

GOOD PRACTICE CASE STUDIES

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0 Executive summary

This deliverable includes a collection of good practice case studies, which can be useful for public transport (PT) stakeholders to develop and implement attractive, clean, safe, accessible, effective, efficient and financially European local and regional public transport systems. The good practice case studies, as described in this deliverable, show a wide range of innovative approaches and policies of PT, which are currently existing 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 the decline PT market share.

In total, almost 40 case studies are presented in this deliverable, which represent good practice examples in the following public transport related areas:

- Organisation of the PT sector
- PT marketing initiatives
- PT market analysis
- PT infrastructure and rolling stock
- PT operation
- Innovative financing solutions in the area of PT
- Intermodal mobility services
- Integrated ticketing systems
- Multimodal traveller information services
- Training and human resources development

The good practice case studies that are presented in this deliverable have been selected since they are considered to have positive impacts on the economic and financial, social and environmental sustainability of PT systems.

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 final chapter of this deliverable is dedicated to the issue of transferability of good practice case studies. The VOYAGER project agreed, that selected good practice case studies should not only have proven positive impacts on the different dimensions of sustainability, but should also include a potential for transferability. 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. Only after an additional assessment of the differences and potential barriers, the level of transferability of the good practice can be determined.

However, most identified good practice case studies within VOYAGER are not transferred to another setting, or an assessment of its transferability proved to be difficult. In this deliverable, some guidelines are given for those PT actors, who want to transfer one of the good practices to his city /region/ system/ organisation, etc. It is expected that the different good practice case studies in combination with the following transferability guidance will secure genuine good practice.

1 Introduction

Deliverable 3 on “good practice case studies” is the second major outcome of Workpackage 2 (WP2) “state-of-the-art analysis” of the VOYAGER project. It presents a number of good practice examples, which can be very useful for public transport (PT) stakeholders to develop and implement attractive, clean, safe, accessible, effective, efficient and financially European local and regional public transport systems. The good practice case studies, as described in this deliverable, show a wide range of innovative approaches and policies of PT, which are currently existing at local, regional and national level.

This deliverable is based on the results of the state-of-the-art analysis, which have been summarised in the state-of-the-art report (Deliverable 2) of the VOYAGER project. The state-of-the-art analysis has identified the current PT trends in Europe and analysed the existing key problems but also the currently existing solutions for providing more efficient and effective PT systems and increasing PT patronage. However, in the state-of-the-art report existing solutions were only presented briefly. By describing a broad variety of case studies, Deliverable 3 will focus on the detailed presentation of existing solutions at local and regional level. This deliverable will 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 the decline PT market share.

Together with the state-of-the-art review, this report gives an overview of where the PT sector currently stands on the way to achieving a more sustainable transport and will therefore establish the current scope for action for PT stakeholders. The outcomes of Workpackage 2 (state-of-the-art analysis and good practices) will provide input for the strategically focussed discussion, which will take place in the following Workpackage 3 (Key challenges of PT).

Structure of this deliverable

The deliverable D3 “good practice case studies” includes case studies that have been produced by the leaders of the six working groups (WG), which are dedicated to the following PT relevant topics:

- WG1 Public transport market and customer relations
- WG2 Public transport infrastructure and rolling stock
- WG3 Roles and structures of public transport actors
- WG4 Seamless intermodal networks and services
- WG5 Public transport and ITS use
- WG6 Training and human resources development

Each working group leader was in charge of editing six good practice case studies. In addition to that, the leader of the of the Accession Country Issues Panel has produced three case studies from Accession Countries.

Before the presentation of the single case studies, the contents of the good practice case studies are synthesised and the impacts of the good practice case studies regarding the horizontal issues, which have been defined in the Deliverable 2 “State-of-the art report” are highlighted. The set of horizontal issues are based on sustainability categories as defined by the World Bank¹ and include economic and financial sustainability, social sustainability and environmental sustainability.

¹ World Bank: “Sustainable Transport: priorities for a policy reform”, Washington, 1996

The following chapter of the deliverable is dedicated to the issue of transferability of good practice case studies. It includes a practical guide for those PT actors, who want to transfer one of the good practices towards his city /region/ system/ organisation, etc. After dealing with the testing of the transferability of good practice case studies and assessment of the settings, some issues are discussed regarding potential barriers and “making a case study transferable” by preparing the setting.

Work steps undertaken to produce the good practice case studies

Based on the initial literature review in the first phase of the state-of-the-art analysis and the recommendations of the WG members, a shortlist of good practice examples from all Working Groups has been set up by the WP2 leader. From this shortlist, six case studies per Working Group plus three case studies from the Accession Countries have been selected by the VOYAGER consortium in agreement with the WG experts.

For the final selection of the good practice case studies from the short list the following criteria have been of relevance:

- Innovative concept
- Advanced status of implementation;
- Availability of validation results;
- Good prospects for transferability of experiences;
- Reliable and high quality information sources
- Wide thematic coverage (see chapter 2)

Furthermore, it was tried to consider a geographical balance when selecting the case studies. However, some countries are highly represented in the list of selected case studies (e.g. France, United Kingdom), whereas other EU countries are not represented at all. This can be explained through the advanced status of development and implementation of specific PT policy areas in some countries (and therefore the existence of adequate case studies and information) and the personal knowledge, expertise and contacts of the Working Group experts and the Working leaders.

In order to guarantee a comparable structure of the case studies, the WP2 leader has developed a common template to be used by the Working Group leaders. This template provided the authors with detailed guidelines on what kind of information should be given in the case studies.

The good practice case study outline defined the following main chapters to be filled up by the authors of the case studies.

- Key successes
- Abstract
- Urban profile
- Background and objectives
- Political and institutional framework
- Present stage of implementation
- Technical profile of project
- Results and impacts
- Barriers and conflicts

- Transferability
- Lessons learned
- Additional information
- Bibliography

The given outline with its different chapters, however, was considered to give general guidelines of how the case studies should be presented and were not seen to be “obligatory” for all case studies. For a number of case studies, specific chapter titles were not applicable and therefore changed or not taken into account.

2 Thematic topics of Case Studies and its impacts

2.1 Introduction

Thematic topics covered by case studies

For the selection of the Good Practice Case Studies, particular attention was drawn to the diversity of thematic areas. Therefore the WG leaders tried to define the content of the case studies according to the priority issues of their Working Groups, as they have been defined in the Inception Phase.

In this chapter, the contents of all selected case studies are shortly summarised. The thematic topics and titles of the case studies are presented in the table below.

WG	Location/	Country	Title of Case Study	Focus
Organisation of the PT sector				
3	Barcelona	E	The creation of “ATM Autoritat del Transport Metropolità ”	Creation of an integrating authority
CEE	Prague	CZ	Prague ROPID transport authority	Co-operation of actors and application of intermodal/integrated solutions
3	Porto	P	Metro of Porto	Co-operation between PT actors in infrastructure development
3	Delta Metropool	NL	Creation of a Delta metropolis and its Mobility network	Co-operation between authorities
3	Manchester	UK	Strategic Partnerships and Bus Quality contracts in the UK	Strategic and Contractual arrangements between Authority and Operator
3	Görlitz	D	Privatisation of PT services in Görlitz	Co-operation form between authority private operator
PT marketing				
1	Barcelona	E	Social Marketing, Barcelona	Marketing for captive passengers
1	Vienna	A	LOYALTY-Programme, Vienna	Marketing for regular customers
1	Paris	F	IMAGINE'R:	Loyalty Programme for young people.
1	Västernorrlands	S	Best price with smart cards, Västernorrlands läns Trafik AB	Ticketing; Pricing; Customer-orientation

