D.T1.3.5 ADOPTED RUMOBIL STRATEGY

Report on the strategies to link rural areas to European and national transport networks	Version 6
	2 2018

Table of contents

1. Introduction

The deliverable **"Adopted RUMOBIL Strategy"** is a work paper that highlights the necessity to link rural areas to European and national transport networks and shows how this can be accomplished with the limited resources available. It is the final deliverable of the **Activity 1** " Elaboration of the RUMOBIL Strategy" of the Work Package Thematic no. 1 and it can be considered as the upgrade of the work paper "RUMOBIL Strategy Outline".

Furthermore, the RUMOBIL Strategy is the step thanks to which the solutions that could be accepted by the decision makers for the improvement of the sustainable mobility in their own rural and peripheral areas have pointed out.

In terms of transnationality and transferability, the Strategy will allow other regions' transport actors to clarify their expectations concerning the objectives and solutions of RUMOBIL project and, in more general terms, of the improvement of the mobility in rural areas.

Finally, the Strategy is based on a common starting point that is composed mainly of comparative and unique analysis of good practices and lessons learnt, pilot test results and recommendations.

2. Key aspects of the strategy

The key aspects of the definition of the RUMOBIL strategy for the development of public transport in rural areas are the main goal of the project activities, which is the necessity to contrast the population decreasing, the economic and technical self-sustainability in order to guarantee the transferability of the strategy outside the partner territories and beyond the end of the project, the target users, to which solutions should be addressed, and the users' needs, which should be satisfied.

2.1. Necessity to contrast the population decreasing

Nowadays, rural areas are about the half of entire European territory and they are occupied by the 20% of the total population, so it is clear how this is a matter of a certain relevance. Such a huge number of people, therefore, lives in a particular situation that is definitely different from what is considered the standard quality of life for the rest of Europe. This condition is characterised by several aspects that added up lead to a specific scenario.

First of all, the main issue affecting rural areas is the demographic change (strictly connected to the distribution of activities). Business cores, workplaces, universities, etc. are always more concentrated in big cities and, in this way, rural inhabitants (in particular, adults and young) have to make a decision: move towards the metropolis or stay in the village trying to reach their own destination anyway. It is not rare to see the first case, with an obvious result: in rural areas the average age clearly grows, entire families leave their original territory so that elderly people become the main part of the population.

This leads to another issue of rural areas: in certain sites it can be observed a lower population density than expected, with the consequence that these areas become even more isolated. All is reflected in another issue, i.e. the poor PT offer. In areas with low densities of population it is more difficult to realise a proper Public Transport service since the demand is not enough and it would lead to an under-utilised system, with enormous costs. Obviously, this is a further reason behind the movement towards the city.

It must not be underestimated also the attitude of people living in rural areas. Notoriously, technological development, ICT tools, and above all the awareness of them, arrive at a later stage in

these areas which are a bit out of a particular environment such that one of the big cities. This makes slower the approach of people with an entire new world that in this era is omnipresent, to say the least.

2.2. Self-sustainability

One of the main assumption of the project is the planning and implementation of actions through limited resources available and an approach of financial self-sustainability. In this way, it is easier the strategy proposed will continue in the afterlife project period and also in external contexts not directly involved in the project activities ("transferability").

In order to guarantee the future application of the strategies proposed, it is essential to carry out and continuously strengthen the stakeholder network, connecting the partners with other public bodies, suppliers, firms, etc.

All the practices highlighted in the analysis are characterised by a pretty low level of financial resources required in order to implemented the upgrading actions. In this light, it is possible to distinguish two groups of actions:

- implementation of communication campaign, to raise citizens' awareness of PT services, improvement actions of bus stops, services for disabled and elderly people and planning activities on the already existing PT offer require a low or medium level of resources (approx. between € 20,000 and 75,000 per single pilot case);
- concerning the implementation of new PT services necessarily require a higher level of funding (approx. > € 75,000 per pilot case).

2.3. Target Users

The target users of the solutions planned and adopted in RUMOBIL partners' territory in order to promote the public transport in rural and peripheral areas are characterised by a set of actions that suit the wide group of the inhabitants of the rural areas, taking in particular account the needs of disabled and elderly people.

The following table shows the details of the target users which the pilot activities are addressed to.

PARTNERS' TERRITORY	TARGET USERS	OTHER USERS
Saxony-Anhalt	Rural areas inhabitants	All potential users (in particular ageing and disabled people)
Vysocina Region	Rural areas inhabitants	All potential users
Self-government of Szabolcs-Szatmár-Bereg county / Nagykálló	Regional inhabitants	All potential users
Žilina Self-governing Region	Regional inhabitants (in particular, ageing and disabled citizens)	All potential users
Karlovac County	Regional inhabitants (in particular, rural citizens and tourists)	All potential users
Mazowieckie Voivodeship	Regional inhabitants	All potential users
South Bohemia Region	Rural areas inhabitants	All potential users
Castelfranco Emilia	Regional inhabitants	All potential users

2.4. Users' needs

In rural and peripheral areas and regarding mobility questions, the need of an effective and useful public transport system is surely the most urgent request to be satisfied. Indeed, in more partners' territory the

improvement of PT has been highlighted, in terms of enhancement of the supply (frequency, no. of daily departures, etc.), creation of more appealing services for the users, more accessibility to PT systems for all users in rural areas, in general, and disabled and elderly people, in particular, and promotion of the systems in order to raise the citizens' awareness of the services.

The following table summarises the users' needs pointed out in the territories involved in RUMOBIL project.

USERS' NEEDS	PARTNERS' TERRITORY
Implementation or improvement of PT services in rural areas	Saxony-Anhalt Vysocina Region Karlovac County South Bohemia Region
Effective PT services	Saxony-Anhalt Mazowieckie Voivodeship Karlovac County Self-government of Szabolcs-Szatmár-Bereg county / Nagykálló
Appealing and comfortable PT vehicles	Žilina Self-governing Region Vysocina Region Mazowieckie Voivodeship Karlovac County Self-government of Szabolcs-Szatmár-Bereg county / Nagykálló
Higher levels of accessibility for disabled and ageing people	Saxony-Anhalt Žilina Self-governing Region
Flexible PT services (e.g. door-to-door)	Saxony-Anhalt South Bohemia Region
Higher awareness of PT services	Saxony-Anhalt Castelfranco Emilia Vysocina Region South Bohemia Region Self-government of Szabolcs-Szatmár-Bereg county / Nagykálló Mazowieckie Voivodeship
Better distribution of stops/stations on the territory	Saxony-Anhalt Žilina Self-governing Region Vysocina Region Karlovac County
Effective real-time informational applications	Žilina Self-governing Region Self-government of Szabolcs-Szatmár-Bereg county / Nagykálló Mazowieckie Voivodeship Castelfranco Emilia
Better interchange nodes	Žilina Self-governing Region Karlovac County

3. Inputs

To create a unique Strategy that allow us to build the strategy to be adopted in rural areas and suitable not only for the partners' territories but also for other European rural and peripheral contexts ("transferability"), the following inputs have been considered:

- analysis of the good practices in the field of public transport and mobility in rural and peripheral areas in Central Europe. The results of this task are summarised in the "Work paper: learning from good practices"
- overview of the technological state of the art in transport and mobility in rural areas ("Internet of Things"), the correlation between economic aspects and public transport and the effects of the demographic aspects on the rural and peripheral mobility demand and transport supply;

- highlights arisen from the policy conference at Wittenberg, Germany (October 2017), where several interested actors participated;

- recommendations and solutions planned and included in the "Strategy Outline", in which the requirements of the implementation of a good "service strategy" were pointed out, as well as the characteristics of the pilot experimentations in the partners' territory.

3.1. Good practice analysis

As explained in the D.T1.1.3 "Work paper: learning from good practices", 29 good practices were collected in 17 different areas in 5 EU countries (11 in Germany, 2 in Italy, 4 in Austria, 2 in Czech Republic and 2 in Poland).

All the practices were divided into three different categories depending on the issue they concerned, which are: new services to better connect rural areas, improvement of access points to national end EU transport network, enhanced passenger information to increase the quality of public transport in rural areas. All the practices considered produced and produce benefits and substantial positive impacts in terms of sustainable mobility, providing an effective and innovative service for each rural and peripheral area.

The analysis of these good practices highlighted the following **lessons learnt**, here listed in order of importance coherently with what emerged:

- to implement an **integrated and coordinate system** in the most important nodes through an harmonised timetable and a selection of the best areas to create new nodes or renew older ones. Interchanges can range in size from a single stop to an intermodal station but they should be always recognisable by the users. In this way, the users could find useful solutions to continue their own journey and reach the final destination;

- to implement a **unified tariff system**, including rail service and also cable cars, rack railways, ferries/local ship lines;

- to **enlarge the network** to the surrounding cities, towns or regions and also beyond country borders, if they are part of the same urban area and they have mutual demand flow;

- to adopt **Demand Responsive Transport services in rural and peripheral areas,** where it is allowed[1], which are one of the most effective ways to serve low-density areas and to connect them with the "traditional" services and the main transport corridors. Indeed, DRT services are characterized by a great flexibility and reduced costs, although great effort is needed to continuously manage the operation and all involved actors;

- to **involve small transport companies or taxi services** as subcontractors to provide DRT services and, in particular, to build synergies with taxi services already working and through a special tariff less expensive. In this light, an innovative on-demand taxi service could be implemented;

- to implement **on-demand bus services organised with volunteer drivers**, reducing substantially the operating cost of the service of about -50% of the costs per km. On the other hand, it is a long-time process to plan and implement a public transport service based in voluntary engagement, especially the implementation of legal requirements, which are a challenging task. Furthermore, it is a challenge to find enough drivers who are willing to support the action on a voluntary but long-term basis;

---

[1] Czech law does not allow really flexible DRT services. Buses need regular timetable and go on call/order in fix times on fix routes.

- to promote an **info-mobility system also through web and mobile app**, giving real-time information to users and increasing the quality and effectiveness of the interchange. A managing centre can be the technological platform upon which innovative services can be developed/managed/monitored by different partners. Moreover, managing centres can help local authorities to manage special events, emergences or daily stop-and-go traffic;

- to better develop the **information flow for potential and actual passengers**, which could improve the usability and access to a DRT service. In this light, it is advisable to implement a software to manage information, focusing on those that could access to the service without a previous reservation, which is too often not possible;

- to create an **intermodal systems also favouring the use of bike**, often significantly used in rural areas through various types of facilities, such as simple bike racks, secure bike pounds, secure and sheltered parking places, etc.

- to **cooperate with the municipalities, regional district and regional PT companies**, mainly in order to develop a real and effective integrate mobility system. Also cooperation with tourist areas must be taken in consideration. Especially politicians have to be interested in flexible and innovative transport solutions;

- to **involve SME and private operators** who, with the help of local government, promote innovative transport systems and the local heritage of territories, in cultural, naturalistic and artistic terms, and raise citizens' awareness. It is essential taking into account the development of transport systems, also in rural and peripheral areas, can be the starting point for a general growth of the areas less populated;

- to aim at the **social cohesion**, particularly important in rural areas too often affected by a population aging. In this light, an additional important topic is the implementation of accessibility for people with disabilities. On the other hand, that requirement entails further challenges. For example, an accessible vehicle is much more expensive than an ordinary small bus. Furthermore, the conversion of the vehicle is combined with an increase in weight which leads to more ambitious requirements for the drivers.

The solutions examined highlight the strengths and weaknesses, whose main aspects are synthesised in the following table.

STRENGTHS	WEAKNESSES
New services to better connect rural areas	
Possible involvement of volunteers and non-profit organizations to reduce operating costs in DRT services	DRT services can be supported by unskilled volunteers who often require the compliance of a specific legislative framework
Mutual cooperation and social cohesion of citizens of the same town or area and stakeholders	The current booking systems and route management could not be adequate for higher level of demand
Flexibility of timetable and routes of DRT systems, booking systems are very simple and managed on-time	Difficulties to create and manage an integrated tariff system with the traditional PT offer
	High initial cost for the buying of buses
Possible high level of accessibility to PT of disabled and elderly people who need to access to primary services	Coordination of various authorities and/or the availability of different operators sometimes even competitors in the same territory

STRENGTHS	WEAKNESSES
Helping to ensure the right to mobility of persons living in rural areas and do not have (or cannot use) private car Tourist appeal of the territories Low vehicle congestion	Elderly population and therefore not always easily movable Buses that allow disabled people to access are most expensive and they require drivers more skilled Bad road condition on the countryside
Improvement of access points to national and EU transport network	
Interchange nodes and PT services are more recognizable by the users More safety for the people waiting for the buses More security or perception of security for PT users	Results will be visible mainly in medium/long term High investment and maintenance costs Need to use sophisticated tools for managing services in a complex interchange area Reticence of some municipalities to have P+R systems close to the railway stations
Enhanced passenger information to increase the quality of public transport in rural areas	
Large use of apps and web based tools by young people Real-time fleet monitoring for users and other stakeholders Possibility of checking and monitoring demand and offer by PT operators and the competent public body Creation of the assumptions for the "internet of things" in order to improve PT systems	High initial cost for ITS tools Difficulties to use apps and web based tools by ageing people

3.2. Workpapers on the Strategy outline

The three work papers carried out in the framework of the activity 3 "Elaboration of the RUMOBIL Strategy" has been useful to identify the state of the art of the mobility in rural areas and the correlation with demographic and economic issues in contexts where the population is decreasing.

Data and information were collected and analysed in the three deliverables:

1) Macro-economic effects of PT for rural regions (drawn up by The Institute of Technology and Business in České Budějovice);

2) Opportunities and boundaries of transport network telematics (drawn up by T Bridge S.p.A., Genoa - Francesco Edoardo Misso, Filippo Eros Pani, Simone Porru, Cino Repetto, Umberto Sansone);

3) New demand patterns for PT due to demographic change (drawn up by University of Zilina, Zilina - Marián Gogola, Dana Sitanyiová, Ľubomír Černický, Milan Veterník).

3.2.1. Macro-economic effects of PT for rural regions

A geographical location and the related transport accessibility and traffic services are without any doubt essential elements to create preconditions for the economic development. It is well known that higher

opportunities to travel mean higher work chances to be caught and, consequently, more resources also for leisure activities. This process is a basic principle of the economic development of an area and it is the core of the concept of accessibility. Accessibility can be defined as the interaction between the system of activities, sites of interest (workplaces, sites of study, etc.) disseminated on the territory and the transport systems serving it.

Nevertheless, the availability of a service is not enough to ensure high levels of social inclusion and so of economic development. This is the difference between motility and mobility. The first one is the ability to travel, without any other deeper considerations, while the second one is the effective concretion of a trip. To make this last one possible, two elements are essential:

- efficiency of the transport system, that shall be understood as all the features that make a mode of transport attractive (precise, affordable, well deployed on the territory, comfortable, safe, etc.);

- user-friendliness, that means that the user can easily know everything interesting about it and in real time (schedules, routes, traffic situation, delays, costs, etc.).

For sure, private vehicles can strongly contribute to it, but it is known that they are not affordable for everyone. Furthermore it is not possible to imagine an entire population whose only mode of transport is the private one. Just think what would be the impact on the environment or the traffic congestion.

Hence the necessity of a Public Transport system that could support people in their activities, in particular for rural areas.

Nowadays commuting is a common practice, both for working and studying, and this represents a more important issue in those areas and villages where there is no alternative to the private vehicle to reach the biggest city nearby and, as it has been said, cars are not so popular in areas where the economic development is slower in itself (it is like a vicious circle).

In order to have a practical example of how much transport systems and economic development are correlated, a study has been carried out on a microregional level, in different low populated areas of different EU countries, involving more than 4000 municipalities. Although the study was carried out also for interregional and macroregional levels, the results are not so significant and clear as for the first case. In fact, factors like accessibility in terms of kms and time, number of public mass transport links and average travel time using these links have been analysed and combined with factors like the number of employers or self-employed people, unemployment rate, total population, etc.

