policy Recommendations

**Re-adjust the legislative framework**

TARGET GROUPS: national governments and the EC

The conventional and flexible public transport needs to have the same legal status and to be subject to the same legal requirements and opportunities (e.g. public funding, competition with private transport) as new and flexible services.
Assure equal access to tendering procedures

TARGET GROUPS: cities, national governments and the EC

New mobility services can only become successful on a larger scale if they obtain equal access to tendering procedures, which as a prerequisite, need to be carried out openly and transparently in the future.

Establish a comprehensive and coherent transport policy

TARGET GROUP: cities

Mobility services fit in with other measures of transport policy that support an intelligent use of the existent transport infrastructure. It is only when complementary measures are implemented that they can work together with the new services, for example by favouring access to the inner city with the public transport over car dominated accessibility. Examples for that include the integration of flexible services into public transport, the provision of reserved parking spaces for shared cars, permission to use the priority lanes of public transport etc.

Include direct economic benefits for users in your measure design

TARGET GROUP: cities

New innovative services require new attitudes and new behaviour. Providing economical benefits to the new users will help achieving this more easily, and faster.

When introducing new transport services, incorporate sustainable techniques

TARGET GROUP: cities

Often a measure is focused on introducing a new concept that will change the travel behaviour of people. The environmental advantage then is created through the behavioural changes. When doing so the sustainability of the technology used might be neglected, which means the total advantage for the environment is negatively influenced (the impact might be bigger when clean technologies would have been used).

When introducing new transport services, adopt an professional approach

TARGET GROUP: cities

A clear view of the market, a sound marketing and sales concept, and a customer orientation are prerequisites for successful implementation.

Think about your public fleets when developing ideas for new mobility services

TARGET GROUP: cities

Public fleets carry high potential for innovative mobility services. However the cost advantages have to be made visible (which sometimes is not an easy task) and possible internal opposition has to be convinced of the benefits.
You need (small) private companies, so be co-operative and treat them correctly

TARGET GROUPS: cities, national governments and the EC

Innovative mobility services require often high investments, but the service developers are often small companies. Financial assistance and guidelines should be provided, and lengthy administrative procedures should be adapted to the conditions of the small companies.

When introducing new concepts secure backup and (political) support

TARGET GROUP: cities

Innovative mobility services often question established service concepts, or they can be substitutes for services that work fine (but that are not good from an environmental point of view). This means you might encounter both internal and external opposition. Therefore, in order to successfully implement a new service support from (key persons within) the authorities and politicians is needed.

Use a realistic time horizon: changing behaviour takes time

TARGET GROUPS: cities, national governments and the EC

Introducing innovative concepts requires a sound understanding of people’s needs. It addresses attitude and it involves changing behaviour in people. Both need time, so make sure you have plenty of it, for service development, implementation, evaluation and (impact) assessment.

4.3.4. Parking Management

A group of 5 measures evolve around the topic parking management. Two touch upon new ways of paying, the others focus on new parking facilities sometimes in combination with parking restrictions.

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<tr>
<th>Location</th>
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<td>Berlin</td>
<td>6.4</td>
<td>Mobile Parking</td>
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<tr>
<td>Bucharest</td>
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Mobile Parking in Berlin successfully introduced the new concept of payment by mobile phone in the entire parking management region of the city. Bucharest realised new parking facilities and accompanying traveller information services at a public transport node and also restricted on-street parking, with the goal of reducing congestion and promoting the use of public transport. Rotterdam reduced hindrance to residents by successfully establishing a dedicated truck park in a residential area close to the harbour. A special guiding system helps the trucks to arrive quickly to their destination and the special facilities at the truck park (like 24-hour surveillance services) provide them with several benefits. Rotterdam actively works on raising the operational number of parking spaces at P+R sites. Within the measure on pricing strategies for target groups at P&R locations Rotterdam introduced a payment system distinguishing P&R users from other travellers. The new system operates satisfactorily.
Drivers and barriers

Drivers parking management

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- no driver
- small driver
- big driver
- very big driver
A small number of big drivers contribute to the success of the measures in the cluster ‘Parking management’. Assuring user acceptance and meeting user needs, showing commitment and support by accompanying City policy measures do matter in every measure. Favourable framework conditions such as public opinion and meeting user needs have been strong drivers in Rotterdam, the former for park-and-ride pricing strategies, the latter for truck parking management.