WG	Location/	Country	Title of Case Study	Focus
1	Region London	UK	Branding, London	Brand management plan
PT market analysis				
1	Nuremberg	D	KONTIV, Nuremberg	PT market analysis - Survey for mobility studies (incl. Benchmarking)
PT infrastructure and rolling stock				
2	Grenoble	F	Grenoble bus route revitalization	PT hierarchic network and accessible infrastructure
2	Lund	S	Lund Interchange and infrastructure (PIRATE project)	Design of interchanges
2	Clermont-Ferrand	F	LEO 2000", an innovative PT system	Guided system on tyres and bicycle rental service
2	Lille	F	VAL's, a driverless guidance system	Vehicle technology, driverless guidance system
2	Reichoffen	F	ULEV-TAP - flywheel project	New power technology (Ultra low emission)
PT operation				
5	Southampton, Genoa, Toulouse	UK, I, F	Priscilla project	PT priority at traffic lights
Financing of PT				
3	Chicago	USA	Tax Increment financing	Innovative financing of PT
CEE	Czech Republic (nation-wide)	CZ	Financing and Regulation of public transport in the Czech Republic	Financing and Regulation of public transport
Intermodal mobility services				
4	Switzerland (nation-wide)	CH	Mobility Car Sharing -	Integration of PT and mobility services, Car sharing
4	The Netherlands	NL	Mobility Mixx	Intermodal mobility services for companies
4	Germany	D	Call a bike	Integration of cycling and PT use
4	East-Westfalia	D	Haller Willem	Strategy for the modernisation of a regional PT line
5	Genoa	I	DRINBUS	Demand Responsive Transport Services in urban areas
Integrated ticketing systems				
4,5	Hong Kong	HK	The Octopus system	Integrated ticketing for PT user and electronic payment
5	Paris	F	Navigo, Paris	Electronic Ticketing System based on a contactless smart card
Intermodal traveller information services				
4	Paris	F	Cité futée	Multimodal Traveller information
5	Gothenburg	S	GoTIC, Gothenburg	Internet based traveller information service
5	Turin	I	TITOS	Multimodal and multimedia PT and mobility information service

WG	Location/	Country	Title of Case Study	Focus
5	Italy (nation-wide)	I	Clickmobility	PT and mobility information service
CEE	Czech Republic (nation-wide)	CZ	Czech National Public Transport Schedule Database	Travel and Traffic Information
Organisational and personnel development				
6	Paris	F	Courtesy Service and Customer Loyalty	Customer Responsive Programs and on the job training
6	Barcelona	E	TMB Staff participation system	Human resources management strategy
6	Valenciennes	F	Study on "Insecurity and the feeling of insecurity on local public transport"	Strategy for improving security of personnel
6	Brussels	B	UITP Training Programme	International management training
6	Arriva (PT company)	UK	Diversity strategy	Diversity strategy within a PT company
6	Connexion (PT provider)	NL	Self managing teams	Human resources management

VOYAGER Good Practice Case Studies per Working Group

Impacts of Good Practice Case Studies

The good practice case studies that are presented in this deliverable have been selected since they are considered to have positive impacts on the economic and financial, social and environmental sustainability of PT systems.

Case studies can be considered as economically or financially beneficial when they have proven to contribute to the overall efficiency and effectiveness of the PT system or they have developed sustainable financing solutions.

When case studies have shown that they provide the citizens with better travel opportunities and better access to their day-to-day activities, such as employment, education, and health services without being dependent on the car, they can be seen as socially beneficial. For many of the selected case studies positive economic (mainly for the operators) and social impacts (mainly for the customers) could be identified at the same time.

For a few case studies, the positive impacts were mainly seen in the area of environmental sustainability. This was the case when the presented case studies have shown a direct effect on the reduction of pollution or resource consumption.

The impacts of the case studies on the sustainability categories are described for each of the thematic topics, for which case studies have been developed.

2.2 Organisation of the PT sector

Overview of case studies

The case studies under this chapter deal with new organisational forms of PT, such as co-operation between PT related authorities or co-operation between authorities and operators.

The **Barcelona case study “The creation of ATM”** is a good practice example for the development of a single regional transport authority. Following the lack of integration between the different PT modes in the past, which hampered a better functioning of the PT system in Barcelona, it was decided to improve the integration of PT modes by creating a single Metropolitan Transport Authority (Autoritat del Transport Metropolità, ATM). The responsibilities of this new authority include the planning for all PT infrastructure and services and monitoring of private operators; managing of an integrated fare framework; establishing funding agreements with the central government and with the individual operators and finally collecting the fares, taking care of advertising, information provision and public relations.

Another success story related to the creation of an integrated transport organisation at regional level can be found in the region of Prague. **ROPID** is an independent organization, which has been created in 1993 and is owned and largely financed by the city of Prague. The major tasks of ROPID are to set up and manage integrated tariff and fare systems, agree on (integrated) network and service parameters and their funding, make tariff agreement with operators, negotiate contracts on provision of services, organize a Prague Integrated Transport information system and select transport operators of newly established routes. The Prague Integrated Transport system comprises the City of Prague and now 250 communities outside of Prague. ROPID is constructed as a free association of purchasers (municipalities) of public transport, where ROPID guarantees the purchaser a service under contract with the transport operators. ROPID formulates the order from the purchaser and negotiates it with the PT operator. In March 2002, 15 operators were providing services including 130 suburban bus lines (although many suburban lines are serviced by the Prague PT company).

The case study “**The Metro of Porto**” can be considered as a good practice for cases, where new infrastructure is envisaged for a specific urban area without an overall empowered authority. In 1992 the Portuguese Council of Ministers approved the constitution of the company “Metro of Porto S.A.” and one year later the company is formally established. Delegates of the different involved authorities in the Porto Metropolitan area form the administration. The creation of this company was essential for the realisation of the Metropolitan Metro (Light rail) system covering several different administrative areas and involving several levels of government, increasing the social, economical and environmental sustainability of the Metropolitan area of Porto.

Another interesting example related to co-operation forms between authorities is the case study from **Deltametropool in the Netherlands**. The Deltametropool case study has the objective of integrating the planning and development of policies and transport infrastructure, due to an enlarged and integrating mobility scope of different urban areas. This case study is a good example of how PT planning is considered as a key issue and unconventionally fully integrated within the overall mobility planning, future urban development and necessary water management, involving all relevant stakeholders including all levels of authorities and covering several different administrative areas. Moreover, the Deltametropool case study describes an interesting approach with regard to the planning of new land-development around existing or envisaged mobility networks, including public transport, instead of the usual other way around.

A good example for strategic and contractual arrangements between authority and operator can be found in **Manchester**. The open access deregulation for public transport in the UK has made the integration of PT services more difficult (due to the increase of competition). A way of improving the co-ordination of PT services is provided by the “Quality Partnership”, a concept, which has

been developed in the U.K., in response to its particular structure of PT operation. In 1998 the Passenger Transport Authority of Manchester and the operators decided to adopt the “Greater Manchester Quality Partnership” in order to deliver a high quality integrated PT network. Within this Quality Partnership, measures for quality improvement have been formulated in the areas of: passenger information, the waiting environment, services, fares and ticketing and connections and interchange. Many quality partnerships exist for serving individual bus routes, but the Greater Manchester agreement has been the first, which covers the management of an integrated PT system.

The City of **Görlitz** (Germany) has followed an interesting approach of co-operation between authorities and operators with the purpose of privatising the local PT network. The City of Görlitz decided to privatise and tender its public services with the intention to remain all public services within one entity. Furthermore, it wanted to assure employees’ rights and citizens interests. In 2001 74,9% of the Public Service Company’s stock was sold to a private company. The municipality kept a proportionally large involvement in the strategic decision taking. A large package of new and upgraded infrastructure and services, like for instance a new tramline and its regional expansion was included in the deal.

Impacts on horizontal issues

The most important impacts of the case studies related to new organisational forms of PT can be seen in the area of economic and financial sustainability. Effective competition, well-designed regulation as well as improved co-operation between PT actors can help to achieve better outcomes. As the case studies show, new forms of PT organisation can largely contribute to a higher efficiency of the PT sector and result in substantial service improvements. New organisational forms can also have effects on social sustainability, since a better integration of services due to the co-operation of operators will lead to a PT offer which is more accessible and attractive for its customers.

The creation of a single regional transport authority, ATM, in Barcelona has proven to be one key factor for the increase of PT patronage in the last years. Passenger movements increased from 680 million in 1997 to 800 million journeys in 2001. Thanks to the establishment of a single Metropolitan transport authority the public has a better perspective of the PT network and several new infrastructures have been implemented, for instance a new metro and tram line. Furthermore, a more sustainable financial framework has been established. The administration is no longer almost automatically covering the deficits. Public subsidies are calculated ex-ante, allowing for a more efficient cost control.