The results of this analysis were that, not only that the majority of this factors are significantly correlated (i.e. the variation of the first influences the second) but also that this connection is logically oriented. In the following diagram the most relevant significant correlations are shown (the highest is the number, the strongest is the correlation).
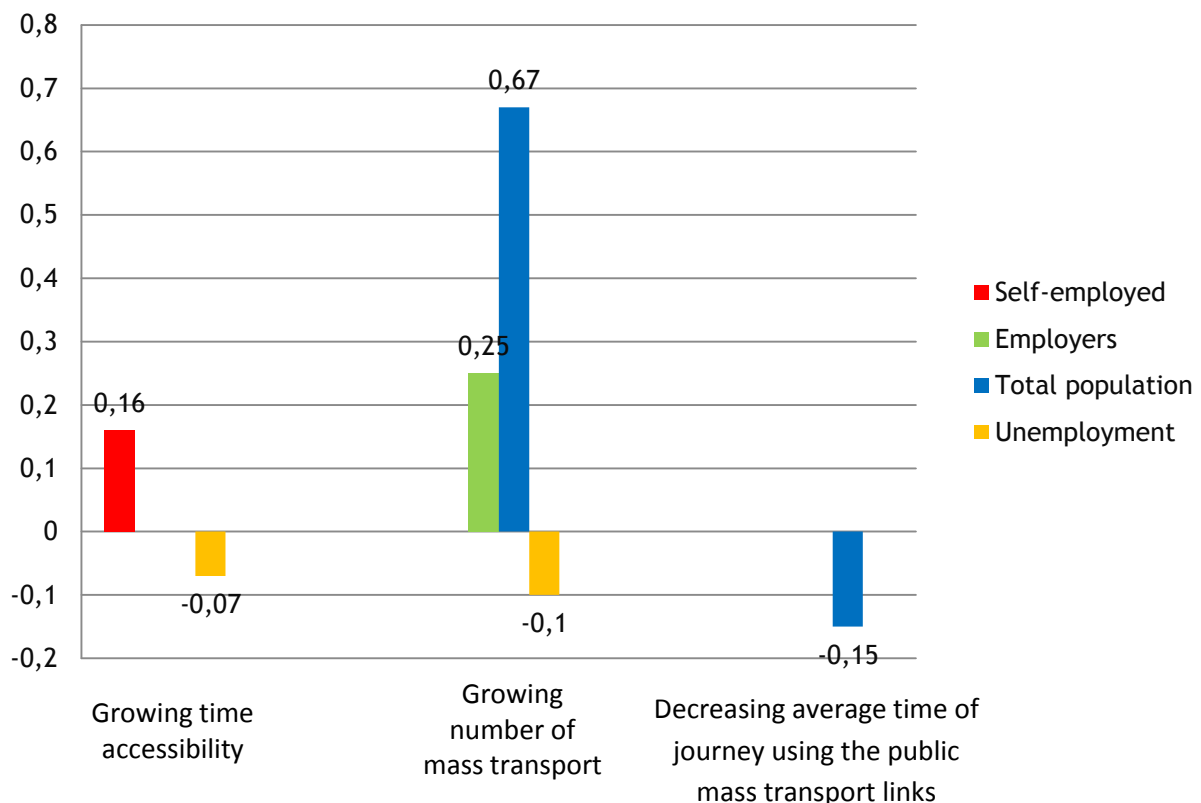
Figure 1-The correlation indicators between the main mobility and economic factors

What emerges from the diagram is that if time accessibility grows, the number of self-employed people grows while unemployment decreases. Similarly, when the number of public mass transport links grows, both employers and total population grow while unemployment decreases again. Another example regards the average time that, when decreasing, implicates an increasing total population.

If the PT system is simply accessible and not too far from the majority of the citizens of an area, these ones can accept a higher number of job offers because they know that can count on a cheaper mobility alternative instead of private car (and for a lot of them this could be the only alternative).

If an area is better provided with more and faster mass transport public links, total population of this area automatically grows. People are less worried about getting far from big cities to establish in villages and rural areas, because they are aware of the opportunities offered by PT that allow them to be always involved in all the activities. This can be interesting both for adults (as said, for job opportunities) and children, who can attend to sport, art, leisure activities that usually take place in the city in the afternoon. In particular, from the analysis is evident how it is important the number of links which indeed positively influences also the unemployment rate.

These were just some evidences that have in common the same basic concept: when there is a PT system with enough performances level and features, the logical consequence is a clear socioeconomic development.

3.2.2. Opportunities and boundaries of transport network telematics

Starting as a static repository of interlinked hypertext documents, over the past decades, the Internet gradually changed into a dynamic universe of networked humans, machines and applications. First experience was represented by **the Internet of content**, i.e. the definition of the HTTP protocol and the creation of the World Wide Web (WWW), which marked the creation of the "real" internet, that is the Internet we all use today. In this phase, the Internet was static and used for publishing and sharing

content. The next step has been **the Internet of services**, where XML, web services, user-generated content, productivity and collaboration tools, together with the advent of the e-commerce, brought the Internet far from the static pages of the early websites and eventually led to the Web 2.0. Recently we had **the Internet of people**, characterized by the wide adoption of mobile devices with broadband access and the increasing popularity of social network apps brought about the current phase of the Internet evolution. The last evolution is **the Internet of things**. The increasing use of Machine-to-machine (M2M) communications and big data analytics is bringing about another revolution in the way we are using the Internet. In this phase, objects are becoming part of information systems and end-user applications, effectively creating a ubiquitous and unlimited universe where machines and humans interact to make our society safer, greener and healthier.
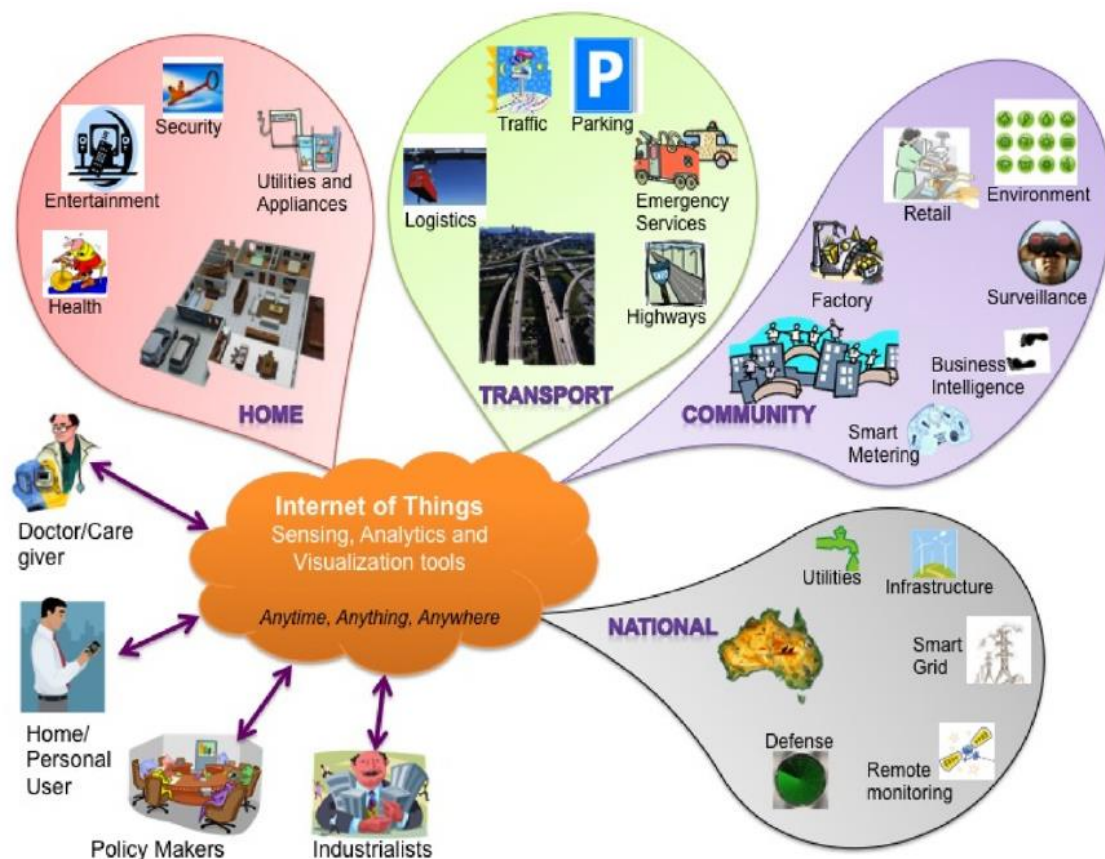

Figure 2 - IoT applications

IoT consists of three layers: the perception layer, which includes all the devices capable of perceive, detect objects, gather information, and exchange information with other devices through the Internet communication networks (e.g. RFID, cameras, Global Positioning Systems (GPS), sensors); the network layer, which is in charge of forwarding data from the perception layer to the further one (e.g. Bluetooth and ZigBee for short distances, while WiFi, 2G, 3G, 4G, and Power Line Communication (PLC) for long distances); the application layer, where the information is received and processed, and where smart homes, smart cities, intelligent transportation systems are effectively created.

Before going deeper in the concrete opportunities offered by IoT in transportation and also in the challenges that can emerge, we have to understand which are the potentialities (listed below).

Mobility patterns - Driving behaviour can be studied through monitoring mobility patterns which provide crucial information about the big picture of individual's habits and routes.

Traffic Data and Cooperative Systems – Mobile devices or cars can be used to acquire urban traffic data available on road infrastructure.

Smart Transport Infrastructure – Intelligent transportation systems (ITS) is the collective term which comprises all smart infrastructure technologies which are being embedded in traffic lights, car parks, roads, bridges, and toll-booths to make them capable of communicating with one another and with vehicles.

Intelligent Speed Adaptation - Any system that does not allow the vehicle to exceed the safe or legally enforced speed is referred to as an Intelligent Speed Adaptation (ISA).

Iot applications can be useful both for planning and for services.

Some opportunities in terms of planning could be:

- Collection of traveler data - Movement patterns of smartphone owners can be easily extracted with applications, and leveraged to identify, among other things, the chosen transport mode and the time when they start or stop using services.

- Collection of vehicle data - IoT brings about benefits even on from the vehicle data collection perspective. IoT makes it possible to automatically retrieve detailed travel data on aspects such as the time when passengers enter and leave vehicles, occupancy rates and robustness.

- Collection of traffic data - Measuring congestion levels via crowdsourcing and road-side cameras is an example of online traffic monitoring.

- Collection of air quality data - Air pollution monitoring provide information that might be used to identify the need for more environmentally friendly transport services.

- Collection of transfer point data - Timetables optimization can be supported by retrieving detailed information about transfer points between services, so as to make travelers utilize routes involving multiple public transport services in a better way than they currently do.

- Use online services for modelling - An opportunity to develop analysis and problem solving models using data in an innovative way is represented by the use of online services to access the data collected by IoT devices and smartphones.

- Real-time delay information - The traveler is able to make informed decisions on which transport service to select during a disturbance on the basis of information about the context, and delayed or cancelled transport services. Thereby, alternative travel routes can be suggested to the traveler.

- Co-traveler information - The IoT beacon technology could be used to provide information about which passengers are travelling on the same vehicle. Together with information about the passengers' destinations, such information can be leveraged to connect people, thus allowing for taxis sharing services during disturbances.

- Real-time vehicle information - Real-time information about the status and characteristics of the public transport vehicles can support the decision-making process about which public transport service to choose. Travelers can use information about the number of passengers on a vehicle to identify overcrowded vehicle, in particular people with special needs (e.g., elderly, disabled).

- Delay compensation - Proving their presence on a delayed vehicle would allow travelers to more easily obtain price compensation for delays. IoT could make this possible by providing data about the context.

- Interchange guidance - Providing context-aware information during interchanges could serve as a guidance to the traveler, allowing them, for instance, to reach the correct train platform or ticket office, and to help calculating the time required to reach it. Personal disability constraints might also be considered (e.g., need for wheelchair).

- Ticket-buying support - Travelers may interact with ticketing and payment systems, which can be supported by IoT technology. IoT can be employed for ticket-buying support to provide positioning

information to make ticket purchasing easier. In addition, ticket validity could be automatically extended in the event of disturbances.

- Support during travel - Travelers may benefit from support during travel, which would ensure that they are acting as planned. For instance, IoT-enabled support during travel might provide confirmation that the boarded vehicle is the correct one for the purpose of reaching the traveler's destination, or tell if the traveler's ticket is still valid, or give information about when to get off the vehicle.

- Enriched travel experience - Public transport can be made more attractive also by providing different types of data capable to enrich the travelling experience, such as, but not limited to contextual information about the current surroundings or the destination, or vehicle data that help travelers to keep track of the environmental impact caused by their travel.

As far as services are concerned, some opportunities for the end users could be:

- Improved management of operations - Knowledge on vehicles and travelers, as well as the vehicles that travelers will use and the route which they will select (e.g., through ticketing data, or sensor data, or information directly obtained from the traveler) can lead to improvements in operations management.

- Demand Responsive Transport (DRT) - A vehicle in a DRT is shared among passengers who decide where it stops to pick up or drop off users. The original goal behind DRT was to help disabled or elderly people, but nowadays can be regarded as a viable means to increase access and flexibility in public transport for the whole community.

- Maintenance-wear - More accurate decisions can be made by using status data provided by sensors. This would allow for fast recognition of immediate maintenance needs, hereby leading to less scheduling for maintenance and repair stops, and possibly even less maintenance time in total.

- Maintenance-damage - Related to maintenance due to wear and tear, IoT could also be used to collect information about damage on the vehicles and the infrastructure used in public transport.

- Self-driving vehicles - IoT enables the development of self-driving vehicles, which significantly affect transport systems. Transport overall cost and safety will be reduced by replacing human drivers.

- Transport related services - IoT not only benefits traditional public transport operators through enabling innovative services and better decision making, but might also create opportunities for transport-related services.

Next step is the evaluation of the challenges that can hinder the spread of these opportunities.

- Business Models - IoT can be fully leveraged only if, in addition to the public transport operator, also a variety of other different actors are involved, such as telecommunication operators, sensor data providers, data storage providers, end-user service providers, public authorities, and the travelers themselves. To develop and maintain the necessary infrastructure, large investments may be needed, appropriate management and storage for the collected data must be ensured, along with the necessary services and data APIs, etc.

- Privacy and Integrity Issues - While privacy is concerned with not sharing data about organizations and individuals, integrity is about protecting against unauthorized modification of data. Not sharing information about the travels of individuals is often among the objectives of privacy in the public transport context. Such information include the movement of individual travelers, which can be tracked by mobile phone operators or by using RFID tags in travel cards (Origin-Destination matrices can be generated with these data).

- Security - Many types of potential malicious actors (e.g., cyber-terrorists, hackers) may attack the information systems of public transport, for various reasons. In addition to such actors, also competitors could be a threat.

- Interoperability - In machine-to-machine contexts, such as IoT, interoperability is a matter of major concern, considering that sensors and other types of devices to a large extent communicate without the involvement of humans. Interoperability refers to the ability of systems to work together. The IoT is characterized by a plethora of heterogeneous connected devices which work together and are provided by different vendors which use different technologies, hence qualifying interoperability issues as some of the main challenges for a well-functioning, connected IoT infrastructure.

- Scalability - In IoT, it is the ability of a system to function with an increasing number of users, sensors, and devices which continuously collect and process large amounts data. "Big data" refers to the efficient management and use of this data. In fact, when the amount of data is small storing and processing tasks are not always a complex; however, when the amount of data grows at a seriously fast pace, as happens with the roll-out of IoT, there are some major challenges deriving from storing and processing needs which are related to the scalability.

- Usability - In the IoT context, and especially when evaluated from the perspective of public transport sustainability, it measures how easy it is for the involved actors to leverage the provided information and services (such as data collection and generation, e.g., via crowdsourcing). Mobile apps and websites are required to be user-friendly, making of high usability a prerequisite for achieving the benefits of IoT and particularly relevant to establish a connection with the travelers.

- Data Collection - It is not an easy task that of determining what type of data can be collected, both in real-time and in retrospect. It is necessary to understand what type of data is actually useful and to which actors in a variety of different situations. Data collection and storage have to be performed in the best and most efficient way, which may include non-traditional methods, including crowdsourcing and the use of social networks (e.g., Twitter). Moreover, data can also be incorrect due to different reasons (e.g., poor quality IoT sensors, sensor spoofing or tampering from external individuals).

