# Content

**Executive Summary**  
1

**Key project statements**  
2

**Messages of our politicians**  
4

**Summary**  
6

**Main results & Foregrounds**
- Clean Fuels and Vehicles  
  9
- Collective Passenger Transport  
  13
- Demand management strategies  
  18
- Mobility Management  
  22
- Safety & Security  
  26
- Less car dependent lifestyles  
  30
- Urban Freight Logistics  
  34
- Transport Telematics  
  38

**Potential Impact**
- Key thematic Achievements  
  43
- Key Evaluation Achievements  
  51
- Key Dissemination Achievements  
  51
- Key Policy Achievements  
  52

**Contact details**  
53

Executive Summary

Since 2002 the CiViTAS Initiative has been supporting the implementation of hundreds of innovative urban mobility measures in a large number of European cities. These measures relate to one or more of the 8 CiViTAS thematic groups [link]. By advancing knowledge regarding overall strategic urban mobility planning, and involving citizens and other stakeholders, the CiViTAS initiative aims at improving sustainability and citizen’s health, creating an economically viable and accessible city, ensuring safety and security.

The partners of CIVITAS MIMOSA regarded CiViTAS as the ideal instrument to better understand the frameworks, processes and technicalities necessary to successfully introduce and test innovative, courageous and integrated strategies for a clean, energy-efficient and sustainable urban transport. The possibility to do so with a group of peers made it all the more stimulating and meaningful, as it supplied local authorities with policies that were both validated by widespread experimentation and legitimised by the concurrent adoption in other cities.

Four years into the project, and the end approaching, the results are there for all to see: Bologna is already well on its way to creating a pedestrian friendly city centre, with increasing numbers choosing to take the bus and cycle. Funchal, through its creative public events, has encouraged citizens to use public transport, as well as cleaner vehicles. On a commercial level, many hotels and tourists visiting Funchal now opt to take the eco-friendly public buses as opposed to hospitality buses and taxis. Gdansk has succeeded in engaging citizens in its bike weekends, as well as encouraging more use of the tram, while children and parents are once again walking to school. Utrecht has tackled freight – one of the major causes of congestion and pollution – by implementing the highly effective Beerboat and Cargohopper. Finally, Tallinn has made significant progress in improving the quality and image of its public transport with an invigorated cycling culture now part of the city’s landscape.

Five cities, each with their own success stories. Yet any success has only been made possible by public participation and partnerships with private parties. This has proved crucial to all, despite the different approaches. Tallinn aimed for in-depth understanding of the behavior and motivations of its citizens. Utrecht, with a strong track record in participation, took it to the next level, whilst Gdansk had to find a way forward in a post-socialist society still adapting to the idea of conducting discussions with stakeholders. However, the city’s persistence in the use of social media, as well as frequent liaison with civil society organisations, won the day. Lastly, Bologna and Funchal, with political backing and openness towards change, forged ahead with many successes of their own.

Cities learned that it is crucial to involve citizens in the decision making process as well as create mechanisms to facilitate their participation. One of the most important results in CIVITAS MIMOSA was the concept that any policy, simple or complex, cannot achieve the desired outcome if the target groups are not sensibly consulted and informed. The dialogue between target users and authorities, the final decision-maker, enabled better and faster resolutions and raised acceptance on all levels.

CIVITAS MIMOSA brought colour to the CiViTAS Initiative by introducing innovative formats such as ‘Transferability’ and ‘Learning History’ Workshops, the Pecha Kucha speaking method, the thematic video box, the books on Cycling and Evaluation, the collection of Smart Apps, a Portal with 9 websites, a dedicated CIVITAS MIMOSA website with a search engine and innovative search buttons. Importantly, the cities of CIVITAS MIMOSA liaised with the European Parliament and the Transportation Research Board in the USA to foster dialogue on crucial policy issues in Europe and across the Atlantic.

CIVITAS MIMOSA had the ambition to help shape a new mentality, whereby conscientious behaviour is felt as rewarding, not a sacrifice. In doing so, it successfully deployed a set of innovative approaches involving the whole community that made its name: Making Innovation in Mobility and Sustainable Actions.

The CIVITAS MIMOSA Cities executing 69 measures are:

Bologna | Funchal | Gdansk | Tallinn | Utrecht

The cities were supported by:

A Coordination team | A Policy team | A Dissemination team | An Evaluation Team
MEETING OF THE LIKE-MINDED

The co-funding made available by the CIVITAS Initiative for the implementation of innovative policies and technologies has arguably been the main appeal of the programme, and in times of financial strains any form of relief will continue to attract interest. The partners of CIVITAS MIMOSA have however come to increasingly recognise the benefits of working in collaborative transnational networks, even though the full potential of projects like CIVITAS remains to date largely untapped. Cultural and resource (human and financial) problems often prevent transnational cooperation from being effectively deployed. Local public authorities, especially in large cities, often witness a divide between the staff engaged in the EU activities and the staff involved in the daily operational activities, with the result that priorities and dedication differ considerably. Those running the ins and outs of our cities’ mobility policies have scarce visibility of the EU projects, often perceive them as secondary commitments, and eventually consider them as time consumers and carriers of excessive administrative burdens. In other words, no immediate reason to cooperate with them.

A similar divide separates even the most dedicated partners of a EU project once the ritual consortium meeting is over, as they unfailingly tend to succumb to their daily routine.

CIVITAS MIMOSA believes that EU projects should be able to foster a much more effective cooperation both within cities, among cities, and among project partners. The easiest way to do so is to expose city staffs and project partners to more frequent personal interaction. Social media and other remote media are cost-effective, but can only complement direct meetings, which is where and when added-value ideas spark, knowledge flows, and professional networks come to life.

Thus, the EC shall rethink their travel budget caps, which these days are still perceived (more or less overtly) as costs associated with frivolous activities, hardly defendable before the public opinion. In reality a well-organized and attended study tour or staff exchange does much more than months of phone calls, email exchanges or LinkedIn discussions. Even from a cost-effectiveness point of view, personal interaction is a winner.

EVALUATION MATTERS, AND COSTS!

The evaluation of the results of EU projects is crucial to both the EC and project participants, particularly public authorities. Nowadays forms of impact and process evaluation are standard procedures in most EU projects, and such practice is positively influencing local practice.

Increasingly public authorities learn how to evaluate and apply evaluation principles to the assessment of their local policies. Reliable and thorough evaluation however requires competence and adequate human and financial resources; else the exercise proves patchy and ultimately counterproductive.

With some exceptions, EU projects do not provide enough financial means to conduct sound evaluation, with the consequence that data ends up being collected by resorting to readily available information (if any), or by using educated guesses or calculations. These are clearly best second options, but not the best way to intercept the direct impacts of the interventions to be evaluated.

CIVITAS MIMOSA was lucky and forward-looking enough to divert substantial extra budget to the evaluation activities, thereby supporting enough staff to ensure a one-on-one assistance to each city, arrange on-site visits (often for several weeks), and organise training workshops on particularly relevant topics, such as Cost-Benefit Analysis.

Evaluation is important, but only if it can scientifically prove what otherwise remains and educated perception. In order to do so, evaluation must rely on established methodologies (like in CIVITAS), trained staffs (especially in the cities), adequate financial and time resources.

With specific reference to Cost-Benefit Analyses (CBAs), CIVITAS MIMOSA believes that despite their being susceptible to subjective and inaccurate estimates, they prove to be a highly valued practice both by city staffs and local decision-makers, which long for quantitative and monetary arguments to back-up their choices. Like other advanced evaluation techniques, CBA’s are costly exercises in terms of learning time and execution requirements, but provide cities with “immediately understandable” evidence of their benefits.
ESTABLISH THE VALUE OF COMMUNICATION & DISSEMINATION

CIVITAS MIMOSA heavily relied on communication techniques in order to foster the effectiveness of many measures. Urban mobility policies these days increasingly employ sophisticated marketing methods and tools, and by all means compete in the arena of market products. The use of social media has long become a necessity, whilst segmented marketing is gaining ground.

However EU projects do not always evaluate the effectiveness of these techniques, unless in case of projects that specifically concentrate on communication measures. In CIVITAS MIMOSA this was a clear shortcoming. A number of very interesting marketing approaches, which perceivably afforded positive results, where not properly evaluated. Future EU projects featuring communications components should not miss to evaluate their impacts.

MEET THE POLITICAL PEERS

On 14 June 2012 a number of politicians from the CIVITAS MIMOSA cities met with MEPs from the Urban Intergroup in Strasbourg to discuss “Sustainable Urban Mobility in Times of Crisis”. The meeting was attended by many Members of the Parliament involved in the negotiations of the new cohesion policy after 2014. The cities presented innovative solutions and interventions made by the five partner cities of CIVITAS MIMOSA.

Thanks to this meeting and the innovative and practical tools identified by CIVITAS MIMOSA, the Urban Intergroup had the opportunity to get a feedback contributing to the better identification of future policies and funding for environmental sustainability and urban mobility within the European Regional Development Fund and the new cohesion policy after 2014.

The visit to the European Parliament, together with the Policy Advisory Committee of CIVITAS and the Policy Statements thereby developed, helps the role of the politicians in CIVITAS to become tangible and explicitly relevant. It is a format that deserves further development.

MEET THE NEIGHBORS

Meeting with the world and exchanging information and ideas during the CIVITAS FORUM, the Transportation Research Board in Washington in 2011 and 2012, or the Shanghai Expo in 2010 is an effective form of networking and worth of further exploration. The established dialogue with the rest of the world should be continued and structured more firmly.

The European Contribution to TRB in Pecha Kucha or other engaging styles new to the urban mobility community can be better programmed and bundled quite in advance. It can become part of an exchange, prepared during the CIVITAS Forum and vice versa during the TRB. Ad-hoc and thematically-defined sessions in the context of TRB or other major events would be a very practical way of furthering cooperation.

NEW FRONTIER?

CIVITAS has overtime incorporated new areas worth of research and implementation as they were able to accelerate a more sustainable development in our cities. The emergence of Sustainable Urban Mobility Plans (SUMPs) goes to confirm this trend. However one pillar is still missing. There is no sustainable growth, contraction or simple adaptation in cities that overlooks the intimate relations between mobility and spatial planning. Despite plentiful of worldwide literature, forward-looking city practices, and some research strands funded by the EC in the late 1990s and early 2000’, the integration between these two crucial planning dimensions is still lagging behind. The guidelines on SUMPs touch upon it, but much more needs to be done, especially in city practice.

Also in light of the massive urbanization trends visible in the emerging economies of the world, CIVITAS should keep playing the front-runner and promote research, exchange and good practice in the domain that truly holds the destiny of healthier, safer, greener, and more livable cities.
Messages of our politicians

MR. ANDREA COLOMBO, BOLOGNA
If I had to describe the main priorities to support and promote sustainable mobility solutions I would start with raising citizens’ awareness about the necessity to change their means of transport and opt for more efficient and less pollutant ones, such as cycling and walking. Similarly, Bologna’s Municipality and transport providers need to strive to offer sustainable mobility services and opportunities that are as useful and attractive as possible. Making this change possible, cities also have to involve citizens and stakeholders as much as possible in planning, designing and implementing any new mobility services. The European Action Plan on Urban Mobility represents an essential instrument for mobility planning, guidelines and common goals at European level.

CIVITAS MIMOSA has exceeded Bologna’s expectations in terms of urban mobility benefits and advantages. We used the opportunity to implement, demonstrate and test innovative mobility solutions in the city that are more efficient and less pollutant. We got an international perspective by allowing the City and its mobility technicians to learn state of the art mobility practices implemented in other European cities, potential barriers and solutions. Even bad practices are important learning curves, since they can teach a lot about mistakes to be avoided. The project gave Bologna the opportunity to carry out communication and raise awareness campaigns to promote sustainable mobility in collaboration with more experienced partners. As a result, a greater citizens/stakeholder involvement and participation has been obtained.

MR. BRUNO PEREIRA, FUNCHAL
For us in Funchal the priorities with regard to Sustainable Mobility focused on reducing transport related emissions. We need to encourage modal transfer to more sustainable means of transport, to reduce traffic in the city centre and to promote conditions for an improved pedestrian mobility in the city centre. My desire is to turn Funchal into an even friendlier city for the people, with fewer vehicles, less pollution, less noise. In an ideal world, citizens themselves would solve their mobility issues, taking softer displacement modes and preferring public to private transport.

CIVITAS MIMOSA is contributing with important measures towards sustainable mobility and promoting significant partnerships among stakeholders of urban transport. It has set a focus on sustainable mobility issues, prioritizing them and in addition to this, the financial contribution is definitely significant. It stimulates and enhances the implementation of sustainable mobility measures. The contact and partnership with the other cities involved in the project allows constant sharing of ideas and information.

