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0. Introduction

This report describes the defined **objectives** of the SPUTNIC project, the **methodology** used and the **results** obtained and the **outcomes** reached in terms of project coordination and management as well as products and dissemination activities. Furthermore this document can be regarded as an **advice-giving handbook** for future Coordination and Support Action in order to learn from SPUTNIC's experienced **achievements and barriers**.

1. Project execution

1.1. Overview of general project objectives and structure

The SPUTNIC project was a Co-ordination Action, which focussed on local and regional public transport (PT), as specified in Research Domain 1.2 High Quality Public Transport, Part B. It started on 26 July 2006 and lasted for three years. SPUTNIC built on the outcome of the VOYAGER project and was dedicated to challenges faced by local and regional PT systems in transition. SPUTNIC focussed on four priority areas of PT systems:

Market organisation

This cluster focussed on topics related to organisational aspects of the PT market and provided practical support for the sector to master the ongoing changes of the business environment. The knowledge development was based upon the input provided by participants in this action and has:

- Analysed options for co-operation between PT actors within a competitive environment to increase the overall efficiency of the PT sector
- Reviewed existing practices for optimisation and integration of tariff and fare systems to establish best practices and provide guidance for the development of fair revenue distribution systems within multi-operator systems
- Reviewed innovative financing models and assessed their potential to broaden the financial basis for PT related investment

Customer Relations

This cluster looked into the interrelations between the PT providers and their customers. It dealt with issues like mobility data and travel patterns, the image of PT, marketing strategies and customer relations management. The knowledge development was based upon the input provided by participants in this action and has:

- Provided guidance and tools for monitoring and analysis of mobility behaviour to develop a sound basis for planning of public transport services
- Identified best practices for PT sector image improvement and successful approaches to communicate its value and benefits to the general public and selected target groups
- Supported the realisation of a proactive customer approach and dialogue, which acknowledges passengers as customers with a choice of modes



Corporate Management

This cluster dealt with organisational and management aspects within PT organisations. Potential working areas included human resource development and management, knowledge management, business organisation and planning including cost management. The knowledge development was based upon the input provided by participants in this action and has:

- Established the potential for re-structuring public transport companies to streamline internal procedures and improve the efficiency of management and operation
- Identified soft and technical skills, which are gaining importance within the changing business environment of the public transport sector and providing guidance embed those skills in new recruitment and qualification strategies

Equipment and operational aspects

Efforts of this cluster were dedicated to operational and technical aspects of the PT business and focussed on infrastructure and fix installations, rolling stock and related equipment, safety issues as well as operational and fleet management. The knowledge development was based upon the input provided by participants in this action and has:

- Assessed the potential of fleet modernisation and improvement by upgrading of rolling stock and its infrastructure interfaces
- Reviewed migration strategies of innovative technologies into existing operational and management procedures and provide guidance for a smooth and effective integration of such systems

Validation mechanism

The SPUTNIC methodology was based on a comprehensive validation mechanism, originating from Working Group (WG) meetings and Plenary Sessions. Besides PT research experience, the consortium composition involved a wide range of expertise in PT service development and provision, which provided a sound working basis and ensured that a wide scope of sector needs and views were taken into account.

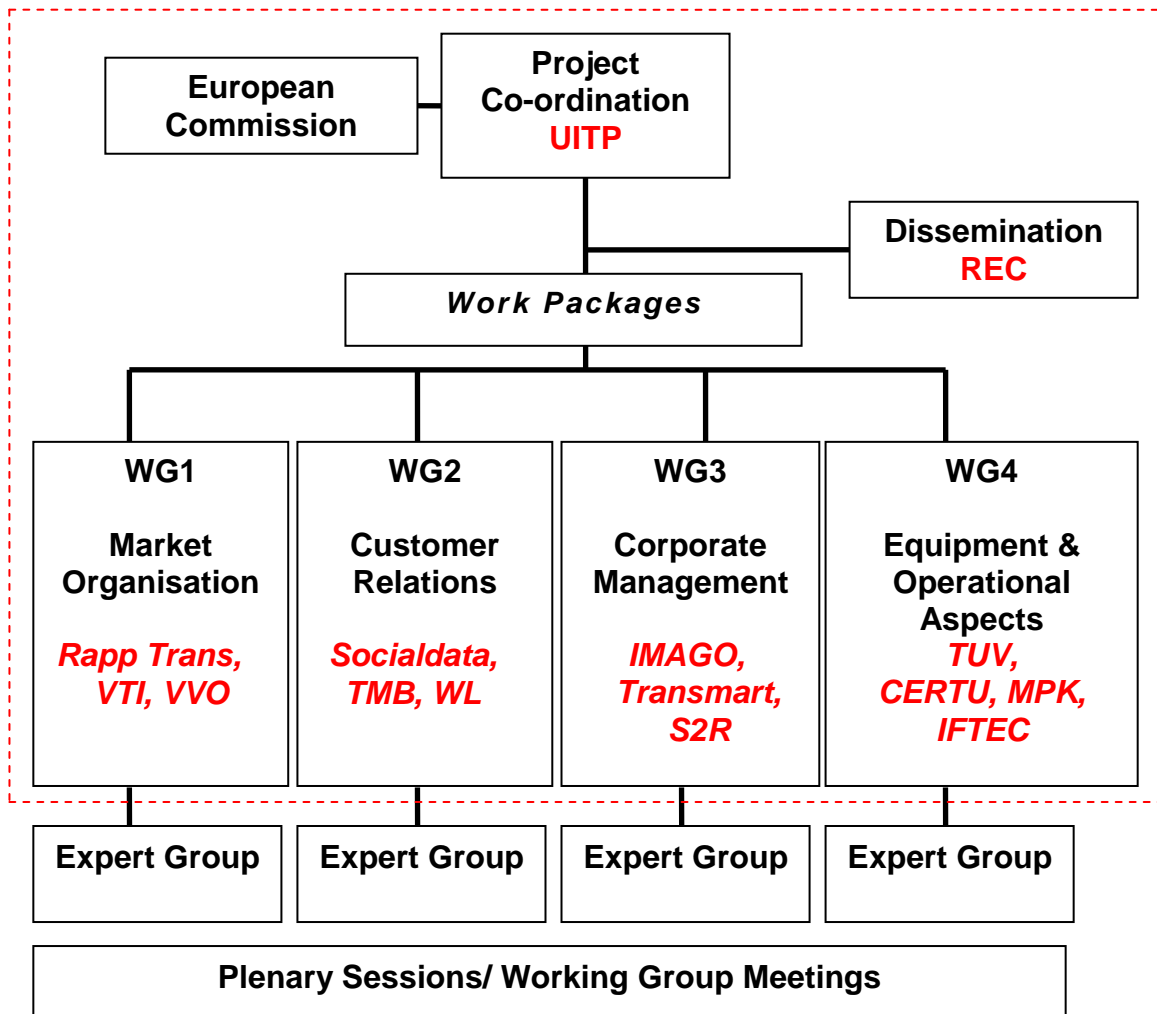
In order to further broaden the basis of PT stakeholders involved in the project, experts have been consulted within each of the priority topics during four WG meetings. At the meetings the findings of the project partners were validated and the transferability of recommendations was drafted.