The challenges identified above can differently impact on a rural or in an urban environment, in particular some of them. The involvement of several actors for the sustainability of the Business Model results to be more difficult in rural areas due to a bigger prudence in the investments in innovations of this type. Similarly, usability and data collection could be other issues to be faced, since a frequent use of personal devices, just like internet accessibility and familiarity with it, could not be so certain and assumed like in urban areas.

That said, the opportunities before analysed seem to pave the way for a new way of perceiving the mobility system. The data collection about traffic status or vehicle use represents a new and more reliable method to draw demand patterns, since they could be based on **real** decisions. Similarly, enhancing infomobility, people could feel more at ease using PT, because there would be a constant and real time support that could avoid unpleasant situations (delay, mistakes, etc.) making the trip more enjoyable and attractive. In addition to these, services like DRT can be really a notable innovation, since they meet the needs of those who otherwise would have no choice.

3.2.3. New demand patterns for PT due to demographic change

According to the EU Commission, Europe is facing unprecedented demographic changes that inevitably impact on different socioeconomic fields, both at EU and national level, including in particular the future demand on all forms of transport. Mobility and its quality is one of the key elements of assessment standards in the countries of the European Union (EU), and the quality depends largely on satisfying the everyday needs of citizens, including the level of access to work, schools, shops, accessibility to social care and to leisure activities. In recent years, in several countries (including Slovakia, Czech republic, Hungary, Poland) the increase of road transport is represented by significant growth of negative impacts on the environment, increasing congestion in urban areas and the growth of road accidents and, in parallel, in passenger traffic, the growth of individual automobile transport is reflected by a significant decline in the performance of public passenger transport (rail, bus and public urban transport).

As said before, the significant demographic changes which mostly all of European countries are experiencing in the last decade are effecting travel behaviour. Moreover, this trend is not homogenous within Europe but it is changes for different areas. For instance, the current population development in East European countries is a process similar to the one that took place in the developed Western and Northern Europe from the mid-60s to late 70s. A part from this, from this perspective, are also significant demographic changes such as age, gender, household composition or income of its members.

This matter is emphasised in rural areas, where accessibility is not so expected. Accessibility can be defined as proximity or facility for spatial interaction and so, more in general, access to health care, education, work and other services (e.g., shopping centres).

Hence, the importance of transport supply (mainly for rural areas, indeed) which highly depend on provided transport services or transport infrastructures.

Following, most important socioeconomic aspects are shown.

Age – Clearly, there are big differences in the travel behaviour of children, young people, adults and older people, due to the different types of activities they are interested to. Children are primarily interested in educational and playing activities, young people mainly in educational and social activities, adults in work-related activities and the pensioners are primarily interested in social and leisure activities. These activities influence their travel distance. This tends to be shorter for children and old people, while it can be considerably longer for young and adult people, of course.

Income and car ownership – People with a higher income, not only have the possibility to travel more and longer, but often they have the necessity (e.g., to go to work). This sometimes is joined to the matter of car ownership. Those who can count on a higher income often prefer to travel with a private car, while those who cannot afford it are forced to use public transport services, whose presence and quality becomes even more essential in rural areas (where services like car sharing are very uncommon). It goes without saying that, if on the one hand, the possibility of moving by car positively affects the development of the economy, employment and influence the way people live, increasing social inclusion, on the other hand it has a very negative impact on the environment and traffic congestion, matters already very serious in urban areas.

In this issue, urbanization and suburbanization phenomenon play a central role.

Urbanization is defined as the movement of the population from rural to the urban settlements and from the smaller settlements to the larger ones, while disurbanization is the movement from the inner cities to their suburbs or surrounding communities.

Both these processes should be seen not only as a change in population distribution and spatial structure but also as a change in the way of life.

What is emerged from the study conducted, is that there is a difference between Western European countries (Germany and Italy) and Eastern European countries (Slovakia, Czech Republic, Hungary, Poland) trends. In fact, while in these last ones, a part from a few cases of urbanization, the overall trend is the suburbanization due to economic reasons, in the Western ones, urbanization prevails, although not so heavy. It can be said that the Eastern countries are living a process that Western ones have already lived in the last thirty years, after a massive urbanization process. It must be said also that big cities of the Western countries have already enough developed suburban areas, so that any change in the trend is slower and lighter.

Suburbanization is generally seen as a negative phenomenon, although it brings some positive aspects. On the one hand is true that if part of the population moves to the metropolitan areas, it means that these sites will require investments, infrastructures, facilities that increase social inclusion. On the other hand it means longer and more expensive trips for commuters and high effects on pollution and traffic congestion and noise (if there is not an efficient alternative to private car). Furthermore, there are negative impacts on the protection of natural habitats and on quality of life (social issues, such as emptying the inner city, unequal distribution of jobs and people's homes).

This is exactly why providing public transport in low-density areas, which is usually cost-inefficient, although necessary in a lot of cases, has been a challenge for many governments all over the world. What it seems to be a constant to approach to success, anyway, is the combination of three key ingredients, that are the presence of financial means, cooperation between stakeholders and flexible supply of scheduled and on-demand transports. [50] Nowadays, several cities have multiple modal choices at their disposal, most often proposed in a combination (conventional or automated metro, light rail or tramway, bus or BRT, or waterborne) plus other less conventional modes (cable car, tram-train or monorail). It is clear that not everyone has them all, so that each one should make the most what it already has. Cities with long-established public transport systems, particularly ageing rail infrastructure and rolling stock now need rehabilitation and automation to improve their operational efficiency and capacity. Besides challenges linked to quantitative growth, public transport must make significant qualitative improvements in order to become more attractive. The notion of quality in public transport should also be created through operational excellence, which includes enhanced frequency, punctuality and reliability of the service thanks to optimised network design and service performance. Likewise, smart ticketing and integrated travel information contribute to making public transport customer/user-friendly, while facilitating accessibility for all citizens.

As far as rural areas are concerned, we can see some different needs and user types that lead to different demand patterns, like the following ones:

- inhabitants in rural areas without ownership of individual means of transport (.ie. cars)
- inhabitants with specific mobility needs (disabled, handicapped, etc.)
- inhabitants in low densed/populated areas which need to commute on daily basis (school children students, commuters, etc.)
- inhabitants who travel irregular (pensioners, etc.)
- tourists which consider particular rural areas interested from any reason

These groups refer to low populated areas where people are not able to provide adequate demand for regular public transport operation. In order to solve this we can see various approaches.

The first one consists in development of regular operation based on the short and regular interval supported by integrated public transport organisation. This is mainly for rural areas where the population is increasing. The population in these rural areas can take advantage of the proximity of economically strong cities.

The second approach is suitable for less populated areas and is based on the creation of good conditions for development either the public transport service on demand so called Demand Responsive Transport (DRT) or combination of individual transport (cars, bikes) and PT.

A part from new innovative form of public transport service based on the demand basis or combination of individual transport and public transport, it should not be underestimated the lack of efficient passenger information systems, that may strongly reduce the use of public transport (where it is present) and increase car ownership. It is a challenge to provide accurate, current information on arrival and departure times and stations. Passengers from suburban, rural and remote areas need more reliable and sophisticated travel information compared to urban area, because, unlike in urban areas, passengers in rural areas are provided with very limited transport facilities and alternatives, generally make longer journeys.

3.3. Policy conference

The LP hosted a conference at Wittenberg (Germany) on 18th and 19th October 2017 addressed to Central European public transport experts to debate the produced work papers and to adopt the RUMOBIL Strategy. Inputs and issues arisen during the conference have been collected for the carrying out of the "Adopted Strategy".

The conference was attended by 63 participants, from all 12 members of the project consortium and also some local and regional public authorities from Germany and Latvia and public transport stakeholders from the participating partner areas, foremost Germany.

The main topics of the various discussions were the problems and the challenges that the pilots had faced in their territory for the implementation of their solutions, but also the lessons learnt from the different experiences. Furthermore, during the conference, more strategies were illustrated and among them there were the experiences in Saxony-Anhalt, Žilina and Castelfranco Emilia.

Starting from these, the first case exposed was "The Citizen Bus" by the Ministry for Regional Development and Transport of Saxony-Anhalt (Germany). This is a demand-oriented service whose aim is to support the regular bus services in rural areas. Each bus is, indeed, a minibus (max. 8 passenger seats) and it is driven by volunteers. The bus connects smaller settlements to bigger villages or cities (and so with services and bigger transport networks), operating along fixed routes and with a fixed schedule.

Certainly, the long list of stakeholders involved did not help for a rapid implementation, as well as the research of voluntary drivers. Both problems were partially reduced with an early beginning of the project phases and adequate publicity campaigns and information events.

The second experience shared was the one by Žilina Self-Governing Region (Slovakia), which presented a project about improving rural multimodal transport hubs. The objective was to make transport hubs more attractive, comfortable, efficient and safe, and also to enhance the connection between different transport modes. Main innovations were information and navigation panels, digital timetable, CCTV - monitoring and safety features, facilities like free Wi-Fi access, benches for passengers, waste bins and lightening, Bike & ride boxes and Park & ride places and barrier-free ramps for disabled citizens.

If on the one hand mobility needs in rural regions increased, on the other hand limited funds to finance PT and low competitiveness of PT against individual cars increase the gap. An integrated design of intermodal links can improve the overall system, attracting a higher number of users.

The third experience was about "ProntoBus", the on-demand service proposed by the Agency for mobility and local public transport Modena S.p.A (aMo) in Castelfranco Emilia (Italy). It is a supplementary bus service with preset network and stops (identified in some attractive points of the route). The app developed allows the users to book a ride for a certain hour and for certain starting and ending points. If it is not in conflict with other bookings, it is accepted, otherwise the ride can be negotiated. Obviously, the app can give real time information about the vehicles.

The bigger challenge was the production of something whose technical specifications were in line with stakeholders and users' expectations and therefore their involvement was essential, being open to all proposals and comments received.

What is in evidence in all three experiences is that some problems are always present, independently from the background, the territory and the environment. First of all, time limit. Stakeholders involvement, planning, information campaigns require a lot of time if the objective is a job well done and during this period conditions may change, generating new different problems. Furthermore, even after a long discussion with all the parts involved and interested, it is not sure that everyone will agree with the final decisions. In addition to this (and connected to), other difficulties appear because of limited funds that can resize the first ideas and also reduce the power of the public campaigns and dissemination. Last but not least, one of the main challenges is to face the increasing dissatisfaction and disappointment towards PT, very popular in rural areas, that can compromise the success of a project, even if it is well planned and structured.

Downline of the obstacles that can slow down or even interrupt the implementation of innovative solutions, some considerations and good practices seem to be essential for the achievement of fixed objectives. For instance, an efficient public transport alternative is not enough to satisfy citizens, but

should be inserted and integrated in an efficient transport system, with other modes, focusing in particular on spatial and schedule integrations. Simultaneously, it is clear that interventions must be taken to make the service appealing, like comfortable stations/stops and vehicles, advanced digitalization, user-friendliness for all users' categories. Every project should be future-oriented and flexible, so that it could be suitable not only for present days but also when needs and expectations could be different from today. A good communication with stakeholders is the first step towards this goal, allowing modification and improvements whenever possible. Furthermore, a successful project is not able to leave publicity campaign out of consideration, to allow all possible users to approach the innovation in the smartest way, making the best out of it. Obviously, in certain situations the solution could not be just an upgrade and an improvement of something already existing, but it could be necessary the implementation of a brand new supplementary service (as in Saxony-Anhalt or in Modena) whose aim is to meet those needs that otherwise would be unfulfilled.

3.4. The process to outline the Strategy

The project provides **four steps of activities** regarding the **creation of the strategy** (A.T1.2 and 3 "Outlining" and "Elaboration of the RUMOBIL Strategy") **and the consequent building up of the actions and solutions** (A.T1.6 and 7 "Preparing draft decisions to implement the RUMOBIL strategy in the partner territories" and "Decision-making") that could be received from every local decision process. The carrying out of the Outline Strategy is the first step of this set of tasks.

The **four steps** regarding the Strategy and the decision making process can be synthesized as follows.

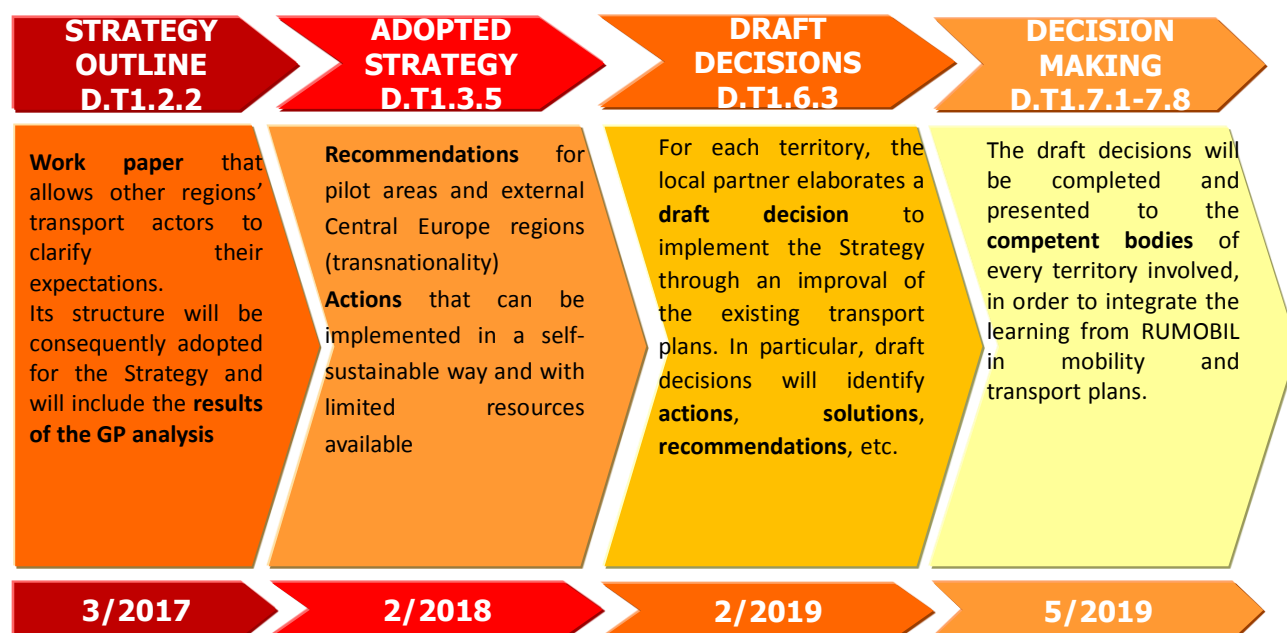| STRATEGY OUTLINE D.T1.2.2	ADOPTED STRATEGY D.T1.3.5	DRAFT DECISIONS D.T1.6.3	DECISION MAKING D.T1.7.1-7.8
Work paper that allows other regions' transport actors to clarify their expectations. Its structure will be consequently adopted for the Strategy and will include the **results of the GP analysis**	**Recommendations** for pilot areas and external Central Europe regions (transnationality) **Actions** that can be implemented in a self-sustainable way and with limited resources available	For each territory, the local partner elaborates a **draft decision** to implement the Strategy through an improval of the existing transport plans. In particular, draft decisions will identify **actions**, **solutions**, **recommendations**, etc.	The draft decisions will be completed and presented to the **competent bodies** of every territory involved, in order to integrate the learning from RUMOBIL in mobility and transport plans.
3/2017	2/2018	2/2019	5/2019

Figure 3 - Scheme of the four steps of activities in order to achieve the Strategy and to trigger the decision making process

The **Strategy Outline** allowed us to define the "**service strategy**" able to improve public transport in rural areas by better connecting them to the national and European transport networks. Indeed, quicker and more comfortable access by public transport positively contributes to the quality of life in rural areas and support business activities in more peripheral territories. In this light, the RUMOBIL Strategy provides insights in already proven good practices and novel solutions, which are elaborated and tested within RUMOBIL lifetime in the form of regional experimentations (pilot actions).

Therefore, taking into account both the **approach able to develop an effective service strategy**, the Strategy Outline is composed of:

1. **PROBLEMS** of the mobility in rural areas;
2. **OBJECTIVES** of the project tasks;
3. **SOLUTIONS**, distinguishing 3 topics**;**
4. **ACTIONS**, which are identifiable through 4 different inputs;
5. **IMPACTS** of the solutions to be implemented.