MR. FRITS LINTMEIJER, UTRECHT
To keep Utrecht attractive and accessible, we are focusing on public transport and cycling. We are not banning the car, but will do everything to stimulate people to take the bicycle or bus. We will also re-introduce the tram in the near future: a clean and efficient means of transport. The minimum ambition of Utrecht is to decrease the growth of car use by 50% in 2030. The cars that come in to the city will have to be as clean as possible.

CIVITAS MIMOSA has taught Utrecht a great deal about co-operation in European projects. The EU requirements and our own regular project plans reinforce each other, creating valuable synergy between research, implementation, evaluation and dissemination of results. I would wish that every citizen of Utrecht and everyone who comes to Utrecht makes a more conscious choice how to travel somewhere, when stepping out of the house. The city would have cleaner air, would be quieter and would in general be a nicer place to live in. We have to facilitate that people really can choose public transport and bikes and leave their car outside the city.
Messages of our politicians

MR. TAAVI AAS, TALLINN
In Tallinn it is a priority to develop sustainable transport and give priority to public transport. We put emphasis on providing accessible and high quality public transport service in Tallinn and improve the attractiveness of PT by offering incentives to PT users. Integrated land-use and transport planning is a requirement. The overall goal is to increase the share of sustainable transport in modal split; to achieve that objective we implement free public transport in Tallinn since January 2013.

In Tallinn 11 measures were implemented within the MIMOSA project, some of them were quite complex technical measures and some soft research measures. However, the following measures have an outstanding and long-term influence on local mobility: New contactless e-ticketing system and real-time information system contribute to raising the PT service quality. Eco-driving for bus drivers is a very successful measure in terms of decreasing fuel consumption, reducing environmental impact and cutting costs. Traffic monitoring system and red-light cameras are measures that help to calm traffic and improve traffic culture.

MR. MACIEJ LISICKI, GDANSK
Gdansk struggles with serious traffic flow problems, therefore we work hard on PT services quality improvement: investments in new PT fleet, upgrading frequency and punctuality, implementing bus lanes and improvement of safety and security perception. We want big traffic calmed/limited zones and cycling/walking shared space, with IT traffic management systems and the newly build south ring road we hope to sort it out. Our third priority is to enhance cycling and walking culture. We put a lot of effort into promoting urban cycling and better understanding and respecting rights among all road users.

The contribution of CIVITAS MIMOS is difficult to be underestimated. Through MIMOSA the EC gave us an unprecedented opportunity of using funds to try out, advance and stimulate new sustainable approaches and solutions. Thanks to MIMOSA we have seriously improved both actual and perceived level of safety and security of PT users and cyclists. The informational, educational and promotional campaigns, so frequently held within the project, were excellent occasions to raise citizens awareness about the multidimensional profits of sustainable transport modes and thus to influence their behaviour and everyday choices. I would like to underline is the extremely enriching experience to be a part of Civitas family based on the principle of best ideas and practice exchange.
Learn how to move better, to live in better cities

The project thus had the ambition to help shape a new mentality, whereby conscientious behaviours must be felt as rewarding, not a sacrifice as all too often happens today.

Communication with our citizens then becomes a pillar of the strategy, because a radical change of urban mobility is a function of our ability to convey this message.

These concepts constituted an innovative approach that will involve the whole community, as invoked by the name of the project: Making Innovation in Mobility and Sustainable Actions.

Summary

With CiViTAS MIMOSA, cities and support teams worked on executing 69 measures grouped around the eight CiViTAS urban mobility building blocks:

- Clean fuels and vehicles
- Collective passenger transport
- Demand management strategies
- Mobility management
- Safety and security
- Car-independent lifestyles
- Urban freight logistics
- Transport telematics

DRIVING CONCEPT

Local authorities are manifesting an ever growing attention to the issue of sustainable transport, promoting strategies based on the management of mobility demand, the diffusion of low emission vehicles, and the adoption of innovative technologies for traffic control, just to name a few popular tools. It all comes down to the fundamental right to be mobile, which must be guaranteed to the totality of citizens without burdening the environment they live in with additional pressure and without having negative effects on the city’s economy.

Fortunately, these concepts are becoming a priority not only in the minds of city administrators but also in the collective consciousness of society, with tangible results in cities throughout Europe. However, there is still a long way to go, with perhaps the most formidable obstacle posed by the natural contraposition of vested interests, which often brings institutions, corporations and even individual citizens to costly stalemates. The consequence is often a serious limitation to our capacity to implement innovative and radical policies capable of going along with and at the same time guide a rapidly moving society.

It is exactly this awareness that has stimulated Bologna, Funchal, Gdansk, Tallinn and Utrecht, together with their scientific and support team, to join forces in CiViTAS MIMOSA, which offered the unique opportunity to collectively explore, with a scientific and empirical approach, a field which is always in need of more investigation. Together with the rest of the CiViTAS family, the five cities were eager to demonstrate the viability of novel solutions and make them available to the rest of the community. With seventy demonstration measures, CiViTAS MIMOSA wanted to promote one guiding concept:

“Learn how to move better, to live in better cities”

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OBJECTIVES & INSTRUMENTS

The cities of CiViTAS MIMOSA are the expression of rather diverse physical, climatic and cultural conditions, as they brought together on the map a geography stretching from the Baltic north-east to the far Atlantic south-west. Despite this apparent separation, Bologna, Funchal, Gdansk, Tallinn and Utrecht were bounded together by the same fundamental appreciation of the problems to be tackled, the instruments to be used, and the objectives to be attained. In short they shared a vision, and the path leading to it.

With the exception of Funchal, which is smaller in size and with the peculiarities of an island, the project cities were remarkably homogeneous; in particular they had the same needs of:

- Improve the quality of life and stimulate healthier lifestyles
- Improve the environmental conditions
- Reduce congestion
- Increase security and safety
- Increase energy efficiency
- Attain all of this without compromising, and possibly improving, the mobility of citizens

Even if the departing point was quantitatively slightly different, as each city had its target, their ambitious goals pointed in the same direction, which was not achievable without winning the change in mentality. There was no better way to do that than engaging city dwellers in an all-inclusive approach, to show how the immediate and individual needs must be reconciled with the collective ones.

The project was consequently committed to launching a large-scale programme of integrated interventions that challenged, targeted and involved at the same time local authorities, transport operators, private companies and citizens.

The other cornerstone of the approach adopted by the project was linked to the individual actions connected to the streams just outlined with a complementary campaign of communication, awareness raising and involvement. CiViTAS MIMOSA considered any plan, any action, potentially destined to failure unless it was effectively made visible to all concerned.

The guiding concept was that any policy, simple or complex, couldn’t achieve the desired outcome if the recipients were not sensibly consulted and informed. A timely dialogue with the target users enables authorities to make better decisions and reduce the scope of poor acceptance.

At the same time, even the simplest initiatives fall short if people don’t know them! All the more if the goal is to trigger a change in mentality. That was why CiViTAS MIMOSA placed a lot of attention on the way end users were reached and involved, trying to improve the marketing, communication and information tools used to talk with citizens, schools, companies and institutions.

INNOVATION

Innovation within the context of CiViTAS has to be considered against the social, economic and even geographic context of the city.

Post-communist Gdansk and Tallinn have inherited command-led economic systems where the customer was often the last to be considered. Both cities have shown significant desire to reverse this aspect and increase communication and liaison with customers. Funchal on the other hand, although always in the western free economic world was isolated and did not have a mind-set oriented towards change.

CiViTAS MIMOSA provided the platform for new thinking in these cities. Bologna and Utrecht have different challenges borne of their already advanced stages of development where innovation and problem-solving were arguably even more difficult. CiViTAS MIMOSA, although comprising diverse city environments had surfaced innovation and development themes that transcended individual city measures and demonstrated how by working together we can demonstrate and validate new ways for European city development.

INTEGRATION

In CiViTAS MIMOSA, the project partners sought out the avenues of possible cooperation, for knowledge transfer, ideas spill over, network expansion and personal interaction which are the main drivers for participation together with the undeniable boost provided by the co-funds.
The whole project was inspired by the concept of “integration”, which is also the main force of CiViTAS, together with innovation. Integration was stimulated in a variety of ways, including two ad-hoc Integration Workshops meant to set up the pace for a successful team work.

The integration theme also cuts across the rest of the work plan, creating joint discussion platforms for what concerns the evaluation of impacts (through the Evaluation Group, the Evaluation Workshops and the Technical Visits), the awareness raising and communication campaigns (through the Communication Group, the Communication Workshops and the Technical Visits) and the policy assessment, which was steered by a high level and highly committed Policy Group.

Another integration level, arguably the most relevant of the project, relates to the synergies created by the demonstration tasks. The five cities invested quite some time in identifying the areas where they expected to give and receive know-how as a result of their CiViTAS participation. This exercise, which was fully illustrated in the work plan, produced interesting results in that it allowed determination of possibilities of cooperation that go well beyond the simple share of information, to the point that they led to the actual joint development of projects.

An example is that Utrecht and Bologna worked together on the measures concerning city-freight and low-emission zones, where Utrecht developed an integrated traffic management system. This offered an opportunity for the cities of Utrecht, Funchal and Bologna to work together and exchange experiences and know-how. The cities worked together to investigate the best alternatives, worked out technical necessities, and monitored the results of cleaner buses on the air-quality.

Other evidence of the inspiration that international cooperation can provide is traceable in the reaction that Gdansk had toward CiViTAS. The city was initially sceptical, having the local mindset on large-scale capital projects designed to make up for the years of neglect and vandalism. However, following the initial CiViTAS MIMOSA meeting and brainstorming, the City felt inspired to add especially the softer measures.

Promoting their infrastructure development, a chance to implement the anti-vandalism programme, to fully develop the seaside recreation area and take the first steps towards building an integrated traffic management scheme. Gdansk previously had no intention whatsoever to investigate bio fuels. The opportunity to join with other cities and especially to learn ‘for free’ how to go about these actions was very attractive. None of this would have happened without the opportunity provided by CiViTAS MIMOSA.

SELECT MEASURABLE RESULTS
During the preparation of the proposal, the cities made an accurate pre-assessment of the expected impacts of their measures.

A small list of headline results for Bologna included a combined 5-10% reduction of CO2 emissions and an addition of 10% of clean fuel vehicles (in the total of circulating vehicles) linked to a package of clean vehicles/fuels, 20% reduction of private transport by public employees, a 20% reduction of road accidents around schools, a 20% reduction of mopeds and freight vehicles crossings through the Limited Access Zone and a 20% reduction of reserved lanes invasion by private vehicles, thanks to its new ITS control systems.

Funchal expected a 10% reduction of CO2 emissions through the local clean vehicles introduction (mostly hybrid), a 20% increase in public transport user satisfaction thanks to the new green lanes, and considerable energy savings stimulated by the large scale eco-driving campaign and cycling promotion.

Gdansk projected a 15% modal shift from private transport to public transport, an important 40% reduction of vandalism in public transport vehicles thanks to the use of ITS surveillance systems, and an associated 20% increase in the customers’ feeling of security, and a 50% reduction in accident rate in the remodelled cycling lanes.

Tallinn predicted a 40% reduction of CO2 emissions due to the new clean vehicles, a 7% increase in the share of public transport thanks to the collective transport promotion package, a 25% reduction of accident rates at the remodelled pedestrian crossings, a 10% reduction of CO2 emission and 10% reduction of accidents through the eco-driving programme, and a 70% reduction of illegal access on bus lanes ensured by the new video-based surveillance system.

Finally Utrecht expected a 20% increase in the use of the park & ride facilities, 80 schools awarded with the Road Safety label, a marked increase of cycling use thanks to the 700 new public bikes at 50 locations and 2950 new parking places for bicycles, and a 100% increase in the urban delivery trips made through the local distribution centres and one regional traffic centre.
CLEAN FUELS & VEHICLES
**Context and Purpose - Alternative Fuels and Clean Vehicles**

‘Alternative Fuels and Clean Vehicles’ comprises a group of measures with the aim to increase the use of clean vehicles in bus fleets through demonstration actions implementing innovative vehicles and investigating clean fuels. Incentive policies were also developed to favour the use of clean private cars. The following paragraphs give a flavour of the work carried out in each city and the cooperation activities within the consortium.