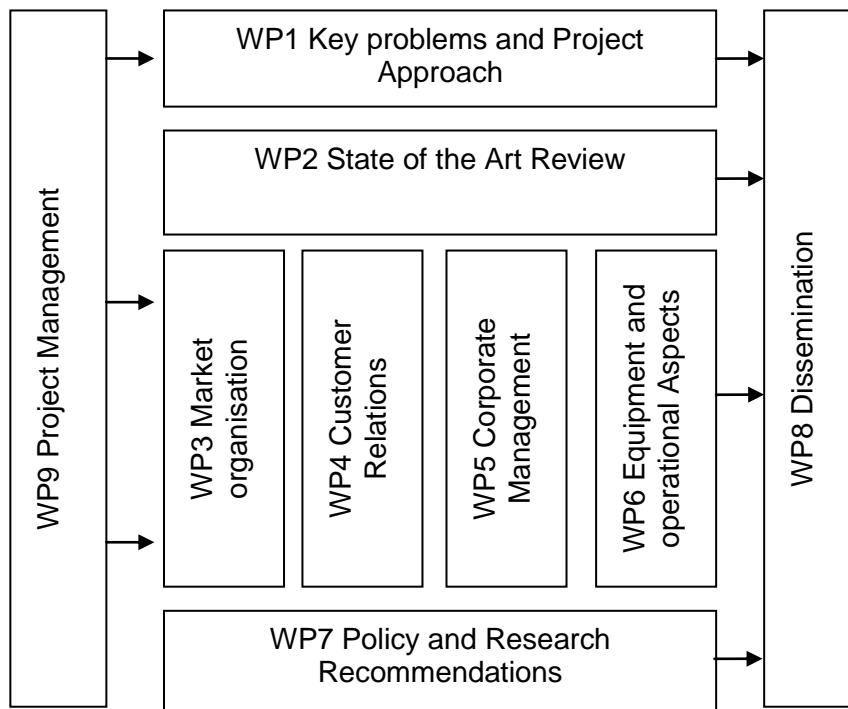
The major outcomes of all WG meetings (working papers, guidelines, good practice catalogues, policy recommendations, etc.) were discussed and validated at plenary sessions, which involved a broader audience of PT stakeholders and experts from other relevant sectors

In this context SPUTNIC:

- Brought together isolated experiences and provides a platform for exchange, which allowed all PT actors to learn from outstanding policies and success stories
- Facilitated networking among researchers from different countries and from different institutional environments
- Created institutional learning especially by providing for a dialogue between academic research, PT service provision and decision making in Europe

- Facilitated the creation of a ‘European market’ by increased transparency in the different service levels and public transport market structures
- Offered guidance on additional and priority research needs at the European level





List of Participants

Part. Nr.	Participant Name	Short name	Country
1	Union Internationale des Transports Publics	UITP	BE
2	Regional Environmental Centre for Central and Eastern Europe	REC	HU
3	Rapp Trans AG	RAPP	CH
4	Institut für Verkehrs- und Infrastrukturforschung GmbH	Socialdata	DE
5	Onderzoek, Advies en Begleiding BV	IMAGO	NL
6	TÜV Rheinland Consulting GmbH	TÜV-A	DE
7	TÜV Rheinland InterTraffic GmbH	TÜV-I	DE
8	Swedish National Road & Transport Research Institute	VTI	SE
9	Verkehrsverbund Oberelbe GmbH	VVO	DE
10	Transports Metropolitans de Barcelona	TMB	ES
11	Wiener Linien GmbH & Co. KG	Wiener Linien	AU
12	S2R Consulting GmbH	S2R	DE
13	Transmart Consulting SA	Transmart	GR
14	Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques	CERTU	FR
15	Miejskie Przedsiębiorstwo Komunikacyjne SA	MPK	PL
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1.2. Work performed and main results

The activity “key problems and project approach” was preparing the ground for the project. It mainly dealt with methodological and preparatory issues: The scientific-technical approach of the project was further detailed and fine-tuned and common protocols for the integration and co-ordination of the scientific activities and outputs of the WG meetings were prepared. The results are summarised in the **Inception Report (D1)**, which is confidential.

Based on the findings of the Voyager project and other recent related research projects results, the consortium reviewed and updated the challenges, which the PT sector is currently facing. The results of the consortium’s desk research, which were validated by the experts on the first plenary session, were incorporated into the **Challenges Report (D2)**.

http://www.sputnicproject.eu/docs/SPUTNIC_D2_Challenges_Report.pdf

These challenges are grouped into four categories:

Challenges concerning the interaction between the different public transport actors

Increased awareness and conviction of decision-makers of the importance of PT for the harmonious development of European cities and regions and for citizens’ quality of life shall stimulate the set-up of suitable organisation/institutional framework. Public service contracts that clearly define PT actors’ roles and provide incentive for quality and efficiency in PT shall support entrepreneurial behaviour and innovation in the sector. Coordinated action to integrate PT will help strengthen the sector while identifying new sources of revenue shall ensure its viability.

Challenges related to the internal organisation of (traditional) operators

The need to increase the overall performance at a company level is translated in the need to streamline the organisation, to improve efficiency of existing management and to introduce new up-to-date methods; to make better use of performance indicators on production, finance, quality and HR; to invest in motivation of staff and improve training and development, in particular for the middle management.

Challenges stemming from the relations with the customers

There is a clear need in many cases to convince PT managers of the potential of marketing tools to improve PT image, to increase PT patronage and revenue; integrated marketing strategies shall be complimented by a genuine dialogue with customers where their concerns and expectations are incorporated in the designing of transport offer.

Challenges related to technical aspects of public transport

Increased quality of infrastructure and rolling stock has major impact on the attractiveness of PT systems. It is often difficult for operators to choose the most economical way to improve the state of their fleet while reconciling the expectations/needs of customers with important financial constraints.

This work was pre-requisite to ensure that the scientific work and discussion within the thematic clusters was responding to issues, the PT sector needs to deal with. Special attention was given to CEEC specific challenges.

In line with the previously specified WG priority issues, the WG leaders and the affiliated team members collected and analysed all relevant research results, in order to compile the current state of knowledge by reviewing the general state of the art analysis, carried out by the VOYAGER project and identifying and collecting relevant research results at a European and national level, which is available from professional press, internet sites, etc.