**Barriers parking management**

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- no barrier
- low barrier
- high barrier
- very high barrier

Parking management measures need careful planning and implementation. There are many different barriers affecting their success. Legal, financial, user acceptance and commitment are barriers relevant for each measure. Furthermore legal barriers can hinder the implementation of a measure for a long time as it happened in Berlin. High investment costs, shortage of financial resources and possible financial repercussions as they occurred in Bucharest and Rotterdam are high barriers. The reluctance to show commitment, for example long discussions concerning ownership questions related to P+R sites can be a strong obstacle as well.

**Policy Recommendations**

**Assure sufficient and sustained political support**

*TARGET GROUPS: cities, national governments and the EC*

Parking management measures and especially those involving pricing elements and access restrictions, almost always meet with severe resistance from the public. Political support is crucial for the implementation of such measures. However, political support is not always easily obtained since politicians also are dependent on the same public for their position.
**Assign ample staff and financial resources to open communication**

*TARGET GROUP: cities*

For realising implementation good co-operation with open communication between different stakeholders is crucial. Furthermore, potential users should be clearly and openly informed in time (which sometimes means before implementation) to assure the right level of user awareness, needed for good user acceptance. The time and money involved in these tasks should not be underestimated.

**Integrate parking management with public transport services**

*TARGET GROUP: cities*

Combining certain parking management measures with public transport services is likely to increase the effects and benefits from both.

**Integrate parking management into the regional and local spatial planning**

*TARGET GROUPS: cities and national governments*

(Large scale) parking areas, such as those for P+R, should logically fit into the regional and local spatial plans to optimise the positive effects they might have on transport behaviour of individuals.

**Actively look for ways of creating PPP’s**

*TARGET GROUP: cities*

Financing large scale implementation measures is often difficult. Creating PPP’s for (parts of) the measure might be a good solution for financial barriers with possible other positive side effects as well.

**Counterbalance restricting measures by creating extras in PT**

*TARGET GROUP: cities*

Restrictive measures - like some parking management projects are perceived by the public - might create a sense of reduced mobility possibilities in the minds of the citizens. Actively ameliorating the PT, by adding services or constructing new facilities might balance out this feeling.

**Build on existing technologies when introducing new technical solutions**

*TARGET GROUPS: cities and the EC*

Different technology solutions for pricing strategies require the adjustment of the legal framework in order to enable the technology to provide the advantages to the customers (e.g. changes in parking pricing units).
Use a realistic time horizon: take your time

TARGET GROUPS: cities, national governments and the EC

Provide sufficient time for concept development and implementation: e.g. if your concept needs adjustments of legislative framework then you will need time. Also, the process of getting agreements with stakeholders (internal or external) often takes more time than anticipated.

4.3.5. Increasing the attractiveness of Public Transport

There are many ways to influence the attractiveness of public transport. This is reflected well in the diverse nature of the measures that are grouped around this central theme. Issues that were dealt with range from more accurate real time travel information, better comfort, ease of payment, shorter travelling times, better complementary services and so on.

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<tr>
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Gdynia successfully enhanced the trolley bus traction in the main shopping street of the city centre, in order to achieve cleaner, quieter and safer public transport. Additionally, Gdynia carried out promotion actions in which private car users were encouraged to use the trolley bus as well as other means of PT and bicycles.

In Bucharest two related measures were worked upon. One focussed on providing better real time passenger information by the introduction of a new location system based on up-to-date technologies. The other concerned the introduction of fare integration and a flexible fare policy, making use of contactless card technology.

In Berlin a dynamic passenger information system was introduced to the satisfaction of the users. An additional service was introduced making the PT information available via mobile phone text messages.