The 7 measures realized by the consortium under Clean Fuels and Vehicles can be aggregated into two sub-themes:

1. Alternative fuels
2. Promotional policies

The sub-themes and measures are represented in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Bologna</th>
<th>Funchal</th>
<th>Gdansk</th>
<th>Tallinn</th>
<th>Utrecht</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alternative fuels</td>
<td></td>
<td>Mini fleet of clean vehicles for PT</td>
<td>Sustainable fleet</td>
<td>Alternative fuels</td>
<td>Alternative fuels</td>
</tr>
<tr>
<td>2. Promotional policies</td>
<td>Cleaner private vehicles</td>
<td>Electric and hybrid vehicles</td>
<td></td>
<td></td>
<td>Stimulating the use of clean vehicles by innovative parking policy</td>
</tr>
</tbody>
</table>

**Main technical achievements - Alternative Fuels and Clean Vehicles**

The **Bologna** study analysed different approaches for evaluation and choice, considering it the most appropriate, the “well to wheel” approach that is based on the evaluation of the whole energetic chain of bus engines starting from the fuel production to the bus wheel. The study shows how hybrid vehicles are the best solution both for companies that have already invested in alternative buses (trolley buses, natural gas buses) and reached the saturation point of infrastructure and for companies that have no possibilities to invest in infrastructure.

The **Funchal** study showed that the rough and mountainous landscape of the city very much constrained fuel alternatives. As an ultra-peripheral region, Madeira faces a set of constraints, such as logistic, fuel and maintenance cost over-runs, reduced vehicle lifetime and tourist pressure upon the territory. To cope with these barriers, the PT Operator modified the objective: the new aim was to provide an innovative service (smaller buses to less accessible areas), rather than innovative technology (hybrid/electric).

The solution adopted was a plan for the purchase of 18 mini buses (Euro V, at least) to operate during non-peak hours and on routes with less demand and with the ability to transport wheelchairs so that special services can be provided (the mobility-impaired citizens service, for example). 5 new mini buses were supplied within CIVITAS MIMOSA and they allowed assessment of the impact the measure has had in **Funchal** with the intention of evaluating the energy and emission performance of the new vehicles.

The **Gdansk** study analysed the current situation and the potential of the use of alternative fuel (in particular bio fuels) for road transport in the City of Gdansk. The prepared report gave a clear answer on the possibility of production and use of bio fuels in Gdansk.

**Tallinn** University of Technology studied legal expertise on implementation of bio-fuels in the Estonian legal environment with reference to European legislation; it studied the legislation regulating bio-fuels and implementation of bio-fuels and the legislative risks and challenges of their implementation in **Tallinn** and Estonia.

**Bologna** supported and refined local policy on boosting and encouraging private vehicle renewal, by confirming and developing the two strategies previously adopted: financial incentives and priority traffic facilities for cleaner vehicles for residents of the Municipality of **Bologna**. As part of the CIVITAS MIMOSA, specialised personnel carried out in-depth studies on how to maximise national and regional funds. The incentive funding system was reviewed, and the Administration’s management and supervision activities were optimized.
The procedure for giving vehicle-owners incentives for installing/purchasing of methane/LPG technology (25% of the full cost) was fine-tuned and updated almost annually. Facilities were introduced for less polluting vehicles, including free access to the Limited Traffic Zone (LTZ) and discount on parking tariffs. On the other hand, restrictions were introduced for polluting vehicles according to their combusted gas emission category. LPG and methane vehicles were exempt from these provisions.

Funchal had the goal to promote sustainable vehicles use and inter-modality in the city through the implementation of three components, namely a bike rental service, the green tariff and the promotion of electric and hybrid vehicles. Although the green tariff was successfully implemented and the promotion of electric/hybrid vehicles was done on a regular basis, the rental service was not achieved.

Lessons learned - Alternative Fuels and Clean Vehicles

The introduction of innovative clean vehicles in public transport fleets implies a relevant impact on the company organization: A company that wants to develop a “sustainable” bus fleet has to consider that sustainability has not only technological implications but has also cultural impact on the company’s organization.

Before the purchase on the market of low environmental impact buses, the company has to improve its internal processes: personnel training, adaptation of maintenance, adaptation/realization of infrastructure, and logistics for the supply of innovative fuels. This cultural impact explains why the introduction of new sustainable vehicles is possible only in the medium-long period. Without a “cultural” approach the company will face too high costs of operation and low service level of new buses.

Another fundamental requirement for the success of new clean technologies for bus fleets is the selection of a ‘mature’ technology: for a transport company, it is fundamental that the innovative technology chosen is a mature technology allowing buses to be in real service in the city every day and not only prototypes parked in a depot.

Any clean vehicles solution needs to be tailored to the characteristics and needs of each country and city: as an example, although urban public transport companies from the most advanced cities all over have Europe hybrid buses in their fleets, manufacturers do not propose buses that cannot manage the steep slopes of Funchal, where diesel powered buses seem to be the best choice for now.

Studies in the possibility of use of bio fuels developed in Gdansk and Tallinn recommended the project teams to work - right from the beginning - in close cooperation with a centre of scientific research that could provide scientific inputs and suggest which type of bio fuel is appropriate to the local context. Also to work together right from the start with a bio fuel producer/distributor, who could supply the operator with the bio fuel, is recommended. A crucial issue is to ensure political commitment from the earliest stage in order to work in a long-term vision, guaranteeing the implementation of the concept.
Incentives for green cars like discounting policies on parking tariffs for green vehicles can play a very important role in promoting sustainable vehicles in the city. It is important to establish a good strategy and involve all entities that deal with parking issues, such as car concessionaires, private companies that manage parking lots and hotels.

The possibility of giving national and local incentives for the purchase of new green cars and/or to convert old vehicles to clean fuels (LPG or natural gas) was successful in **Bologna**. It can be replicated in those cities facing the problem of an old car fleet to be replaced. However, it is important to note that the success of this kind of measure is not necessarily linked to the availability of public incentives for vehicle owners. Instead it depends on the presence of a general political and common interest in environmental issues, encouraging private car drivers to adopt cleaner vehicles/fuels. The limitation of access and circulation for “non clean” vehicles and the innovative parking policies that give incentives and fare discounts to clean cars, also influences public provisions aimed at giving citizens the real possibility of choosing lower impact fuels.

Funchal bought new hybrid buses that reduced traffic related emissions by 1.2% (CO2) and 21.8% (PM10). The total annual amount of pollutant emission from the bus fleet in Tallinn was reduced in a range between 0.7% and 1.0%, the reduction of bus fleet emissions in Funchal was approximately 2%.

In Bologna, the new hybrid buses tested have the potential to more than halve the CO2 emissions. Each bus substituted will save CO2 emissions of 212g per day.
**Context and Purpose - Collective Passenger Transport**

The efforts invested in Collective Passenger Transport are rather large, accommodating 14 distinctive and interesting measures from Tallinn, Bologna, Funchal and Utrecht. Improvements and technologically innovative concepts were accompanied by awareness raising campaigns and promotional activities. Most effective ways to address different target groups were worked out and implemented by the demonstration cities in their campaigns.

The 14 measures realized by the consortium on Collective Passenger Transport can be aggregated into four sub-themes:
1. Park & Ride
2. Fare and Ticket Integration
3. Network Improvement
4. Innovative Services

<table>
<thead>
<tr>
<th>Bologna</th>
<th>Funchal</th>
<th>Gdansk</th>
<th>Tallinn</th>
<th>Utrecht</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Park &amp; Ride</td>
<td>Park and Ride System</td>
<td>Park &amp; Ride with PT School Service</td>
<td>P&amp;R and Schoolbus</td>
<td>Park and Ride Facilities</td>
</tr>
<tr>
<td>2. Fare/ticket integration</td>
<td>Integrated PT Fare System</td>
<td>New Ticketing System</td>
<td>Ticketing on board</td>
<td>Recharging system for season tickets on contactless smart cards</td>
</tr>
<tr>
<td>3. Network improvement</td>
<td>Green PT Line</td>
<td>Improvement quality bus line city centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Innovative services</td>
<td>Control System for Dial and Ride Service</td>
<td>PT Communication System</td>
<td>Improvement of taxi customer service</td>
<td>Public Urban Transport Planning Centre</td>
</tr>
</tbody>
</table>

**Main technical achievements - Collective Passenger Transport**

**PARK & RIDE**

Creating Park & Ride concepts or improving existing systems was in support of the policy to improve intermodality. Intermodal policy is based largely on making more intelligent use of existing infrastructure and resources. According to studies, Park & Ride is an efficient solution to reduce on street parking and limit car traffic in the city centre.
FARE AND TICKET INTEGRATION

In Bologna even wider intermodal network was introduced, an integrated public transport fare system (Mi Muovo) was introduced to strengthen the intermodal network (BOL-2.1 Integrated PT Fare System). The system permits passengers to use different modes of public transport including buses, trains, car sharing, public bike, and Park and Ride service with the same electronic ticket.

With a proper marketing campaign people were informed about their possibility to combine different transport modes without extra effort.

Prior to CIVITAS MIMOSA only urban buses were equipped with self-service ticket vending machines on board. In Bologna, the on-board ticketing services were extended to the buses of the suburban areas. This extended on-board ticketing service was very positively perceived by customers and well accepted by the drivers.

Bologna also succeeded in creating of a widespread network of recharging points for season tickets cards. The recharging service is now available at self-service points of banks and post offices that are already used in everyday life and familiar to citizens. The system had an immediate success as the system launch coincided with the period of renewal of most season tickets. About 25% of the contactless smart cards were recharged with this new system.

In addition, an online application was developed which allows customers to recharge their season tickets directly on the transport company website using a credit card.

The City of Tallinn managed to create an innovative and secure contactless, online ticketing system. The objectives to enlarge the possibilities to purchase PT tickets, to facilitate the validation of the transport ticket and to introduce a number of combined-service and multi-journey tickets were well achieved. An additional objective to establish an automated collection of PT usage statistics to enable better PT capacity and route planning was also achieved. A pilot project was conducted on selected buses on which the related equipment [on-board computers, validating machines, and printers] were installed and tested.

The objective to reduce congestion and increase average traffic speed in the urban area was rather ambitious to fulfill only with CIVITAS MIMOSA measures. Finding additional methods or ways to improve and optimise the collective passenger transport network contributed to this objective. In Utrecht, the bus line between the city center and Overvecht was studied and somewhat improved, long-term actions will be taken in the future. A set of measures was developed, with the objectives to reduce travel times, enhance the reliability of the bus line and increase the number of users on this line.

In Funchal the numerous hotel courtesy buses that cause congestion in the city center drove the need for network improvement. A good alternative to hotel buses, a well-organised “Green PT Line” was provided. As a result tourist areas are now better served and environment issues respected.
The average use of P&R parking facilities in Tallinn increased from 14.5% to 23.6% between 2010 and 2012.

Green Line decreased the number of accidents involving buses in the target area by 30%; also influenced by a general decrease in traffic flows within the area.

Cities that are about to create Park & Ride or improve the existing service can benefit from the experiences of CiViTAS MIMOSA cities. Tallinn, Funchal, Bologna and Utrecht are different in terms of size, topography and cultural background; this adds value to the collected data. The conclusions and recommendations are therefore most comprehensive and valuable for future use.

The objective of this sub-theme is to promote public transport through innovative solutions that enable better quality of life and access to services for all social groups. In Funchal, special attention has been paid to disabled and elderly people, while designing the Dial and Ride concept. It is a new, demand based, public transport solution for reducing social exclusion of people that live in less well-served areas of the city.

The city of Tallinn implemented a very modern 3G-communication solution for public transport management in order to ensure information flows towards PT managers and users. The measure aimed at installing a modern communication system on 145 buses from the Tallinn Bus Company. The new system comprises driver communication units and operator workstations and is based on the 3G mobile communications standard. The objectives of the measure were to ensure better information sharing and faster communication between drivers and traffic operators.

In Utrecht, a new taxi certification system was set up in order to improve the quality of taxi services to public travelling to and from the Central Station. The new system required close cooperation with stakeholder to develop issue and manage the certificates; it required development and implementation of innovative infrastructural and enforcement instruments.

**Lessons learned - Collective Passenger Transport**

A difficult economic situation should be seen as a driver for boosting P&R measures as people search for cheaper mobility options including parking locations, therefore the economic crisis makes P&R more attractive and cities should take advantage of that.

The area where people have to pay for parking their car on the street is gradually growing in European cities. An extended paid parking area makes P&R systems more attractive and P&R becomes therefore more and more convenient to use. Big events offer possibilities for P&R service promotion to potential users, so events (in the city centre) that attract many visitors from outside the city, can be an ideal opportunity to make the visitors aware of the P&R facilities.

In the case of launching new mobility services, appropriate and carefully designed communications can make a big difference. Marketing low interest products (different mobility services) can be tricky and should start from awareness raising. The communication should concentrate on the convenience of the service for PT users and potential users. Communication to the residents should be more personalized, and information distributed on a door-to-door basis.
Rewarding is an issue to keep in mind when implementing measures, **Funchal** and **Utrecht** are examples of the cities that use rewards to boost their measures.

Prepare complex tender processes carefully. It is recommended that close attention should be paid to the technical requirements supporting the tender process.

One integrated PT IT-system has advantages - PT information and communication systems should be considered as one integrated solution.