3.4.1. Service strategy

As detailed in "RUMOBIL Strategy Outline" and in consideration of the types of the possible benefits RUMOBIL highlights regarding the improvement of the connections between rural areas and TEN-T network, the Strategy will be focused on the development of a "**service strategy**"[2].
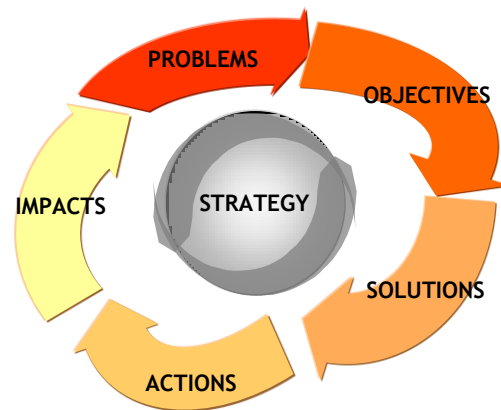
Figure 4- The features of the RUMOBIL Strategy

Service is an outcome between a **physical environment** and **facilitating goods**, the **service personnel** and the **client**. Therefore, there is an almost simultaneous production/consumption of the service. Over the past few years a variety of system models have been developed to explain the service process, which is how the service is designed, produced, delivered and consumed. There is sufficient similarity among them that allows us to identify and characterise their **basic decision elements**:

- ✓ **customer/client**;
- ✓ **service concept**;
- ✓ **service delivery system**;
- ✓ **service levels**;
- ✓ **service provider**.

Since service is a **social process**, the most important part of management consists of identifying the **critical factors** which make the particular service system function and of designing powerful ways of controlling and maintaining these attributes in a concrete manner. Therefore, it is useful to differentiate between an overall **service strategy** and an **operational strategy**.

Richard Normann's studies[3] highlighted the following ingredients establish a solid service organisation:

- ✓ Orientation toward quality and excellence;
- ✓ Development of a long-term relationship with clients;
- ✓ Investments in people and high social technology orientation;
- ✓ Rigorous control systems with regard to factors vital to success in the client relationship;
- ✓ Strong focus on delivering client value for the money and tailoring services to particular market segments.

Implementation of these attributes requires strong leadership. Therefore, leaders must be visible, set and communicate standards, evaluate and reward people, make their organisation credible and create an image that reinforces the strategic vision. There are, therefore, a number of aspects in order to make operational a service strategy, such as the **design of services**, **quality and productivity**, **marketing of services** and **operations research**.

---

[2] Source: «Service Management Concepts», K. M. Haywood.

[3] Richard Normann, "Service Management: Study and Leadership in Service Businesses", 1984

To recap and in order to implement an effective service strategy, new PT services should be implemented through the following **topics**:

- enhancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments;
- improving and upgrading physical items or facilitating goods for transport development;
- valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access;
- aiming at the investments in people and high social technology orientation;
- promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops);
- assuring comfort and the perception of security for users;
- assuring the service "package" is properly designed and well recognizable from actual and possible users;
- taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.);
- assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities;
- referring to the client's perception of the quality of service;
- raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions;
- creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients.

3.4.2. Pilot cases

In order to adequately going deeper with the RUMOBIL Strategy, each pilot was asked to fill in a document where they explained which were their current conditions about rural areas and mobility. In particular, the questionnaire let the pilot partners specify which were the main problems in the area, which objectives it aimed to achieve through RUMOBIL Project and which were the actions and the solutions to do it.

The Ministry for Regional Development and Transport of Saxony-Anhalt stated that the main issues in their region were poor level of the PT offer (due to high costs) and accessibility for disabled and elderly people. Therefore, the identified objectives were the increase of the accessibility and the demand of PT (improving the timetable and friendliness of the service). In addition to these, it aimed to increase people's awareness about sustainability and positive aspects of PT system. That is why, the actions proposed were substantially of two types: the first concerned the implementation of new on demand and innovative bus services, integrating them with the existing ones and enlarging the network; the second one was about the development of info-mobility system at bus stations and/or on board, promoting an infomobility system.

For the South Bohemia Region, the problems are the lack of a flexible service, further than a not effective PT, and a poor accessibility for disabled and elderly people. In this perspective, the objectives were the increase of accessibility and rural mobility, and also the improvement of infomobility systems. In order to achieve them, a new on demand service and the development of new technologies on board and or/at the stations were proposed.

The situation of the Self-Government of Szabolcs-Szatmár-Bereg County/Nagykálló was very similar to the previous one, but the objectives were a bit different. In fact they were proposed the promotion of infomobility (also improving the timetable and friendliness of the service) and the increase of people's

awareness about sustainability and positive aspects of PT system, making it more attractive and accessible and carrying out publicity campaigns.

Also for Žilina Self-Governing Region the lack of accessibility for disabled and elderly people and of a flexible service were the main problems to be faced (in particular for rural areas). Obviously the objectives were the increase of accessibility both in geographical and in users terms. That is why the strategies were the implementation of facilities for PT users (such as secure bike shelters, Wi-Fi and cycling paths), in particular for ageing people and rural inhabitants, and the promotion of an integrated systems among different services.

As far as the Vysocina Region is concerned, the main problem is absolutely a not effective PT system. The objectives were the enhancement of the service, promoting the integration with other systems (in terms of timetable, tariffs and interchange terminals), dissemination and also introducing new specific services for rural areas.

In the Mazowieckie Voivodeship, the exclusion of rural inhabitants and a not effective PT system were the main issues. The identified objectives were, clearly, the enhancement of services in low populated area, the promotion of infomobility and the improvement of PT quality through better timetables and friendliness of the service (everything associated to a good publicity campaign).

For the Karlovac County-Ozalj, high operating costs of PT and poor services for rural areas had to be tackled. In order to achieve good levels of service and utilization also for these areas, the implementation of new rail services, carrying out of traditional communication campaign and promoting also infomobility (enhancing the information flow for users, also using apps and web based tools).

Also Castelfranco Emilia reported high operating costs of PT, further than a low utilization of the existing services. That is why the objectives were to increase the use of PT in rural areas, in particular improving the timetable and friendliness of the service and enhancing infomobility systems for the users by apps. To help the success of the strategy, publicity and communication campaigns were set.

As it can be observed, almost all of them expressed that PT offer in their areas was very low or even absent, due to high operating costs and poor demand, so that intervention on PT infrastructures and services are not justified. Furthermore, even when it is present, PT is not effective and reliable or however, there is no attention towards disabled and elderly people, who are substantially excluded, although equally in need to travel. There is also a limited awareness about PT systems, how they work and which are the positive impacts they have on the environment (compared to private vehicles). Last but not least, a common problem is the condition of rural inhabitants, who are too often isolated and whose accessibility to PT is deeply limited, with the consequent need of a flexible service. All these aspects lead to a lower quality of the service that make it less attractive.

As expected, the most common objective among the pilots is to increase the use of PT in rural areas, also considering the introduction of new services or even flexible ones. The enhancement of the existing PT systems is based on the improvement of basic features (timetable, integrated tariffs, friendliness of vehicles and stations/stops, new and better interchange terminals) and in particular on the promotion of infomobility, that plays a key role in all the layers (on board, at the stops, on users' devices). What emerges from the majority of the strategies is that no result can be achieved without a proper and well done communication campaign that allow all the potential users to be aware of their opportunities beyond private cars.

4. RUMOBIL Strategy

Considering all the inputs collected and analysed, the Strategy has been built on the identification of the solutions, in terms of concrete actions, and recommendations emerged from:

- good practices in Central Europe, specifically analysed and highlighted during the policy conference at Wittenberg about rural and peripheral areas' mobility;

- technological current state and the correlations with economic and demographic issues;

- analysis of the main requirements of a good "service strategy" able to satisfy the users' needs.

Solutions and recommendations have systematised consistently with the five types of actions to be done:

1) Transport network integration and coordination, in terms of:
   o Service planning;
   o Intermodal nodes;
   o Public transport stakeholders' involvement;

2) Tariff system, in order to create and promote integrated systems;

3) New specific public transport services:
   o On-demand buses;
   o Local rail services;

4) Infomobility:
   o Traditional communication campaign;
   o Focus on more innovative systems, such as apps, tools, etc.

5) Social cohesion, promoting cultural and dissemination activities on the promotion of PT and also through the implementation of solutions to make easier the transport accessibility by disadvantaged people.

4.1. Transport network integration and coordination

In the following tables of this chapter, strategies and practices about the transport network, both in terms of infrastructures and services, but also as network of people, are reported.

Main common actions in the different cities have been oriented towards a double goal: improving the PT offer and/or its attractiveness. In fact, there can be observed plans of spatial densification of stations/stops and interchange terminals, better integration among existing services, as well as redefinition of timetables. All this goes along with a huge stakeholders' involvement, which is considered as an essential step for an efficient planning process.

Last but not least, promotion campaigns, publicity, making people aware of implementations and innovations, is considered the perfect corollary, whatever the design object was.

WHERE? Territory involved	Municipalities in peripheral regions of Saxony-Anhalt (Germany): Osterburg (district: Landkreis Stendal), Möser (district: Jerichower Land)		Castelfranco Emilia, near Modena (Italy)	Žilina Self-Governing Region
Type of input	Pilot experience		Pilot experience	Pilot experience
WHAT? Name of the action	Spatial densification of bus stops	Participation of local stakeholders and the public	Communication and promotion campaign	Interchange terminal

HOW? Describe the operative phases of the actions	Increase of number of bus stops on the territory (for example, instead of one bus stop per settlement, min. 3 bus stops), so that ways to reach the bus stops mainly by elderly people will be shortened and barriers to use the PT will be reduced. These bus stops will have a temporary character. The pilot period will show if more bus stops are a useful tool to make PT in rural areas more attractive.	Involvement of Local public authorities, local associations and the local public. They will contribute with own resources, knowledge and experience to the planning and the operation of the new bus services, since they have important knowledge on local peculiarities and possibilities. Local stakeholders are involved at various levels: development of routes and bus schedule, identification of additional bus stops, etc. but also proposals of ideas and specific needs. Further, the public is asked to support the project with voluntary drivers.	• (June 2017) Identification of the agency for the development of creativity activity for the communication and promotion campaign, by the company that developed the software system as they had positively worked together before.
			• (August 2017) Definition and validation of the coordinated image of the communication and promotion campaign
			• (September 2017) Contemporary with the press conference launching the pilot project, the communication and promotion campaign was started with press releases in the main newspapers of the province, a report in the main television of Modena and the posting of posters throughout the area of the Municipality of Castelfranco Emilia.
				1st phase - Analytical part:
				• Analysis of present state of transport within the area of pilot region
				• Analysis of conditions for creating of interchange node in Rajecké Teplice
				2nd phase - Planning part:
				• Draft plan for development of interchange node in Rajecké Teplice.
				• Consultation with stakeholders
				• Public procurement for design work.
				3rd phase – Designing part:
				• Draft designs for redesign of interchange node.
				• Final design.
				4th phase – Construction part:
				• Reconstruction of the area around railway station, implementing:
				  • Information and navigation panels;
				  • Waste bins
				  • Lightening
				  • Bike & ride box
				  • Park & ride places
				  • Barrier-free ramp
				  • Wi-Fi router and equipment providing free Wi-Fi access
				  • Benches for passengers

WHERE? Territory involved	Municipalities in peripheral regions of Saxony-Anhalt (Germany): Osterburg (district: Landkreis Stendal), Möser (district: Jerichower Land)		Castelfranco Emilia, near Modena (Italy)	Žilina Self-Governing Region
Type of input	Pilot experience		Pilot experience	Pilot experience
				• CCTV - monitoring and safety feature • Digital timetable Important steps: • Meeting with stakeholders including site visit • Technical specification agreed • Public procurement process for design • Workshop with stakeholders • Public procurement for installation and construction works • Publicity campaign
WHO? List the organisations that has been/is in charge of the action	The administration of the local municipality is in charge of this action. The municipality decides how many and where bus stops are needed. The ministry and the NASA assist to make temporary bus stops possible.	The administration of the local municipality is in charge of this action. The MLV and NASA assist in planning meetings and discussions. They further connect the municipality with other relevant stakeholders and guide the process.	aMo, Supplier of the software system, Creativity professional agency are in charge of this action.	Žilina Self-governing Region is in charge of this action. University of Žilina, KPM Consult, j.s.c., Koordinátor ODIS, LtD. are the contractors.
HOW MUCH? approx. cost of the action	Passenger information box: € 25 (each) Bus stop sign: € 40 (each)	Information material costs: leaflet ca. € 800 (1000 items)	Cost of the campaign: € 7,440	Analysis, planning, construction costs: € 11,250
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	When installing a new bus stop, there are many rules to follow. Usually, a new bus stop has a platform, shelter, fixed bus stop sign and information plates.	A new service often means more competition. Stakeholders, such as local PT operators and taxi drivers, have to be inclined to accept the new service and contribute to create a supplementary not competitive service.	The main problem was coordinating the images of the software system that won over the promotion and communication campaign.	• Increasing use of individual car. • Fragmentation on competencies in the area of public transport. • Unfit coordination of various traffic systems. • Decrease in number of passengers in public transport (especially bus) • Insufficient infrastructure

WHERE? Territory involved	Municipalities in peripheral regions of Saxony-Anhalt (Germany): Osterburg (district: Landkreis Stendal), Möser (district: Jerichower Land)		Castelfranco Emilia, near Modena (Italy)	Žilina Self-Governing Region
Type of input	Pilot experience		Pilot experience	Pilot experience
				(parking for cars, taxis, bicycles and motorcycles, etc.) • A number of rural/ peripheral areas are not adequately connected to the main transport network. • Limited funds to finance PT and decrease of passengers result in reduced PT offers.
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations.	Flexible and innovative solutions are considered. Existing rules should take this pressure into account and deviations should become easily adoptable.	In order to have fruitful discussions and prevent competition, a stakeholder involvement should start in the beginning of the process. All involved actors should have the possibility to get information, communicate about plans and contribute with own ideas.	• Provide clear indications on how to set up the communication and promotion campaign; • Carefully follow the development phases of the coordinated image; • Verify that the activities, especially the billposting, have been carried out in the required way. • Good coordination activity and choosing companies that had previously collaborated in a profitable way.	• increase a competitiveness of public transport against individual car traffic. • improve communication among all stakeholders in public transport. • better coordinate traffic on the local, regional and state level. • increase the quality of public transport. • build public transport terminals providing interchange among various types of transport.