Another example, where an integrated transport organisation at a regional level has reached substantial economic benefits is the ROPID organisation in the region of Prague. The continuous growing number of municipalities joining the ROPID organisation in the last years proves that ROPID has been successful in creating a feasible and workable integrated suburban system which is attractive not only for the municipalities and operators of the Prague region, but also for the PT users. Although there is no base to compare against, the results of customer satisfaction surveys show a strong general satisfaction (75 % of passengers) with regard to the services co-ordinated by ROPID.

But also the “quality partnership” case study from Manchester shows, that improved co-operation of individual operators has resulted in efficiency and service quality improvements in the PT network. An integrated services centre covering all PT modes and journeys within and from/to Greater Manchester, and giving information on timetables, journey planning and fares has been created. Thanks to the “Quality Partnership” agreements in Manchester, the network stability has increased and considerable progress has been made with the integrated ticketing system. Furthermore, several bus priority measures have already been implemented and different Quality bus corridors are under development. The overall quality of the used vehicles increased.

The case study from the City of Görlitz is an example for positive effects on financial sustainability. The fact, that private actors have been involved in the financing of PT infrastructure, reduces the need for public financing/subsidising. But also economic benefits for the private investor can be ensured by agreed degrees of freedom enabling the operator to develop and adapt the public transport network in line with the changing demand of (potential) passengers. The company itself is also increasingly focussed on the customer. This resulted not only in a more integrated way of information provision, but also in a restructuring of the companies' internal organisation, enabling an increased focus on the customer.

2.3 PT marketing

Overview of case studies

In five good practice case studies various marketing approaches in PT companies, such as global/targeted marketing campaigns, product marketing and branding, are presented.

The '**Sociological Marketing**' initiative in **Barcelona** is a marketing campaign, which does not target specific groups or areas but aims to include all current customers. The objective of 'Sociological Marketing' of TMB (Transport Metropolitans de Barcelona) is not to sell more tickets but to achieve both functional (utility) and psychological satisfaction (comfort, emotional well-being, symbolic representation of public transport use) of its customers. The strategy of 'Sociological Marketing' aims to create satisfied customers so that they transform themselves into defenders of public transport services.

The case studies from **Vienna (LOYALTY-Programme)** and **Paris (IMAGINE'R)** are examples for targeted marketing campaigns. The public transport operator of Vienna, the Wiener Linien, decided with its LOYALTY-Programme to focus the marketing initiatives on their "loyal users", since they recognised that it is easier to increase the number of public transport trips of 'loyal regulars' than those of people that never before used public transport. The approach taken by the Wiener Linien is to gain "loyal regulars" from the beginning. This is to be achieved by corresponding marketing initiatives, like establishing a close dialogue between the company and the annual cardholders and offering "loyal added values".

Another Loyalty programme (this time for young people) is presented in the case study **Imagine 'R' from Paris**. The card Imagine 'R' is a special tariff offer for young people in order to attract customers and to bind them to the PT company. The card is valuable for one year and besides travelling at an attractive price, it offers added values like invitations to special events as well as leisure and consumption rebates. A valuable secondary aspect of the card Imagine 'R' is its accompanying offers (magazine, website, SMS community) to diversify the contacts with the targeted clients and create a better customer relationship.

The case study from the region of **Västernorrland in Sweden** is an example for product marketing in the area of ticketing and pricing. In order to establish a fair and simple PT system in Västernorrland, a new ticketing system (including a discount system) with smart cards has been introduced in 2000. These smart cards can be used for trips to neighbouring regions, however the discount system is only valid in Västernorrland. This discount system has two main advantages. On the one hand, PT customers pay lower prices the more trips they make, which rewards frequent users. On the other hand, people pay only for trips if they really travel and unlike monthly/weekly tickets, nobody has to pay anything when no trips are undertaken. In addition, information services are connected with the smart card.

With the further privatisation and the development of a free PT market an increasing number of PT companies are getting more active in the development of an independent and specific brand for their company. The case study "**Branding London Underground**" presents an interesting example of developing a brand management plan. In order to be more customer-focused, London Underground has developed a new brand approach. The main objective of the new brand strategy

is to ensure greater consistency in the delivery of services to customers. The new brand shall help to optimise customer satisfaction and enhance the relationships with all stakeholders. For London Underground, it is about ensuring that the business objectives of maximising net social benefits are met.

Impacts on horizontal issues

The marketing approaches, as presented in the case studies, can be considered as economically efficient and effective tools for the future development of PT systems. Successful marketing measures can significantly increase revenues and PT ridership (or at least contribute to maintain the actual number of PT customers) and/or lead to a better capacity utilisation of the existing PT network.

This has been proven by various case studies, like for example the LOYALTY programme of the Wiener Linien. In the beginning, some key actors of the Wiener Linien thought that the money for the advertising activities around the annual card would have no big impact and would be better spent for the acquiring of new customers. After the great success of the campaign (raising revenues, raising number of annual cardholders) these critics have changed their opinion and are now in favour of the annual card. In comparison with the achieved goals, the costs for maintaining existing annual cardholders turn out to be very economic.

Another commercial success is the implementation of the card Imagine 'R'. In Paris, the number of Imagine 'R' cardholders has been continuously increasing and this process is still not at its end. The example of the card Imagine 'R' shows that marketing campaigns with customised tariff offers, targeting a specific group can significantly increase the use of public transport modes in the targeted group and also create a long-term relationship with the company initiating the campaign.

The example from the region of Västernorrland in Sweden shows that a new ticketing system with smart cards can bring enormous benefits both for the public transport operators and the customers, even in sparsely populated areas. With the smart card, an attractive ticket system has been developed that is simple to use and enables fair prices for the customers. Especially the discount system, used in Västernorrland encourages people to buy a smart card and to use public transport modes more often. The related communication activities establish a personal dialogue with the customers. As a result of the smart card and statistics system, the transport companies receive a lot of information on the trips of customers, the trips revenue and the patronage at every part of the buslines all over the day.

However, as the example of the 'Sociological Marketing' initiative in Barcelona shows, the positive impacts of marketing strategies on PT ridership and revenues usually cannot be noted immediately. The implementation of the first steps of 'Sociological Marketing' have already started to transform the image of the company and of the provided public transport modes in the eyes of the customers (proven by surveys). But 'Sociological Marketing' is a real long-term strategy and can only be successful if a continuous monitoring of the outcomes takes place.

But also the brand approach of London Underground has to be considered as a long-term activity and concrete results of this brand approach cannot be given yet. For London Underground, adopting a brand strategy represents a major milestone in making it a customer-focused organisation.

2.4 PT market analysis

Overview of case studies

The continuous **mobility survey KONTIV® in Nuremberg** is a city-wide instrument for market analysis for the VAG Nuremberg (public transport operator). The survey helps to identify the present situation and trends concerning mobility behaviour and attitudes towards mobility, allowing the development of corresponding measures.

Impacts of Good Practice Case Studies

The continuous mobility survey KONTIV® in Nuremberg can contribute to the economic efficiency of the local PT system, since the detailed analysis of the PT market, as presented in KONTIV®, is an important condition to position the PT services within the overall transport market. It also provides an analysis of the role it could play and the user needs it should respond to. Surveys and studies about the PT market and the customer's behaviour and preferences with regard to PT are the basis for planning effective and customer-oriented PT services. KONTIV® has become an important planning tool for the local PT operator, to plan and implement the right measures for a better public transport. It is also used for the evaluation of the success of the implemented measures.

2.5 Public transport infrastructure and rolling stock

Overview of case studies

The following good practice case studies are focusing on the design and modernisation of PT infrastructure and the development of new PT vehicle systems and technologies.