From **Utrecht**’s experience to improve taxi customer service, the following recommendation can be drawn - the framework of responsibility of each participant should be clearly defined according to his ability in order to prevent conflict situation and rising of unrealistic expectations.

It is also recommended to make sure that the objective of the measure/project is embedded in policy documents beforehand.

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The running costs for Tallinn PT ticketing system reduced by 64% and the level of citizens’ awareness on the new PT ticketing system increased over four times.

Funchal supplies the tourist waterfront and city centre area with a high-performance bus service. Hotels in this area sell PT tickets at the reception desk with complementary information for their guests. In less than three years, 19 out of 42 hotel units located along the target area sold up to 5,000 ‘Tourist Kits’ each year.
**Context and Purpose - Demand Management Strategies**

Demand management strategies are designed for monitoring, regulating or addressing mobility needs in favour of a more sustainable system. At the beginning of the project, the partnership already had experience of this topic and had obtained good results. During the CIVITAS MIMOSA project lifetime, the Consortium cities further studied this subject in order to find other solutions to balance the right to mobility with minimal environmental impact. The learning cities have been invited to test solutions and have been helped to reach the best results, learning from the implementations achieved by the leading cities.

The 6 measures realized by the consortium on Demand Management Strategies can be viewed under three sub-themes:
- Parking policies
- Access restrictions
- Road pricing strategies

### Main technical achievements - Demand Management Strategies

**Bologna** and **Utrecht** decided to take advantage of digital devices to make parking more user friendly, either for the users or for the controllers. Main technical achievements on parking policies in the two cities are connected to this aspect and can be summed up as follows.

- **In Bologna**, the Pocket PCs for mobility operators to control on-street parking spaces have been replaced with new devices.

  Of 500 people queried, 56% think that the payment of on-street parking can facilitate them to find a free parking place. Feedback from control operators showed criticisms especially about bar code reading functionality: 81% of the controllers did not see improvements in their activity after the implementation of this feature, while the opinion on plate reading functionality was positive for around half of the operators (47%). On the basis of these findings, Bologna went in deeper to understand specific problems encountered and realised a new improved version of the palmtops software.

- **In Utrecht**, 500 new parking ticket machines have been installed in order to increase ‘payment behaviour’ and to make paid parking more user-friendly, reducing the costs for the Department of Parking by simplifying (and thereby intensifying) the enforcement of parking regulations and reducing the number of visitors to the parking desk.
Thanks to the innovation of parking permits and rates, the percentage of short-term parked cars with a ticket increased by 10% compared to the baseline. Furthermore, as the number of visitors to the parking desk decreased, the personnel costs of the Department of Parking did too because the staffing level was decreased by one full-time equivalent. Finally, the number of enforcement officers decreased from 63 in 2008 to 45 in 2012.

New regulations in pedestrian areas in the city center reduced the misuse of access to semi-pedestrianised roads, which ensure a low environmental impact in selected parts of the city, through more effective regulations and enforcement; the key result reached by this measure is a reduction of 42% in limited zone access with multiple passwords between 2009 and 2012, which means around 250 fewer vehicles every day of the week.

Control of the Limited Traffic Zone in the Historical Centre of Funchal achieved a traffic reduction of 56% of car entries. Beside this, access control system contributed also to reduce the length of stay in the LTZ, since the maximum time allowed per vehicle is 30 minutes.

A part from a traffic reduction in the central area, according to a survey conducted in Expo-Madeira most respondents considered the system useful (64.2% in 2012).
Lessons learned - Demand Management Strategies

One of the main lessons learned was the importance of managing the resistance to change: cities interested in Demand Management themes must evaluate beforehand how many difficulties may occur when Municipality decisions interfere with the habits and activities of ordinary citizens.

Widespread information campaigns must be planned to put across to residents the administration’s political commitment and objectives. This means that cities need to encourage the debate with all stakeholders resulting in a continuous fine-tuning policy adapting the restrictions to different contexts.

Another important thing to bear in mind is that the core business of software developers is not primarily maintaining existing infrastructure, but rather implementing new solutions that will keep them competitive.

Giving valid alternatives in favour of less pollutant vehicles is of fundamental importance when trying to change people’s habits. The implementation of every measure must begin with research into viable alternatives: parking possibilities in proximity to the area covered by the restriction, public transport, and infrastructure for bikes or pedestrians.

If these alternatives exist the habit of opting for the car as a mode of transport can be changed. In this context, in-depth market research has to be conducted. The great opportunities offered by technological tools make in-depth market research useful in selecting the best solution based on the needs of the city. Time spent on analysing the city’s needs and available tools is a useful way of finding the best solution for the specific problem.

The best solution to a problem is not necessarily always the most expensive tool or the one with more applications. Identifying the best tool is best strictly connected to the problem that needs to be solved. Beside an in-depth market research, a proper Evaluation Plan should be inserted in the project from the beginning.

Another important lesson learned is about “Political issues”: actions that involve long term planning and implementation require a continuous cooperation with the offices of the local government. It is important to be aware of the fact that modern techniques move forward faster than the political reality and public opinion; it is worth the while to allocate sufficient time and energy to informing these groups. Make sure you keep in contact with the local politicians and the political agenda throughout on-going consultation.

In this context, encouraging debate it is very important to share the Municipality’s objectives with all stakeholders involved. This means encouraging debate, directly involving people affected by a non-total top-down approach but, within reason, by a shared scheme. Involvement is a key issue for the success of projects that rely on field operation.

“License plate recognition system” is a system that automatically controls the vehicles that access the limited traffic zones; it represents an effective tool to manage and control the city’s LTZ. License plate recognition is more efficient than a conventional card since it allows a better control and management of the system. Moreover, other advantages of the system are the possibility of logging the parking time of each vehicle, the type of client and the number of entries.

European funding provides a great opportunity to explore and exploit, especially during an economics crisis; but at the same it time will be a good starting point for learning cities or newcomers in the field of European projects, to start approaching and evaluating the complex world of international projects and funding management.
Context and Purpose - Mobility Management

Mobility management is the instrument of communication with the citizens on the topic of sustainable mobility, its general policy and different travel alternatives. Due to the promotion of multimodal travel, different usage of the car, the promotion of the public transport, car sharing, soft modes, even changing the behaviour that leads to the travel need, mobility management can help to improve the quality of life of every citizen and preserve the urban environment.

The 11 measures realized by the consortium on Mobility Management can be viewed under three sub-themes:
1. Mobility management policy development
2. Marketing and communication
3. Education and training

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<th></th>
<th>Bologna</th>
<th>Funchal</th>
<th>Gdansk</th>
<th>Tallinn</th>
<th>Utrecht</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mobility management policy development</td>
<td>Policy planning and co-operation</td>
<td>“Awareness raising campaign for sustainable mobility”</td>
<td>Mobility Management - Mobility Week</td>
<td>Innovation of the system of parking permits and rates</td>
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<tr>
<td>2. Marketing and communication</td>
<td>Mobility Managers</td>
<td>“Mobility management, marketing tram”</td>
<td>“Mobility Management - Advertising and Promotion”</td>
<td>Mobility Management Policy</td>
<td>Hinder planning and Communication</td>
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<td>Rewarding Car Drivers for Avoiding Rush Hour</td>
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<td>3. Education and training</td>
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<td>Mobility Management Education</td>
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Main technical achievements - Mobility Management

In **Bologna** the innovative approach was to assign the role of ‘director’ to the Municipality, opening up dialogue with different stakeholders (associations, stakeholders’ groups), which provided ideas and directly organized their mobility events. The Municipality set up a common initiative, with a unique logo. This brought together all the activities to promote sustainable mobility through the CIVITAS MIMOSA measures and particular initiatives/measures concerning mobility issues in general.

**Gdansk** aimed at the development of a long-term communication concept to raise citizens’ awareness on alternatives for a sustainable transport. An external positive outcome of this measure was to make just as in Bologna visible the interaction between the several measures implemented in the framework of the CIVITAS MIMOSA and highlight the comprehensive vision for a sustainable mobility management.

Noteworthy was the high number of visitors to the European Mobility weeks with up to 3,000 participants every year. The measures that required strong changes in mobility habits and residents’ way of life received the lowest level of approval: road pricing policies and the automatic monitoring of the Limited Traffic Zone.
Marketing the tram in Gdansk was initially elaborated to promote the existing tramline connected the city center of Gdansk and the district of Chelm. However, it was also recognized that service quality of other tramlines required improvement. A positive shift of attitude towards PT of 10% was measured between 2010 and 2011. Secondly, there was an attitudinal shift towards use of Public Transport among residents, even of those who owned a car. The position regarding sustainable transport modes has improved, especially regarding the tram, which proved to be the most popular means of public transportation in Gdansk.

The most popular campaigns in Gdansk were the “Clean Stops” and the “Bike Fridays” with respectively 49% and 54% of citizens interviewed knowing about them.

The share of Public Transport in Bologna increased between 2003 and 2010 by 3.4%. Public Transport subscriptions sold increased by 50%. This means 4,000 users refrained from using their own private car. As a result, emissions reduced by 35% compared to 2008.

Alternative mobility options (i.e. public transport, cycling, car sharing and carpooling) should be offered and communicated as a package. Only then it can compete with private car use in the urban area. The “package” of a multimodal offer has to be accompanied by an active mobility management strategy, in order to be truly successful in the medium-long term.

In Tallinn 25% of the 1000 citizens interviewed were aware of the activities. Furthermore, the measure activities had a very high level of acceptance among citizens of Tallinn: 78% of the 1000 citizens interviewed gave good or very good appraisal to the Knitting Bus, the new bus terminal design and the new information panel design in PT stops.

Three measures all having the objective to limit the negative impacts on the traffic flows in Utrecht during the major road works in and around Utrecht and reduced the traffic delays. A decrease of the number of incoming cars from 4,000 to 2,000 per day during rush hours was the shared target result of all of these three measures.

In Utrecht research on awareness and understanding showed that awareness of road works is high, 65% know when road works in their neighborhood starts, 47% on the highways and 22% elsewhere. The traffic level was reduced by between 500 and 700 cars during the morning rush hours.

The reduction of school-home trips by cars was finally over 20% decrease of children driven to school and about 12% decrease of children driven from school five times a week. More than 95% parents who took part in the Walking Bus considered this a good idea and were satisfied with their children’s participation. More than 70% of teachers believe that the Walking Bus is a great idea.

Lessons learned - Mobility Management

The experiments of the CIVITAS CIVITAS MIMOSA partners (Bologna, Funchal, Gdansk, Tallinn, and Utrecht) show the importance of a full package of mobility management reaching from an integrated strategy, general awareness campaign to a personalised advice. The need for sustainable mobility is fully integrated in the majority of the Citizens mind set in the City of Utrecht, established in Funchal and Bologna, and significantly growing in Tallinn and Gdansk.

All cities are using stakeholder consultation to develop mobility management strategies, now integrated in the project through Bologna and Funchal. Their experiences proved that the mobility strategy should respond to precise and concrete needs in such a manner that the responsible authorities with a straightforward list can design and implement the problem solving measures. Utrecht uses a dedicated citizen platform to discuss sustainable mobility and bring (bottom-up) new ideas in mobility management related policies.
In Utrecht the surroundings of 54 primary schools were re-designed. This new school zone is uniform; the same colours have been used in all schools and areas, the same road signs and fences are placed and the same sign ‘SCHOOL’ is applied on the streets leading to the schools.

The ‘walking buses’ in Gdansk reduced car school-home trips by over 20%.

In Utrecht the percentage of residents that usually go to the city centre by bike increased from 51% to 55%

Bologna achieved a decrease of 42% of vehicles entering its semi-pedestrian area between 2009 and 2012; 250 less vehicles accessed the zones each day of the week.

The experience of Bologna showed that it could be recommended that all services are made available through a mobility agency. Indeed, certain visitors can feel frustrated to be informed at a certain place on the different existing mobility offers, yet being obliged to travel to another place in order to get the service.

Finally another recommendation is to improve and make the evaluation more systematic. A dedicated database and standardised evaluation methods and questionnaires can help to measure the effectiveness and efficiency of the mobility management efforts in relation to an improved of mobility in the city, and not only measuring general awareness.

The different experiments in the CIVITAS MIMOSA cities show that it is better to concentrate on realistic and progressive changes. Instead of promoting a radical change to alternative options, encouraging the use of another mobility option once or twice a week will have a better result in the longer term.

In order to efficiently create effective sustainable mobility campaigns it is essential to better understand the needs and preferences of the potential users. This knowledge can be obtained by a regular evaluation of the needs, and measuring impacts of preceding initiatives. Previous target groups that have successfully responded to awareness campaigns can become effective “associates” by spreading the word. The City of Utrecht is clearly advanced in this networking approach, which already inspired for example the city of Funchal in how to progress with their mobility management. Gdansk and Tallinn took notice of large stakeholder involvement as took place in Funchal and Bologna.

