

Design and implementation of methodologies for transport (CIVITAS SUCCESS) project(s) impact measurements

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Abstract: In order to assess the impact a European project has at the European Community level, specific methodologies should be developed and implemented according to the specifics of the evaluated project. A framework for this methodology is available within the projects' sector but every program and every project through its implementation team has to build its own instruments and adapt the European guidelines into a new methodology. In CIVITAS SUCCESS project, by definition, a transport and mobility project, a European organism (GUARD) was assigned to monitor the design, implementation and actual evaluation of the developed methodology. The evaluation and dissemination of the projects is based on how well the methodology is realized. In the case of CIVITAS SUCCESS project the methodological instruments used, led to results that changed the partners cities life.

Key-words: methodological instruments, evaluation, transport and mobility project, transport indicators, city life, framework, impact, specific results

1 Introduction

We called **transport measure** all innovations made concerning transport problems which improve urban mobility in terms of: introduction the hydride or electrical vehicles design and building of park and ride services or other new services, create the special areas with controlled access for pedestrians etc. Each measure is related with the potential impacts which could be associated with four main impact categories: economics, environment, societal and transport. In order to assess amplitudes for the impacts, we will use one index list and the help given by modelling, experimental assessment and some public investigations made by experts.

SUCCESS (Smaller Urban Communities in Civitas for Environmentally Sustainable Solutions) was a 4-year project, within the CIVITAS II Program, with partners from La Rochelle, Preston and Ploiesti. As an integrated project, SUCCESS has been implemented thanks to an extensive investment in the participating cities, a large range of stakeholders and integrated packages of demonstration measures.

The SUCCESS proposal was submitted by the "Urban Community" of La Rochelle (France) supported by Preston (UK) and Ploiesti (Romania) in response to the European Commission's call for proposals for indirect RTD (Research and

Technological Development Programme) actions under the specific program for research, technological development and demonstration: 'Integrating and Strengthening the European Research Area' and the thematic priority areas: 'Sustainable Energy Systems' and 'Sustainable Surface Transport'. Specifically it responded to Section 6.1.3.1.3 of 'Sustainable Energy Systems': alternative motor fuels: Testing implementation and transition strategies for clean urban transport – CIVITAS II; and to Objective 1: new technologies and concepts for all surface transport modes (road, rail and waterborne) testing implementation and transition strategies for clean urban transport – CIVITAS II under 'Sustainable Surface Transport'.

The general objectives of SUCCESS were to:

- Demonstrate that alternative fuels could be an efficient choice for urban transport matters; the target for all vehicle fleets was a decrease of 20% in the use of fossil fuels and a decrease of 10% in energy consumption, CO₂ emissions, particulates, NO_x and NO₂ emissions;
- Demonstrate that, with an ambitious package of mobility and traffic management measures, significant results can be provided regarding sustainable transport and energy policy;
- Demonstrate that cities in candidate countries can avoid the mistakes made in Western Europe, and

contribute to the development of their collective transport systems;

- Support related research and assessment activities including new, all-inclusive training initiatives and communication initiatives to disseminate the results and encourage transferability in the concerned areas.

The local demonstrations included the implementation of biodiesel hybrid vehicles (buses, vans and taxis), backed up with a range of initiatives including access control schemes, Integrated Pricing Systems, deployment of a car sharing fleet, innovative transport information systems and new concepts for city logistics. A characteristic of CIVITAS-SUCCESS was to address medium size cities challenges for a sustainable urban mobility. The impact of a project has different levels that need to be considered and evaluated: from the smallest measure implemented to the whole project and city level impact. One impact that has to be considered is also a project impact on local and European policies as well as the support and recommendations offered by the project to other cities. A form of the impact overview is showed in figure 1.

For any cross-site impact evaluation, it is necessary to define a set of common indicators and to determine those indicators in a comparable way at different sites. This enables a cross-site comparison or a generalization of the results provided by the individual projects/sites. Two basic requirements have to be taken into account when defining indicators: they must be able to clearly reflect the related performance or impact; and they must be capable of reliable assessment using the experimental tools and measurement methods chosen. In selecting common indicators, the main criteria to follow include relevance, completeness, availability, measurability, reliability, familiarity and independence.