In order to complement the compiled scientific knowledge the WG Leaders and affiliated team members collected accessible good practices that respond to the WG priority topics and contribute successfully to improving the efficiency and attractiveness of PT services and analysed the good practices to establish their success and the reasons behind it. This review was finalised after the second WG meeting and summarised in the **State of the Art Report** (D3). <http://www.sputnicproject.eu/sputnic-state-of-the-art-report.php>

The report comes to the following findings:

- The upcoming EU regulation on public passenger transport services by rail and by road will fundamentally shape the forms of cooperation between PT authorities and operators by including the element of Public Service Contracts
- The working conditions between PT authority and operator have to abide by the law, provide the quality expected by the customers and conform the fair distribution of responsibilities and risks
- To be cost-efficient and effective integration in the PT sector has to comprise all fields such as, networks, timetables, tariffs, fares and services between operators on the one side and between operators and third parties on the other side
- Due to structural under-financing PT should consider suitable funding alternatives focussing on tax exemptions, congestion charges, International Finance Institutions credits, Public Private Partnerships (PPP) and value capture tools
- Integrated and sustainable PT strategies need to be developed on basis of managing PT users' perceptions through continuous monitoring and communication tools
- Potential marketing methods which improve PT image and increase PT patronage has to be the result of an on-going dialogue with PT users identifying their mobility behaviour and needs
- The PT sector should implement service and quality guarantees and a proper client satisfaction management especially to win back the non-captive users.
- The introduction of relevant performance indicators can turn PT enterprises into more fully-fledged service providing companies which are better equipped to simultaneously meet the demands of the public authority, the customers and the own staff
- Transition in PT organisations has to be based on planned multidimensional processes incorporating both staff demands and consumer needs while anticipating and adjusting to changing circumstances

- Staff development programmes are crucial for the improvement of PT companies regarding topics like innovation, service, quality, efficiency and competitiveness
- Outdated and run-down equipment and infrastructure has to be renewed taking into account the local requirements and conditions while meeting the objectives of cost-efficient operating and maintenance expenses, environment needs and users' expectations
- PT to become as accessible, fast and comfortable as possible is not only an aspect of 'hard' measures as equipment and infrastructure, but also of 'soft' ones as the implementation of cutting-edge intelligent transport systems guiding the user before and during the travel
- The modernisation and upgrading of PT systems corresponds to the principle 'rolling stock follows infrastructure'. First the infrastructure has to be constructed and afterwards the rolling stock has to be designed and purchased

The respective WGs have successfully dealt with the following topics:

Market Organisation

- Global aspects of integration including networks, timetables, services, fares and tariffs
- Cooperation within a competitive environment focussing on various cooperative possibilities within different frameworks
- Financing Model of Operation
- Incentive Contracts and Monitoring Systems

Customer Relations

- Improvement of PT image regarding the effective promotion of PT using multiple strategies and instruments
- Development of customer relations and customer dialogue
- Monitoring the public transport market

Corporate Management

- Performance indicators for business management offering PT organisations a better monitoring and control on internal efficiency procedures
- Restructuring of PT companies
- Development of skills and competences
- Strategic Corporate Management

Equipment and Operational Aspects

- Upgrading of existing rolling stock and infrastructure gathering information of refurbishment and modernisation methods from different PT systems
- Migration Strategies for Innovative Technologies
- Fleet Management

All the findings with the help of external experts during the four WG meetings and the two plenary sessions were summarised in the **Best Practises and Recommendations Report** (D4). <http://www.sputnicproject.eu/sputnic-best-practises-and-research-recommendations-report.php>

The report summarises the collected and analysed case studies from different European countries along the project's priority areas and describes efficient and effective solutions for problems faced by public transport systems in transition. The case studies show a wide range of innovative approaches and policies of PT, which currently exist at local, regional and national level in Europe. The case studies provide PT stakeholders with valuable information, on what kind of approaches and policies have already proven to be successful in supporting the increase of PT ridership or in slowing down the decline of PT market share.

The more than 40 case studies that are presented in the deliverable have been selected since they are considered to have positive impacts on the different dimensions of PT systems but do also include a potential for transferability. The beginning of the report is dedicated to the issue of transferability of case studies and it will be shown, that for assessing the transferability of a case study it is not enough to analyse only the good practice itself, but also the setting of the recipient should be understood first.

Before the actual presentation of the single case studies, this deliverable gives a broad overview of the contents of the case studies and a synthesis of the identified results and impacts. The detailed presentation of the case studies as well as a more illustrative table identifying *key challenge-recommendation-related case study* can be found as annexes to this report.

Although the scientific work of SPUTNIC was focussing at four specific priority topics, it has also allowed drawing general conclusions and developing recommendations to fuel future policy and research agendas by integrating the findings of the four clusters, developing general policy recommendations for the PT sector and identifying research needs for each of the priority domains.

Following the four WG meetings the project consortium integrated the findings and identified synergies and interdependencies between priority topic-related recommendations. In the Final plenary session, which took place in February 2009, the draft policy and research recommendations were discussed with invited experts. Based on this verification workshop eleven policy recommendations of overriding importance were identified:

- Set up sound and stable framework conditions
- Establish seamless multi-modal PT transport offers
- Improve PT funding and financing balances
- Stop (further) decrease of PT modal share – Increase modal share of PT
- Create a comprehensive marketing approach towards the promotion of PT
- Match customer's experiences with customer's expectations towards PT
- Improve the image of PT in the eye of decision makers and the public
- Improving of strategy and business performance
- A need for restructuring of the PT companies and authorities
- Solving the future Skill Gap by development of new competencies of staff
- Increase of PT effectiveness and attractiveness of technical and operational performance



The **Policy and Research Recommendations Report** (D5) was presented to a wider audience at the Final SPUTNIC Conference. <http://www.sputnicproject.eu/sputnic-policy-and-research-recommendations-report.php>

All documents can be downloaded from the project's website <http://www.sputnicproject.eu/> as well as from the public part of UITP's database MOBI+.

The dissemination activities were dedicated to the promotion and dissemination of project results. The project's visual identity was created with a logo as well as several template documents and the project's website was set up as an important tool both for external dissemination and internal communication. A contact database for disseminating activities has been established with more than 450 stakeholders. The website offers all documentation produced by the SPUTNIC partners (including background papers, guidelines, report, newsletters, case studies, etc.), a search function and a navigation tool for deliverables. See the main exploitable results in the next chapter.

One working part was related to the overall management, the scientific supervision as well as administrative and financial issues of the project.

Community Added Value

SPUTNIC can help PT actors and decision makers to prepare the sector to assume its responsibility and shape public transport into attractive, efficient and sustainable mode of urban transport. SPUTNIC:

- Supports decision makers, operators and other key stakeholders anticipating and preparing for emerging challenges in the field of urban mobility
- Provides an updated overview of state of the art knowledge and research results in the area of urban mobility and public transport
- Offers available best practices to enable sector-internal learning from advanced experience
- Presents specific guidelines and tools to benefit from best practices identified throughout European regions and cities
- Provides an opportunity for PT professionals to update their existing knowledge with latest research results and advanced practical solutions
- Offers a platform for discussion and exchange of experiences amongst public transport professionals in Europe

With the above mentioned activities the exchange of experience, knowledge transfer, networking and dissemination, SPUTNIC offers potential solutions for regions, where PT systems suffer from low attractiveness and efficiency, to benefit from the experience of advanced regions.