On-going evaluation is necessary to show the lasting effects of the interventions, but even more important to allow that the messages and actions of the mobility agency are updated. In order to promote more effectively collaboration between cities in a CIVITAS project, joint monitoring over time is considered necessary. This includes the organisation of regular workshops, but even better exchanges of each other’s transport professionals as well as regularly updated information and advice.

For more information on this theme click here
Bologna showed an increase in students who said they would not drive after drinking alcohol: from 65% before the training to 84% after witnessing night-time Police checks on car drivers.

Context and Purpose - Safety & Security

“Safety and Security” gathers six ambitious measures aiming at stimulation of non-motorized and collective transport modes through improvement of safety and security conditions of its users. During the last four years Bologna, Gdansk, Tallinn and Utrecht succeeded in implementation of measures differing from each other but at the same time having one common goal which was development of safe and secure transport in the cities.

The 6 measures realized by the consortium on Safety & Security can be viewed under three sub-themes:

1. Road Safety for school children
2. Improvement of safety-oriented road infrastructure
3. Improvement of safety and security of the public transport passengers

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<thead>
<tr>
<th></th>
<th>Bologna</th>
<th>Gdansk</th>
<th>Tallinn</th>
<th>Utrecht</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Road Safety for school children</td>
<td>Safer Road to School</td>
<td></td>
<td></td>
<td>Road Safety Label</td>
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<td>2. Improvement of safety-oriented road infrastructure</td>
<td>Urban Traffic Safety Plan</td>
<td>Road Infrastructure</td>
<td>Improvement of visibility and safety of pedestrian crossings and bicycle tracks</td>
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<td>3. Improvement of safety and security of the public transport passengers</td>
<td>Anti Vandalism</td>
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Bologna showed an increase in students who said they would not drive after drinking alcohol: from 65% before the training to 84% after witnessing night-time Police checks on car drivers.
Main technical achievements - Safety & Security

In Utrecht the main technical achievement was related to creation of a consistent scheme of labelling zones around schools. Among the main technical achievements within the measure should be mentioned the uniformed road signs informing car drivers about the school zone and the speed limit, special road markings that indicates school zones, fencing on pavements near the school exits, stopping prohibitions, slow ramps and speed bumps and road isles with poles and road markings. As a result of the measure 54 school zones were implemented. In opinion of 40% of teachers and 33% of residents the school zones increased safety of school children.

“Safer Road to School” in Bologna did not assume any significant technical achievements due to its soft dimension. The results indicate that 20% of pilot-school students participated in “pedi bus” action.

As opposed to Bologna the city of Tallinn tried to find new solutions for increasing traffic safety of pedestrian crossings and bicycle tracks. Doing so Tallinn reduced the number of cars exceeding the speed limit while approaching the crossing from 9% up to 3%.

Gdansk focused on improvements of the safety and security of cyclist and pedestrians along the seaside cycle path. The measure’s results show that 60% of the residents consider the municipal cycle paths to be safe. The level of satisfaction expressed by the users with regard to the cyclists’ speed along the pilot coastal strip increased by 20%.
Lessons learned - Safety & Security

The city of Utrecht highlights the importance of using the same materials and design in the whole city or even better: the whole region. This increases the recognisability. There were some difficulties expected in convincing other regional cities to use the same school zones; every city wanted its own model. A coordination of the region could help to prevent different kind of school zones.

Bologna with its measure 5.2 “Safer Road to School” evidenced that infrastructural interventions for sustainable mobility, for private traffic moderation, for public transport strengthening and development, should be necessarily joined by interventions to contrast the cities’ cultural and physical subjection to the car.

For Tallinn the most useful process was a regular monthly meeting with officials from Tallinn Transportation Department. The meetings lasted approximately for 1 year and supported the gradual process of finding suitable locations and solutions for improving of visibility and safety of pedestrian crossings and bicycle tracks.

The realization of a Traffic Safety Plan in Bologna needed the coordination of Municipality Police offices, Mobility offices and Public Works offices, in order to obtain integrated information management that supports all decisions, to guarantee the process continuity and reliability towards citizens.

Anti-Vandalism and Safety and Security of Road Infrastructure in Gdansk taught similar lessons. The implementation of measures indicated that investments towards more safety and security conditions for PT users or cyclist and pedestrians are not sufficient to reach the goal. What was highly important, the success of the measure came from a social campaign and actions constituting an information channel between the project team and the citizens.

Promoting the awareness of sustainable mobility among new generations should only be realized if there is a general interest from all stakeholders: parents, schools, Municipality, Police departments and city districts. Otherwise the implementation phase may encounter several barriers impeding the measure development and causing delays. As an example, in Bologna many activities were carried out only thanks to the voluntary contributions of police officers committed to road education activities.

In Tallinn the number of drivers ignoring red light at camera guarded intersections dropped to 9.5 times less in 6 months.
In Tallinn the number of accidents involving a public transport bus was reduced by 22% for training participants.

Improving visibility and safety of pedestrian crossings and bicycle tracks is replicable in other cities. As was noticed by participants during general CIVITAS MIMOSA meeting, before implementing new innovative solutions, simple repainting of zebra-markings should be done first. Worn-out zebra-markings are visible on all pictures of the descriptions of the technical solutions.

Bologna concludes that cities interested in implementing this kind of intervention must always invest preliminary resources in a detailed plan to investigate traffic conditions and safety topics. Firstly, a preparatory plan makes it possible to investigate the requirements of each area and choose the best traffic calming action. Secondly, in case of political changes/the lack of a leading role (as happened in Bologna), is the main guide to pursuing the goal of improving road safety.

For Gdansk the most important conclusion is that consultations regarding security should be aimed at road-engineering specialists as well as the Police, rather than just road users and mobility management institutions. The support of Non Governmental Organizations is also necessary when introducing safety solutions to cycling. This assures higher acceptance.

One of the main insights of Gdansk is that organization of social campaigns and promotional actions always has to deal with limited resources and skills. The best way to overcome these barriers is to create a civil society platform that will support the undertakings. The synergies obtained thanks to cooperation in the network of experienced partners lead to obtaining required outputs.
**Context and Purpose - Less car dependent life styles**

‘Less car dependent life styles’ deals with the reduction of the use of private car and the consumption of energy and fuel through awareness raising on all issues related to: optimizing the usage of energy in transport, the promotion of new behaviour, the promotion of alternative vehicles and promotion of car sharing as a real substitute to private cars.

The 10 measures realized by the consortium on Mobility Management can be viewed under four sub-themes:

1. Eco-Driving
2. Car-Sharing
3. New bicycle infrastructures and services
4. Smart and innovative services

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<tr>
<th></th>
<th>Bologna</th>
<th>Funchal</th>
<th>Gdansk</th>
<th>Tallinn</th>
<th>Utrecht</th>
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<td>4. Smart and innovative services</td>
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**Main technical achievements - Less car dependent life styles**

**ECO-DRIVING**

In **Funchal**, the PT Operator developed a bold plan based upon state of the art Israeli software called Trafilog. **Funchal** used complementary measures that helped to make the Trafilog monitoring effective. Trafilog is not yet a sound solution to track down individual performances, but can be found useful to get a glance at a more holistic concept of eco driving, understanding driver’s behaviour in terms of sharp accelerations, braking and turns as well as violations of speed limits.

In **Tallinn**, no special equipment was found to measure fuel consumption. In this city, the main technical achievements relied on the possibility to conduct accurate and full collection of the driver’s attitude; all data were collected during the driver’s work shift when passengers were boarding and leaving the bus and regular routes were driven.

In **Funchal** and **Tallinn** alike, driving events were geo-referenced. This IT feature enabled a complete and accurate understanding of the areas that require more attention from the drivers.
Eco-Driving is a matter of time and requires long-term commitment in a step-by-step process. That is why the PT Operator of Tallin has decided, upon the good results of CiViTAS, to make it a permanent measure and mandatory part of regular driver’s training procedure.

CAR-SHARING
New cars and more parking spaces introduced by information and promotion campaigns brought an increase in the number of car-sharing users. In order to avoid regular cars parking in the reserved parking spaces dedicated to the car-sharing scheme, **Bologna** has developed a radio frequency sensor that recognizes whether or not the vehicle is allowed or not to park there and consequently decides to raise or lower a physical barrier.

A consumer platform in **Utrecht** supports and promotes sustainability initiatives and projects. This platform has allowed identifying areas of the cities and groups of citizens with potential development for successful car sharing implementation. One of the most interesting results was the clustering of citizens in terms of lifestyle groups and in terms of changing customer needs, as shown in the picture below. This is a fine tool for marketers to take up from the CiViTAS work and research.

NEW BICYCLE INFRASTRUCTURES AND SERVICES
By encouraging less vehicle dependent lifestyles and reducing consumption of energy and fuel by private cars, Bus and Bike appear as typical examples of more energy efficient vehicle use in **Funchal**.

More cycling was a focus for **Gdansk**. As in **Funchal**, the measure development was fairly “soft” and its main aim was to nurture citizen’s attention towards cycling and consequently counteract traffic and spatial and environmental problems related to it.

The city of **Gdansk** has realized that the development of the cycleway infrastructure has not led to the expected increase in bicycle use, so there is the need for continual public education to ensure that any significant change in awareness results in a change of mobility habits towards more sustainable options.

**Utrecht** showed that stimulating the use of bicycles cannot be made only by increasing space availability. It has to be accompanied by a strong communication effort.

Financial difficulties were felt by all the demonstration cities to some extent. The fact that the bicycle service was involved in a European project with other cities helped to maintain the plan and study new solutions to increase the availability of bicycle parking facilities in the city centre.

SMART AND INNOVATIVE SERVICES
In **Bologna**, a dissemination campaign and up-scaling activity of MobiMart Citizens by Bicycle pilot has been realized by a European campaign involving other CiViTAS and non-CiViTAS cities in order to foster sustainable mobility and to disseminate CiViTAS MIMOSA best practices. Again, **Bologna** brings a great example of how a successful and high adherence measure conceived and developed in CiViTAS can become a spin-off for up-coming cooperation projects.

All cities have pursued measures with low investment costs and widespread awareness among the target audience. Thus the measures played a vital role in future urban/regional policies that can favour cyclists’ needs towards the creation of well, planned and designed cycling networks.

The **Bologna** experience with MobiMart was a success. Elements of this pilot were used for the European Cycling Challenge in May 2012, when seven European cities - from Spain, Estonia, UK, Greece, Italy and Romania - battled to collectively cycle the most kilometres in their city in that month. Every trip was tracked via GPS through the cyclists’ mobile phones and a web platform allowed real-time data sharing. At the end of the challenge, CiViTAS MIMOSA cities Tallinn and **Bologna**, came out on top ranking first and second.
Bologna has taken bold steps to incentivise citizens to shift mobility behaviours by introducing the so-called “mobility credits”. These “mobility credits” are based upon a validated conversion methodology that accomplishes Kyoto targets for emission reduction. This represents the introduction of an internationally innovative aspect, and therefore required the preparation of guidelines for issuing mobility credits, now available in Bologna.

**Lessons learned - Less car dependent life styles**

All in all, the cities conclude that Eco-Driving is a matter of time and requires long-term commitment in a step-by-step process. All cities have pursued activities with low cost investment and widespread results of awareness among the target audience. These activities played a vital role in future urban/regional policies that favour cyclists’ needs in creating well planned and well designed cycling networks.

Fuel consumption in Tallinn, reduced by 3.9% on average for participants of the Eco-driving training; in total 0.9% less consumption by the local public transport operator.

Eco driving training in Tallinn reduced the number of accidents involving a public transport bus 22% for training participants.
Context and Purpose - Urban Freight Logistics

Most European cities and especially the ones with a mediaeval hyper centre, like Bologna and Utrecht are implementing strategies to improve their city logistics, the transportation of freight, materials to the centre removing waste or other specific locations. Although heavy commercial vehicles generally account for a smaller share of the road traffic, they take a proportional larger share in terms of CO2, NOx and PM emissions. Coordination of goods delivery can be achieved through a simple regulation, promotion of alternative freight delivery behaviour, or large-scale implementation of an urban freight centre.

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<tr>
<th>Freight logistics</th>
<th>Bologna</th>
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<td>City freight delivery plan</td>
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<td>Construction logistics plan</td>
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<td>City distribution by boat</td>
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<td>Flexible access for cleaner freight traffic</td>
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<td>Distribution Centres for Fresh &amp; Perishable Goods</td>
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<td>Flexible access for cleaner freight traffic</td>
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<th>Freight information services</th>
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<tr>
<td>Marking routes for smooth freight and city logistics</td>
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Utrecht’s ‘Distribution Centre for Fresh and Perishable Goods’ is based on bundling fresh and perishable goods in an ‘Urban Distribution Centre’ using cleaner freight transport vehicles for the distribution.