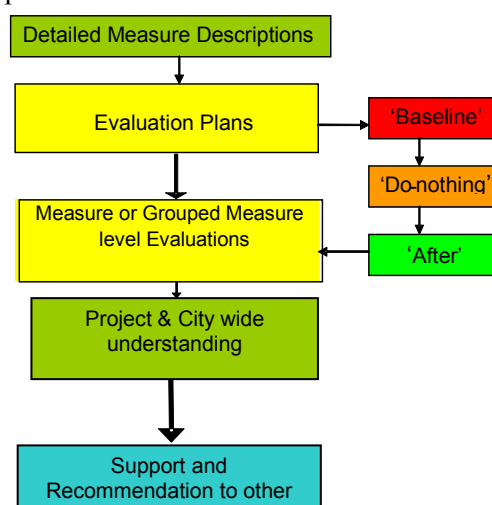


Fig.1 Outline of Impact Evaluation Framework

Common indicators in CIVITAS-GUARD were based on those developed by METEOR in conjunction with the project *evaluation* objectives in CIVITAS II (fig. 2).

The indicators and methods used in METEOR were developed with the CIVITAS I projects and cities and formed a basis for those to be used in CIVITAS SUCCESS. METEOR has considered 5 evaluation areas (economy, energy, environment, society and transport) and 28 indicators, divided into 12 subcategories: benefits, costs, energy consumption, pollution/nuisance, resource consumption, acceptance, equity, health and security, quality of service, safety and transport system. A number of methods are available to evaluate emissions and energy impacts from the CIVITAS II measures. Each method has varied in cost, ease of collection and how representative it reflects the reality. Key pollutants which are often measured in emissions studies are CO, HC, NO_x, PM₁₀, CO₂ and fuel consumption. The chosen approach can range from direct measurement of vehicle tailpipe exhausts either on-road or in the laboratory, use off records collected by the parties involved with a particular application or use of specific vehicle parameters which are then feed into the model. Local evaluation managers are best placed to understand the likely impact of such measures and so choose the appropriate tool. Most important however, is that the reasons for the chosen approach and explicit description of the methodology used, is presented with the final results. No approach is perfect and limitations of each approach need to be considered when drawing conclusions from the result.

For a few years, all demonstrative projects proposed by the European Commission have contained a short part discussing about the transferability: Crash [1], Priscilla [2], Niches [3], SUCCESS [4].

But in these projects, the transferability is concerned with understanding those factors which are important to the success of a measure and whether they can be transferred/ replicated in another city.

The receiver city will be just informed which are the barriers and will not have the possibility to estimate potential impacts of a project in the city, in agreement with specific urban and socio-demographic conditions.

In CIVITAS SUCCESS project the adaptation and detailing of the indicators and the wider evaluation framework has been reported in Local Evaluation Plans (LEP) for each site, setting out what, how and when measures will be evaluated. The final

presentation of indicators and assessment methods were set out in the Measure Results Templates (MRT), which contain the main results of the CIVITAS SUCCESS project. Data have been collected for each measure in accordance with the scale of that measure. For most measures implementation there will be a much smaller scale than corresponds to the full scale of the city, and

therefore measure-level evaluation has been appropriate. Impact evaluation of measures has also been considered at other scales, where appropriate:

- clustered measures (where similar actions are implemented in the same area);
- city level impacts (where analysis has been done on wider impacts).

NO.	EVALUATION CATEGORY	EVALUATION SUB-CATEGORY	IMPACT	INDICATOR
	ECONOMY			
1		Benefits	Operating Revenues	Operating revenues
2		Costs	Operating Costs	Operating costs
	ENERGY			
3		Energy Consumption	Fuel Consumption	Vehicle fuel efficiency
4				Fuel mix
	ENVIRONMENT			
5		Pollution/Nuisance	Air Quality	CO levels
6				NOx levels
7				Particulate levels
8			Emissions	CO2 emissions
9				CO emissions
10				NOx emissions
11				Small particulate emissions
12			Noise	Noise perception
	SOCIETY			
13		Acceptance	Awareness	Awareness level
14			Acceptance	Acceptance level
15		Accessibility	Spatial Accessibility	Perception of PT accessibility
16			Economic Accessibility	PT services relative cost
17		Security	Security	Perception of PT security
	TRANSPORT			
18		Quality of Service	Service reliability	Accuracy of PT timekeeping
19			Quality of service	Quality of PT service
20		Safety	Transport Safety	No. of injuries and deaths caused by accidents
21		Transport System	Traffic Levels	Vkm by vehicle type - peak
22				Vkm by vehicle type -off peak
23			Congestion Levels	Average vehicle speed - peak
24				Average vehicle speed - off peak
25			Freight Movements	Total no. of goods vehicles moving in demo areas
26			Modal split	Average modal split-PAX
27				Average modal split-vehicles
28			Vehicle Occupancy	Average occupancy