1.3. Lessons learnt

Networking and expert meeting methodology

As SPUTNIC was largely based on the input from experts outside of the project – which were “only” compensated for travel and accommodation to the WG meetings and Plenary Session – but not for their working time when for example providing case studies for the Best Practises and Recommendations report (D4) the project partners had to find ways to keep the experts “close-by” the project.

This was done firstly by inviting at least 75% of the experts to more than one meeting; this created a form of **trust** between the project partners and the experts and between the experts themselves as well as it built a feeling of **commitment** towards the project. Due to that also some confidential information was presented sometimes from experts, which was not transmitted to the official papers.

As no budget for the time in between the meetings was reserved for the experts the consortium invented some **measures to make the bi-annual meetings more productive**:

- the experts received topic-related questionnaires before the meetings that they had to return also before the meeting; the cluster leaders used the compiled input from the returned questionnaires as a “starter” to the meetings
- some experts had to prepare topic-related presentations, which were presented at the meeting; so there was no chance for being a “passive” listener only
- the cluster leaders prepared topic-related background papers, which were sent to the experts before the meetings in order to inform the experts about the upcoming work during the meetings and not to loose too much time at the meeting for the introduction session
- during the meetings the experts group was divided into small working groups to work more interactively and efficient on specific topics; furthermore e.g. real-life example cases were played through or post-it exercises were used to loosen up the meetings
- some background information papers were prepared by the local host and handed out to the participants prior to the meeting, which presented the public transport situation of the hosting city
- the local host held the ice-breaking speech presenting the SPUTNIC topics in connection to the hosting city
- the SPUTNIC newsletters were translated into the six CEEC languages as English is still not the common spoken languages in these countries
- the consortium established a online forum on the homepage of the project’s website in form of a question of the month where persons visiting the website could post their opinion about the requested topic; unfortunately this received only little attention and was closed down in the course of the project



- the experts received after the meetings an evaluation form which asked for their opinion on both the organisational and content-related parts of the meetings. The input and recommendations were directly used as an input for the successive meetings
- the cluster leaders completed an evaluation form focussing on how active the experts participated in the meetings as well as the quality of the given presentation. The outcomes about the suitability of the experts fed back into the experts selection process for the successive meetings

Regardless the efforts of the consortium to receive good practise cases from experts originating from Italy and France, no case study from one of these countries has been submitted by the related experts.

SPUTNIC would recommend for similar projects – in order to represent a broader picture of the European public transport sector – to reserve a part of the project budget for subcontracting to *fill this gap* if necessary.

Measurement of the project's impact in the public transport sector

Due to the request by the EC the project consortium conducted a survey in order to measure the impact of the SPUTNIC results to the public transport sector. The 450 online registered SPUTNIC were asked to complete a questionnaire after the midterm of the project concerning the scope of SPUTNIC results impact on their daily working life and their short-, mid- and long-term planning. Due to the low rate of return (2,5%) no valid results could be obtained.

The SPUTNIC consortium would propose to use other methods in future projects such as phone interviews or new IT tools of the web 2.0 such as twitter, blogs, LinkedIn, etc. in order to reach a high dissemination level.

2. Dissemination and use

Product	Functional description	Main advantages
Challenges of the Public Sector - Report	Provides an overview of the general challenges faced by the public transport sector	Handy breakdown of the current problems faced in different sectors of PT
State of the Art Report	Describes the outcomes of the comprehensive state-of-the-art analysis of European PT systems in transition	Detailed analysis with practical examples of the present situation in PT systems in transition
Best Practices and Recommendations – Report	Summarises the collection of best practice case studies providing in-depth information	Offers a detailed overview with emphasis on the criteria “transferability” and “lessons learnt” for an easier reproduction
Policy and Research Recommendations – Report	Highlights SPUTNIC conclusions of wider relevance and the PT sectors needs for future research activities.	Gives concrete guidelines for the realisation of PT sector wide objectives taking into account all levels of PT stakeholders
Case studies	Good practise example of a specific PT issue within the four thematic clusters prepared in “pdf” file format and uploaded on the website.	A “stand alone” product useful for PT operators, provides overview of the specific issue and gives references for further information/contact details
Guidelines	Compiled knowledge on the respective working topics prepared by each cluster. Uploaded on the project website.	A “stand alone” product useful for PT operators, provides overview of the specific issue and gives references for further information/contact details

All above documents can be downloaded from the project’s website <http://www.sputnicproject.eu/> as well as from the public part of UITP’s database MOBI+. The SPUTNIC website will be continued until 11 September 2014 with non-SPUTNIC budget, financed by UITP and the results will be transferred into the public part of the UITP database MOBI+. The continuation of the project’s homepage was done in order to give continuous access to the source known by “SPUTNIC-followers”.

The dissemination activities were performed by all project partners although only seven project partners had a budget in dissemination activities.

Throughout the three years information on SPUTNIC work and results (presentations, newsletters, leaflets, calendars, etc.) were presented in all 27 European countries several times and were accessible to more than 35.100 persons on a worldwide scale (Eurasia, North and South America, Africa, Oceania). Due to the cross-linking with other EU projects such as LINK and PROCEED as well as the ELTIS website the exact range of SPUTNIC dissemination cannot be precisely defined.

Main conferences covered were the UITP World Congresses in 2007 and 2009, VTI’s annual Transportforum, the International Transport Forum 2008, the Transports Publics 2008: The European Mobility Exhibition and many more.

Regarding the scope of dissemination presented above one can say that SPUTNIC has reached and even surpassed the planned information spreading and awareness raising objectives; if the presented solutions and good practise cases are to be translated by other cities and countries could be analysed in a follow-up project.

Annex I

In this annex the suggestions for further investigation are gathered which were identified in the course of the project. These “blank spots” in the public transport sector could be used as a starting point for a new Framework Programme project; either RTD or CSA.

Suggestion for further investigation – Cost benefit analysis of incentive schemes

For the authorities it is often difficult to set the right level of incentives as the incentive should be economically relevant to the operator but not too costly for the authority. Therefore the costs and benefits of different incentive schemes should be compared in order to identify the most suitable schemes and to support the authorities in calculating the appropriate level of incentives.

Suggestion for further investigation – Handbook for PT Monitoring systems

Throughout Europe various types of monitoring systems are successfully established. Therefore further investigations should less focus on the development of new methods and techniques but should focus on the dissemination and implementation of the existing knowledge and experience. A Handbook for PTA should be established that deals with the issue of monitoring systems for PT and makes it easier for the PTA to choose and implement an appropriate solution adapted to the local circumstances.

Suggestion for further investigation – Analyse an appropriate balance of national support and intervention

National authorities should not withdraw from urban PT – nor should they interfere into its daily business. The appropriate balance between national government support for urban PT and intervention is not easy to find and might depend on local circumstances. Further investigations are needed to guide the different countries in finding this balance.