WHERE? Territory involved	Vysocina Region		Mazowieckie Voivodeship	Karlovac County		Szabolcs-Szatmár-Bereg County / Nagykálló
Type of input	Pilot experience		Pilot experience	Pilot experience		Pilot experience
WHAT? Name of the action	Transport Plan of the Vysocina Region 2017 – 2021: Integration and coordination of public transport services	Transport Plan of the Vysocina Region 2017 – 2021: Promotion and raising of awareness	Improving PT offer, adapt the timetable to the needs of passengers and implementation new tariff system	Construction of intermodal terminals (bus+rail), places of integration and stops in the public system transportation	Integration of public transport systems	Strategy for Bus-stop development and real-time bus information system realization
HOW? Describe the operative phases of the actions	Development of a transport planning, with the aim to create conditions for economical, effective and efficient ensuring of transport services as well as for mutual cooperation between the state, regions and municipalities, starting from the backbone connections of public railway transport. The ambition of Vysocina Region is to optimize public transport services for the territory of the region by means of close interlinking railway, bus and intercity transport and to introduce a unified tariff system	The launch of the planned "Public Transport of Vysocina" conception will be accompanied by a wide-range publicity campaign, using various communication channels in order to reach all relevant target groups and stakeholders (printed media, internet, radio, social networks, etc.).	• Surveys • Analysis of travel needs • Making changes on timetables • Analysis of the transport environment (market) in the region (bus and individual transport), • Implementation of the best proposal	Objectives were identified, while measures not yet. • Reduction of transport effects on environment • Enhancement of economy competitiveness • Reachability of Public transport • Connectivity enhancement between cities and settlements Other important steps: • Meeting with the representatives of local government in Ozalj. • Phone interview	Objectives were identified, while measures not yet. • Enhancement of economic competitiveness • Enhancement of transport sector, in terms of service level, PT accessibility • Enhancement of safety and security • Integrated public transport system • Enhancement of International, intercity and regional passenger approachability • Enhancement of connectivity between cities and	Bus-stop development, creating design plans, creating construction plan, producing and placing the structures. Important steps: • Stakeholder involvement workshop and meetings • Design, and functional specification agreed for three types of stops

WHERE? Territory involved	Vysocina Region		Mazowieckie Voivodeship	Karlovac County		Szabolcs-Szatmár-Bereg County / Nagykálló
Type of input	Pilot experience		Pilot experience	Pilot experience		Pilot experience
	"Public Transport of Vysocina".			settlements • Increase of financial efficiency of public transport Essential steps: • Meeting with the representatives of local government in Ozalj • Phone interview		
WHO? List the organisations that has been/is in charge of the action	The "Public Transport of Vysocina" system is being developed by the Vysocina Region in close cooperation with external experts – the company KPM Consult, joint-stock company, based on the public procurement contract concluded on15 January 2015.		Mazowieckie Voivodeship and Mazowieckie Railways are in charge of this action	City authorities, Local authorities, Public transport providers, Infrastructure managers	Ministry of Sea, Transport and Infrastructure, Karlovac County Government, Transport operators and Infrastructure Managers	Urbs Novum Nagykallo Town Development Nonprofit Ltd.
HOW MUCH? approx. cost of the action	Intervention costs: 5,700,000 CZK excl. VAT (approx. € 225,000)	Still unknown	Analysis, surveys and planning costs.	100,752,758 € (750,000,000 KN)		Bus-stop development: € 52,000
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	• Effectiveness of public transport offer, so that in a polycentric territory, it is difficult to operate too many direct links • A slow but constant decrease of number of passengers using	In particular the decrease of number of passengers using public transport, due to the mistrust	Changes in the train running time and the problem of passing trains on a single-track railway line.	• financial issues for authorities • ecological aspect and how to create more ecological friendly environment for every day commuters • how to make their every day journey approachable • problems of congestions and pollution • long approval procedures with stakeholders • bad time to start • extra working hours for station personnel		Public Transport is not comfortable, there are no covered bus stops. A huge portion of citizens is moving to Nyíregyháza to

WHERE? Territory involved	Vysocina Region		Mazowieckie Voivodeship	Karlovac County		Szabolcs-Szatmár-Bereg County / Nagykálló
Type of input	Pilot experience		Pilot experience	Pilot experience		Pilot experience
	PT since past few years, accompanied by an increase in using individual car transport, in particular in areas with insufficient or untimely PT connections			during weekend • more train personnel		avoid commuting. Other problems: • long approval procedures at region administration and public procurement procedure • absenting transmitters in PT vehicles
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations	• integration and coordination of public transport services: how to properly and in a well-balanced way adjust PT services within a territory with fragmented settlement structure, while improving quality of services and increasing attractiveness of PT in order to gain new passengers. • modernisation of PT vehicles, in terms of	The campaign will promote public transport as a high-quality alternative to individual car transport among all population groups and highlight main advantages of the new system, such as the improved offer of connections as well as on tariff unification that eases interchanges (no need to buy a new ticket or to pay a surcharge). The campaign will aim	Applying to the owner of the tracks for refurbishment to increase speed and shorten the time the train travels.	Cooperation with local authorities as well as State level organizations such as Transport Ministry.	Coordination and cooperation among Transport Ministry and local governments with help of useful information provided by public operators. Croatia is constantly reporting about enhancement of tourist numbers on sea side as well as in inland area. In order to continue with this trend it is necessary to promote public transport as well as possibility on line information reach as well	Providing comfortable public transport services

WHERE? Territory involved	Vysocina Region		Mazowieckie Voivodeship	Karlovac County		Szabolcs-Szatmár-Bereg County / Nagykálló
Type of input	Pilot experience		Pilot experience	Pilot experience		Pilot experience
	their equipment with devices and software necessary for implementation of the unified tariff in everyday practice. The proposed revision works on the assumption that, a higher volume of transport outputs will be ensured by less vehicles (including a more widespread use of smaller vehicles), which requires closer interchanges between transport modes as well as tariff adjustments.	to: • make the regional public transport more attractive for citizens; • increase the share of public transport in modal split, in particular in areas of rural character; • increase number of passengers using regional public transport services.			as online ticket purchase. This includes time table schedules, stations (locations), all provided at one place and with easy access.	

WHERE? Territory involved	Tirol, Austria	Brno, Southern Moravian Region	Salzburg, Freillasing	City of Coburg and County of Coburg, Bavaria, Germany
Type of input	Good practice	Good practice	Good practice	Good practice
WHAT? Name of the action	Achenseebahn and Achenseeschiffahrt, Jenbach-Achensee, Austria	Intermodal Regional Transport	Intermodal Regional Transport	Bus transport and on-demand transport in the city of Coburg and county (Landkreis) of Coburg, Bavaria, Germany
HOW? Describe the operative phases of the actions	Leaflets and promotional materials for train and boat, promo material, website. A cooperation with the tourist board and local government is in place.	About 60 stops were redesign with the aim to create intermodal nodes in the whole region. A safe, comfortable and convenient environment for intermodal transfer is essential. This is perhaps the most important component of	1) OPERATION OF INTEGRATED PUBLIC TRANSPORT in city and region, cross border. The interesting thing is the managing of integrated transport within the region Salzburg and also the	Intermodal terminal with the railway station Coburg It offers connections between local bus lines and regional and local train lines (to Bamberg, Bayreuth, Sonneberg, Bad

WHERE? Territory involved	Tirol, Austria	Brno, Southern Moravian Region	Salzburg, Freillasing	City of Coburg and County of Coburg, Bavaria, Germany
Type of input	Good practice	Good practice	Good practice	Good practice
		station access, since the station area is where passengers spend some time. Passengers need to know where they can stand safely. Accordingly station planning and design should provide many functions. Different measures were carried out in the region. E.g. many interchanges and stops were equipped with the electronic information panels. On these panels the real time information about the arrival of the PT vehicles are displayed.	cross border regional Transport. The Integrated public transport systems is organizing the public transport within city of Salzburg, but also some rural areas around the city. Moreover there is also the integration and good condition for commuting the regional passenger even from the Germany (i.e. city of Freilassing). The orientation within the intermodal hubs is clear with designed direction marking. Within the city is the city public transport well designed with regular and frequent headway, modern stops with simple ticket machines for all way of payment, real time display 2) INTERMODAL STOPS, Park and ride, Bike and Ride facilities. In order to attract the individual transport users (cars, bicycle) to the public transport the public transport companies have created many small park and ride, or bike and ride facilities. This facilities and parking places are successful because the usage of passenger is high. The important thing is that it is not huge densely populated area, but it is working in small rural areas. There is a lot of examples how these facilities are managed. For city of Salzburg there is the parking for cars and bicycle in underground, but the	Rodach and Nürnberg). From 2018 due to new high-speed line completion the railway station will become and inter-city hub with connections to Berlin, Munich, Erfurt and Nürnberg.

WHERE? Territory involved	Tirol, Austria	Brno, Southern Moravian Region	Salzburg, Freillasing	City of Coburg and County of Coburg, Bavaria, Germany
Type of input	Good practice	Good practice	Good practice	Good practice
			passengers who are holders of public transport card have the access to this facilities. In rural areas the can park the bicycle even in secure bicycle boxes or in bicycle rack. 3) TICKET AUTOMATS, DISPLAYS. Purchasing tickets from ticket automats is possible. In particular, in Salzburg automats allow the passenger mainly from Germany to buy the suitable ticket for travelling in Austria.	
WHO? List the organisations that has been/is in charge of the action	Achenseebahn and Achenseeschiffahrt	The city of Brno, Southern Moravian Region	Landes Salzburg (Salzburg regional authority)	SÜC Coburg (the city company) and OVF (Omnibusverkehr Franken), bus company operated by Deutsche Bahn
HOW MUCH? approx. cost of the action	-	Costs: • costs to redesign intermodal points are variable, depending on the size of redesign: between € 10000 - 1000000; • total annual costs for managing the system of integrated transport in South Moravian region and city of Brno are around € 1,000,000;	-	Costs: € 4,700,000
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	• Service not in operation the whole year (only from May to October) • No joint ticket • Printed materials in more languages, as well as website	Poor functionality and flexibility of the technology used inside the on-board units.	Sometimes the tariff condition it is not clear for tourists or foreign users	There is no tariff integration between bus and railway systems. In the city and the county there are two railway (DB and Agilis) operators and two bus operators (SÜC Coburg and OVF). This makes harder to combine the systems. There are also some communities which have railway and bus connections, so parallel bus

WHERE? Territory involved	Tirol, Austria	Brno, Southern Moravian Region	Salzburg, Freillasing	City of Coburg and County of Coburg, Bavaria, Germany
Type of input	Good practice	Good practice	Good practice	Good practice
				and rail lines. In case of integration, the overall costs will raise for around € 250,000. To cover these costs the overall modal share of public transport should raise for at least 2-3% which is at the moment considered risky.
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations.	People will stay in rural areas and mobility will be ensured by creating contents and attracting people – SME's and private operators can, with the help of local government, create content by employing local people, promoting heritage, sights and natural beauties. People are interested in visiting rural areas with specific tourist offer and routes, and if combined with natural adventure and sport or other activities, this kind of routes are excellent for attracting visitors, thus passengers. With people coming, local population has a reason to stay in rural area and provide contents. Element to which attention should be given: personnel, cooperation and coordination of all stakeholders, updating (not creating) existing sights (natural, cultural, infrastructural etc.) in order to expand tourism in the region.	• A better integration of the different transport modes is a way to improve the overall efficiency of the system. • The interchange, where two or more types of public transport infrastructure are brought together has an important contribution to make in achieving sustainability of mobility and good social welfare. • A special attention has to be given to the selection of the best areas to create the nodes. • In order to increase the quality of the interchanges, a new telematics information system should be installed • Local interchanges can range in size from a single stop to an intermodal station. They served a local community and are generally the first contact customers have with the public transport system. As such, the appearance and operational success of the interchange can have a significant effect on the perception and use of the public transport services provided.	• The quantitative offer for individual car or bike passengers have the significant effect on increasing of passenger in public transport • There can be various city or regional public transport operators (bus, rail) in one public transport system, • Enhancement of condition for international passenger • There can be offer various types of facilities (simple bike racks, secure bike box, secure and shelter parking places..) • The unit tariff within the region, city and countries can be useful for daily commuters	-

4.2. Tariff system

Consistent with pilot cases, good practices analysed and analysis and studies carried out, the actions regarding the upgrading of tariff systems have implemented in the framework of a wider set of solutions and tasks, which include often new services implementation, optimisation of interchange nodes and intermodality, etc. In this light, the case highlighted below (in Poland) provides the implementation of a new tariff system with other solutions mainly in terms of service planning.

WHERE? Territory involved	Mazowieckie Voivodeship
Type of input	Pilot experience
WHAT? Name of the action	Improving PT offer, adapt the timetable to the needs of passengers and implementation new tariff system
HOW? Describe the operative phases of the actions	• Surveys • Analysis of travel needs • Making changes on timetables • Analysis of the transport environment (market) in the region (bus and individual transport), • Preparation of proposals for introducing a special offer (cheaper tickets) • Implementation of the best proposal
WHO? List the organisations that has been/is in charge of the action	Mazowieckie Voivodeship and Mazowieckie Railways
HOW MUCH? approx. cost of the action	Analysis, surveys and planning costs. Lower ticket prices in the first period will result in lower revenues, in the longer term may result in higher revenues (increase in the number of travelers).
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	Determining the value of optimal ticket prices in a special offer (the special offer is intended primarily for new customers, and not only for those who already use the train journey).
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations	Conducting a detailed analysis of ticket prices in bus transport and analysis of travel preferences (for example, the cost of car ownership).

4.3. New specific services

Analysing new practices suitable for rural and peripheral areas, the introduction of new specific services is obviously needful. In particular, implementation of on demand services is the prevailing strategy, considered in all its potentialities. These are sometimes an integration to an existing PT service and aims to support it reaching low density areas or covering particular time frames, but in other cases they are even more important because they could represent the only PT alternative.

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
WHAT? Name of the action	New, demand-oriented bus service (Citizen Bus)	Introduction of suburban rail system	Transport Plan of the Vysocina Region 2017 – 2021: Rumobil pilot action	Implementation of new PT services in rural areas by the use of mini buses	New facilitating services in order to support PT users
HOW? Describe the operative phases of the actions	Implementation of the Citizen Bus, as a demand-oriented, novel PT offer, supplementing the regular bus services in rural areas. The Citizen Bus is a minibus (max. 8 passenger seats) driven by volunteers. The bus connects smaller settlements, where no services of public interest are provided, to bigger villages or cities, so that people get access to services and main (rail) transport network. This new service will be helpful for all citizens, in particular for elderly and disabled people ones. The new bus service operates along fixed routes and has a fixed schedule.	Objectives have been identified, while measures not yet. • Enhancement of economic competitiveness • Enhancement of transport sector, in terms of service level, PT accessibility • Enhancement of safety and security • Integrated public transport system • Enhancement of International, intercity and regional passenger approachability	As a part of the project, it was introduced a testing operation of 15 pairs of new public bus transport connections both on working days and at weekends. The transport connections are ensured by 4 transport operators on the basis of their long-term contracts with the Vysocina Region. The pilot will end in June 2018. After careful assessment, which will be done through evaluation of passenger numbers and a qualitative survey, further adaptations and modifications can be suggested in terms of organisation and timetables, both on the concerned connections as well as on other similar lines within the region.	1. Searching of suitable area in the South Bohemia Region (based on comments of Mayors) The following parameters were required: • a purely low-density settlement in rural region • lack of PT links in the area • proximity to the T-network with the possibility of connection • starting point at intermodal point (rail-bus connection) • innovation requirement of the line • tourist appealing The selection also took into account the complaints and demands of the inhabitants and self-governments.	1st phase - Planning part: • Planning of new services for PT users 2nd phase – Designing part: • Draft design for installation • Final design for installation 3rd phase – Installation part: • Installation of new infrastructure

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
		• Enhancement of connectivity between cities and settlements • Increase of financial efficiency of public transport Essential steps: • Meeting with the representatives of local government in Ozalj • Phone interview	Important steps: • Meeting with stakeholders • Precise technical specification, set up of routes and bus schedules • Awarding the services to relevant operators • Accompanying media campaign	2. Collecting indicators before pilot The demographic situation and operational parameters such as the number of existing links, the number of passengers transported, the frequency of services, and the other data were collected from the statistical and cartographic offices and PT providers. 3. Planning of new bus line: • Route: to connect the villages to the railway line and to connect them that have not yet been interconnected. • Timetables: to be coordinated with train timetables. • Technical specification of the vehicle: small-capacity bus with 15 seats. • Dates for bus service: to meet the desired goals of residents and tourists. 4. Informing of local stakeholders: to inform the municipalities concerned, the Transport Department of the Territorial Unit and other authorities interested in	

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
				the implementation of the new bus stops (the Czech police, the landlord). New line was discussed with mayors 5. Tender procedure launched for a new bus line 6. Operation of bus (April – July 2018) 7. Collecting indicators after pilot 8. Evaluation of pilot 9. In case of success, the line will be add to public service obligation and will be operated regularly	
WHO? List the organisations that has been/is in charge of the action	The administration of the local municipality is in charge of the action. The municipality plans routes and bus schedule, searches for voluntary drivers and plans their "employment", is responsible for administrative tasks and looks after the bus. The municipality is supported by the ministry and the NASA. They assist in the development of routes and schedules, provide financial support, organize stakeholder involvement, and prove an integration in existing PT offers.	Ministry of Sea, Transport and Infrastructure, Karlovac County Government, Transport operators and Infrastructure Managers	The Transport Plan has been prepared by the Department of Transport and Road Administration (section of transport services) of the Vysocina Regional Authority and officially approved by the Vysocina Regional Assembly on 20 December 2016.	The contractor is JIKORD s.r.o. – South Bohemian Transport Coordinator, who launched a tender for public transport operator.	Žilina Self-governing Region