Fig.2 List of indicators

In addition, through up-scaling, an analysis has been carried out regarding the potential impacts and if the measure should be implemented on a larger scale. This has assisted the cities to forecast future impacts, as many measures will continue to be expanded in line with current policies for integrated mobility practices.

It was anticipated that the success of the CIVITAS-SUCCESS measures would be influenced not only by the technical solutions themselves, but also by optimising the process of planning and implementation including accompanying activities such as information, communication and engagement of stakeholders. This was in fact the case, and the influence of such activities has been recorded throughout the project via the process evaluation activities.

Process evaluation data have been collected and presented in two main ways:

- Via the collection of information on-site for activity reporting and process evaluation in a Project Management Tool based on MS Access. This has provided detailed time-series input to GUARD's analysis of process evaluation;

- Inside the measure results templates under a key section on 'Lessons Learned'.

An important output from the process evaluation has been for those involved in measure implementation (the measure managers) as they had to rate the importance of various drivers and barriers experienced during the implementation process, and highlight if these issues are likely to be relevant to other cities that will consider the implementation of the same measure.

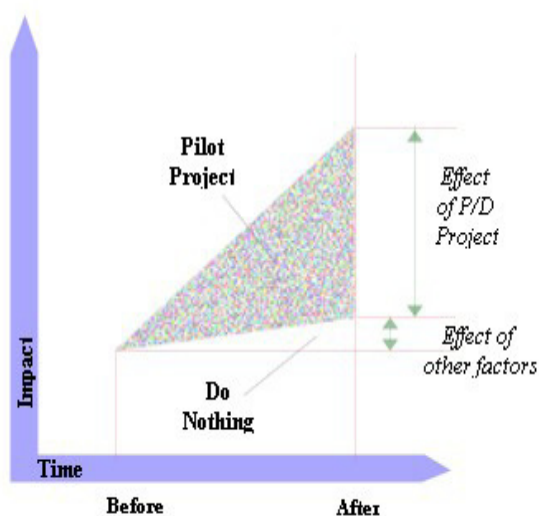


Fig. 3 From the Final Evaluation Report: Before (Baseline), Do-nothing (Business-as-Usual) and After (Ex-post) scenarios (from MAESTRO, 1999)

A common reporting framework in the form of templates (figure 4) has been developed in CIVITAS II that this forming the building blocks for impact evaluation analysis in the CIVITAS-SUCCESS project.

The domains in which new knowledge was acquired by partners during SUCCESS are classified into 4 types:

- Clean vehicles;
- Urban mobility improvements;
- New services;
- Information and ticketing systems.

Apart from the knowledge linked to the design and implementation of technical equipment, this paper stresses also the importance of several key factors which must not be neglected by cities wishing to implement sustainable mobility policies. These are:

- **the 3 pillars for mobility projects:** political decisions, technical coherence and involvement of stakeholders are the foundations of such projects. The management of urban mobility projects must take into account the influence of these pillars, and although there may be strong similarities between projects, the management of each one must be adapted to the domain concerned, to the specific challenges linked to its success and of course to the city in which it is situated.

- **project management:** mobility improvements are always complex projects. The variety of stakeholders implied and the different technical solutions which have to be integrated to meet the objectives require a global approach within the domain tackled by each project (e.g. cycling, vehicle sharing, and bus network), a good view on interfaces with other domains and a strong and efficient project management.

- **project construction:** As for project management, the construction of Mobility projects resembles other kinds of project, although specificities will of course arise when detailing technical solutions. Therefore the following steps will be found in each mobility project: concept development, baseline analysis, design of technical solutions, implementation and adjustment.

The SUCCESS partners will continue to exploit the knowledge gained during the project to motivate other politicians and transport managers to implement similar policies, measures and tools in their own projects. The exploitation activities and instruments were devoted to the stakeholders more involved in the investment decision making process or in supporting it.