The **Grenoble** case study describes **the revitalisation of a bus line**. This project was started in the framework of the "Cité bleue" programme (1992) which aimed at upgrading the bus lines to the characteristics of tram lines. The 18 km bus line with 54 bus stops provides connections with 2 tram lines and 9 bus lines. This line was officially launched in September 1998. The revitalisation of the line included:

- improving the accessibility of bus stops,
- developing 12 km of dedicated lane along the bus line;
- installing traffic light priority at most of the junctions along the route;
- modifying the position of bus stops where necessary to favour proximity with places attracting the public and to improving safety.

The second case study presents an example of **multi-modal transport interchange restructuring in the City of Lund (Sweden)**, which provides high quality service to users of all kinds of transport modes. A big effort was made concerning the accessibility of bicycle users. The reconstruction of the railway station in Lund included the provision of increased P+R capacity (car park and ride), increased B+R capacity (bike and ride), improved connections with the urban bus network, rural buses and intercity coaches as well as the improvement of passenger comfort within the interchange.

The "**LEO 2000**" project is about the testing of a tyre-wheel guided system in **Clermont-Ferrand (France)**. The PT authority of Clermont-Ferrand has launched the experimental line "LEO 2000" with 6 optically guided buses and, in a second step, 6 CIVIS, newly designed vehicles which integrate wheel-motors and optical guidance. The experiment consists of testing technological

progress on the French and European level and of studying the advantages travellers may experience when using a highly innovative, complete public transport system under real operating conditions. Furthermore, an additional offer of a bicycle lending and rental service at some stations of the LEO 2000 line (with 50 electric and 50 standard bicycles) has been provided.

Another case study presents the successful **driverless system from the city of Lille**. Lille was the first city in the world to adopt a new form of fully automated urban metro. The VAL concept is a driverless guidance system and consists of rubber-tyred vehicles using an automated guideway, segregated from other road users for safety reasons, and allowing the greatest possible flexibility.

A new type of vehicle technology is described in the case study on the **ULEV-TAP - flywheel project**, which is aimed at designing and assessing the flywheel energy storage system. This power generation system would partially replace the external supply of a mass-transit electric vehicle, light rail or trolleybus. ULEV-TAP is an abbreviation for Ultra Low Emission Vehicle - Transport using Advanced Propulsion. This is a rail vehicle in which a flywheel is used for storing braking energy that can be retrieved later while accelerating. Thus, the Prime Mover Unit, which is a gas turbine with a high-speed generator, has a significantly lower power rating than would be needed without flywheel, since it only has to deliver the average power demand.

Impacts on horizontal issues

The case studies on PT infrastructure and rolling stock are showing considerable impacts on the economic efficiency and effectiveness of the PT system (mainly by decreasing costs or by raising incomes through increased PT patronage) and therefore on the economic sustainability of PT. At the same time, most of the case studies have contributed to a better service quality and increased customer satisfaction, which means that also social benefits could be achieved. The use of innovative propulsion technologies, as presented in one case study can lead to environmental improvements related to pollution and resource consumption and therefore to more environmental sustainability.

The example of the revitalisation of the bus line in Grenoble has shown, that the frequency of the bus service could be increased by 13% and commercial speed from 15.5 km/h to 17.4 km/h. 80% of time saving was due to the traffic light priority system. Patronage of the line increased by 18% over the same period during the previous year, which was far higher than the increase of 7% recorded for the whole network. Customer satisfaction appeared higher than that recorded two years before, regarding comfort, cleanliness, smooth driving. But also the drivers appreciated their new equipment and the dedicated lane gave them greater driving comfort, provided that it is not blocked.

An example, that the modernisation of an interchange can result in a high degree of service improvements and customer satisfaction, is described in the Lund case study. In Lund, the new interchange facility is highly appreciated by all users. Travellers safety and security has been improved by restructuring the interchange surroundings and providing well lighted waiting and walking areas. Since cycling facilities have been improved and cyclists are authorised to use lifts within the interchange, travel distances and efforts can be reduced and cycling is more safe.

The driverless system of Lille, called VAL, has proven to provide great economic benefits, because there is less need for personnel. The saving related to the marginal cost of a VAL km compared to a bus km is in the region of 1 to 3, mainly due to the reduced driver costs. However, since personal contact (mainly for security and information reasons) is highly appreciated by many customers, the reduced number of personnel can at the same time be seen as a social disadvantage. In terms of reliability and flexibility of the operation, the VAL system has shown good results. The adoption of the VAL concept in many French and foreign cities has consolidated the success of this light rail system. This driverless guidance system has also progressed in certain heavy metro projects, but with different technical approaches.

The tyre-wheel guided system of Clermont-Ferrand “LEO 2000” seems to be an economically interesting option for a high quality PT system, between bus and tramway, with intermediate cost and capacity. However, in order to achieve higher commercial speed and cost-effectiveness, the guided sections should be implemented on dedicated lanes. Perspectives in terms of the Civis system’s market value are not small but they are linked to the system’s reliability. The LEO 2000 evaluation shows a steady increase of the guidance system reliability.

Due to reduced energy consumption (the prototype achieved a gain of 21 % in energy consumption) and pollution the ULEV-TAP - flywheel project can contribute to the environmental sustainability of PT. Positive economic effects can be achieved through less energy costs. Furthermore, it is expected that this project can help to develop technology solutions, which can reduce investment and maintenance costs. The perspectives in market terms are currently low, but are linked with the capability to offer very good reliability and low cost. Limits are possible in terms of competency for operation and maintenance. The first results of this project were encouraging, but need to be confirmed by further improvements and assessment in real operating conditions.

2.6 PT operation

Overview of case studies

The **PRISCILLA project** describes the implementation of a comprehensive bus priority system. The main objective of the PRISCILLA project was to ‘take-up’ existing **bus priority** practices and to improve them for wide networks by adapting new technologies and processes. The project included the cities of Genoa (Italy), Southampton (UK) and Toulouse (France), where network-wide bus priority systems were installed. The case study focuses on the Genoa site and the main results of the PRISCILLA project.

Impacts on horizontal issues

The PRISCILLA project is an example, which makes clear that only bus priority measures can lead to significant benefits in terms of travel times and punctuality, which lead to a real improvement of service quality offered to the end users. The PRISCILLA project has also shown, that during the period when the traffic is highly disturbed by unusual events, bus priority can have negative impacts. However, bus priority is only one of the means that can be used to improve the bus network. For improving the overall quality of the bus network, measures for integrating services or improving the design of bus stops and interchanges are of equal importance.

2.7 Financing of PT

Overview of case studies

In one case study a remarkable example of PT financing from **Chicago** is presented. Since 1977, the city of Chicago uses the tool of Tax Increment Financing (TIF). TIF is a tool that can be used to finance redevelopment in decayed areas. As vacant properties developed with TIF assistance return to productive and appropriate uses, the value of those properties increases. This will create an increase in the tax revenue generated within the TIF District. The "increment" created between the "baseline" and the new tax revenue level is captured and put in a TIF fund that is solely used for improvements within the TIF district (e.g. for the development of PT infrastructure).

Another case study gives an overview of **Financing and Regulation of public transport in the Czech Republic**. The Czech policy for regional public transport aims to support the minimisation of social exclusion and to support sustainable mobility for rurally originated trips all as economically efficiently as possible. To these ends, since the early 1990s, a stable and co-ordinated minimal adequate coverage of regional public transport service is provided by law, at a socially acceptable

tariff. Loss making „basic public transport” services (e.g. transport to schools, health facilities, public offices and employment places) are subsidised, tariffs regulated, concessions offered and the service regulated and planned by regional transport offices. The total state subsidy package for basic public transport service is in practice limited and defined by resources made available. However, a high percentage of households and basic destinations in smaller towns and villages are covered within walking distance of a stop and with a frequency in the order of at least 4 connections daily. The 3 key players in the system of public transport service provision are the regional transport office (the regional service customer), the public transport operator and any municipality ordering suburban or urban services.

Impacts on horizontal issues

The tool of Tax Increment Financing (TIF) from Chicago can be seen as a financially sustainable solution since it shows an innovative way to generate additional funding for PT infrastructure by catching a financial input from all beneficiaries of new or upgraded infrastructure. TIF can be considered as a tool that could help to divide the benefits and the costs of the different stakeholders in a more balanced way.