Suggestion for further investigation – Analyse the consequences of EU Regulation for national and local legislation

The new EU Regulation 1370/2007 should and could be a kick-off for improving PT market organisations in many MS. However, its final benefits and the time-frame for realising them strongly depend on the way the regulation will be implemented on MS level. Therefore, further guidance for all MS is needed on how to adapt national, regional and even local PT legislation in the context of the new EU Regulation 1370/2007 in order to ensure that the Regulation will develop its full potential for improvements.

Suggestion for further investigation – Impact analysis of the new EU Regulation 1370/2007 with respect to integration

Although the new EU-Regulation does not say much about PT integration it nevertheless might influence the chances for integration projects as the new Regulation will certainly lead to substantial changes in the legal framework for PT in a number of MS. As legal frameworks are not changed every year this chance should be taken to adapt the legal framework in a way that supports integration. A research project should analyse the impact of the new EU regulation on the different legal frameworks in different MS and assess the possibilities to steer this impact into a direction favourable for PT integration.



Suggestion for further investigation – Set up a Handbook on integrated PT

The workshops with SPUTNIC experts have shown that although some innovative solutions are in place and working successfully many professionals within PT authorities and operators lack sufficient know-how on how to set up and implement integration projects. Therefore new projects should focus on capacity building for operators, local authorities and governments. These projects should be more implementation oriented than previous pure research projects and should focus on what is needed to actually implement integration – barriers, politics, incumbent operators' situation, transaction costs etc.¹

Suggestion for further investigation – Promotion of integrated PT solutions including demonstration projects

Successful integrated PT solutions should be promoted and promotion measures should be implemented in order to convince local stakeholders by showing them the benefits of integrated transport in a real life environment. Different approaches have to be developed for different stakeholders such as politicians, authorities and operators. Promotion measures should include both an extended database of good practice cases as well as demonstrator projects. A large scale international demonstrator project combining the efforts of SPUTNIC and LINK would be advisable. 3-4 MS with different degrees of integration could demonstrate how integration of local – regional – national – international journeys along a longer trip chain should work. Non PT modes should also be included.

Suggestion for further investigation – Cost-benefit-analysis of PT integration

The benefits of integrated PT systems are widely acknowledged among PT experts. However, first-mover experience shows that apart from benefits (in the form of increased attractiveness, higher patronage, higher revenues, cost reductions due to the cutting of parallel services etc.) system integration also creates costs (in the form of administrative costs, check-through losses, harmonisation costs). In a research project benefits and costs of different real-life implementations (case studies) should be compared.

Suggestion for further investigation – Implement surveys on choice of transport mode in order to find out reasons that influence the choice of transport modes

A better understanding of the reasons for and against the use of different modes would be very helpful in the planning of PT services in general but also in setting up integrated transport solutions.

Suggestion for further investigation – Customer friendly systems to buy tickets

There are numerous approaches for the way tickets are sold within Europe. Some of which are unnecessary complicated due to range of ticket types sold, others limit the places where tickets can be bought (e.g. only at ticketing machines), while others allow only specific payment methods. Therefore support in the development of customer friendly ticket systems and on how companies can easily adapt them would be highly appreciated by the customers. A harmonised approach would also make it much easier for travellers to buy tickets in different countries or cities.

¹ This finding is supported by the NICHES project (New and Innovative Concepts for Helping European Transport Sustainability, UE FP6) one of whose thematic areas was “New seamless mobility services” and who recommended to run more ”practical experiments”



Suggestion for further investigation – New tariff strategies for yield optimisation

Further investigations about different tariff strategies are strongly recommended. The balance between differentiated tariff schemes and simple easily understandable schemes is very important and worth attention.

Suggestion for further investigation – Good Practice Handbook on additional business opportunities for PT operators

In order to show the possibilities and benefits of side businesses for PT operators and to inspire the concerned actors a handbook should be elaborated showing good practice and real-life examples.

Suggestion for further investigation – Possibilities and risks of using Public Private Partnership (PPP) schemes for local PT infrastructure

Experience in the PT sector with PPP so far is mixed. Further studies on PPP schemes, their pros and cons and especially their suitability for PT improvement schemes are dearly needed.

Suggestion for further investigation – Establish a Handbook on PT funding including an impact assessment of different funding schemes

Further work on a Handbook on PT Funding is needed. PT stakeholders have many funding alternatives but finding the suitable alternatives with their associated conditions is very difficult. Furthermore, an impact assessment of different funding schemes is needed to show the effectiveness and potential negative side effects of the different approaches.

Suggestion for further investigation – Make transparent the (low) share of EU funds that are being used for regional and/or urban PT

The appropriate ways to use EU funds for the improvement of different transport modes should be evaluated. Such a study should make transparent the (presumably low) share of EU funds that is being used for regional and/or urban PT thereby increasing the pressure on national administrations to shift their attention towards PT.

Suggestion for further investigation – Development of new electronic data collection tools

Over the last couple of years a number of new electronic data collection tools using SMS and the Internet have been developed. One major obstacle in their use was always the fact that they were used only by a small part of the population. However with their use now extended to a majority a further close look at their reliability, usage and further development would be highly recommended.

Suggestion for further investigation – Improvement of methods for PT passenger satisfaction surveys

A lot of PT companies are collecting information on the satisfaction levels of their customers and use them to benchmark themselves against other companies. However customer satisfaction data can be used for much more. They can also be used to identify actions to improve PT services and to develop company strategies. Unfortunately most existing tools are not able to do that. Therefore research and further development of these tools are necessary.

Suggestion for further investigation – Develop programmes to compare the use of data collection and to interpret the data

Choosing the correct survey tools and interpreting and analysing the collected data is mostly based on knowledge and experience, however as this knowledge is often limited in small and medium sized companies some research should be done regarding programmes that can help with the selection of survey and data collection tools and the analysis of the collected data.

Suggestion for further investigation – Key factors for PT success (Research situations in which PT is successful / Different markets and market situation / Competitive PT operator market versus non competitive market):

With the number of very positive examples for PT it would be highly recommended to identify the key factors for PT success in different markets and market situations and provide PT stakeholders with some hints and guidelines on how to improve PT services and to react to a changing (public) transport market.

Suggestion for further investigation – PT ticket survey methods (purchase, use, elasticity, migrations)

The price of PT tickets is a deciding factor to the success of the service. Despite this most price changes do not look like they have a certain ticketing strategy in mind (except to increase prices). Additional research should be implemented in this field to find out what tickets are bought, how they are used, which tickets have the highest price elasticity, and whether there are certain movements between ticket types and how these movements are made. The target should be to make ticket pricing more transparent and accepted by the general population and thereby to increase sales.

Suggestion for further investigation – (Better) Analysis of potential for PT. Mobility matrix (in order to map mobility need of people)

The potentials of PT are already analysed with a number of tools, however as there are major differences between PT companies in this regard some further research would be necessary. This would include the preparation of mobility matrices to better map the mobility needs of the people.