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
HOW MUCH? approx. cost of the action	Minibus (leasing): around 650 € per month; Insurances (bus): 50 € per month; Driving license for voluntary drivers(around 15 drivers needed): 250 € per person (once); Mileage allowance for voluntary drivers to get to and from the bus: 20 ct./ km (running costs); Software to plan operation of the bus: 350 € (once) + 100 €/ year (running costs); Technical devices for the bus: mobile phone: 100 €, tablet PC + printer: 700 €; Promotional & information material: 5000 € (starting phase); Children seats: 1,000 € (once); Summary: Starting phase: around 7,900 € Running costs per month: 780 € Hint: it is expected that costs for the buses' operation (e.g., gasoline) are financed by ticket sales.	33,584,253 € (250,000,000 KN)	Pilot activity implementation: € 108,750	Pilot bus line: € 50,000 (85 % is paid by EU - ERDF and 15 % by the owner of company South Bohemia Region)	Planning and installation costs: € 39,950
WHAT ARE THE	Main problems are :	• financial issues for	In particular, the low demand	• some lack of information	• Absence of

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
PROBLEMS? List and explain the main problem tackled or to be tackled	• Long list of local stakeholders, which have to be involved, and many steps which have to be taken, so a very long period for implementation (around 1 year). • The minimum number of voluntary drivers to start the service. • Leasing procedure	authorities • difficult accessibility of the areas of this County • long approval procedures with stakeholders • bad time to start • extra working hours for station personnel during weekend • more train personnel	for Public Transport in certain areas that hinder a proper offer	from competent body of transport authority (Road infrastructure manager). • In the pilot area was planned a reconstruction of bridge, but the road infrastructure manager does not have information about it (=bad communication between each organization structure in the Region). We found out this information from Mayor of one village in area. • Not interest of the PT operator for a new line/service • In the first round of tender procedure there was no applicant (now we are waiting for the second round of tender procedure). • late implementation of pilot due to bad natural and technical condition in the area – bad quality of roads, in winter. • non-inclusion of all stakeholder requirements in the pilot test • multiplicity of different needs. For example,	services or insufficient services for public transport users at intermodal nodes. • Decrease in number of passengers in public transport (especially bus)

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
				Municipalities have requested a modification of the pilot's route, but with this the line would lose the innovative aspect as defined in the project objectives. • not filling bus capacities on new lines • dependency of the inhabitants on the ownership of motor vehicle because of the comfort (for example for shopping) and time-independency of cars • short duration of the pilot experimentations (4 months), that could be too short to change the habits of the population	
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations	In order to have a constructive process of stakeholder involvement, it is a good idea to start the involvement process as early as possible, so that conflicts can be reduced, involving experts, who have enough experience in the operation of citizen busses, to learn from them and become aware of critical issues. Take enough time to plan information events and involve the local public. Try to reduce	• Collaboration between local stakeholders • interoperability of the entire transport system (railway especially)	The test will be very helpful to verify the real situation of rural areas and the assessment during the testing period will make possible to do changes and adaptations in a controlled way.	• Better communication and dissemination (also between all regional authorities) of the upgrading actions. • On the line was planned the reconstruction of the road bridge, so it was necessary to ask to the department of regional development to postpone the works • Less strict technical criteria for operation bus	Passenger stations are the heart of the mobility: taking train, intermodality, selling tickets, other activities (shops, services…). Therefore, an integrated design of intermodal terminals is essential Different kind of services can be offered at stations

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
	the effort and expenses of volunteers to a minimum. To convince people to start voluntary work, it takes good connections and put a lot of effort in local information campaigns.			line in the tender procedures (e.g. average age of vehicles, capacity of bus), in order to allow more transport companies to participate. In this light, now the tender is addressed also to private companies who operate irregular transport (e.g. for schools and tourist) • For Czech law, a regular bus service on the road must be maintained also in the winter • Continuous communication with stakeholders during the implementation phase • monitoring of the requirements requested, especially if the tender rules allow to make some modification – e.g. Modification of timetables in response to interest of citizens, etc. • Starting an effective public campaign to inform citizens that there is a new public transport service • cooperation with train operator who is intended	

WHERE? Territory involved	Peripheral municipalities in Saxony-Anhalt (Germany): Osterburg (Landkrei Stendal), Möser (Jerichower Land)	Karlovac County	Vysocina Region	South Bohemia Region	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
				to have a touristic bus line in the area. In our pilot, in particular, it operates a touristic bus line during summer holidays or weekends.	

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
WHAT? Name of the action	Tele-Bus: DRT Service in Krakow	Prontobus: DRT Service in Province of Modena	Night Taxi	Bus transport and on-demand transport in the city of Coburg and county (Landkreis) of Coburg, Bavaria, Germany	Qualist- Quality of life in small towns
HOW? Describe the operative phases of the actions	Tele-bus is a DRT service operating in the suburban area of Krakow. The purpose of the service is to connect areas of weak demand and not served by other public transport services to major transport networks (urban and suburban transport, railways), similarly to what happens for rural areas.	aMo in consultation with the municipalities involved has activated since 2003 some DRT services, called Prontobus, in different areas of the province of Modena. These areas are: Pavullo, Carpi, Modena, Mirandola, Maranello, Serramazzoni, Castelfranco Formigine and Fiorano. The main purpose of the Prontobus services is to	Keeping active a regular public transport service in the night hours is practically impossible due to heavy costs; in order to still give a public response and night mobility, the night taxi service was established in 2004. This service replaces the ordinary and offers the possibility to travel in a way that is halfway between the bus and taxi service.	SÜC Coburg is a city bus company, part of the SÜC Coburg city company (owned by the city). The system has 10 bus lines operated daily, mostly with hourly intervals when it comes to departures. After 20:00 hours until around midnight the system is replaced by on-demand transport (taxi) service which	Development and implementation of measures to respond on negative impacts of demographic and social change in small towns. These measures were aimed to improve the quality of life of the existing inhabitants and to raise awareness to attract potential new residents. The QUALIST project has the following objectives: • Demographic-oriented

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
	The service was implemented for the first time inside the European project Civinet-Caravel and is still working with some developments compared to the beginning. Tele-bus is a stop-to-stop service, that needs reservation but everyone can access to it standing at a bus stop where the bus transits. There are not constraints about the time except the respect of previous reservations. Tele-bus has the same fares of ordinary public transport in order to facilitate the interconnection with the main bus and train network.	connect dispersal areas with the main public transport networks (railways and busways) and also these principle are followed: • integrate or replace the traditional public transport services in the peripheral areas or in hours of low demand • give a public mobility service in small towns characterized by low population density, in areas with dispersal population (mountain areas, rural areas) as an alternative to the absence of traditional public transport services; Prontobus gives an offer of public transport that is intermediate between the traditional line public service, which does not overlap, and the door to door service. Prontobus has the same fares of ordinary public transport in order to facilitate the	You can access the night taxi service from four major stops that are the cathedral, the two hospitals, and the railway station. From these stops passengers can be transported to any address within the municipality that is divided in two concentric areas. The service can be accessed by owners of annual or monthly subscriptions to the public transport service and Rates are superior to those of ordinary public transport but they are much smaller than those of the ordinary taxi service. Fares are depending from the number of passengers and the area that has to be reached. The service is operated from the local taxi company and operates every day from 20.30 to 5.30.	supplements it. On demand service is also available on Saturday till Sunday until 3:45 AM and on Sunday morning from 6 to 11:20 hours and between 19:30 to 23:45 hours. Omnibusverkehr Franken (OVF) is a bus company owned by Deutsche Bahn which is a state railway and bus company owned by the Republic of Germany. The system in County was significantly reorganised in the last year. Most of the lines were set to be on-demand transport. The old system had 11 lines, while the new system has 5 lines, but the rest of the County is covered with on-demand services that can be used every hour and drives people to bigger bus and train stops. New on-demand	revitalization of small town centres • Development and piloting of solutions to increase the attractiveness of city centres of small towns in rural areas. • Development of a concept "Vision Central Europe small Town 2020" (rural area) under consideration of the demographic development (infrastructure, variety of services, multi-generation housing concepts etc.). • Pre-investment activities for revitalisation of centres in Horn (A), St. Martin (A), Adorf (D), Oelsnitz (D), Slavonice (CZ, associated partner) • Identification and drafting of further projects in the partner regions. • Demography oriented mobility concepts for small towns

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
		interconnection with the main bus services; tickets can be purchased also on board. To access the service it is necessary to book the trip to a reservation centre that takes care of optimizing the various reservations with the aim of minimizing the distances of trips together to maximize the number of people who can use the service. In some cases the services are subcontracted to small transport companies and in the past have also been set up partnerships with taxi companies.	If a bus is not already present at the starting stop, it can be booked at the taxi's call centre.	services were advertised through campaigns. Every OVF bus is covered with on-board info system that shows the next four stations. It also gives info on tickets, campaigns and other traffic info. The five lines remaining run on hourly intervals on workdays from 6 to 23:30 hours. On Saturdays, Sundays and holidays the system runs on two hours intervals from 8 to 22:00 hours. The garage (maintenance) and office building are shared together with SÜC Coburg in Coburg.	• A public transport supply oriented to small target groups and innovative operating system (based on first experiences in Saxony). • Mobility centre model for CE small towns. • Elaboration of a "Mobility concept CE small town 2020" (under consideration of the results in the PP regions). • Pilot project: mobility centre Waldviertel (Lower Austria). • Activation of flexible means of transport (buses on-call or taxis). • Upgrading and safety of the pedestrian-cycle paths of supply to public transport stops (replacement of a bridge in Oelsnitz) • Location information/ presentation system • development and implementation of presentation tools to improve information and raise awareness

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
					of target groups about advantages and potentials of living quality in small towns. • Implementation and extension of location information system (WohnWeb 2.0) • Implementation of model "Ambassadors of small town regions". • Qualification for the location agents in public authorities.
WHO? List the organisations that has been/is in charge of the action	MKP Krakow	aMo/Seta	aMo/Seta/Taxi company	SÜC Coburg (the city company) and OVF (Omnibusverkehr Franken), bus company operated by Deutsche Bahn	• Department for Transport in the Ministry of Economic Affairs and Labour of the German region Saxony, Lead Partner (D); • District of Vogtland (D); • Municipality of Oelsnitz (D); • Municipality of Adorf (D); • ZVON, Transport Federation Upper-Lusatia-Lower-Silesia (D); • Government of lower Austria, Dept. RU7 "traffic and transport affairs" (A);

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
					• Association Interkomm Waldviertel (A); • Municipality of Horn (A); • Euroregion Silva Nortica (CZ); • A.R.D. Central s.r.o. (CZ); • Municipality of Sankt Martin (A); • Municipality of Slavonice, associated partner. (A).
HOW MUCH? approx. cost of the action	Costs: € 1.22 / km - 212,000 / year (2015)	Costs: € 3 / km (2015)	Costs: € 3 / km (2015)	Costs € 1.8/km	Costs: € 1878700
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	• costs of this kind of service is very high and this aspect limits the expansion • poor functionality and flexibility of the software used to manage Tele-bus, also to give a better information to passengers • poor information to passengers • the buses used are not updated if compared to the rest of the fleet	• Costs of this kind of service is very high and this aspect limits the expansion. • As actually no software are used to manage reservations; it is necessary increase the performance of the Prontobus services giving a better information to passengers in order to improve the user information and thus increase the use of services. • It should be necessary	• Number of starting stop has been reduced in the years because of declining economic resources	There is no tariff integration between bus and railway systems. In the city and the county there are two railway (DB and Agilis) operators and two bus operators (SÜC Coburg and OVF). This makes harder to combine the systems. There are also some communities which have railway and bus connections, so parallel bus and rail lines. By integrating the system buses could be used to	The results will be visible in the long term.

| WHERE?

Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
	• the covered area is only suburban and it is not planned to cover the rural areas around the city	to adopt more modern buses that actually are not updated if compared to the rest of the fleet.		reach other communities and connected them with trains.

In case of integration, the overall costs will raise for around 250.000 Euros. To cover these costs the overall modal share of public transport should raise for at least 2-3% which is at the moment considered risky. | |
| HOW CAN YOU REDUCE THE PROBLEMS?

List and explain the recommendations | • having focused on the efficiency and reliability of the service, taking care of the aspects related to the interchange with the major public transport networks has been awarded with a large and growing usage of the system
• MPK has reached a consideration similar to that which will lead to the pilot project in Modena: a better information to passenger (potential | • The DRT services are the only real way for serving low-density rural or urban areas and connecting them with the main transport networks.
• DRT services are expensive, but globally the balance is positive considering the amount of traditional public transport services that should be necessary to cover the same areas and give a similar level of service.
• The satisfaction of | • It is possible provide alternative to ordinary public transport even in night hours at a vastly lower costs than those of ordinary services.
• In recent years was restored the night ordinary service (until midnight) to the main bus trolley bus line in Modena, but the number of users has proved to be very low so that the service has been removed. This reinforces the idea | - | Concerning the improvement of the quality of life in small town, the project showed, with the development and pilot cases, how the increase of the attractiveness of the small towns involved, innovative PT networks, development and implementation of information tools produce real benefits for inhabitants. Moreover, the project shows how the flexible means of transport, including buses on-call or taxis are an efficient instruments for increasing attractiveness and life style in small |

WHERE? Territory involved	Krakow, Poland	Province of Modena	Province of Modena	City of Coburg and County of Coburg, Bavaria, Germany	Czech Republic, Germany, Austria
Type of input	Good practice	Good practice	Good practice	Good practice	Good practice (EU project)
	or actual) could improve the usability and the access of a DRT service. MPK is going to change and implement the software used to manage information, primarily to increase the passengers information, focusing principally for those that could access to the service without a previous reservation • it is confirmed that the DRT are probably the only real way to serve low-density areas and to connect them with the general services and the main public transport services	users is high and despite the progressive reduction of public economic resources for local public transport, the most of the Prontobus services are still active after about 13 years of operations. • Involve small transport companies or the taxi service as subcontractors to provide DRT services can lead to a significant reduction in operating costs.	that a service such as a night taxi is appropriate to the needs of a city with the size of Modena.		centres that generate too low flows of traffic for implementing regular services.

4.4. Infomobility

Strategies about infomobility are probably the ones more considered and various, and it could not be in a different way. Actions concern a lot of fields, all important to make a service more attractive and, above all, simple. Many of them refer to the matter of real-time information (which is for sure very heartfelt by users) that can really improve the perceived quality of a service. Other actions focus on helping people in their trip planning, to make useful decisions, while other propose to manage booking services and ticket buying to make users save time and troubles.