The case study on “Financing and Regulation of public transport in the Czech Republic” has shown, that the way of how public transport services are financed, can have significant social impacts. The Czech system of subsidising basic regional public transport services can be viewed as a stabilising base line for regional public transport and can lead to less social exclusion. Through central management, the system also supports intra-regional integration of bus and rail transport.

2.8 Intermodal mobility services

Overview of case studies

5 case studies in the field of “intermodal mobility services” are presented. They deal with intermodal travelling services, such as car sharing, combined PT and bicycle use, integration of PT modes and demand responsive transport services in urban areas.

The case study “**Mobility CarSharing Switzerland**” is a very successful example of the integration of public transport and innovative mobility services. Mobility CarSharing Switzerland” is the world’s largest Car Sharing organisation. Today, the national Car Sharing scheme offers in cooperation with local public transport (PT) operators as well as with the Swiss Federal Railways a complete nation-wide intermodal mobility service, which can be considered as one of the best offers in terms of combination of public transport with Car Sharing. An increasing number of PT operators in Switzerland consider Mobility Car Sharing as an integral part of their mobility programme for regular customers, and include Car Sharing in their offer.

The “**Mobility mixx**” concept is an innovative business mobility service from the Netherlands, which offers companies or organisations flexible and intermodal mobility solutions for their employees. “Mobility mixx” provides companies with a full range of transport options to business travellers (according to the individual needs), simplifies the administration of business travel and improves cost transparency of the organisation. “Mobility mixx” services also include budget control and advise, fiscal information and travel information. In December 2001 the operational phase started with three launching customers and in April 2002 was the commercial start of “Mobility mixx”. In April 2003 “Mobility mixx” has around 50 companies and organisations as customers.

As far as the integration of public transport services and the use of bicycles are concerned, the case study “**Call-a-bike**” from **Deutsche Bahn AG (German railways)** can be seen as quite an advanced example. “Call a Bike” is an innovative bike hiring service, which offers a cost-effective, comfortable, easy and convenient alternative to the car in inner city areas. The “Call a Bike”

system offers a whole fleet of high-tech bikes in the cities of Munich, Berlin and Frankfurt. Bicycles do not have to be returned to departure stations. They can be left at the nearest major crossing within the core area. The service can be used all around the clock. The “Call a Bike” system has been highly appreciated by railway customers, but also by other city visitors. In Berlin and Munich more than 20,000 persons are currently registered as Call a Bike clients. More than 1,100 individual bike rides are recorded every day.

The “**Haller Willem**” case study contains a success story of the revitalisation of a regional railroad line in Northrhine-Westfalia (Germany). The railroad line, which originally dates back to 1886 was closed for passenger transport in 1984. A citizen’s initiative strongly promoted the idea of revitalising this regional railroad line and managed to attract interest among the relevant stakeholders. In June 1999, first works started on the old track and until today the project has been successful in modernising the old tracks to suit modern low-floor trains, reorganising some railway stations in order to satisfy passengers needs, providing Park and Ride as well as Bike and Ride facilities at stations and finally corresponding train and bus connections with matching timetables and integrated tickets. The revitalised railroad line “Haller Willem” has become a modern, easily accessible, comfortable, comparatively fast, environmentally friendly, reliable means of public transport.

The **Drinbus case study from Genoa** represents a particular demand-responsive transport service, since it runs in highly populated hilly urban areas, which are not served by traditional PT due to accessibility problems. The management of reservations and trips is supported by a software for booking acquisition and route and timetable optimisation, a software for vehicles location (built on a GIS software) and on-board terminals (provided with GPS for vehicles location).

Impacts on horizontal issues

By promoting the quality of PT services, which has benefits for all citizens, in particular for the socially excluded, all case studies related to innovative mobility services can largely contribute to social sustainability. The different strategies for fostering intermodality, as presented in these case studies, have considerable impacts on improving the availability, accessibility and attractiveness of PT. In addition, most of the case studies are expected to have positive economic effects, since a better service quality can lead to a rise of trips by PT modes and finally to increased revenues.

The case study “Mobility CarSharing Switzerland” is an impressive example of how the combination of PT modes with individual means of transport can increase the overall availability and attractiveness of PT. The number of customers of “Mobility Car Sharing Switherland”, which was founded in 1997, has increased continuously over the last years and has achieved 50.000 customers in 2002. The continuously growing vehicle fleet of Mobility Car Sharing currently consists 1.770 cars at 990 locations in 400 communities all over the country. The size of the company has paved the way for an increasingly professional organisation. The effects of joining a Car Sharing scheme on the mobility behaviour are considerable. Car Sharing customers usually use cars less frequently and tend to increase the use of more environmentally friendly modes of transport, which has also positive effects on the consumption of energy and space.

“Mobility mixx” offers an alternative to standard mobility solutions of companies or organisations, which can lead to considerable benefits for the employees, but also for the employers. Through easy-to-use services it enables business travellers to make use of individual intermodal services, according to personal related to speed or comfort. The economic benefits of “Mobility mix” can mainly be expected through the reduction of efforts for the management of business travel and the overall mobility costs.

The “Call a Bike” system of the Deutsche Bahn has shown, that the integration of public transport and cycling can bring notable benefits not only for the customers, but also for the operators. Through the combined implementation of measures, such as an innovative bike hiring scheme, shared facilities, on board accommodation and joint access routes, both public transport and

cycling can benefit. Benefits for PT operators and authorities can derive from a better image, increased patronage and also from reduced congestion in the longer term.

Thanks to the “Haller Willem” project, the overall quality of PT services in a low density area could be improved considerably. The project has successfully managed to revitalise a neglected railroad line and to turn it into a modern, comfortable, means of transport. The success of the project can particularly be seen in the number of passengers on the regional line, which rose from approximately 1,600 on weekdays in 1999 to 2,500 in Sep. 2000.

The Demand Responsive Transport service (Drinbus) in Genoa is an example of a service, which responds to requests of individual passengers in areas, where a traditional public transport did not exist before. The social benefits of this service are significant, since it provides for many people a viable transport alternative to the single occupancy private car. After one year of operation, the results of the service are very encouraging: the new service is highly appreciated by the public, in particular by “captive” users, such as students, elderly and housewives. Drinbus is a service close to users. The high number of bus stops and the short distances between them ensure a good accessibility of the service to all users. The Drinbus case study also shows clear environmental benefits. The demand responsive transport service can help reducing emissions and pollution by substituting car trips, using methane vehicles and minimising distances without travellers.

2.9 Integrated ticketing systems

Overview of case studies

As regards integrated ticketing systems, which allows the use of a broad range of transport modes within a region with only one ticket, the “**Octopus system**” from Hong Kong can be seen as one of the most advanced and successful examples. The “Octopus system” is a contact-less smart card system for the fare payment across all forms of public transport in Hong Kong using one single ticket. The Octopus system has extended from a transport payment system to a general e-payment system for small-value transactions. Octopus is known as the world's most successful experiment to date in stored-value, electronic cash cards.

The **NAVIGO smart card pass** is the first big and flexible e-ticketing system in Europe, based on a contact-less smart card system. The main reasons behind the introduction of the contact-less ticketing system in the Ile-de-France region were to set up a more simple and fluid ticketing system, permitting individualised service for the customer. Furthermore, the combined use of various types of public transport and associated services should be made possible on one contact-less smart card. The introduction of the NAVIGO smart card pass in the Ile-de-France region started in 2001 following the research and demonstration results obtained in the previous 10 years of deployment, supported by two major EU projects: ICARE and CALYPSO. The NAVIGO smart card pass is designed for all passenger carriers and for all modes of transport.

Impacts on horizontal issues

As can be seen by the examples of Paris and Hong Kong, smart card based ticketing systems can bring benefits for both, the customers and the operators. In these cities smart card ticketing systems have been introduced that are a fast, reliable, cost-effective and convenient method of PT fare payment and collection.

The number of Octopus cards as well as transactions that take place each day across the networks of the service providers of the Octopus system in Hong Kong has steadily increased over the last years. This shows the high degree of acceptance of the Octopus system amongst the citizens. But also for the PT operators involved in the Octopus system, significant benefits can be achieved in terms of cost savings, enhanced equipment performance, more operational efficiency, flexibility of fare schemes, increased security and marketing opportunities.