The main target groups are: politicians from all levels of government, managers of transport

authorities, implementers of policies and initiatives, multipliers (experts, journalists), business associations, manufacturers of vehicles, equipments, information systems or any products who can benefit from the achievements and findings of SUCCESS. Many project deliverables are already and will be in the near future directly exploited by SUCCESS partners at the local level in each city.

Various technologies have been implemented during the 4 years of the project.

The impacts of these introductions have been analyzed through the project evaluation in order to measure the feedbacks and the progresses in urban mobility in the 3 cities and in other cities.

This was one of the bases to build the exploitation plan.

MEASURE-LEVEL RESULTS	
Measure title:	Project:
Measure number:	City:
<i>The Measure – what is it about?</i>	
M1: Measure objectives:	
M2: Measure description:	
<i>The Implementation – how was the measure implemented?</i>	
M3: Innovative aspects:	
M4: Situation before CIVITAS:	
M5: Design of the measure:	
M6: Actual implementation:	
M7: Deviations from the plan:	
<i>The Evaluation – how was it done and what are the results?</i>	
M8: Method of measurement:	
M9: Achievement of quantifiable targets:	
M10: Achievement of evaluation-related milestones:	
M11: Report on the measure results:	
<i>Lessons Learned – what do other cities, other actors and the EC have to consider?</i>	
M12: Barriers and drivers of the measure implementation / Process evaluation	
M13: Interrelationships with other measures	
M14: Lessons learned	

Fig.4 MRT – Measure level Result Template

With over 50 measures developed during the CIVITAS-SUCCESS project and accompanying evaluation activities undertaken over a number of years there are abundant results available at a detailed level. GUARD [8] have been given full access to these results in order to draw cross site and cross project conclusions about the relative impact and importance of CIVITAS measures. The full sets of results from CIVITAS-SUCCESS are contained in the Final Evaluation Report. Some illustrative results are presented here as examples of key findings from each of the main demonstration themes.

2 Clean vehicles and alternative fuels

In La Rochelle, a diester fuelling station was created for buses and fleets using vegetable oil and/or recycled cooking oil from a treatment unit which was implemented as part of the project. Apart from the process itself which does not use any chemical additives, a complete new organization had to be set up in order to collect cooked oil from "producers" and specific arrangements had to be established with legal authorities.

Buses in Ploiesti were converted to run on Liquid Petroleum Gas, which was a major step towards environmental improvement in the city. Apart from the retrofit itself, which lead to buses looking like new ones, the utilization in to day service allowed the operator to determine how to optimize performance and maintenance costs.

EEV buses demonstration in La Rochelle proved reliability, had reasonable maintenance costs and produced reduced pollution comparing with previous standards of bus: the main findings of the exhaust gas analysis comparing Euro 3 buses and EEV buses showed a strong drop in favour of EEV buses in carbon monoxide (-98%), hydrocarbons (-98%), nitrogen oxides (-68%) as well as in particulate matters (-89%)[4].

However, hybrid buses were tested in La Rochelle alongside with electric buses of a similar size and duties and hybrid bus and their performance was disappointing, with low levels of reliability/availability and frequent maintenance required. Despite this, the public view was positive when they were using the vehicles due to the interest and support for a clean urban public transport. Preston had difficulty obtaining suitable and cost-effective hybrid buses for their planned demonstrations, and used biodiesel in order to reduce CO₂ emissions from public transport.

LPG buses in Ploiesti met their objectives of reducing pollution of (CO) emissions and reduced

fuel costs. On the other hand, the maintenance costs of these buses were not reduced however (as had been as hoped), and there are some concerns about long-term robustness of retrofitting this equipment to older buses. The public reaction to the overall refurbishment has been very favourable.

3 Access Management

The main development of new knowledge concerned:

- **access controlled zones and dedicated bus lanes:** each has been extensively implemented during the project by the 3 partners. Design and implementation methodologies as well as the use of adapted technology were demonstrated in various situations;

- **car park management:** optimization of space, improvement of footpaths, integration with soft modes, car park design, lighting, information about local bus and rail links are the ingredients which must be cleverly mixed in order to have efficient and well integrated car parks;

- **optimization of bus networks:** the design and management of bus networks using new information technologies was one of the developments in SUCCESS. The knowledge gained was so important that the networks in all three cities were substantially changed at the end of SUCCESS. This included the specificities of seasonal adaptation and the integration of external coaches in the network (tourist coaches in La Rochelle).