Low emission zones

Utrecht’s CargoHopper marks a more flexible access for cleaner freight modes in Utrecht’s low emission zone. Only freight vehicles with ‘cleaner’ engines can enter this zone. With cameras and license plate registration these restrictions are effectively enforced.
Main technical achievements - Urban Freight Logistics

The concept of a ‘Beer Boat’ performs best in a compact infrastructure, with a dense distribution of clients along canals.

The elaboration of an overall logistic plan for large-scale construction work is a long-term process and should be implemented step-by-step. It leads to financial benefits for the stakeholders; start with pilot projects on a limited scale and integrate it in a long-term vision.

Between 2010 and 2019 the central railway station area in Utrecht is under reconstruction. A ‘Construction logistics plan’ was elaborated with the aim of minimizing emissions due to trucks and construction machines in the city and to establish an efficient traffic management for construction vehicles in the city. The main idea is that the construction materials should not be delivered directly to the construction sites in the city center, but to one central transfer site.

Utrecht’s City Distribution by Boat is known as the Beer Boat operating 6 times on 4 days per week, supplying more than 60 catering businesses. As a result of the CIVITAS MIMOSA electric Beer Boat, in the summer of 2011 the City of Utrecht signed a contract for another electric ‘Multi Purpose Vessel’. This Multi Purpose Vessel replaced the existing garbage boat that had been running in Utrecht to collect garbage from businesses on the wharves. In April 2012, the ‘Eco-boat’ was launched.

FREIGHT INFORMATION SERVICES

Tallinn’s ‘Marking routes for smooth freight logistics’ aimed at reducing the impact of heavy freight transport connected to the Old City Harbour in the city centre of Tallinn. Defining an optimal freight route from the Old City Harbour to the national road network was implemented. A new guidance sign system for freight traffic was installed at 41 junctions. 40% of the truck drivers interviewed have noticed the new guidance sign system and 31% consider that the new guidance sign system is useful for them.
Lessons learned - Urban Freight Logistics

The most important criterion for successful transfer to other cities - besides the presence of waterways - is that there must be strict limitations for road transport companies. Utrecht's restriction criterion is weight; transport companies have to use many small vehicles to be allowed to make deliveries by road.

The Cargohopper for example, substituted 4,080 freight vehicle trips during CiViTAS MIMOSA, which corresponds to the saving of 88 332 kilometres driven by diesel van or light trucks. This resulted in a reduction of 5,800kg of CO2 (-73%), of 5kg NOX (-27%) and of 1kg PM10 emission (-56%).

The main barriers encountered during the implementation were logistical challenges that made engaging new customers for the Beer Boat - as for the van sharing in Bologna - difficult. Transporters do not easily change their current schemes and delivery profiles. Logistical choices for chain stores are often made at their headquarters and implemented nationwide. A specific logistic solution for one city is often considered too difficult to incorporate in another.

The main barrier for implementing an urban freight centre is the major change for the individual catering providers. The delivery service that providers are currently offering allows them to establish a personal contact with their customers and they have control over the quality of the delivery service. Catering providers do not easily see benefits for them to shift from a traditional delivery service to a bundling good delivery system.

Freight transport has to be integrated in urban planning / and in efficient construction plans right from the start, so that freight transport solutions can be adopted at the same time.

Transhipment possibilities at distribution centres at the fringe of the city are very important. This concept can combine advantages for efficient long haul traffic with the advantages of a good environmentally friendly urban distribution system for short distances. Stimulating measures and good enforcement supported by modern access systems can increase the attractiveness of the concept.

Promoting consortia among operators (especially small operators) can help to optimise service costs and to support investments for technological tools and devices, for distribution platforms and for avoiding empty trips.

Goods flows from shops to consumers are of growing importance. Cities have to find solutions for the transport of purchases in order to reduce car traffic related to shopping.

The development of urban freight measures can only be the result of a long process of assessment of the problems, recognition by the stakeholders, public awareness and willingness to cooperate and improve the situation.

It is also recognised that one should start small. A public and stakeholder information campaign, environmental charters and a more restrictive regulation should at first be implemented as it shows the usefulness of the envisaged effects and can change the pre-existing mind sets. It might take some time before the effects are visible.

The freight delivery industry is subject to strong competition and works with small margins. Freight deliveries are too much in competition to be able to build up a relation of trust and realise a common project without the city taking the lead.

It seems that for the creation of an urban freight centre for fresh goods in Utrecht the city should pass through a cooperation of shop owners or the producers of the goods. They can create a demand for a grouped freight delivery, which will force the competing transporters to cooperate.
**Context and Purpose - Transport Telematics**

Innovative Intelligent Transport Systems (ITS) include innovative services for information and enforcement of traffic management. They have been widely used for a number of years in many cities across Europe and the results have been very important for achieving better traffic management and improving monitoring of mobility. These systems also allow the effective implementation of new regulations and facilitate local authorities to directly communicate with citizens.

CIVITAS MIMOSA cities wanted to demonstrate the effectiveness of new solutions for traffic monitoring, vehicle location, automatic enforcement and information, also based on the Galileo application.

The 15 measures realized by the consortium on Transport Telematics can be viewed under three sub-themes:
1. Technology for enforcement
2. Traffic control and management
3. InfoMobility

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<th>Gdansk</th>
<th>Tallinn</th>
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<tbody>
<tr>
<td><strong>Technology for enforcement</strong></td>
<td>Illegal on Street Parking Reduction</td>
<td>Stars: Automatic Enforcement of Traffic Lights</td>
<td>Cisium: New Traffic Control Centre</td>
<td>Bus Lane and Red Light Cameras</td>
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<td><strong>Traffic control &amp; management</strong></td>
<td>Illegal on Street Parking Reduction</td>
<td>Urban Mobility Control and Monitoring Centre</td>
<td>GDA ITS Development</td>
<td>Traffic Monitoring</td>
<td>Traffic control center and traffic management</td>
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<td></td>
<td>Cisium: New Traffic Control Centre</td>
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<td>Clean route planning for freight transport</td>
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<td><strong>Infomobility</strong></td>
<td>Mobility Services - SMS</td>
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<td>Location-enabled Mobile Search and Guidance</td>
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39
Main technical achievements - Transport Telematics

TECHNOLOGY FOR ENFORCEMENT

Bologna and Tallinn have been using Technology for enforcement, using similar types of technologies, to increase road safety and to increase the respect for road regulations. Tallinn decided to adopt cameras to control the observation of reserved lanes for buses, the speed limits at intersections and the observation of the red traffic lights. So did the Municipality of Bologna, equipping many junctions with STARS, a photographic mobile camera positioned in a protective device to control the respect of red traffic lights that produced large returns in terms of public safety and benefits for the Municipality too.

CISIUM, Bologna’s new traffic control centre was part of a general strategy implemented by the Municipality to improve congestion, especially for the Public transport service by optimising traffic management. CISIUM resulted in a general improvement in traffic conditions and it enhanced bus prioritisation at traffic lights. This led to shorter travel times on the bus routes.

The Scout System for the reduction of illegal on street parking resulted in a reduction of illegal on-street parking of 53% between 2008 and 2011.

STARS is the ‘Automatic Enforcement of Traffic Lights’ and represents a good example of employment of ITS for safety improvement. STARS resulted in a 21% reduction of accidents and a 28% reduction of injuries at all cross roads equipped with STARS. The number of fines issued increased significantly, by 88%, comparing 2011 with 2008.

TRAFFIC CONTROL & MANAGEMENT

Funchal’s Urban Mobility Control and Monitoring Centre aimed at creating a control and monitoring platform in traffic, transport and environment issues. The traffic software that was acquired had several plug-ins, including one to measure pollutant emissions. Cooperation protocols were established with 9 entities with responsibilities in mobility management. In this context, the mobility observatory was successfully launched.

The CiViTAS initiative gave Gdansk a unique opportunity to complete the TRISTAR concept providing more functionality of transport services during mass events (e.g. large football matches). TRISTAR is in implementation process and is planned to be up and running by 2014.

Traffic Monitoring in Tallinn was aimed at creating a traffic counting network for counting and real time monitoring of vehicle traffic on the main street network of Tallinn. The traffic experts gave very high appraisal to the system. A central monitoring system with such wide automatic counting and classification possibilities and automatic operative information transfer had not been used in Tallinn and Estonia before.

Traffic control center and traffic management in Utrecht was aimed at elaborating an efficient strategy for traffic system management on a regional level, and at implementing this strategy to improve the current situation by combining local and regional competences, which was achieved in close cooperation with developing the “Clean route planning for freight traffic”.

“Clean route planning for freight traffic” focused on defining a method to guide, in real-time, freight traffic along routes that are less congested, based on air quality measurement. Freight vehicles now adapt their routes according to the air quality conditions, and doing so air quality can be improved. The innovative aspect of the measure is the new conceptual approach: road traffic management based on air quality; linking with navigation and route-guidance systems.

INFOMOBILITY

Funchal’s Mobility Services - consisted of the development, implementation and promotion of an SMS (Short Message Service) and email based messaging service, mainly to provide traffic related information to drivers. 63% of potential clients/users of the service consider it as “useful” or “very useful”.

Funchal’s Location-enabled Mobile Search and Guidance consisted of publishing walks/routes in Funchal, preferably to be performed on foot or using public transport. Potential end-users/clients indicated that 67% consider it as Useful or Very useful.

‘Real-time information system’ installed electronic real time PT information displays in 6 bus stops and provided a mobile application for smart phones providing real time PT schedule information. This type of new technology/ITS and Real-time PT information based on vehicle positioning data, was not used in Tallinn before.
Lessons learned - Transport Telematics

One of the main lessons learned was the importance of ensuring that the system or service delivers what the users need and want, in order to maximise end-user acceptance and to try to implement the new service over something that already exists and is proven to work.

Rigorous subcontracting rules must be put in place in order to avoid or at least minimise the effects of substantial delays caused by such third party entities. Knowledge of the local traffic context is required. This operational context improves the internal personnel’s technical skills, enabling them to better understand congestion dynamics and traffic features.

In using ITS, it is extremely important to involve key stakeholders as soon as possible: It is very important to take into account that the service requires the production and availability of updated, good quality data/information, in particular real-time information related to road/street congestion and work.

Focus in the general approach on what is binding, not what is separating? Clarification of the role of all partners is crucial: the developments around a software development subtask group showed that new cooperation can lead to good bottom-up initiatives, yet that at a certain point it should be made clear what exact role of partners and workgroups are in the official organization of the Regional Traffic Control Centre.

Another lesson learned from Utrecht was the importance to go from a ‘temporary centre’ to ‘permanent centre’. The Utrecht case asked in fact for a fast solution to face the expected traffic congestion around the large road infrastructure works. A temporary centre responded to this timing issue. There are several technical limitations to link precise air quality measurements with active control strategies. Modelling is needed to link “real-time” air quality measurements to air quality levels at other locations.

NO2 and PM10 are integrated in the Dutch smog standard and this provided a good basis for monitoring as well. Similar methods will most likely have to be adopted in other cities.

Best practice examples from more advanced cities should always be taken into consideration. The best practice examples exchange may have had a crucial impact on the implementation process and helped to avoid barriers encountered before by other cities.

Implementation of the enforcement system needs specific knowledge about legislation and technical specifications.

Another important lesson comes from Tallinn experience regarding the purchase of equipment for enforcement and is about the importance of planning of amortization. Due to delays in implementation the amortization period during the project was only 9.5 months and could only receive 26.4% of the planned EC support.

A large part of “lessons learned” was about the importance of cooperating with many partners and stakeholders and to invest in communication campaigns to inform citizens or in personnel training: in fact, when many partners are involved in the preparation and operation phase, this might represent a risk for the implementation timetable.

Investment in communication strategies for the public is strategic: when the aim is improving road safety, the fact of punishing incorrect and dangerous behaviour is easily interpreted as a simple way for the Municipality to earn money.

Investment in internal personnel skills is of fundamental importance. Implementing traffic control centres, in fact, take a long time and requires a lot of work in terms of analysis, testing and developing algorithms. The implementation process showed that the daily work of internal personnel is fundamental and cannot be replaced by external contributions.
Overall Impact

Assessing the overall impact of CiViTAS MIMOSA on mobility is a bold task. Mobility is a concept and cannot be truly quantified. Summarizing if and to what extent CiViTAS MIMOSA’s objectives were achieved was done through presenting quantitative and qualitative data for the work done. Based on these arguments and the partial conclusions presented in this publication, the overall assessment is summarized in the Table below. It shows that from an evaluation perspective the measures contributed substantially to achieve the overall project objectives.