The case study on the NAVIGO smart card pass has shown similar results. The pass has been widely accepted amongst its users and the economic effects of the NAVIGO smart card system are expected to be positive given the lower maintenance costs and the reduction in lost revenue due to fraud. The fact that the NAVIGO smart card technology has been developed as an “open” technology allows different operators to define individual systems using a complete range of cards.

2.10 Multimodal traveller information services

Overview of case studies

The case study “**CitéFutée**” from Paris is a remarkable example for the development of multimodal traveller information services in Europe. “CitéFutée” is an internet-based information service for travellers in the Paris region, provided by the public transport operator RATP (Régie Autonome des Transports Parisiens). The site offers high-quality information in real-time about public transport (all modes, route planning, tariffs, schedules, incidents), road traffic (status, route planning, incidents) – including comparison between both alternatives – as well as practical and leisure information (maps, sights, events, etc.). Furthermore, the service includes options for personalisation through individual preference settings or opening a personal e-mail box, and it integrates three accessory sites for specific target groups (young people, tourists, businesses).

GOTiC (Gothenburg Traffic Information Centre) can be seen as another a good practice for an internet-based traveller information service. The objective of GoTiC is to ensure that all travellers in Gothenburg, regardless of the transport mode they use, have access to relevant information on travel routes and travel times in real-time and thereby contributing to the optimal use of the traffic system’s infrastructure. An important condition has been the technical development of KomFram (Get There), the real-time system, which now has the capacity to offer real-time forecasts of all arrivals of all public transport vehicles at all stops on the public transport network.

A further interesting case study of multimodal and multimedia PT and mobility information service is the **TITOS traveller information application in Turin**. TITOS has been developed in 2000 on the basis of the large-scale project in mobility telematics named 5T (Telematic Technologies for Transports and Traffic in Turin). TITOS provides real-time information on private and public transport, traffic, mainly by Internet and SMS. The aim of the TITOS Public Information subsystem is to help travellers to plan their trips on-line before and during their journeys. It provides recommended travel itineraries from and to any point in the city area.

The “**Clickmobility**” case study deals with the nation-wide internet portal for PT stakeholders in Italy. The portal offers to people involved in the mobility and PT sector the first high added value information centre and customised on-line consulting services. “Clickmobility” is on-line since May 2001, satisfying the information requests of an increasing number of users. At the end of 2002 the number of regular users of Clickmobility (those that are linked at least once per week) was around 8.000. The total number of visitors at that time was around 500.000.

The **IDOS** case study is a good practice example of multimodal traveller information at nation-wide level in the Czech Republic. IDOS is a National Schedule Database, which provides information on all kinds of transport modes in the Czech Republic. The free Internet search engine holding the National Schedule Database (www.idos.cz) offers intermodal integrated timetable information on the combination of trains (Czech, international), buses (all regional, national: Czech and Slovak) and urban public transport in the 3 largest cities (Prague, Ostrava and Brno). A further 9 major towns and many other smaller ones also provide their public transport timetables on the system. This means that the information service is truly local, regional and national in nature. The database is based on a public-private partnership which has managed to successfully provide free information for end users on the Internet while giving a commercial incentive as well: The main commercial aim of the private company involved in the project is to provide high quality schedule

data for other added-value service providers in this area (mobile phone services, off-line databases etc) and directly sell data with added value over the free service.

Impacts on horizontal issues

For the case studies related to traveller information clear positive social and economic impacts can be noted.

The case study "CitéeFutée" has shown the great potential that multimodal traveller information services can have on improving the overall attractiveness of public transport. The information service from "CitéeFutée" is currently used by 40.000 travellers every day. Since its introduction in 2001 this number has doubled annually. Therefore, CitéeFutée is now a well established service and represents a key reference for travellers in the Paris region. To assess, how far it contributes to actual changes in travel behaviour (modal shift), to attract new users or retain old ones, will require more operation time, but the corresponding evaluation is underway.

The case study also shows, that there are clear economic benefits for the PT provider (RATP). The information services are expected to provide a direct financial payback through increased ridership. Moreover, the PT operator expects that the creation of a "one-stop-shop" for travellers offering everything from multi-modal transport information, city and event information, ticketing and transport services can lead to an image improvement of the company.

For Public Transport users in Gothenburg, the Traffic Information system has improved the travel quality and the time of trips has been reduced and therefore the real-time information system is more and more appreciated amongst its users. Also the users of the TITOS system in Turin stated that the given traveller information is an important factor for improving the overall quality of PT. Furthermore, the users perceived the performance, reliability and assistance quality of the TITOS system as positive.

The GOTiC case study shows, that traveller information systems can contribute to an increase of customers and incomes for the PT company. Annual profits of the Gothenburg Traffic information system (due to an increase of incomes and a decrease of costs) are estimated to approximately 100 MSEK (10,8 million €). This means that the investment in the real-time system had paid for itself after only about 1.5 years.

But also the experience of the IDOS project (Czech Republic) is very positive for both the users and the information providers. The timetable information of IDOS is fully intermodal, covers all national and regional public transport and many towns, is of high quality and is well used through a number of relatively ubiquitous media. Total National Schedule Database usage including mobile and Internet access was an impressive 1.5 million requests per month (the population of the country is 10.2 million) in mid-2002.

The operator of the electronic National Schedule Database creates most income by selling information through mobile phone operators, telephone, advertising on the Internet (around 17,000 users per day), CD-Rom + floppy discs (around 1,000 clients, own direct sale) and self-service terminals. The role of mobile operators as end-user information providers is key to the ubiquitous impact of the system and the feasibility of the business model (up to 1 million requests per month). The system very clearly demonstrates that some Travel and Traffic Information policy aims can be achieved to high quality and with minimal public investment with the use of and reliance on the private sector in a lightly regulated relationship. The National Schedule Database highlights the benefits of well-balanced co-operation between state (service regulation and institutional/ legal support) and private sector (service management and financing, data marketing and system development) on such projects and shows the benefits of a top-down regulated approach for improving local and regional travel information through integration and intermodality.

2.11 Training and human resources development

Overview of case studies

In the following case studies different innovative approaches of staff development are presented, which have the objective to mobilise all personnel of PT companies to provide satisfactory service to the customer or to introduce new organisational structures, new technologies, new management theories and work methods.

The case study “**Courtesy services of customers**” from **RATP, Paris** deals with a staff development programme in order to provide high quality services to the PT customers and to increase the overall attractiveness of PT in the Paris region. Actions within this staff development programme include the development of new staff assignments (in particular those of staff in contact with their customers), increasing staff awareness about changes within their environment, offering various types of training and the assuming of greater responsibility by staff members.

In the case study “**TMB Staff participation system**” from **Barcelona**, the human resources management strategy of TMB (PT operator in Barcelona) is presented. One part of this strategy is the TMB participation system, which is intended to improve the internal communication as well as involvement and development of staff. In order to strengthen a problem solving approach among staff members, working groups have been set up at TMB that consist of people from the same or different work areas that meet voluntarily and regularly during the life time of a project. The idea behind the groups is based on the principle that people who do a job know it best and are thus most eligible to develop and present suggestions for improvement. Besides this intention the working groups facilitate personnel integration, involvement and participation and promote teamwork in an organised way. They offer every staff member a way to contribute to the improvement of relations within the company and to implement a culture of continuous improvement.

The case study “**Insecurity and the feeling of insecurity on local public transport**” reports on a study, which explored, how the issue of insecurity in local public transport was being addressed by social dialogue within PT companies. The study was carried out by a European delegation made up of three representatives of the employers of the sector and three Trade Union representatives. One of the cases that has been analysed in detail was the City of Valenciennes (France), which can be considered as an example of how to use social dialogue to respond to the problem of insecurity. The case study presents the activities undertaken by SERMIVAL (PT operator of Valenciennes) related to: analysis and measurement of insecurity and prevention and avoidance of incidents and risks.