Romania follows the trend set out by the European Community in improving air quality and city mobility by encouraging alternative transport modes and Public Transport instead of self car use. In these conditions, even without CIVITAS, traffic restriction would have been imposed for the city central area.

Ploiesti City Hall, in the spirit of sustainable development, promotes and sustains the design and implementation of pedestrian areas within the city, not only for the central area. The project CIVITAS SUCCESS came as an answer to the Municipality efforts in the modernization of Ploiesti Central Area.

Implementation of such measure was actually an objective on the Local Agenda 21, Ploiesti Plan for Sustainable Development.

The necessity of clear zone development in the city centre came from:

- Concerns regarding a sustainable traffic system in the city in the context of an increasing traffic congestion and air pollution;

- The need of coordinating - at a future urban development level - the high density zones and

pedestrian facilities needed for traffic safety and increased recreation facilities;

- The important number of inhabitants with no access to a car and for whom daily walking is a must;

- Increased number of elderly people for whom walking is important and beneficial. What should be also mentioned here is that the implementation of a pedestrian area in the city centre, was programmed by the end of 2010, and the CIVITAS – SUCCESS project offered at least 2 years advantage. More, the design of the access controlled area included not only traffic restrictions but a strategy to develop the area.

Since 1971, several streets in the city centre of La Rochelle have been pedestrian areas. Although the shopkeepers were first divided on this subject, the initiative finally proved to be popular. These pedestrian streets were then equipped with rising bollards in order to restrict access to the residents' cars and to delivery vehicles. With the support of the inhabitants in favour of reducing traffic flows, La Rochelle has spread access control zones in other parts of the city and it became an example on how access control should be managed. In CIVITAS SUCCESS project, by developing access control zones, La Rochelle aimed at restricting the access of the private car in the historical centre of the city. Furthermore, access control zones constitute secure areas for bikes and pedestrians. In some area, such zones make deliveries easier; combined with the creation of dedicated bus lane – they give priority to Public Transport comparing with the private cars access in these areas. Such actions were accompanied by a major overhaul of the city's traffic flow plan. They implied preliminary tasks including a wide range of local actors: in-depth studies on the potential impacts, a consultation phase with all the stakeholders (residents, businesses, car drivers association), an efficient cooperation between the local authorities (City and Urban Community of La Rochelle) and above all a strong political involvement, as it constitutes a tricky issue, notably among businesses and car drivers.

From the city-wide evaluation done in Preston and La Rochelle on air quality and traffic a clear result showing impacts of this scale (magnitude and geographical coverage) cannot be attributed to CIVITAS measures, and probably has not been achieved.

What has been learned from the evaluation of the CIVITAS-SUCCESS project is that significant city-wide impacts are nearly impossible to achieve from a series of demonstrations that are linked

thematically and integrated across mobility topics, but which are dispersed in the city so there is a more limited scope for geographical overlap. There is a choice between choosing to focus all measures on one area or corridor (which is then untypical and perhaps undermined by the behaviour of travellers in other areas of the city) or spreading measures across a range of areas to create a stronger foundation for whole-scale mobility transformation. The latter strategy can also take longer to produce results than is available in the CIVITAS project timescales, to a sufficient degree that they overcome the trends that are operating in the reverse direction and with some force.

However, what has also been learned from the evaluation of the CIVITAS-SUCCESS project is that measures are available and have been implemented and that they are working towards improved mobility and reduction in negative impacts from transport. Indications are that citizens are keen on them both in theory principle and practice; therefore this momentum must be maintained to develop a steady change in opinion and then behaviour about what are acceptable standard and mode(s) of urban mobility.

4 Integrated pricing strategies

Different software and telematic systems have been implemented and tested in the cities:

- **real time information systems:** such systems have been set up in all three cities. In this domain again, the most significant knowledge concerns the NAS countries. Through the comparison between implementations, specific deployment methodology may be designed for these countries;

- **integrated ticketing:** projects made during SUCCESS lead to the demonstration that the integration of several transport modes is possible in medium sized cities, both on the multi modality aspects and the integration of ticketing. In La Rochelle and Preston multi-service travel smartcards have been set up allowing customers to use the same card in different transport modes with different tariffs;

- **interoperability:** the integration of ticketing is based on the interoperability of information systems and coordination of organizations. So the development of common data bases between several transport operators was the basis of the learning.