WHERE? Territory involved	Szabolcs-Szatmár-Bereg County / Nagykálló		Castelfranco Emilia	Vysocina Region	South Bohemia	Mazowieckie Voivodeship
Type of input	Pilot experience		Pilot experience	Pilot experience	Pilot experience	Pilot experience
WHAT? Name of the action	Strategy for Bus-stop development and real-time bus information system realization	Strategy for Raising awareness on public transport	App to supply real time info for DRT service booking	Transport Plan of the Vysocina Region 2017 – 2021: Promotion and raising of awareness	Infomobility – carrying out a traditional communication campaign	Implementation of the passenger information system (GPS transmitters, app, interactive kiosk)
HOW? Describe the operative phases of the actions	Information system: - Cooperation with the PT operator and regional road operator - Searching for proper technology and company dealing with Information systems - Investigating compatibility - Purchase and installation	- Updated website content on the own website and on the stakeholders website - Publicity campaign involving professional agency	(October 2016) Definition of the functionalities of the software system to be implemented in the pilot project jointly with the stakeholders (mainly the Primary Stakeholders who are the users of the DRT service) and with the call center that manages the reservations of the on demand service (March 2017) Execution of the public procurement for the selection of the software system provider; an essential and winning point was the request to offer additional elements respect those provided in the technical	The launch of the planned "Public Transport of Vysocina" conception will be accompanied by a wide-range publicity campaign, using various communication channels in order to reach all relevant target groups and stakeholders (printed media, internet, radio, social networks, etc.).	1- Considering: - size of the territory - Population - Number of new buses - Involvement of stakeholders - Tourist attractions in the area 2- Material preparation: - Leaflets for every household - Leaflets and posters for public places - bulletin boards, shops, pubs, etc. - Posters and timetables for stops, train stations - Railings in on-board train connections - Workshop with	- The choice of the contractor system (public procurement) - Creation of a train traffic tracking application, installing info kiosks, launching the system - Placing the application in the "Google store" (free download) - Application tests - Analysis of user comments and remarks Other important steps: - Precise technical specification. - Workshops for stakeholders. - Public procurement process for purchasing equipment and

WHERE? Territory involved	Szabolcs-Szatmár-Bereg County / Nagykálló		Castelfranco Emilia	Vysocina Region	South Bohemia	Mazowieckie Voivodeship
Type of input	Pilot experience		Pilot experience	Pilot experience	Pilot experience	Pilot experience
			specifications rather than requiring a discount on the economic part • (May 2017) Starting of the development of the system software with a continuous and reciprocal feedback between the supplier and aMo to ensure the respect of the technical specifications • (August 2017) Test phase of the software system performed before from aMo and then from the call centre • (September 2017) Starting of the pilot with all the functionalities available for call centre and users		stakeholder • Mutual advertising of the pilot bus and tourist destinations in the area • Media advertising - radio, local press 3- Printing materials - supplier selection 4- Distribution of materials	services. • Installation and testing of GPS transmitters, mobile app and kiosk. • Publicity campaign.
WHO? List the organisations that has been/is in charge of the action	not confirmed yet (contracting in March)	not confirmed yet (contracting in March) Prober Consulting Ltd. is in charge of the publicity campaign.	aMo, Supplier of the software system, Call center	The "Public Transport of Vysocina" system is being developed by the Vysocina Region in close cooperation	The contractor is JIKORD s.r.o. - South Bohemian Transport Coordinator.	Mazowieckie Voivodeship and Mazowieckie Railways are in charge of this action

WHERE? Territory involved	Szabolcs-Szatmár-Bereg County / Nagykálló		Castelfranco Emilia	Vysocina Region	South Bohemia	Mazowieckie Voivodeship
Type of input	Pilot experience		Pilot experience	Pilot experience	Pilot experience	Pilot experience
				with external experts (KPM Consult), joint-stock company, based on the public procurement contract concluded on 15 January 2015.		
HOW MUCH? approx. cost of the action	Information system: € 25,000	Szszbmö: € 4,650 Nagykálló: € 9,000	The software system: € 39,900	Still unknown	Campaign promotion costs: € 6,000 (85% is paid by EU - ERDF and 15% by the owner of the South Bohemia Region).	Information system: € 40,000
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	Public Transport is not comfortable, there are no passenger information system. A huge portion of citizens is moving to Nyíregyháza to avoid commuting. Other problems: • long approval procedures at region administration and public procurement procedure • absenting	It is difficult to convince the population to convert habits (shift from car towards Public Transport).	The main problem was to produce accurate technical specifications that respect the indications of the stakeholders and the needs of the call center and that and which provided for all the features required by the project.	The main problems are in general the same of the other actions, in particular the decrease of number of passengers using public transport, due to the mistrust.	• it would be necessary to specify the timetable and the localisation of the new bus stops but they cannot be mentioned until the operator is selected and the tender aspects are discussed. Moreover, regarding the bus stops, the agreements with	Little awareness among travelers of the existence of this type of project. Some travelers think that the project covers all railway lines in Mazovia, so these users give negative feedback and comments that weaken the app's rating.

WHERE? Territory involved	Szabolcs-Szatmár-Bereg County / Nagykálló	Castelfranco Emilia	Vysocina Region	South Bohemia	Mazowieckie Voivodeship
Type of input	Pilot experience		Pilot experience	Pilot experience	Pilot experience	Pilot experience
	transmitters in PT vehicles				the transport inspectorate of the Police of the Czech Republic were necessary • It may happen that the campaign will not have the desired impact.	
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations.	Providing comfortable public transport services, the vast majority of the inhabitants will choose and use public transport facilities over cars or moving-to-Nyíregyháza.	Elements of awareness raising strategy should be creative, which attracts potential PT users. Activities should contain novel solutions, which differs from the ordinary technics.	• Sharing as much as possible the definition of the functionality of the system with who will use it • Being as accurate as possible in defining technical specifications • During the tender, if possible, requesting prototypes of what will be developed; this helps to get a better idea of the competitor's capabilities • Being open to additional and supplementary proposals from service providers The pilot experience is achieving good results, in	The campaign will promote PT as a high-quality alternative to private car for all population groups and highlight main advantages of the new system, such as the improved offer of connections as well as tariff unification that eases interchanges (no need to buy a new ticket or to pay a surcharge). The campaign will aim to: • make the regional public	• A timely launch of all process steps and pre-preparation of the materials for printing, with the acceleration of additional information added. • As part of RUMOBIL's promotion, we have established close co-operation with mayors who have offered dissemination of information by	We have not technical problems with the project.

WHERE? Territory involved	Szabolcs-Szatmár-Bereg County / Nagykálló	Castelfranco Emilia	Vysocina Region	South Bohemia	Mazowieckie Voivodeship
Type of input	Pilot experience	Pilot experience	Pilot experience	Pilot experience	Pilot experience
			consideration of the increase of the number of passengers. Moreover, more local public bodies of the Modena Province has already requested the implementation of the RUMOBIL SW for DRT in their own territories. In particular, in Mirandola (Modena Province) the implementation of the RUMOBIL system is starting and it will be extended to all provincial areas with Prontobus DRT service (6 including Castelfranco Emilia).	transport more attractive for citizens; • increase the share of public transport in modal split, in particular in areas of rural character; • increase number of passengers using regional public transport services.	all available means (local radio broadcasting, location of info materials in public places, publications in local publications). Cooperation on advertising was offered also by Czech railways, because they consider pilot project consisting of connecting bus and rail traffic useful.	

WHERE? Territory involved	Wrocław	Italy, Austria, Czech Republic, Slovakia, Hungary	Czech Republic, Germany, Austria	Coburg, Germany	South Bohemia
Type of input	Good practice (EU project)	Good practice (EU project)	Good practice (EU project)	Good practice	Experience outside RUMOBIL project
WHAT? Name of the action	iMPK - Vehicle tracking	EDITS – European digital traffic infrastructure network for intelligent transport systems	Qualist- Quality of life in small towns	Süc Coburg, City Bus Company	Infomobility – developing of infomobility systems
HOW?	IMPK application contains information about the	This project aimed at enabling cross-border	Development and implementation of measures	• 18 stops in the city upgraded	• analysis of the information currently

WHERE? Territory involved	Wrocław	Italy, Austria, Czech Republic, Slovakia, Hungary	Czech Republic, Germany, Austria	Coburg, Germany	South Bohemia
Type of input	Good practice (EU project)	Good practice (EU project)	Good practice (EU project)	Good practice	Experience outside RUMOBIL project
Describe the operative phases of the actions	location of all public transport vehicles operated by MPK Wrocław.

The application, based on the GPS position, gives the passengers the opportunity to track public transport vehicles, check if they run according to the schedule, see the type of the bus or tram and download the timetable for the specific stop directly to the mobile phone. Passengers can also use the timetable with the information about possible transfers.

The purchase of the application fell within the scope of the large-scale investment related to the launching of the dynamic passenger information system in Wroclaw (installation of more than 220 electronic boards at bus stops, equipping almost 600 vehicles with on-board computers etc.). | multimodal travel information based on harmonized traffic data and information gathered on transnational level.

EDITS focused on accessibility improvement to provide information services based on a harmonized platform for data and information exchange and therefore to promote interoperable and multimodal travels. The available data were exchanged through the developed platform also on cross-border level. This was done through two main services: web based interoperable and intermodal pre-trip information and on trip services which provided information to the end-users. Furthermore, traffic management was also tackled within EDITS platform, applying the exchange principle. | to respond on negative impacts of demographic and social change in small towns. These measures were aimed to improve the quality of life of the existing inhabitants and to raise awareness to attract potential new residents. The QUALIST project has the following objectives:
• Location information/ presentation system
• development and implementation of presentation tools to improve information and raise awareness of target groups about advantages and potentials of living quality in small towns.
• Implementation and extension of location information system (WohnWeb 2.0)
• Implementation of model "Ambassadors of small town regions".
• Qualification for the location agents in public authorities. | • All vehicles low floor – 40 buses (15 vehicles use natural gas, 12 buses on EURO V diesel, 3 on EURO VI, diesel)
• Many new stops with info screens with info on departures, delays, etc.
• Investments made for dispatching systems to provide info for Bayern Fahrplan website. This website gives all public transport timetables and connections from every to every stop in the country. SÜC Coburg dispatching system gives data for the Bavaria Farhplan system (real time data about delays, interruptions, etc.) | provided
• determining the extent of passenger information
• implementation of information systems
• verification operation on selected vehicles / terminals
• gradual expansion
• evaluation |

WHERE? Territory involved	Wrocław	Italy, Austria, Czech Republic, Slovakia, Hungary	Czech Republic, Germany, Austria	Coburg, Germany	South Bohemia
Type of input	Good practice (EU project)	Good practice (EU project)	Good practice (EU project)	Good practice	Experience outside RUMOBIL project
WHO? List the organisations that has been/is in charge of the action	MKP Wrocław	• Lead partner: Austria Tech- Federal agency for technological Measures LTD. • Central Europe Initiative-Executive Secretariat • Regione Autonoma Friuli Venezia Giulia- Central Directorate for Infratructure, Mobility, Spatial Planning and Public Works • Provincia di Modena • Provincia di Ferrara- Technical Infrastructure, Buildings, Civil Protection, Tenders • ITS Vienna Region Pubblic transport Association of The Eastern Region of Austria /ITS Vienna Region • City of Bratislava • Hungarian transport Administration • Telematix Software a.s.	• Department for Transport in the Ministry of Economic Affairs and Labour of the German region Saxony, Lead Partner (D); • District of Vogtland (D); • Municipality of Oelsnitz (D); • Municipality of Adorf (D); • ZVON, Transport Federation Upper-Lusatia-Lower-Silesia (D); • Government of lower Austria, Dept. RU7 "traffic and transport affairs" (A); • Association Interkomm Waldviertel (A); • Municipality of Horn (A); • Euroregion Silva Nortica (CZ); • A.R.D. Central s.r.o. (CZ); • Municipality of Sankt Martin (A); • Municipality of Slavonice, associated	SÜC Coburg	The contractor is JIKORD s.r.o. - South Bohemian Transport Coordinator, who launched a tender for public transport operator.

WHERE? Territory involved	Wrocław	Italy, Austria, Czech Republic, Slovakia, Hungary	Czech Republic, Germany, Austria	Coburg, Germany	South Bohemia
Type of input	Good practice (EU project)	Good practice (EU project)	Good practice (EU project)	Good practice	Experience outside RUMOBIL project
		• Brněnské komunikace a.s. • Kordis JMK • ASFINAG Maut Service GmgH • Gyor-Sopron-Ebenfurt Railway Corp. Ltd. Other stakeholders involved: Service operators and authorities/infrastructure operators	partner. (A).		
HOW MUCH? approx. cost of the action	Costs: ~ € 23,000,000 (entire development action)	Costs: € 2,424,266	Costs: € 1,878,700	Costs: around € 40,000 per stop (shelter and barrier free access)	Depending on the size of the territory and the technology used, the number of vehicles For example, central dispatching for area of current integration transport system will cost approx. 80 000 EUR (financed by another EU project, 85 % from EU fund, coo financed 15 % from company budget)
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	• Implementation cost of the application and its maintenance; • Application malfunctions; • Scheduled arrival times (estimates) are not always accurate	The limit of the on-trip approach is the necessity to continuously ensure the flow of information by all operators and other stakeholders in order to allow users to plan their own trips thanks to real-time and high quality data	The results will be visible in the long term.	• There is no tariff integration between bus and railway systems. In the city and the county there are two railway (DB and Agilis) operators and two bus operators (SÜC Coburg and OVF).	A. Poor traffic awareness, especially in the case of bus traffic in the form of up-to-date vehicle position information B. Minimum digital panels on transfer terminals C. No central bus

WHERE? Territory involved	Wrocław	Italy, Austria, Czech Republic, Slovakia, Hungary	Czech Republic, Germany, Austria	Coburg, Germany	South Bohemia
Type of input	Good practice (EU project)	Good practice (EU project)	Good practice (EU project)	Good practice	Experience outside RUMOBIL project
	enough.	and information.		This makes harder to combine the systems. • High price due to materials used.	management (central control centre is preparing) In the case of rail transport there is an on-line train position, it is also transmitted to a mobile application, a web application is available on the station's position in the stations / gradually expanded to the maximum number of railway stations.
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations.	The application is very popular among passengers and is positively assessed by users. Bug efficiency and reliability of the service, taking care of the aspects related to collaboration with other entities, with applications related to the planning travel in order to exchange experiences and information.	Feedback by users about information of their own trips are very useful to enrich the information flow between travelers and between them and transport operators and therefore to improve the service level. In this light, also negative feedback can be essential to better know the most critical issues.	Concerning the improvement of the quality of life in small town, the project showed, with the development and pilot cases, how the increase of the attractiveness of the small towns involved, innovative PT networks, development and implementation of information tools produce real benefits for inhabitants.	High quality service with comfortable and modern low floor buses, high quality maintenance, good info-mobility, quality made and recognizable stops, reliable service.	A. Ensure tracking online vehicle positioning (Especially buses) B. installation of transfer terminals by information panels, including showing the current arrival of the vehicle C. to establish a central dispatching centre to ensure the management of public transport, including the guarantee of transfer links within the bus transport and at the railway nodes.

WHERE? Territory involved	Aalborg, Helmond, Helsinki, London, Torino, Trikala, Trondheim, Vigo	United Kingdom	United Kingdom	United Kingdom	German state of Baden-Württemberg
Type of input	IoT best practice	IoT best practice	IoT best practice	IoT best practice	IoT best practice
WHAT? Name of the action	Europe-Wide Platform for Connected Mobility Services (MOBiNET)	oneTRANSPORT™	Informed Rural Passenger	Social Journeys	RAMSES-Platform, on-the-go-rural mobility 2.0
HOW? Describe the operative phases of the actions	MOBiNET is a European e-marketplace of mobility services for business and end users. At the core of MOBiNET is a platform providing components and tools that enable interactions between users and suppliers of mobility services. The MOBiNET e-marketplace allows content and service providers to exchange transport and mobility services for new or third-party service development. MOBiNET provides: • A comprehensive Europe-wide directory of mobility and transport-related data and services • An e-marketplace as an e-commerce network linking content providers, service providers and end users	The oneTRANSPORT Data Marketplace is an open, standards-based environment that both public and private sector organizations are using to publish their data, where it can be discovered, consumed and used in any kind of application or service. Data owners can "publish once, distribute to many". Organizations can: consume city and transport-related data that was previously inaccessible or too siloed; distribute and gain access to both static and real-time data via an open, cloud-based platform; discover and consume any data via a single interface with terms that support the open use of data; as the platform does not require exclusivity or copyright to published data, the organizations	Informed Rural Passenger aims to review the state-of-the-art in journey planning and passenger information systems including public and other shared transport modes; establish user information requirements for the journey planning process in rural contexts; design semantic models to underpin the rural passenger information ecosystem, including capturing provenance; develop a prototype cloud-based platform for a rural passenger information ecosystem, associated knowledge layers and scalable query/reasoning capabilities; create prototype services that utilise the knowledge and information components of the ecosystem to support real-time information and community content construction; apply user-centred approaches to develop novel user-interface modalities for	Social Journeys aims to understand how social media is currently used for real time passenger information by identifying potential user groups in the passenger landscape; apply user-led design methods to inform novel approaches for the use of social media; create and evaluate bespoke travel information solutions via design workshops suited to the particular needs of users; incorporate social media data into the broader public transport ecosystem; understand the quality and trust issues associated with social media data; Investigate methods to deal with inconsistencies between different data sources – whether these arise from errors, malicious behaviours, etc.; deliver services that rural travellers will want to use, and that operators/local authorities will want to host.	The RAMSES on-the-go platform provides not only an intermodal trip planner and ticketing for users of rural transportation services but also specifically aims at empowering small-scale providers of mobility services in rural areas, e.g. voluntary community transport providers. A low cost, integrated solution supports them in organizing, operating and marketing their services. From the point of view of the advantage to the society, the platform provides access to a wider range of mobility options, better integration, and consequently less dependence on cars and lower environmental impact.