Suggestion for further investigation – Responsibility for monitoring of PT market in different framework conditions

As the title already says in different framework conditions there is the possibility that a different stakeholder (e.g. authorities, operators, municipalities) is responsible for the monitoring of the PT market or of different topics within the market. While the decision could be made simply by competition and the level of openness of the market some research would be helpful to define the role of stakeholders in different framework conditions. Based on this the responsibilities could then be laid down in PT service contracts.

Suggestion for further investigation – Survey of efficiency of PT information channels (websites, newspapers, TV, radio etc)

Various channels are used to provide PT information and, while most companies' use a mix of these channels; there are some who concentrate only on one or a number of them. Further research on the cost effectiveness of different channels and their suitability for different information topics would be very helpful for the further planning of campaigns and measures and would allow a better use of existing resources.

Suggestion for further investigation – Research the value of customer comments

The introduction on new channels of communication has significantly increased the number of complaints received, but it has done nothing regarding their evaluation.

Therefore some research should be done on the value of customer comments, how these complaints can be better used for the improvement of PT services and customer relations and especially on how to differentiate between relevant and irrelevant complaints.

Suggestion for further investigation – Research long-term development of customer satisfaction

Most customer satisfaction surveys look at satisfaction levels at a specific point in time and only as an afterthought make comparisons with previous surveys. In order to better understand customer satisfaction and to better use the collected data for an increase of PT patronage research on the long-term development of customer satisfaction and its impacts are necessary.

Suggestion for further investigation – Values and barriers of social marketing

The social value of PT is an important aspect of PT and a major selling argument with politicians. It can also be used to market the service in the public; however there are many uncertainties regarding the value of such marketing (to the public) and its efficiency. Further research could help to find an answer to this question and enable PT companies to better plan their marketing and image strategies.

Suggestion for further investigation – Analyse the impact of environmental and social developments on the perception of PT

A lot of PT experts indicate that environmental and social developments will have a major impact on the use and perception of PT. However when these developments took place these changes were often not realised. A good example would be the rising petrol prices in 2008 which lead to a short time increase in PT; however these increases were more or less gone before the prices went down again. As there are further similar examples further analysis of the impact of environmental and social developments would be highly recommended.

Suggestion for further investigation – Analyse how it would be possible to improve the image of PT even if the current system has major deficits

The specific situation of PT in Eastern Europe with sometimes quite old PT vehicles and infrastructure makes it sometimes quite difficult to improve its image. As an image improvement is nevertheless highly necessary to keep the existing customers some research on how this would be possible should be implemented. This was an important request by all experts participating in the meetings.

Suggestion for further investigations – Management Guide on Corporate Management in PT

As the PT industry is going through fundamental changes and a number of transport companies are in a transition phase between the state of a public company with no competition and with little regard to revenue generation or cost cutting to a state of increased competition in a changing legal framework during a period of fiscal austerity, an encompassing and integrated Management Guide which would cover all fields of PT management is required. An indicative outline of such a guidebook is the following: It should first address the changing transport environment in legal, regulatory, societal and environmental aspects; it should address issues relating the planning process, cost reduction, funding sources other than fare revenue, use of performance indicators, introduction of quality management methods, employee relations, community and stakeholder involvement, development and implementation of public/private partnerships. This guide or handbook should be a real value to every

practitioner, should be updated regularly and should be the basic source of information on how to manage a PT company.

Suggestion for further investigations – Create a toolkit of management methods applying to specific situations, development stages and sizes of a company

Although there are generic management tools and techniques that could be used by every transport agency, specific situations warrant different behaviour and tactics. The purpose of such a toolkit would be to develop a kind of diagnostic mechanism toolkit that would provide different solutions based on an “operating environment” and “performance audit”, based on the legal and regulatory environment and overall circumstances that a company is facing. This toolkit could be interactive in nature and could steer the company towards the adaptation of the specific tools required for the specific circumstances.

Suggestion for further investigations – Examination of the techniques used in adopting corporate practices of the private sector to public sector companies

It is generally acknowledged that the operational efficiency and overall management techniques of the private sector are further advanced than the ones applied to a public owned and managed companies. In this respect, PT agencies have turned to the private sector fostering PPP. Even if a vast amount of work is tendered out or given in a concessionary form, the public sector company has a great deal of task to perform by itself. However, most transport agencies still lack the full capability of adopting tools, methods and techniques that the private – commercial sector has been utilising with success for some time. Hence, the examination not only of the techniques but also of the problems associated with their implementation by the public sector transport companies should be further investigated.

Suggestion for further investigations – Examination of methods used in increasing productivity other than simply reducing personnel

Productivity increases should not be the result of layoffs only; attrition could be a first option. Various transport organisations have also been able to reduce personnel costs through a number of techniques, such as the greater use of part time employees, split shifts, two-tiered wages for new hires. Furthermore, productivity and efficiency increases could be the result of introducing new technology such a dynamic scheduling applications which would align better supply to demand and would reduce layover time at the end of the routes. Modifying the service planning methods, as for example in minimising service on lower demand days or changing radial service to a more grid type service could also be examined. Achieving higher productivity per kilometre and simultaneously increasing on time performance could also be achieved by increasing bus speeds through the use of exclusive bus lanes and new technologies that give priority to buses at signalised intersections. Standardisation of the fleet type and purchasing more fuel efficient buses could also be considered. All these elements should be carefully examined and coordinated in order to decrease costs while at the same time maintain a motivated and inspired workforce.

Suggestion for further investigations - Investigate existing types of Service Level Agreements /Public Service Obligation Contracts

A number of different types of Service Level Agreements (SLA) and PSO contracts exist that define the service objectives and requirements, the service description, the outputs to be achieved, the quality to be obtained, the method of remuneration, etc. What is needed to be further investigated is how to better define these contracts as to achieve the right balance between the costs to be paid to the concessionaire with

respect to the service level to be obtained. PT companies contemplating in entering a SLA or a PSO would benefit greatly from being able to examine different contract types and features in them and choose the ones most suitable to their needs.

Suggestion for further investigations – Examination of processes on how to improve business practices through the use of PPP

Several PPP are a large success, yet a number of co-operations produced a number of negative side effects or even failed completely. Reasons, processes, and critical success factors of these PPP need to be established, and it has to be determined how these types of co-operation could be a success model for the PT sector. The division of the operational and commercial risks and also the so-called final-risk taking need additional attention. It has to be researched whether it would be possible in this respect to co-operate with for instance insurance companies or other financial institutions.

Suggestion for further investigations – Good practices on decentralisation and business unit management

Decentralised responsibility and business units responsible for their own result need a clear management framework – basically planning and control as well as decision making procedures. These have to be implemented based on the individual circumstances of the defined business units and to the specific PT framework. Experience and know-how of the management leading the business units or are responsible for decentralised tasks have to fit with their competencies and their role in the overall management process. Hence, personnel recruitment and training becomes a crucial issue in order to implement decentralised or business units successfully.