The implementation of integrated ticketing products in La Rochelle has been a success, when measured against the core selected and monitored indicators. The seven-day pass was the most popular and accounted for a little over half of the sales over

a four-year period. On the other hand, the numbers of trips in public transport using 'Pass Rochelais' between 2005 and 2008 had also increased. Virtually all users were satisfied with the practical information provided in the Pass Rochelle's brochure concerning activities and prices.

Test versions of the interoperable Smartcard in Preston were trialled generating useful results on performance and usability. Feedback from users was that instructions on how to use the Smartcard were clear and the roll-out strategy was refined with a feedback.

Smartcard recharge should take place on board the bus. Paying by Smartcard was the preferred method of payment amongst respondents across all bus routes.

5 New concepts for goods distribution

The Transport Act (2000) requires Local Transport Authorities to prepare a 5 year Local Transport Plan setting out a transport vision and priorities for its area, the second Local Transport Plan covers the period from years 2006/07 to 2010/11.

As part of the plan, one of the aims was to improve the rural and urban areas by promoting new transport ideas for Preston and South Ribble through the Civitas project; by re-inventing transport in Preston and demonstrating a new standard of best practice.

A draft of Lancashire's first proposed freight strategy was produced based on the advice of the FQP. This would set a framework for addressing a wide range of transport related issues across the county of Lancashire.

It would illustrate the problems which were currently faced locally, whilst relating them to a regional and national context. This strategy would also look to potential challenges in the future, and a range of related actions.

In order to reduce the traffic congestion inside Ploiesti, in particular in the city centre and to reduce the air pollution in this area it was an absolute necessity to set up a City Logistics Strategic Plan.

Specific routes for freight transport were established in this way and an organized framework for transporters was created, respectively the Freight Forum.

As a result, the access of heavy duty vehicles was totally restricted in the city centre, and heavy traffic was directed to the city periphery. Levels of congestion, pollution and noise inside the city were lower than at the periphery of the city, where freight vehicles traffic had been re-directed. The Local Administration found that based on the Logistics

Scheme elaboration and goods distribution activity increased.

6 Innovative soft measures

Key results from implementing student travel plans in La Rochelle along with the 'Pass Etudiant17' were that the number of Pass subscribers increased over a period of two years. The level of awareness regarding the Pass had increased and Pass subscribers were relatively satisfied or very satisfied with the Pass.

By implementing cycling and walking infrastructure in Ploiesti, facilities, accessibility and connectivity were improved. New cycle lanes and walking routes were created and this contributed to lower pollution and traffic congestion.

According to a survey which inhabitants were asked to mention measures implemented within project CIVITAS – SUCCESS, 42.2% mentioned the cycling tracks.

Also the results showed that implementing this measure:

- was considered, by 70% of the respondents, to be helpful for stimulating alternative/ ecologic transport modes;

- 69% of the respondents considered that the measure increases the safety of bicyclist;

- 69 % considered that the measure has the potential to reduce in a big measure the level of pollution.

In the same manner, 68% of the adult population considers that the measure also increases the pedestrians' safety.

7 Telematics

Around 80% of respondents surveyed in Preston found the MARIO (mapping and travel information) website is easy to use. For the majority of information topics, respondents felt that such as GIS based information system is suitable for getting enough transport information.

The key result for the GPS system in Ploiesti was to reduce operational costs. In addition, public transport users knew about the real time information system and high levels of appreciation were recorded. Public transport users considered that the main improvement of the quality of bus stops was the installation of real time informational panels.

PT developed two surveys in order to quantify the implementation and the impact of such measures on Ploiesti citizens, particularly on public transport users.

Also, the efficiency of the system in terms of delays, period between departures and arrivals, as well as the seldom breakings of the public transport flow were monitored.

Inter-related measure 12.11 “Implementation of a GPS System for the PT fleet” and 12.13 “Implementation of a real time information system for PT”, were differently perceived by PT users. The awareness level was higher for “what they see” – the real time information system – than from what they benefit more – the GPS System.