Another case study describes the “**Training Programme for Public Transport Managers**” of the International Union of Public Transport (**UITP**). The training programme of UITP offers its members’ managers the opportunity to improve their understanding of global mobility issues and enhance knowledge on the hot topics at present in public transport, touching upon globalisation and liberalisation, sustainable mobility and pricing of urban journeys, contractual arrangements between operators and authorities, integration and seamless travel, a total quality management and customer approach, safety and security, innovative rolling stock, travel information, electronic ticketing, etc.

The issue of **introducing diversity in local public transport companies** is described in the case study of **Arriva**. One of the major staff related challenges that Arriva (one of Europe’s largest passenger transport organisations, employing over 30,000 people) is facing is, that its staff mainly consists of male and white employees and biased towards full-time working, whereas by 2010 available staff resources will be predominantly female, increasingly from a different ethnic background and biased towards part-time working. Arriva is convinced that they have to adapt its

business to meet this challenge. For this reason a Diversity Committee has been developed. The activity areas of this Diversity Committee are presented in this case study.

Another interesting example has been compiled about the development of self-managing teams in Connexion, the biggest public transport operator in the Netherlands. These teams face full responsibility for a certain part of transport services and considerably contribute to improving the services and streamlining internal working procedures. The resulting flexibility of staff also increases the individual satisfaction with the own job.

Impacts on horizontal issues

The staff development programme of RATP has shown, that the involvement of all staff members of a PT company in the services provision is essential in order to improve the satisfaction of the customers. By means of the new courtesy services for the customers, this programme has laid down the conditions for the successful increase in new customers and keeping old customers. This means, that the staff development programme is likely to have positive social impacts, but also economic benefits, by contributing to further increase in revenue.

The same is true for the “TMB Staff participation system” from Barcelona. The working groups of the staff members can contribute to enhancing the quality of service and customer satisfaction. Depending on the project subject, they support the improvement of working methods and procedures as well as safety and working conditions. Staff members involved in the groups benefit from participating in decision making and solving problems in their professional environment. The problem solving oriented co-operation with their colleagues clearly helps to increase their knowledge and professional preparation.

The study “Insecurity and the feeling of insecurity on local public transport” can have considerable social impacts, related to the improvement of security of staff members of PT companies. The study has made clear that social dialogue is essential not only to reduce the impact of insecurity within companies, but also to bolster the type of civic dialogue which is necessary to combat the different categories of offences (vandalism, anti-social behaviour, theft or muggings).

The “Training Programme for Public Transport Managers” can most likely contribute to a more economically sustainable development of PT companies. The Training Programme is mainly targeted to managers who have an important role to implement most of the changes from the top to the bottom of their organisations. By improving the knowledge and skills (competencies) of the PT managers, the Training Programme can help to maintain or increase the levels of innovation, service, quality and efficiency within the companies and therefore promote the development of modern service providing PT companies.

The Arriva case study shows that a clear diversity strategy within a PT company can help to improve the performance and organisational efficiency of the company and increase the overall productivity and PT ridership by taking into account and integrating the multicultural, multi-racial needs of passengers with differing ages, gender, and abilities.

Flexibility as achieved in the self-managing teams helps to improve the service and thus contributes to improving the efficiency of the overall PT service. The increased individual satisfaction with the own job provides an essential contribution towards a socially sustainable company climate.

3 Transferability of Good Practice

3.1 Introduction

A key objective of good practice case studies is to learn from the best and to avoid mistakes already made by others. This means, that a good practice example does not have to be a practice lacking difficulties or barriers. It could be a good practice as the final outcome of the realisation shows an extraordinary (positive) result or alternatively an innovative process.

When selecting the case studies within the VOYAGER project, the general understanding was that each good practice case study should include a potential for transferability.. The following chapters will show that within an assessment of transferability it is not enough to assess only the good practice itself. The setting of the recipient should as well be understood, and only after an additional assessment of the differences and potential barriers, the level of transferability of the good practice can be determined. Only then it is possible to determine the validity of the qualification "good practice case".

Nevertheless, most identified good practice case studies within VOYAGER are not transferred to another setting and therewith a real assessment of its transferability proved to be infeasible. It was therefore decided to provide the readers of this case study report and the different PT actors, especially the ones that could foster the transfer of good practice, with some guidance in understanding the different transferability issues. It is expected, that the different good practice case studies in combination with the following transferability guidance will secure genuine good practice.

Transferability of good practice case studies would have to distinguish between testing whether a case study is transferable and making a case study transferable. The latter means that a good practice, which within a first assessment did not seem to be suitable for transferability, could be transferable partly or within a somewhat adjusted format. It implicates a shaping of the setting for the implementation of the good practice. More important, the "making transferable" points out that in practice few project/s measures are completely transferable.

3.2 Testing the transferability of the good practice case

In order to identify good practice it is necessary to understand the state of "normal practice". It is therefore essential not only to take knowledge from the respective case study, but also to understand ones own practice and the different developments within the respective field. When, for example, it is intended to transfer a good practice related with security, it is essential to know what are the latest trends and developments in the area of security.

The testing of the transferability of a good practice can be divided in four correlated assessments:

1. generalise-ability of the good practice case study and the determination of the real outcome;
2. comparability of settings and policies²;
3. checking of the availability of resources that are necessary to transfer the package of good practice measures to the recipient setting; and
4. preparation of transfer with included and cause-effect assessment³.

Generalise-ability assessment;

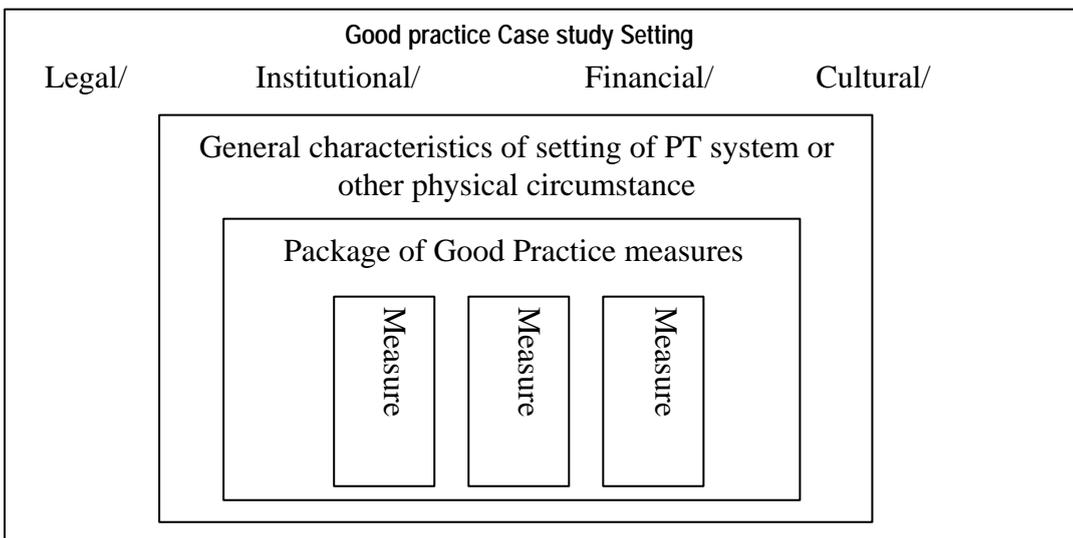
² Based on material of MARETOPE, 2000-2003.

³ Mainly based on material of TRANSPLUS, 2000-2003.

Firstly, the package of good practice measures should be defined. Then it should be tried to determine, to which extent the good practice outcome of the case study is the independent result of the “package of good practice measures”. It is possible, that the positive outcome was caused due to a correlation with a specific present factor of the case study’s setting, even completely be the result of the case study’s environment characteristics.

For instance in the presented VOYAGER case study from Gothenburg⁴ it is stated that an advanced real-time system cannot be realised without the right conditions – buses and trams must be able to drive in their lanes without obstruction and be given priority at intersections regulated by traffic stoplights. These conditions were created in the different traffic planning actions taken over a period of several decades in Gothenburg and created by regulations and new infrastructure. In this case the new regulation and new infrastructure are specific factors that have to be taken into account.