Similarly, Rotterdam introduced dynamic passenger information at all 50 subway stops and at 100 tram stops. Surveys show good customer satisfaction. Rotterdam successfully introduced the new concept of TramPlus, high quality tram, at three lines to increase the reliability, average speed, comfort and number of passengers. First results are very promising: a ten percent growth in passengers, an increase of the commercial speed from 18 to 23 km/h (target is 25 km/h); and 50% return on investment on first line. In order to stimulate the use of bicycles in combination with public transport
Rotterdam realised a total of new 950 covered and non-covered places at 18 public transport locations. Two guarded bicycle stands were established as well.
Drivers and barriers

Drivers increasing the attractiveness of public transport

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This cluster of measures experiences strong drivers in 4 of the eight categories; the availability of enough financial resources, in Bucharest for instance through financing of the European Investment Bank, clearly positively influences the implementation process. In Bucharest “technology” is also a big driving force behind the measures, being at the core of the measure and it’s objectives. The needs of the potential users play important roles, for instance in Rotterdam where the city caters to the user’s needs by providing better and safer bicycle parking facilities in the vicinity of PT nodes. Commitment plays a role in all measures of this cluster but most strongly in the Gdynia measure where politicians played an important role in starting and continuing the implementation, notwithstanding a certain level of resistance.
Barriers increasing the attractiveness of public transport

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The category “legal” forms an important barrier within the Bucharest measures given that for both strict requirements for tendering procedures had to be followed. It turns out that finance is both a driver and a barrier: the required budgets are high and processes long so there is a strong dependency on volatile political views and priorities. Technology can be a driver, but also is a barrier: time consuming tests have to be done to assure proper functioning before the service/product can be launched publicly. In Rotterdam the two PT measures are experiencing some difficulties arising from difficult cooperation. The success of the Gdynia measure is very much dependent on the availability of adequate financial resources. Large modernisation measures like the one in Gdynia take time and require a substantial amount of resources. Budget planning is not easy given the long project period. Together with the high costs the long project period were therefore high barriers for the city.

Policy Recommendations

**Constantly monitor customer satisfaction**

TARGET GROUP: cities

Only by knowing what your customers actually think, and by adapting the service to the findings you can create something that they will use.
Assure good co-operation between different institutional stakeholders

TARGET GROUPS: cities and national governments

Many demonstration measures involve a lot of stakeholders. Such complex situations call for clear management and communication structures and an active approach towards stimulating co-operation, communication and knowledge exchange.

One way of getting co-operation from stakeholders is to make sure the objectives formulated specifically for the demonstration measure are similar or at least contribute to the general objectives of your stakeholders.

Actively work on sustaining political support

TARGET GROUPS: cities and national governments

Large scale, high cost implementation measures require permanent political support in order to keep the process and all it’s stakeholders going towards the desired goal.

Make use of experienced technology providers

TARGET GROUP: cities

Implementing large scale innovative measures are complex per se, often requiring integration with other (already existing) ITS applications. The technology providers/ integrators should have experience in (parts of) the working field to avoid further complications.

Trolley buses should be seen as a good alternative to other means of PT

TARGET GROUPS: cities, national governments and the EC

A number of remarkable features of the trolley-bus as a mean of urban transport are ecological soundness, flexibility and cost effectiveness. Trolley bus systems do not pollute urban air and they are silent. Compared to trams the busses are more flexible in using urban road space and more cost-efficient due to low costs for infrastructure.

Involve your staff

TARGET GROUP: cities

The success of your measure to a large extend depends on the team of people that works on it. Involved and committed staff will be necessary to continue activities even when barriers are to be overcome.

Actively look for ongoing other measures or activities

TARGET GROUP: cities

Many times synergy can be found by combining measures; of course, there can be measures that offer complementary services. But there can also be synergy from combined marketing campaigns. Or financial benefits from for instance using combined infrastructure.
Safeguard adequate financial resources, over a long period of time

TARGET GROUP: cities

Many of the demonstrations measures that focus on PT are big-scale projects that have to be implemented over a longer period of time. It’s crucial that measure management secures enough financial resources for the entire intended project period, preferably reducing in the same time the dependency on politics for continued funding.

Set realistic objectives regarding time for user acceptance

TARGET GROUP: cities

Working on increasing the attractiveness of PT, means trying to influence current user habits or life styles. This is a process that takes time, a lot of time (the four year project period of TELLUS is too short for changing behaviour on a large scale).