With regards to real time information terminals in La Rochelle, the level of awareness, acceptance and satisfaction expressed by public transport users has increased. The same is also true of the real-time information service via SMS service. Six months after it was launched (July 2008), more than one in three users were aware of the SMS service.

The key results for the enhanced integration of the ticketing system in La Rochelle were that users who had used the smart card were generally satisfied. There was a very high rate of approval amongst bus users for developing a service to e-recharge travel passes.

8 City wide impacts

In order to evaluate the city wide impact, at every partner level as instrument was used a spreadsheet similar to MRT Report illustrated in figure 5. It was hoped that the measures implemented through CIVITAS-SUCCESS would have a positive impact on city wide traffic levels in La Rochelle, and thereby air quality. However, there was not a clear indication from the monitoring programme that overall city traffic levels had responded to the CIVITAS-SUCCESS measures.

However, some individual measures have proved and explained some estimated reductions in car trips:

- Measure 9.2 Bike Sharing: in 2007 over 6,000 car trips were avoided;
- Measure 11.1 Implementation of new structure for alternative modes: 26% of respondents stated that they used the cycle path mainly for home-to-work or home-to-school travel and claimed that they changed their main mode of travel after the cycle paths were opened;
- Measure 11.2 Business Travel Plan: between 65,000 and 85,000 car trips could be avoided.

It would appear that collectively the CIVITAS-SUCCESS measures in La Rochelle have not had a measurable impact on traffic levels at the city level, and therefore air quality.

CITY-LEVEL RESULTS	
Indicator title:	Project:
Indicator number:	City:
Evaluation Area:	
The Indicator – what is it about?	
C1: Local objectives and quantifiable targets:	
C2: Indicator description:	
C3: Context and relevance:	
The Evaluation – what are the results?	
C4: Method of measurement:	
C5: Achievement of quantifiable targets:	
C6: Report on results:	

Fig.5 City level Result Template

Impacts are difficult to prove and are likely to be dominated by population growth and seasonal variations.

For the Preston site an analysis of emissions and predicted air quality was carried out. Over the evaluation timescales for the CIVITAS-SUCCESS project the trend in air quality was one of general improvement, with emissions and subsequently concentrations of all pollutants seen to be decreasing. However, this decrease cannot be clearly and directly attributed to the measures.

The analysis of the impact of individual measures in Preston did show, however, that the actions undertaken within CIVITAS-SUCCESS are leading to a decrease in pollutant emissions and over a larger scale actions of this type could have a significant effect.

In the case of Ploiesti, all measures were demonstrative ones and the impacts are not easily separated from the other changes in the city, such as changes in land use and the reductions in emissions resulting from improvements in vehicle technology.

In Ploiesti major surveys were carried out to understand the changing perceptions of integrated mobility measures implemented during the CIVITAS experience. While a relatively small proportion of Ploiesti’s population had heard of the CIVITAS-SUCCESS project (11% of survey respondents) a higher proportion are aware of the measure the project has delivered. The expectations of respondents are high and they believe that the measures implemented will have a positive and lasting impact on many aspects of life in Ploiesti.

9 Conclusions

As SUCCESS was a demonstration project, it was the place to experiment with innovative transport technologies and to measure changes in the transport behaviour of the users.

In this sense, there were no "products" developed during the project but mainly new practices to use existing or innovative products or combination of several products. As a consequence, there was no need to set up specific arrangements for contractual ownership of results, or for potential industrial and intellectual rights.

In order to reach the mentioned objectives, the exploitation strategy was split in several types of actions:

- to extend the application area in SUCCESS cities (for instance to develop new access control zones);
- to transfer the knowledge on most efficient practices which have been developed during the project; this will be done through various dissemination and training channels;
- to help other cities to set up urban mobility projects.

The benefits of SUCCESS in the 3 cities will last for a long time and many of the successful demonstration projects will continue. However these successes generated new ideas and new projects as continuation of the already implemented or the brand new.