<table>
<thead>
<tr>
<th>No.</th>
<th>CiViTAS MIMOSA Specific Objectives</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1</td>
<td>Increase energy efficiency (through the decrease of fuel consumption)</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Reduce [CO2] emissions</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Increase security and safety</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Improve the quality of life and stimulate healthier lifestyles</td>
<td>XX</td>
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<tr>
<td>5</td>
<td>Achieve all of the above without compromising, and possibly improving, the mobility of citizens</td>
<td>X</td>
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NA = Not assessed · O = No contribution · X = Substantial contribution  
XX = Decisive contribution · XXX = Exceeding contribution

The overall set of CiViTAS MIMOSA objectives - as they were stated at the beginning of the project - did not specifically state objectives in terms of this learning process. However, it was part of the CiViTAS MIMOSA slogan, in which the cities stated that they wanted to “Learn how to move better” and learn how “to live in better cities”.

For more information on this theme click here
Potential Impact

Selecting the most relevant impacts of CIVITAS MIMOSA on mobility is not easy and will always be debatable since the pool to choose from is so rich. We have limited ourselves to 10 key thematic achievements per CiViTAS theme. Obviously more can be read in the CIVITAS MIMOSA Results Brochure. This followed by the key achievements for Evaluation, Dissemination and Policy.

KEY THEMATIC ACHIEVEMENTS

Alternative Fuels and Clean Vehicles

1. The introduction of innovative clean vehicles in public transport fleets represents a relevant impact on the company organization: The CIVITAS MIMOSA public transport organizations will include in their thinking that sustainability has not only technological implications but has also cultural impact on the company organization.
2. This cultural impact explains why the introduction of new sustainable vehicles is only possible in the medium-long run. Without a “cultural” approach companies will face too high costs of operation and low service level of new buses; cities must allow for time to realize this.
3. For a transport company it’s fundamental that the innovative technology chosen is a mature technology that allows to have buses in real service in the city every day and not only prototypes parked in a depot. It is now accepted that the success of new clean technologies for bus fleets lies in the selection of a «mature» technology.
4. Before companies purchase low environmental impact buses, they will improve their internal processes with regards to: personnel training, adaptation of maintenance process, adaptation/realization of infrastructure and logistics for the supply of innovative fuels.
5. Where cities plan to work with bio fuels they will work from the beginning in close cooperation with a centre of scientific research as well as with a bio fuel producer/distributor who could supply the operator with the bio fuel.
6. A crucial issue for every city was, is and will be to ensure political commitment from the earliest stage of any program in order to work in a long-term vision and guarantee the implementation in the frame of the research activities.
7. When promoting sustainable vehicles, cities will increasingly organize discount policies on parking tariffs for green vehicles, since they will most likely play a very important role.
8. It is not only important but also common sense to establish a good strategy involving all players who deal with parking issues, such as car concessionaires, private companies that manages parking lots, and hotels.
9. With the success of Bologna demonstrating the success of national and local incentives for the purchasing of new green cars and/or to convert old vehicles to clean fuels, other cities feel supported in promoting the same.
10. It is clear that success largely depends on the presence of a general political and common interest in environmental issues and in encouraging private car drivers to adopt cleaner vehicles/fuels.
Collective Passenger Transport

1. CIVITAS MIMOSA cities learned that keeping consistency in promotion is very practical. Therefore new P+R facilities in Utrecht will continue to make use of the branding style developed within CIVITAS MIMOSA.

2. Rather than a threat, a difficult economic situation can better be seen as a driver for boosting P&R as people search for cheaper mobility options including parking locations. Larger on street paid parking areas make P&R systems more attractive and affordable.

3. Big events offer possibilities for P&R service promotion to potential users, so events that attract many visitors from outside the city, will be an eminent opportunity to make the visitors aware of the P&R facilities.

4. Marketing low interest products such as different mobility service can be tricky and should start from awareness raising, but the properly and carefully designed communication campaigns will make big difference, when launching these mobility services.

5. The communication should best concentrate on the convenience of the service for PT users and potential users: the time it takes to arrive in the city centre for users of PT in comparison with those using the car could be communicated actively.

6. ‘Rewarding’ cleverly is a cost effective driver for the introduction of products like the Madeira Green Mobility Award; an award like this appreciates the work done by hotels in promoting the Tourist Kit, a kit that tackles unnecessary private vehicles between a hotel area and a hub. An award like this raises on its turn awareness of the ‘Green Line’.

7. More than before cities will prepare carefully complex tender processes. Close attention will be paid to the technical requirements supporting the tender process. Otherwise a situation can occur where more human resources have to be assigned for work the subcontractor was meant to be responsible for.

8. Cities feel it is best to work towards single and integrated public transport IT-systems, covering: driver communication, ticketing, positioning, real time passenger information. Trying to implement different parts of a public transport IT-system separately has too many disadvantages: substantial resources needed for separate processes, for acquisition and implementation, double equipment.

9. Cities will see to it that partners in a IT-system will clearly define their responsibilities, according to their competences, in order to prevent conflict situation and raising unrealistic expectations.

10. Strengthening sustainable mobility thinking among citizens in a long-term perspective. Embedding the objectives of projects in policy documents beforehand will help cities to keep track on the long run.
Demand Management Strategies

1. Cities are better prepared to manage the resistance to change and will assess more carefully beforehand how many difficulties may occur when they decide on actions interfering with private habits.

2. Widespread information campaigns bringing across to residents the administration’s political commitment and its objectives is recognised as an elementary tool. This allows for encouraging debate with all stakeholders and for continuously fine-tuning the policy and adapting restrictions to different contexts.

3. In making contracts cities will be more alert that the core business of software developers is not always maintaining existing infrastructure, but rather implementing new solutions that will keep them competitive. This alertness can prevent many problems with maintenance.

4. Cities will focus more on giving valid alternatives for the private car; this is of fundamental importance in the change of habits in favour for less pollutant vehicles. Only with these alternatives in mind the common attitude to choosing the car can be changed.

5. More than before on-line opportunities make in-depth market research, supporting the best solution based on the needs of the city, affordable. Time spent on analysing the needs and available tools is a useful investment in finding the best solution for the specific problem;

6. In identifying the best tool cities will focus more to the problem that needs to be solved which not always has the highest price.

7. “License plate recognition systems” are convincing and effective in controlling automatically vehicles accessing the limited traffic zones and will increasingly be deployed.

8. Actions that involve long term planning and implementation require a continuous cooperation with the offices of the local government. Cities realize in this context the relevance of a proper Evaluation Plan from the beginning of a project.

9. Cities are aware of the fact that modern techniques move forward faster than the political reality and public opinion; allocating sufficient time and energy to informing these groups is vital. They will also use the results of the project evaluation in their ongoing consultations with the local politicians.

10. Cities realize that involvement is a key issue for the success of projects that rely on field operation. Increasingly debate is encouraged in a ‘non-total top-down’ approach and by a shared scheme, directly involving people affected.
Mobility Management

1. A full and balanced package of mobility management measures, reaching from an integrated strategy, general awareness campaign to a personalised advice, is recognised as the way to go. Increasingly cities will make all services available through one mobility agency.

2. Cities will continue to organize stakeholder consultation in the development of mobility management strategies. Organizing citizen consultation in a dedicated citizen platform discussing sustainable mobility brings new ideas continuously.

3. Cities agree that it is important to improve evaluation and make it more systematic. They realize that a dedicated database with standardised evaluation methods and questionnaires can help to measure the effectiveness and efficiency of the mobility management efforts in relation to improved mobility in the city.

4. Costs / benefits calculations will be enhanced when modal split and mobility behaviour are part of evaluation of mobility management.

5. Cities are happy to refer their peers to the CIVITAS MIMOSA evaluation methodologies as described in the Evaluation Handbook; it provides a base for evaluation, improving their performance over time.

6. Instead of promoting a radical change—encouraging the use of alternative mobility option once or twice a week—the different experiments in the CIVITAS MIMOSA cities show that it is more effective to concentrate on realistic and progressive changes.

7. Cities have learned that offering and communicating alternative mobility options (i.e. public transport, cycling, car sharing and carpooling) as a package will make the offer competitive with private car use in the urban area, and complementary in the sub-urban environment.

8. The “package” of a multimodal offer, understanding the needs and preferences of the target groups and potential users through regular evaluation, has to be accompanied by an active mobility management strategy, in order to reach a true success at a medium-long term.

9. The target groups that have benefited of dedicated awareness campaigns can become effective “associates in spreading the word”. The City of Utrecht is advanced in this networking approach, which inspired already the city of Funchal. Gdansk and Tallinn learned from large stakeholder involvement in Funchal and Bologna and include the learning in their work.

10. On-going evaluation is deemed necessary by all cities, which want to show the lasting effects of their interventions, and even more importantly to allow that the messages and actions of the mobility agency are updated.
Safety and Security

1. Recognition as ‘school zone’ with a ‘Road Safety label’ proves already to be an incentive for schools to participate in developing standard road signs for school zones. Cities have good experience with involving schools in developing standard road signs. Developing standard road signs prevents confusion of different road signs.

2. “Safer Road to School” projects provide evidence that infrastructural interventions, private traffic moderation, public transport strengthening and development are necessary. CIVITAS MIMOSA cities learned that working with local project teams is important provided they have skills in understanding school management and priorities, understanding education priorities within the city, understanding mobility issues and understanding physical infrastructure.

3. The best results in developing an “Urban Traffic Safety Plan” is when three offices are involved: Municipality Police offices, Mobility offices and Public Works offices. Doing so obtains an integrated information management that supports all decisions, to guarantee the process continuity and reliability towards citizens.

4. In implementing “Anti-Vandalism” and “Safety and Security - Road Infrastructure” cities learned that just investing in more safety and security conditions for vulnerable road users is not sufficient to reach the goal. These measures may even go unnoticed without the support of soft/smart actions. Cities now include as a standard social campaigns and actions, constituting an information channel between the project team and the citizens to facilitate the direct flow on information.

5. Cities introducing new and more sustainable realize that they must evaluate in advance the difficulties they can encounter. Intense communication efforts are to be planned at the beginning and during implementation.

6. In setting up awareness campaigns of sustainable mobility among new generations and in order to gain a general interest from all stakeholders, cities need to include parents, schools, the municipality, police departments and city districts. Doing so will overcome several barriers in the implementation phase.

7. Classic wear and tear situations, like worn-out zebra-markings are all over in many cities. This is easily mended like with the “Improvement of visibility and safety of crosswalks and bicycle tracks”-project in Tallinn. This is easily replicable in other cities.

8. CIVITAS MIMOSA learned that an “Urban Traffic Safety Plan” requires investing in detailed plans for traffic conditions and safety topics. Cities realize that there is a need to investigate each area and choose the best traffic calming action; this in coordination with the different participants involved from a technical and organizational point of view.

9. Cities have continued their already extensive cooperation between the 3 different participants from inside the Municipality: Municipal Police offices, Mobility offices and Public Works offices. Consultation meetings regarding security should be attended by road users and mobility management institutions as well as by road engineering specialists and the Police.

10. Creating a civil society platform allowing citizens to be involved in the action, can lead to extraordinary results. Organization of campaigns and promotional actions is always related to the problem of limited resources and skills. A cost effective way to overcome this barrier is to create an on-line civil society platform supporting the undertakings.
Energy Efficient Vehicles

1. Bologna has taken forward bold steps to incentive citizens to shift mobility behaviours by introducing the so-called “mobility credits”. These “mobility credits” are based upon a validated conversion methodology that accomplishes Kyoto targets for emission reduction. Guidelines for mobility credits are now available in Bologna.

2. Rather than waiting till the execution phase, cities learned that it is more effective to perform context-oriented analysis in the development phase of a project, identifying what has been done and worked out well or less successful. The Research and Development phase when the project is being designed is more suitable for this analysis than the execution phase.

3. In Bologna, the up-scaling activity of “MobiMart, Citizens by Bicycle” was realized in a European campaign involving other CiViTAS and non-CiViTAS cities; this has fostered ongoing international cooperation and will be ongoing at a larger scale in the years to come.

4. Funchal used the facts sheets and evaluation reports of a measures developed in CiViTAS-SMILE. They proved relevant during the preparation phase of the Eco Driving measure. CiViTAS MIMOSA feels that promoting existing Fact Sheets in an accessible, ongoing and to be developed «Food for Thought» Portal would benefit the exploitation of CiViTAS.

5. All cities have pursued smart cycling campaigns, at low investment costs, gaining widespread awareness among the target audience. Cities will continue and build on these low cost campaigns that will play a vital role in designing future urban/regional policies for the creation of well planned and designed cycling networks.

6. Car sharing is an established approach in attempts to mitigate negative environmental impacts and to enhance the quality of public space, especially in inner cities. Cities will continue to develop car-sharing schemes.