Suggestion for further investigations – Cost benefit analysis on the direct and indirect benefits of a full-scale introduction of state-of-the-art information technologies and their impact on corporate culture

As shown above, modern IT-technology can serve as an enabler in order to manage successful a change management process. On the other hand cost pressure on PT companies is immense and costs for implementing new IT-systems are very high. Therefore cost-benefit-analysis must be carried up front before introducing new IT-technology. If for example a new Electronic Resource Planning (ERP) system is planned and implemented the corresponding costs for additional IT might be feasible in relation to the benefits that can be gained.

Suggestion for further investigations – Examination of successful examples of outsourcing, including the limits of outsourcing (financial, return on investment) and feasibility of strategic alliances

Since outsourcing and partnering on a strategic level is not common for PT companies, successful examples within the sector of outsourcing and partnering should be examined. The economic limits of a meaningful outsourcing depend of course on the individual situation of each PT company. On the other hand, clear guidelines can possibly be derived from the examples about risk margins – which is the threshold for an economically feasible outsourcing including the risk of bad quality, cost of interfaces and controlling – and about best practices in outsourcing contracts. Depending on the strategy of the individual PT company the reason for and the kind of a strategic alliance is different. Based on the investigation of existing examples a pattern can be developed, which sorts the conceivable cases where a strategic alliance makes sense.

Suggestion for further investigations – Management Guide on Corporate Management in PT

Additional remark: we would like to refer to a good example of such a handbook which was produced in 2004 by the GUIDEMAPS consortium, which was also funded by the EC under the 5th Framework Programme. The title of this handbook is “Successful transport decision-making”, a project management and stakeholders’ engagement handbook (in two volumes; Volume 1 “Concepts & Tools – Volume 2 “Fact Sheets”).

Suggestion for further investigations – Determining future skill-gaps for PT managers

Most European governments have tended not to develop national occupational standards, except for the UK. But some work has been undertaken by the European Council of Management to develop standards for managers, designed to apply across Europe. There appear to have been only a few attempts to develop competency frameworks for PT managers within some European PT organisations. In order to determine the future skill gaps for different levels of PT management, we suggest further investigating this matter by developing a European Framework of Management Competencies in PT.

Suggestion for further investigations – Investigate successful vocational training and e-learning projects in Europe

Lots of research has already been done in most European MS. By studying and analysing all these Vocational Education and Training (VET) projects and initiatives PT itself can contribute to continuing vocational training of its employees and even increase mobility to promote the development of a more European labour market for PT personnel. To move forward PT organisations should identify the key issues of such an educational and development strategy, supported by PPP and agreements with social partners and other stakeholders.

In this regard we like to refer to the website of the European Training Foundation (ETF) www.etf.eu.int and another European website www.e-learningeuropa.info.

Suggestion for further investigations – Pilot with e-learning for European PT managers

After having investigated possible successful e-learning projects in European PT organisations we propose to set up a pilot with different city transport companies in the western and eastern part of Europe in order to prove the effectiveness of on-line learning for (middle) managers.

Suggestion for further investigation – Analysis of the Life Cycle Cost for upgraded and second-hand vehicles (Tram, Trolley Bus, Diesel Bus) in order to evaluate the results of SPUTNIC.

Suggestion for further investigation – Maintenance policies

Investigate pros and cons of outsourcing of maintenance. The impact of such a change should be evaluated on the staff employment, the maintenance facilities.

Suggestion for further investigation – Demand responsive services

Demand-responsive transports are a valuable type of service for reduction of cost operation of existing regular routes in low-density areas. Their implementation may not be well understood by the actual users. The conditions for a good acceptability should be investigated.

Suggestion for further investigation – interurban corridors

Investigate pros and cons of commuter railway systems (heavy rail) being means of PT between cities and surrounding suburbs and rural areas around urban agglomerations.

Suggestion for further investigation – cost-benefit ratio for IT systems

Investigate the cost-benefit of passenger IT systems implementation. Investment and updating may be costly but their development may partly be done in-house, on the other hand such systems may keep the customers onboard and even increase patronage as they bring confidence in the PT network.

Suggestion for further investigation – Economic analysis of the need for the adaption of technical and operational rules on WEC standards in order to avoid under- and over-regulation

An analysis of the European standards clearly shows today's fragmentation with all its disadvantages like high costs, especially for rolling stock, due to the need for individual adjustments. In this respect the creation of a more common European Standard where the MS are obliged to implement European Standards by giving them the status of national standards, is highly recommended.²

Suggestion for further investigation – Energy consumption due to prioritisation

Evaluation of the impact of dedicated bus, trolleybus or tram lines with priority at streets crossings on energy consumption, air and noise pollution (bus only).

² The recently started FP7 MODSafe should build a Safety Analysis and Model Reference for the future for Urban Guided Transport projects, www.modsafe.eu

Annex II

This annex describes the identified policy recommendations and strategies for the future development of the public transport sector; part of this approach is also to identify the involved stakeholders and their roles. To make it easier for the reader to identify strategies and to find out the roles of the involved stakeholders the following table provides an overview of identified policy recommendations and strategies and also lists the roles of central stakeholders.

Main stakeholders:

- EC: The European Commission is the executive of the European Union. Its primary role is to propose legislation on an European level and to carry it out.
- MS: The Member States of the European Union (currently: 27)
- LA: Local Authorities are political bodies on a regional or local level, including municipalities, administrative districts, etc.
- OP: Companies responsible for operating PT in a city or region.
- TA: Transport Authorities are groupings of PT actors in order to provide integrated PT services for a city or region. Normally the responsibilities of TA include the network organisation, provision of information, ticketing. However this can differ strongly in the different MS.

As there are a lot of differences in the structuring of the PT sector in Europe, it is often difficult to identify a stakeholder who holds the same responsibility all over Europe. This is the case regarding the last three stakeholder groups and especially regarding TA. While the trend goes towards wider spreading of TA there are still some countries without these structures. In such countries the local authority takes over most of the responsibilities of TA, in some cases this role can also be adopted by a strong PT operator. Because of this sometimes two leading stakeholders are listed, depending on the local structures.

Therefore when going through the table the reader should always keep in mind local differences.

Roles of stakeholder:

- ◇ Facilitator, leading role
- \$ Implementation
- § Legal and regulatory framework
- ☼ Support, promotion and awareness raising

The following table tries to follow the principle of "subsidiarity". This means that action of the EC is only demanded in areas which do fall within the EC's exclusive area of competence, or if the proposed actions cannot be sufficiently achieved by the MS.