For La Rochelle Urban Community, the most significant future projects which are already in design phase are:

- concerning the vehicles: the extension of the EEV bus fleet, the introduction of electric vehicles in car sharing as soon as they will be available (in late 2010);
- the extension of the area of the cooked oil collection, to all the touristic towns of the Urban community and maybe as far as Rochefort;
- the development of BHNS (Bus à Haut Niveau de Service / Bus Rapid Transit) lines linking suburbs to city centre;
- the implementation of new circular bus lanes (2010) to match the requirements of the customers
- to experiment with a dedicated lane for automated electric vehicles in self service;
- the improvement of real time information systems using numeric nomad technologies;
- several research works have already started to develop the methodology and the prototypes of simulation software developed during the project. Two new PhD theses started in 2009 on urban mobility topics directly linked with SUCCESS results;

- a Masters course, specialized in Urban Mobility was launched in March 2010; designed in collaboration with the CNAM (Conservatoire des Arts et Metiers) it aims towards professional training for urban mobility specialists.

For Lancashire County Council and Preston:

- the development of demand responsive transport will be applied in as many new areas as can be identified with known demand. The projections are: Maximum 2009: 1 further area, assuming funding for new bus. Practicable 2015: 2 new dial-a-ride services operational;
 - the extension of the car park approach to new sites based on public/private consortium the extension of cycle paths to the Lancaster / Morecambe area and if funding can be obtained, a roll-out to other towns in the East Lancashire area will be considered;
- In Ploiesti, the projections concern:
- the development of real time information of passengers, particularly the installation of information panels;
 - the creation of new access zones in the city centre;
 - the extension of cycle paths and accessible infrastructure;
 - the medium-longer term plans will focus on new bus purchase of the cleanest standard technologies, whether CNG or latest diesel.

Knowledge transfer relies mostly on dissemination and training activities. These are presented in the second part of this document and for each of them the "beyond SUCCESS" life is examined.

Apart from classical dissemination media (press, web sites, ...), the main categories of actions are: **conferences and scientific articles** based on the exploitation at research level of SUCCESS achievements are and will be produced in the next coming years, either to promote new findings or to evaluate the results of the demonstration projects, **local study tours** will continue to give opportunities for companies to show implemented technical solutions on site, enhancing the networking process, and for other cities to benefit from the real-world demonstration of partner achievements.

The methodological guide as well as the Urban goods thematic brochure will be widely disseminated.

Training: several training sessions are already planned in the coming years to make available and to explain SUCCESS achievements to different target groups.

As a complement of the previous transfer activities, SUCCESS partners plan to be involved strongly in the development of future urban mobility

projects, at European or national level, which will have the same global approach as the one developed in CIVITAS. The aim of this is to develop further knowledge or new practices according to the evolution of technologies or society requirements.

The specific actions which will be realised in the future are:

- **contribution to national CIVITAS task forces**; this was initiated during CIVITAS II in France and United Kingdom.

The French Taskforce will be continued through the CIVINET initiative (proposed by TTR and EPC working with Toulouse and GART). The UK / IE Network led by LCC with the support of TTR will also be continued through CIVINET.

The Romanian Taskforce composed of Ploiesti and Suceava (CIVITAS II), Bucarest (CIVITAS I) could gather the cities of Craiova and Iasi (CIVITAS Plus).

Through CIVINET, the concept will be extended to Spain, Italy and Slovenia, and promoted in other countries.

- **participation in new demonstration projects**: this was also initiated during SUCCESS and the 3 partners are already involved in other projects which are the continuation of SUCCESS measures, for instance BIOSIRE for CdA La Rochelle (Europe, best practices for tourism transport), and CIVITAS-ARCHIMEDES for TTR. Partners also helped other organizations to build projects like CdA La Rochelle for CdA Poitiers.

- **involvement in national urban mobility organizations**: although this existed for all partners before SUCCESS, the achievements and lessons learned during this project helped partners to take an expert role in national organizations dealing with urban mobility and to influence funding decisions and project orientations.

For instance: CdA La Rochelle or EIGSI through respective networks like Predit or Interop VLab (ex-European NoE); Ploiesti as a representative city for the NAS, will help to analyze the transferability of western technologies in neighbouring countries.

- **development of new knowledge through PhD thesis and research works**.

Four PhD theses were launched during the SUCCESS project, in direct link with the improvements and innovative measures that were set up. Two are ended and the other two will end in the coming year; however, because SUCCESS, as well as other CIVITAS projects, was a real source of new urban transport

practice, research partners will continue to investigate the rich material in order to propose new organizations or transport modes for the future.

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