7. CiViTAS MIMOSA cities believe that it would be interesting to elaborate common transnational plans so that local politicians can feel better motivated to implement energy-efficient CiViTAS measures for clean vehicles.

8. In order to create transnational plans for the exploitation of CiViTAS measures, CiViTAS would need the assistance of politicians in a CiViTAS-wide ‘Political Advisory Committee’ (PAC).

9. Meetings and site visits help revise and fine-tune the work in the cities. The results of site visits are not easily quantifiable, but site visits play a subtle yet paramount role in overcoming emergent problems such as the unforeseen problems that all the cities have felt.

10. The European Cycling Challenge launched in May 2012 was a success that engaged cities in and outside CiViTAS. Bike trips were tracked via GPS through cyclists’ mobile phones and a web platform allowed real-time data sharing. This international cooperation will be ongoing also in 2013 and will grow in number of cities and citizens.
1. The elaboration of an overall logistic plan for large-scale construction work is a long-term process and should be implemented step-by-step. The involvement of several and diverse parties in the project is crucial in its execution. The sharing of the experience gained in CIVITAS MIMOSA will be of incalculable advantage to cities that will start doing the same type of large-scale construction.

2. The Beer Boat appeals to many cities. The most important criterion for successful transfer to other cities - besides the presence of waterways - is that accessibility of clients must be very difficult for road transport companies. A Beer Boat concept performs best in a compact infrastructure, with a dense distribution of clients along the canals. The concept has been and will be transferred to other cities, in and outside CIVITAS. Berlin Looks at Adopting Utrecht Beer Boat

3. Reducing freight traffic contributes to improving the livable quality of the inner city, and will have direct positive impacts on catering providers business. The main barrier of implementing an urban freight centre, is the major changes that a bundling good delivery system requires in the individual organisation of the catering providers. Cities will play a role in trying to reduce that barrier.

4. Cities see it as their mission to integrate freight transport in their urban planning and in construction plans right from the start. Cities consider transhipment possibilities at distribution centres at the fringe of the city as very important.

5. Increasingly cities feel that the integration of freight transport solutions should be a precondition to permits for developing building districts, shopping centres and other large projects.

6. Promoting consortia of (small) transport operators can help to optimise service costs and to support investments in technological tools and devices, in distribution platforms and in avoiding empty trips. Cities will look for a focused role in making visible that a comprehensive logistic plan leads to financial benefits for all stakeholders.

7. E-commerce and pick-up points have a big potential but often are often not known by the general public or the offer is not suited to the consumer’s needs. Cities are well positioned to advertise them better.

8. The development of urban freight measures can only be the result of city driven process of assessing the problems, recognition by stakeholders, public awareness and willingness to cooperate and improve the situation. Cities are perceived as logical partners to play a role in offering support in the planning and execution.

9. The freight delivery industry is subject of intense competition and knows small margins. The freight delivers are too much in competition in order to be able to build up a relation of trust and realise a common project themselves. Cities can take the lead and have a role in convincing them of the benefits and offering support in the planning and execution.

10. It is of importance to continue to foster collaboration between European cities as done during freight conferences to avoid the cities having to reinvent the wheel. CIVITAS MIMOSA cities are ready and happy to be a part of that.
Transport Telematics

1. ITS deployment is a fully theoretical measure without an implementation phase. One of the main lessons cities take to heart is the importance of ensuring that the system/service delivers what the users need and want; this will maximise client/end-user acceptance over something that already exists and is proven to work.

2. If it’s necessary to develop a platform from scratch or a new layer of service on top of existing layers, it’s fundamental to make sure that it’s developed by people with previous experience in such work. Cities realise that it is of the utmost importance to start prototyping and testing a service as soon as possible in order to ensure more robust results and allow time to improve the system.

3. Cities interested in implementing a Traffic Control Centre will consider in advance that a large portion of the urban network must be involved in the project, in order to obtain significant benefits. Cities need to make rigorous subcontracting rules, in order to avoid or at least minimise the effects of substantial delays caused by a different interpretation by subcontractors.

4. In using ITS, cities are aware that it is extremely important to involve key stakeholders as soon as possible. The service normally requires the production and availability of updated, good quality data/information, in particular real-time information related to road/street congestion and work. Without all key stakeholders involved this can be the cause of delays and other problems.

5. Engaging providers and integrating the city’s platform with their platform can impose some technical and legal issues, which may require substantial effort to overcome. Focus needs to stay on the end users. The evaluation of the end users is always of crucial importance for the success of the project. Solving technical and legal issues will be seen in that light.

6. When many partners are involved in the preparation and operation phase, this might represent a risk for the implementation timetable. Negotiations and coming to decisions requires high amount of resources and time. In future projects cities will include this learning.

7. When purchasing equipment, the planning of amortization is important. If due to delays in implementation the amortization period can only start later in the project, only part of the planned EC support can be obtained.

8. Even if the resources for implementing a monitoring system are not sufficient for creating a full-scale network covering the whole city, the full network should be planned before implementing first parts of the system. This will prevent extra costing the future and may be taken into account in other, not yet planned, activities.

9. Investment in communication strategies for the public is a strategic choice. When aiming at improving road safety by penalising incorrect and dangerous behaviour, this is easily perceived as a simple way for the Municipality to earn money. With adequate communication strategies, the Public Administrations can demonstrate that the fines are only issued as a last resort when incorrect behaviour persists, despite all their previous communication efforts.

10. Implementing traffic control centres take a long time and require a lot of work in terms of analysis, testing and developing algorithms. The daily work of internal personnel is fundamental and cannot be replaced by external contributions. Investing in ‘own’ staff is of the essence; this should not be outsourced.
KEY EVALUATION ACHIEVEMENTS
As one of the pillars of urban project management, an elaborated evaluation of impacts and processes of each measure was conducted for all CIVITAS MIMOSA measures. The results obtained through the cooperation of the cities with TUB highlighted the measures’ achievements, allowed identifying challenges and solutions in the urban setting. The MIMOSA evaluation framework enabled the cities to learn from their own experiences. For example in the first application of Learning History Workshops within a CIVITAS project, measure specific barriers and drivers were intensively discussed on the local level. Beyond this, continuous peer-to-peer discussions were stimulated and allowed an intensive cross-city exchange of experiences.

The Handbook “Evaluation matters - a practitioners guide to sound evaluation for urban mobility measures” was a great step forward in issuing guidelines to practitioners to better understand and plan evaluation resources in the future based on the various experiences in CIVITAS MIMOSA. It illustrates the value of evaluation of urban transport measures and provides guidance for its success. The handbook will help to strengthen the evidence base for transport-related programs and policies in Europe and possibly around the world. Furthermore it will be an integral part in the courses at TU Berlin and supports the spread of evaluation methods illustrated with the handbook examples in the field of transport. As the evaluation handbook is the first step-by-step guideline available to the general public a second edition and/or a translation into different languages will likely prove necessary.

Another major contribution of the MIMOSA Evaluation Team was the ‘Transferability Workshop’ - a co-production with the Dissemination Team. Cities realized they could utilize the CIVITAS MIMOSA network as a market place for presenting their best achievements and reconsider, if and how specific measure ideas and designs of the other cities could be transferred to their own urban context. Thus, this format allowed deepening specific topics of evaluation with all cities involved and strongly contributed to a strong team spirit - a precondition for mutual learning from the measure processes. The results of these activities documented in the reports reflect this vivid, inspiring and outcome oriented atmosphere. It is strongly advised to hold Transferability Workshops in future projects.

KEY DISSEMINATION ACHIEVEMENTS
Enabling Cycling Cities: Ingredients for Success was a refreshing contribution to the body of knowledge in the field of cycling planning as it provided a limited number of no-frills and evidence-based facts that could help to solve the cycling puzzle. By inviting cities to take cycling even more seriously, the book is already now finding its way through a maize of people, organizations and groups who are spreading copies of the book in a social-networking way to local authorities, particularly policy executives and city planners. Velo Mondial and ISIS anticipate that the book quickly will see updating and enriching with future and new experiences in this booming field of mobility. A second edition will best highlight a number of focused issues relating to cycling like ‘Safe Cycling through Regulation and Infrastructure’ and ‘Integrating Bike Sharing Systems in Sustainable Urban Mobility Planning’.

Pas-Port to Cycling found its base in the book Enabling Cycling Cities: Ingredients for Success and is a database driven portal with 9 angles from which cities can look at cycling planning. Where the book focuses on ‘understanding the pieces of the puzzle’, the portal links more to the ‘ample literature and empirical evidence describing how cycling should be dealt with’. Velo Mondial will continue to enrich the database of the portal and will develop the cycling portal in a portal for sustainable urban mobility, obviously including cycling. This portal will focus on making CiViTAS and wider knowledge and experience available in a way that is aligning better with the times, focussing on the end consumers of the experience gained.

The CiViTAS MIMOSA Search Engine is up and running, is integrated in Pas-Port to Cycling and is now connected to CiViTAS and other databases, giving access to thousands of documents in the eight thematic fields:
Velo Mondial will gradually develop and offer dedicated ‘Search buttons’ as a novel tool in many CiViTAS projects, allowing ‘neighbouring’ knowledge to be found. Making the ‘Search Button’ a standard CiViTAS tool would make implementation more flexible. How this will work in reality can be seen in the chapters of ‘Enabling Cycling Cities, Ingredients for Success’. The second level Velo Mondial intends to develop the Search Engine to is making more types of data available from an enriched database focusing on Sustainable Urban Mobility Planning with search not only for documents and products, but also for video’s, pictures, blogs, advice, people.

CiViTAS MIMOSA researched into the variety of Digital Media and Smart Apps in the area of Sustainable Mobility that can be exploited by cities wishing to learn about this topic and find examples of what has worked elsewhere. The database/inventory created, as a result of this research, is publicly available online to anyone wishing to access it. It will be updated regularly and will be promoted using various online channels such asLinkedIn.

KEY POLICY ACHIEVEMENTS

The visit to the European Parliament was a success and the European parliamentarians suggested to ‘do this more often’. ISIS and Velo Mondial suggest to the successors in CiViTAS to come and pick their brains and ask for support on how to build on that experience and on how to structure the meeting and agenda.

International cooperation with the USA in the context of the Transportation Research Board was also a field Velo Mondial and ISIS explored together with the EC, and the established dialogue will be continued and structured more firmly. The European Pecha Kucha Contribution to TRB should be bundled and better programmed in advance. It can become part of a competition during the CiViTAS Forum Pecha Kucha presentations.

An annual Cycling Session in the context of TRB would be a very practical way of furthering cooperation. The next focus could be on exploiting the knowledge and experience gained on ‘Public Bicycle Systems’ in both the Europe and the rest of the world as visualized in the ‘Bike Sharing World Map’ that found a firm position in Pas-port to Cycling.
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New ways for European city development

Cooperation and communication: the development of multi-agency approaches, engaging with customers and even changing the way that city hall bureaucracy will work. CiViTAS MIMOSA was not afraid of public-private-partnerships and public and private cooperation for the good of its people. Allowing ideas from outside the country / city and working together was core to the function of CiViTAS MIMOSA;

Fuels: Every city is embarking on innovation within its own context. From first considerations in Gdansk and Tallinn through adventurous implementation in Utrecht, Bologna and Funchal to facilitation and promotional schemes in Utrecht and Bologna we wanted to demonstrate how sustainable fuels could be implemented in all environments. A frequent theme is differential (lower) pricing for parking clean vehicles and granting access;

Public transport was facilitated and developed not only through ticketing and integration with park & ride but where possible with water borne transport for people and goods. Significantly the needs of customers for ease of use, ticket purchase, integration, comfort and speed were taken into consideration;

Pricing strategies for access control were woven throughout the measures and linked with the clean fuel issues;

Promotion and Awareness: Bold use of media and leading edge up to date marketing techniques were demonstrated. Gdansk was sidestepping a whole generation of techniques and launching straight into the web marketing area. All cities implemented campaigns based on best practice. Significant was to make communications customer driven rather than operator or ad-agency;

Safety on roads and in vehicles formed a significant component. Infrastructure developments were unusual in the ways that transport modes were segregated and controlled. Bad passenger behaviour was monitored by CCTV and offended dealt with by new measures as an alternative to the criminal legal system;

Cycle promotion was a number of innovative aspects from cyclist skills through bus&bike, cycle and accessory design and a number of cycle loan schemes;

Logistics plans, imaginative alternative goods delivery systems and integration with road pricing all contributed to an ‘outside the box’ approach to goods delivery;

ITS measures featured in all cities. From first faltering steps in Gdansk where the concept was struggling for acceptance and resources through usage for identifying bus lane violations through total management systems to use for optimising route design, CiViTAS CIVITAS MIMOSA had the full range of innovative demonstrations to add to European knowledge.