Therefore in order to determine the transferability, it is essential to assess as well the setting of the good practice case. The characteristics of this setting can be split into the physical and non-physical factors that positively or negatively influences the outcome of the ‘package of good practice measures’ (see figure below).



Package of Good Practice Measures within its setting

In a first layer it should be assessed, if there are any characteristics of the physical setting, PT system or other physical circumstances that significantly influences, negatively or positively, the outcome of the integration ‘package’.

Secondly the so-called non-physical setting could influence the outcome of the good practice package. The following type of non-physical factors can be identified:

- legal and regulatory framework and/ or specific measures;
- present institutional and organisational framework;
- financial and fiscal framework and / or specific measures; and
- cultural and social factors.

⁴ GOTIC” – GOthenburg Traffic Information Centre, VOYAGER case study WG5.

In Gothenburg case study the building of new infrastructure and implementation of new regulation clearly influenced the outcome of the good practice. However, the real considered outcome of the good practice is the availability of a reliable information system for the traveller. In this respect, the case study can be considered generalise-able when the setting of the good practice is compatible with recipient setting. Therefore when a sufficient level of generalise-ability of the good practice case study is identified, a comparability study should be carried out to determine the relative compatibility between the policies of the good practice case study and the recipient's own policies.

Assessment of comparability of policies;

In relation with the different related policies, the comparability study has to take into account seven aspects⁵:

- actors objectives;
- diagnose of the problems solved and to be solved in the recipient case;
- existing legal framework;
- existing institutional and organisational framework;
- political framework;
- public acceptability; and
- ability to enforce and realise the good practice outcome.

For instance in the case study Cité Futée⁶, a real-time customised information internet site of the Parisian RATP, it is stated that the RATP made the strategic decision to become an integrated public transport and service provider, rather than a mere transport operator. It has to be assessed if this strategic approach exists in the recipient setting, and if not how this will influence the outcome of the good practice measures implemented in the recipients' case. Another example is the Mobility Car Sharing practice in Switzerland⁷. In this good practice study the level of success is depending largely on the availability of a sufficiently dense and attractive network of public transport. The recipient has to make sure that this is also available in ones own setting and according to its defined policies.

Whereas the generalise-ability assessment was mainly meant to identify if there are any specific factors that influence the outcome of the good practice in the initial setting, the comparability study should identify if there are specific policy related factors within the recipient setting. Logically the more comparable, the more likely the package of good practice measures is transferable.

Assessment of availability of resources and cause-effect analysis

After having identified the potential of transferability of the good practice and its potential outcomes, in a second step a transferability requirement assessment has to be elaborated. This consists of an analysis of necessity and availability of resources. This should be assisted by a cause-effect analysis, which should assess the alteration in the former resources after the transfer and other expected impacts. The transferability requirement assessment should take the following issues into account:

- administrative requirements;
- personal requirements;
- financial requirements;

⁵ Adapted from LEDA, 2001.

⁶ "Cité Futée", Paris VOYAGER case study, WG4.

⁷ "Mobility Car Sharing", Swtzerland, VOYAGER case study WG 4.

- knowledge requirements;

while the cause-effect analysis should:

- identify recipients of the measure (winners and losers) and their potential for reaction;
- devise potential mitigation measures towards opponents; and
- quantify potential impacts and respective scope.

For instance in the implementation of the increased customer service in the case study “Courtesy service of customers” in Paris⁸, it has to be assessed which knowledge is necessary within the recipients organisation to provide the training classed to the employees. Furthermore, the level of potential opposition by the employees against these training activities should be evaluated.

Within the case study of private involvement in public service provision in Görlitz⁹, a recipient public authority should assess what are the necessary administrative requirements for a tender. Especially they should try to quantify the potential impacts and respective scope of the private involvement.

Resulting from the lessons learned, an adjusted package of measures can be developed and the decision can be taken to transfer the good practice or not (risk assessment). Then a contextual preparation for implementation of the transferred package of good practice measures has to be prepared. Some important facilitating issues in relation with the adaptation of the good practices package and potential barriers and mitigating measures are discussed in the following chapter.

3.3 Potential barriers and “Making a case study transferable”

As presented above there could be many factors that influence the transferability of a good practice case study. In general it is expected that the case studies are more easily transferable when¹⁰:

- they are less context-dependent;
- the organisation for service delivery are substitutable;
- the resources available to develop are similar;
- the mechanism by which the programme works (cause and effect structure) are simple;
- the scale of changes the programme produces are small;
- the programme covers areas of interdependence between importer and exporter jurisdictions; and
- the values of policy makers are relatively consensual.

Although generalise-ability of the package, compatibility of policies, availability of resources and consensus between policy makers is essential, it is as well necessary to identify all stakeholders, their individual costs and benefits and opposing or supporting reactions. Additional measures have to be developed, particularly to overcome or mitigate the potential developed hindering or blocking obstacles of opponents.

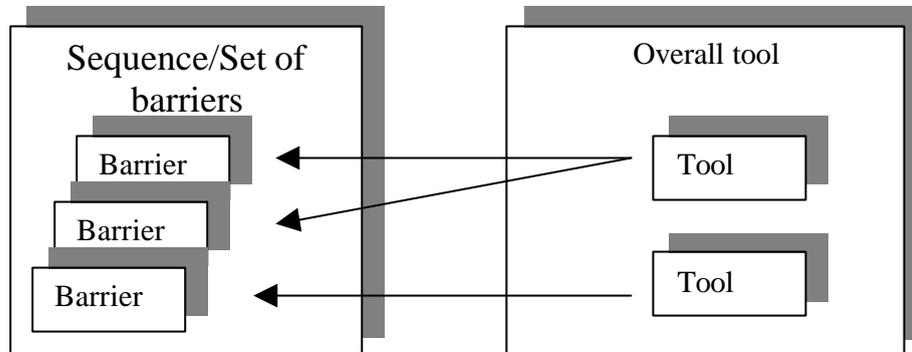
All four assessments can reveal a number of barrier situations that could block a successful transfer and realisation of the good practice with emphasis on the revealing of “situations” of barriers, as the blockades are often a mixture of barriers. For instance in the Barcelona case, the realisation of an integrating and competencies integrated public transport authority was hindered

⁸ Courtesy service of customers (RATP Paris), VOYAGER case study WG6.

⁹ Privatisation of PT services in Görlitz, VOYAGER, case study, WG3.

¹⁰ Taken from D4.3 TRANSPLUS 2003, originally from Rose R (2001): ten steps in learning lessons. from abroad. Future Governance Paper 1, University of Strathclyde.

by a combination of political and financial obstacles¹¹. The mitigating measures or so-called tools could also be focussing on the mitigating of just a single barrier or a constellation of barriers (see figure 3.1).



Constellation of barriers and potential tools

Few general rules can be identified to guide the process of transfer and the analysis of the occurring barriers and the preferable mitigating measures.

For instance, when experiencing a legal or regulatory barrier, firstly it has to be identified who has the competencies to overcome this barrier. After this, it should be assessed whether the measure can be adapted in this respect, or the legislation or regulation should be adjusted.

Particularly the consultation of all stakeholders and participation of politic and public seems to be a critical success factor. For instance in Görlitz after the political decision was taken to tender part of the public services, all political parties had a delegate in the commission that had to supervise the implementation and realisation proceedings¹². It has to be noted, that politics and public are not per definition homogeneous and their perceptions are often based on behavioural incentives.

However, depending on the nature of the good practice, it is essential to stimulate a level of participation of the different stakeholders. For instance the case study of the realisation of multimodal and multimedia public transport and mobility information services in Turin¹³ has shown, that it was impossible to develop innovative ideas against the will of any of the key actors. A common understanding is as necessary as the financial resources to generate integrated systems. In general, the involvement of all stakeholders will eventually ease the necessary adaptation of good practice package of measures and recipients' setting and subsequently proceedings of implementation and realisation.

¹¹ The creation of "ATM Autoritat del Transport Metropolità", Barcelona, VOYAGER case study, WG3.

¹² Görlitz, VOYAGER, case study, WG3.

¹³ Turin –Titos, VOYAGER, case study, WG5.