Target groups involved in policy recommendations

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
Set up sound and stable framework conditions	Establish long term urban mobility planning		§	◇§	☀	☀§	☀
	Implement an accepted Market Organisation		§	§	☀	◇§	☀
	Implement Public Service Contracts according to EU Regulation	☀§	§	§	☀	◇§	
	Implement incentives		§	§	☀	◇§	
	Implement monitoring systems		§	§	☀	◇§	
	Verify and adapt legislation	☀	◇§	◇§		☀	
Establish seamless multi-modal PT transport offers	Co-ordinate PT planning		§	§§	☀	◇§	☀
	Set up legislation that favours integration	☀	◇§	◇§		☀	
	Implement organisational models for integration		§	§	§	◇§	
	Raise awareness of the potentials of integration among all actors	☀	☀	☀	§	◇§	
	Extend integration to other mobility service providers			§	◇§	☀§	§
Improve PT funding and financing balances	Check all options for tariff measures in order to increase revenues				☀§	◇	

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
	Evaluate the possibilities of creating additional revenues by enlarging the operator’s service portfolio			§	◇\$	☀	
	Make use of market forces			§	☀	◇\$	
	Identify alternative sources to fund PT infrastructure and operations	☀	§	§	☀	◇\$	☀
	Make use of EU funding and other special purpose funds	☀	\$			◇	
	Make use of loans by International Finance Institutions			☀	◇\$	☀	
	Lobby intensively at all levels	☀	☀		\$	◇\$	☀
	Concentrate on central indicators	☀	◇	☀	\$	\$	
Stop (further) decrease of PT modal share – Increase modal share of PT	Improve knowledge about current situation and development				◇	◇	PT Association, Consultants
	Harmonise planning of PT services and urban planning (Urban sprawl)		§	◇	☀	☀	
	Increase knowledge regarding the use of data for development support and decision making				◇	◇	
	Overcome prejudices (increase knowledge about social groups using PT)			☀	◇	◇	Unions, User groups
	Include the analysis of potential customers with the analysis and monitoring of the PT market			\$	◇	◇	Consultants

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
Create a comprehensive marketing approach towards the promotion of PT	Promote marketing as a means to work with customers and to improve customer satisfaction			☀	◇	◇	Consultants
	Promotion of service quality			☀	◇	◇	
	Clear responsibility for PT marketing in different framework situations	◇§	◇§	☀	\$	\$	
	Mobility management			◇	\$	◇	Consultants, User groups
	Raising awareness of all target groups		☀	☀	\$	◇	PT Associations
	Campaigns and information on changes in PT route or infrastructure	§	§	☀	◇	◇	
	Marketing of integrated PT Marketing and of integrating PT solutions (incl. integrated ticketing systems)		§	◇	\$	◇	
Match customer's experiences with customer's expectations towards PT	Show that actual PT services are much better than their public perception				◇	◇	
	Transformation of captive users into satisfied (loyal) customers				◇	◇	User groups
	Putting the customers into the centre of service provision	☀	§		◇	◇	PT associations, User groups
	Provide different channels for customer comments				◇	◇	

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
	Train staff in order to be proud of their work and act as ambassadors for their company				◇	☀	Unions / employees
	Create a better understanding of customers and potential customers			☀	◇	◇	Consultants
	Drawing up a development strategy for a sustainable mobility environment	◇	◇		\$	\$	
Improve the image of PT in the eye of decision makers and the public	Lobbying to convince decision makers of the values of PT				◇	◇	PT associations, User groups
	Increase awareness of PT both in the eyes of decision makers and general public	☀	☀	☀	◇	◇	
	Opening companies to the public	☀	\$	☀	◇	\$	User groups, Media
	Advertising the strengths of PT		☀		\$	◇	PT Associations
	Improve image based on emotional values				◇	◇	
	Share best practices within the EU	◇	\$		☀	☀	PT Associations, Researcher
Improvement of strategy and business performance	Introduction of new management methods like, EFQM Excellence Model , Total Quality Management, Value Based Management, Balanced Score Card, etc.			☀	◇\$	☀	

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
	Develop a clear strategy and break down the goals to achievable targets to responsible managers within the organisation				◇\$	☀	
	Use of the Benchmarking technique in understanding (i) the firm’s operating environment, and in assessing (ii) strategy, (iii) processes and (iv) Key Performance Indicators with respect to other organisations			◇	\$	◇☀	
	Analyse performance indicators to investigate their suitability and compatibility and use them as a diagnostic tool.				◇\$	◇☀	
	Improve involvement and management of stakeholders (identify stakeholders, create forums for strong involvement, manage relations)		\$	◇	◇	\$☀	
	Establish a contractual agreement (mid/long term) with the corresponding public/authority which includes topics relating to the service level to be provided, financial issues and the determination of the tariff system to be used		\$	◇	◇\$	◇\$	
	Act in more proactive, entrepreneurial approach			◇	\$	◇	
	Improve knowledge on competitors			◇	\$	◇	
	Improve the control of the business practices when new private partners are involved				\$	\$	
A need for restructuring of PT-companies and	Adjustment of organizational structure in accordance with a new mission, vision and strategy			◇*	◇/\$	☀	

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
authorities	Better use of change management methods and approaches, including analysing the company culture, planning and control and internal communication			◇*	◇/\$		
	Decentralization and working with different business units			◇*	◇/\$		
	Use of modern IT technology for internal communication and culture change			☀*	◇/\$		
	Increase the efficiency of the structure and decision making processes through proper use of standard operating procedures			☀*	◇/\$		
	Improvement of outsourcing techniques and partnering				◇/\$		
Solving the future Skill Gap by development of new competencies of staff	Introduction of up-to-date Performance Management methods for managers and employees				◇/\$		
	Greater emphasis on Competency Based Human Resources Management and Talent Management				◇/\$		
	Make better use of present EU research on vocational training and E-learning	◇	☀		◇/\$	☀	
	Establish appropriate incentive schemes for middle management			☀*	◇/\$		
	Create new and transparent hiring processes to find more entrepreneurial type of top level managers				◇/\$	☀	
	Create a learning culture in the organisation, including the use of modern learning technology (e-learning)				◇/\$		

Policy Recommendation	Strategy	Target groups					
		EC	MS	LA	OP	TA	OTH
	Intensify knowledge exchange between PT organisations and schools and universities	☀	☀	☀*	◇/\$	☀	
Increase effectiveness and attractiveness of technical and operational performance	Optimisation of the number of vehicles required by increasing the commercial speed			☀	◇\$		
	Upgrade of the infrastructure (after lack of investments)			§	\$	◇	
	Fleet renewal with respect to cost factor			☀	◇\$		
	Optimisation of the maintenance process and the workshops				◇\$		☀ rolling stock industry
	Reduction of travel time				\$	◇	
	Increase of travelling comfort				\$	◇	
	Additional strategic aspects		◇§	§§			

* = if city is owner of the PT company

Type of stakeholder:

Roles of stakeholder:

EC – European Commission

◇ Facilitator, leading role

MS – Member States

\$ Implementation

LA – Local Authorities

§ Legal and regulatory framework

OP – Operators

☀ Support, promotion and awareness raising

TA – Transport Authorities

OTH – Other