WHERE? Territory involved	Aalborg, Helmond, Helsinki, London, Torino, Trikala, Trondheim, Vigo	United Kingdom	United Kingdom	United Kingdom	German state of Baden-Württemberg
Type of input	IoT best practice	IoT best practice	IoT best practice	IoT best practice	IoT best practice
	• Traveller assistance tools for service roaming and virtual ticketing • Third-party service composition to discover and add content and services to existing products • An "App Directory" and smart Communication Manager for end-user devices • A Service Development Kit to enable easy creation of new user services	can use and distribute their data through the means they prefer. The oneTRANSPORT Data Marketplace enables integrated operations and efficient use of infrastructure. New services can be enabled that facilitate the movement of people and goods and improve quality of life. The Marketplace supports connections with public and private data systems and is especially suitable for data from sensor networks and the Internet of Things. Securely stores published data and makes it available through open APIs that conform to the global oneM2MTM international standard. Facilitates collection of access fees for data publishers while also enabling free data distributions where applicable.	communicating travel information via mobile and desktop clients; develop a component that assess the quality of information utilising the ecosystem knowledge and information components; evaluate the system in a trial area, including measurement of changes in travel behaviour in response to customised travel information.		
WHO? List the organisations	Rasmus Lindholm, ERTICO ITS Europe. The consortium includes 33	InterDigital Europe. The consortium includes 11 partners: Arup,	University of Aberdeen	University of Aberdeen	Berlin University of Technology, Dept. Work and Technology

WHERE? Territory involved	Aalborg, Helmond, Helsinki, London, Torino, Trikala, Trondheim, Vigo	United Kingdom	United Kingdom	United Kingdom	German state of Baden-Württemberg
Type of input	IoT best practice	IoT best practice	IoT best practice	IoT best practice	IoT best practice
that has been/is in charge of the action	partners, among them: CRF (Centro Ricerche Fiat), Volvo, Transport for London, Allianz, Xerox, Tim	InterDigital Europe, Buckinghamshire County Council,Clearview Traffic Group, Hertfordshire County Council, Highways England, Imperial College London, Northamptonshire County Council, Oxfordshire County Council, Traak Systems and World Sensing			
HOW MUCH? approx. cost of the action	Budget: €15,600,000 (€11,000,000 funded by EU)	Budget: £3,500,000 (partially funded by Innovate UK)	-	-	-
WHAT ARE THE PROBLEMS? List and explain the main problem tackled or to be tackled	The project addresses the current frustration that widespread deployment of ITS services is hindered by the complexity of the real world of mobility information and infrastructure, which e.g. prevents seamless coverage of services across borders throughout Europe.	City budgets are under pressure in absolute terms and in relation to budgetary ring-fences around education, health and welfare services. The financial squeeze led many of the early smart city projects to tackle quick-win, point solutions with a clear, near-term return on investment. City managers are beginning to see that their initial focus on quick-win, standalone solutions is costly to maintain and difficult to	In rural areas, a possible underlying lack of potential solutions to develop travel information services often cause journey planning scenarios to not be included due to missing or inaccurate data.	There has been a rapid growth in the use of social media in public transport in recent years. Public transport service providers currently communicate with customers via social networks such as Twitter	Public transportation in rural areas needs to cope with structural difficulties of low population densities, high car ownership and an aging rural society

WHERE? Territory involved	Aalborg, Helmond, Helsinki, London, Torino, Trikala, Trondheim, Vigo	United Kingdom	United Kingdom	United Kingdom	German state of Baden-Württemberg
Type of input	IoT best practice	IoT best practice	IoT best practice	IoT best practice	IoT best practice
		integrate into a unified smart city operating framework. The strategic challenge is to recognize that each city will manage a growing number of connected assets and data sources. The start-up challenge is to experiment by bringing together a few data streams into a common environment to enable data sharing and application mashups for different use cases. Technology can overwhelm the start-up process and lead to inaction or investment in just a sub-set of the overall portfolio necessary to sustain multiple smart city services.			
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations.	The MOBiNET concept includes five key areas of innovation: • Federated directory of all European online services for transport and mobility; • Identity authentication and management	One approach to overcome the technology challenge is to work within a multi-party eco-system. Here, different specialists contribute their relevant expertise within the framework of a common goal and model of cooperation. Such an approach	-	This benefits transport operators as they can gain insight into customer attitudes and behaviours. It also enables passengers to be alerted to delays and disruption at an early stage through the existing channels they use.	Rural areas are characterized by vibrant community life, strong voluntary engagement and collaboration. Local voluntary organizations in many European countries, including Germany, have started to operate community transport services to their villages.

WHERE? Territory involved	Aalborg, Helmond, Helsinki, London, Torino, Trikala, Trondheim, Vigo	United Kingdom	United Kingdom	United Kingdom	German state of Baden-Württemberg
Type of input	IoT best practice	IoT best practice	IoT best practice	IoT best practice	IoT best practice
	scheme for single sign-on by any user for multiple services; • Unified accounting & billing framework, allowing roaming by users & payment clearing between providers; • Secure operating environment for in-vehicle and portable devices, offering (for users) a dedicated app-directory and (for service providers) access to all subscribing users; • B2B community & marketplace for automatic negotiation of service agreements when adding extra service components and data sources to existing service offerings.	combines the best of the public and private sectors.			The number and types of services is growing steadily. RAMSES is taking these rural mobility services to the next level. Community-driven transportation and other alternative mobility options like bottom-up car sharing rely mostly on face-to-face contact, personal acquaintance and trust; it is largely paper-based, as restricted budgets do not allow implementing IT infrastructure. Building on this first generation of the sharing economy, RAMSES offers an easy-to-use IT application that allows providers to make the most of the local commitment.

4.5. Social cohesion

The following recommendations concern social cohesion, considered as a complementary matter. In fact, the strategies which have been proposed aim to make people's awareness grow, operating with collateral actions, for example combining promotion campaigns with other events. In this way, people gathered for another reasons, can take part also to explanations and demonstrations regarding a new service or an implementation.

In addition to this, a particular attention for disabled citizens is very important both for passengers with reduced mobility and for all people, to understand how the attention for the customer is deep.

WHERE? Territory involved	Mazowieckie Voivodeship	Szabolcs-Szatmár-Bereg County / Nagykálló	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience
WHAT? Name of the action	Promotion of public transport as an alternative to private transport (e.g. in the context of environmental protection or cultural institutions)	Strategy for Raising awareness on public transport	Services for disabled citizens
HOW? Describe the operative phases of the actions	Cooperation of the Mazowieckie Railway with cultural institutions for cheaper access to tourist and cultural places (e.g. museums) for people who bought a train ticket Activities related to the promotion of PT (leaflets, posters, use of screen to display communication in Mazowiekcie Railways trains)	Transnational competition in which it was announced a drawing competition not only to raising awareness on public transport but to involve as much numbers of the population as possible to exclude vandalism	1st phase - Planning part: • Planning of new services for people with reduced mobility 2nd phase – Design part: • Draft design for new infrastructure • Final design for new infrastructure 3rd phase – Building part: • Building of new infrastructure
WHO? List the organisations that has been/is in charge of the action	Mazowieckie Voivodeship and Mazowieckie Railways (Koleje Mazowieckie)	not confirmed yet (contracting in March)	Žilina Self-governing Region is in charge of this action. University of Žilina is the contractor
HOW MUCH? approx. cost of the action	Small project implementation costs on the part of cultural institutions (entrance tickets with a discount)	Szszbmö: € 4,650 Nagykálló: € 9,000 (as already indicated)	Planning and building costs: € 12,050
WHAT ARE THE PROBLEMS? List and explain the main	Little awareness of travelers on this project	It is difficult to convince the population to convert habits (shift from car towards	The main problem is that there are stations with limited access to people

WHERE? Territory involved	Mazowieckie Voivodeship	Szabolcs-Szatmár-Bereg County / Nagykálló	Žilina Self-Governing Region
Type of input	Pilot experience	Pilot experience	Pilot experience
problem tackled or to be tackled		PT)	with reduced mobility in pilot region.
HOW CAN YOU REDUCE THE PROBLEMS? List and explain the recommendations	Wider carrying out of traditional communication campaign, involvement of cultural institutions	Elements of awareness raising strategy should be creative, which attracts possible PT users. Activities should contain novel solutions	Adequate services for persons with reduced mobility become more and more important in ageing societies. Accessibility benefits everyone - people with health conditions or impairments, people with children, heavy luggage or shopping and older people. Technical conditions should allow barrier-free access to every train.

5. Conclusions

To recap the main results of the analysis on the strategies to implement in rural and peripheral areas, one practice for each significant type of action has been highlighted in the tables below.

More common points characterise all the practices pointed out around the Central Europe. In particular, the analysis highlights implementing a good rural and peripheral transport service mainly needs:

- aiming at the investments in people and high social technology orientation;

- assuring the service "package" is properly designed and well recognizable from actual and possible users;

- involving the stakeholders in a continuous way and starting from the initial phase of the improvement action;

- assuring comfort and the perception of security for users

- taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.);

- referring to the client's perception of the quality of service;

- assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities;

- promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops).

Moreover, in a context in which the availability of financial resources is limited, it is interesting to point out the practices analysed required a pretty low level of funding. In particular, the implementation of communication campaign, to raise citizens' awareness of PT services, improvement actions of bus stops, services for disabled and elderly people and planning activities on the already existing PT offer require a low or medium level of resources (approx. between € 20,000 and 75,000 per single pilot case[4]). The actions concerning the implementation of new PT services necessarily require a higher level of funding (approx. > € 75,000 per pilot case).

All the details are included in the tables below.

	PRACTICE N. 1	PRACTICE N. 2	PRACTICE N. 3	PRACTICE N. 4	PRACTICE N. 5
SOLUTIONS TO BE IMPLEMENTED	PT stops/nodes design	Promotion campaigns about PT services	New tariff system	Demand Responsive Transport services for rural areas	Implementation of passenger information systems
PROBLEM TO BE TACKLED	• Low integration • Low attractivity • Low level of information	• Low awareness about existing services • No awareness about new opportunities	• Low integration • Low awareness about services • Low attractivity	• Low accessibility • Lack of funds • Low demand for low density areas	• Low attractivity • Low level of information • Low awareness about the features of the services
OBJECTIVE TO BE PURSUED	A positive and comfortable situation for the users	Increase of PT use rather than private vehicles	A new integrated tariff system suitable for a multimodal PT service	Ensuring a mobility chance and a PT alternative to private vehicles in rural areas	Allow users to know any useful information about a PT service on real time
HOW?	This solution considers the renovation of the stops or the interchange terminals in order to make the travel experience easy and enjoyable. Most common interventions are: • Information and navigation panels	This solution is based on events, workshops, campaigns, publicity and everything useful to promote the use of Public Transport highlighting positive features and potentialities.	This solution wants to help people using the entire PT system, in a favourable way. The steps are: • Surveys • Analysis of travel needs • Making changes on timetables • Analysis of the transport environment (market) in the region (bus and individual	This solution is essential for all those areas where there are no links between the different settlementsor villages due to a low density of inhabitants. Common features are: • Leasing/purchase of buses/minibuses • Design of main routes and stops (preset, flexible, etc.) • Design of a management	This solution aims to help all people when using a PT service. With GPS tracking systems, applications, delays or accidents notifications and othe IoT tools, users are at ease and more confident about public services.

---

[4] "Single pilot case" means a set of more items (e.g. bus stops, lines and users' groups) whose upgrading actions are able to make significant improvement to enhance the use of PT.

	PRACTICE N. 1	PRACTICE N. 2	PRACTICE N. 3	PRACTICE N. 4	PRACTICE N. 5
SOLUTIONS TO BE IMPLEMENTED	PT stops/nodes design	Promotion campaigns about PT services	New tariff system	Demand Responsive Transport services for rural areas	Implementation of passenger information systems
	• Waste bins • Lightening • Bike & ride box • Park & ride places • Barrier-free ramp • Wifi router and equipment providing free wifi access • Benches for passengers • CCTV - monitoring and safety feature • Digital timetable		transport), • Preparation of proposals for introducing a special offer (cheaper tickets) • Implementation of the best proposal	system (app, telephone, etc.)	
HOW MUCH? (approx.. level of resources requested: low, medium, high)	Medium: between € 50,000 and 75,000	Low: < € 25,000	Low: < € 25,000	Medium/high: > € 75,000 until 100,000	Medium/high: > € 75,000 until 100,000
RECOMMENDATIONS TO BE TAKEN INTO ACCOUNT	• Stakeholders involvement • Attention to the context/system • Good level of design • Enhancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops) • Improving and upgrading physical	• Stakeholders involvement • Attractive events • Attention to people's interests • Enhancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the	• Stakeholders involvement • Attention to the system and existing services • Enhancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops) • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the client's	• Stakeholders involvement • Attention to the system • A good promotion campaign to make people aware of the service • Volunteers and associations involvement • Recurring monitoring to evaluate the service • Deep analysis about which services to be implemented • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of	• Stakeholders involvement • Deep analysis about which services to be implemented • A good promotion campaign to make people aware of the service • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops) • Improving and upgrading physical items or facilitating goods for transport development

	PRACTICE N. 1	PRACTICE N. 2	PRACTICE N. 3	PRACTICE N. 4	PRACTICE N. 5
SOLUTIONS TO BE IMPLEMENTED	PT stops/nodes design	Promotion campaigns about PT services	New tariff system	Demand Responsive Transport services for rural areas	Implementation of passenger information systems
	items or facilitating goods for transport development • Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.)	client's perception of the quality of service • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities • Raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions	perception of the quality of service • Creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities	service, no. of stops) • Improving and upgrading physical items or facilitating goods for transport development • Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the client's perception of the quality of service • Creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer	• Aiming at the investments in people and high social technology orientation • Referring to the client's perception of the quality of service • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities

	PRACTICE N. 1	PRACTICE N. 2	PRACTICE N. 3	PRACTICE N. 4	PRACTICE N. 5
SOLUTIONS TO BE IMPLEMENTED	PT stops/nodes design	Promotion campaigns about PT services	New tariff system	Demand Responsive Transport services for rural areas	Implementation of passenger information systems
				expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities • Raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions	

	PRACTICE N. 6	PRACTICE N. 7	PRACTICE N. 8	PRACTICE N. 9
SOLUTIONS TO BE IMPLEMENTED	Services for disabled and elderly people	Promotion of PT with other initiatives	Implementation of new PT services	PT services for tourists
PROBLEM TO BE TACKLED	• Low accessibility • Lack of funds	• Lack of funds • Low awareness about the features of existing or new services	• Low accessibility • Lack of funds • Long time for approvals	• Low accessibility • Low awerness about the features of existing services • Low level of information • Service not for full year • Multilanguage features
OBJECTIVE TO BE PURSUED	Allow disabled and elderly people to use PT services without difficulties	Increase of PT use rather than private vehicles	Ensuring a mobility chance and a PT alternative to private vehicles	Ensuring a mobility opportunity for the tourists
HOW?	This solution considers the implementation of physical structures/infrastructures and new facilities suitable for people with reduced mobility.	This solution aims to encourage people to use PT services through actions not strictly connected with mobility. Possible initiatives: • Cheaper access to tourist and cultural places (e.g.	This solution is essential for all the territories where the PT offer is not enough although a high demand. Common features are: • Design of the routes • Design of a new schedule	The purpose of solution is to set up tourist services in rural areas, to investigate how local governments can attract them to not particularly attractive regions, how private operators conduct business and arrange marketing campaigns, and the

	PRACTICE N. 6	PRACTICE N. 7	PRACTICE N. 8	PRACTICE N. 9
SOLUTIONS TO BE IMPLEMENTED	Services for disabled and elderly people	Promotion of PT with other initiatives	Implementation of new PT services	PT services for tourists
		museums) for people who bought a bus/train ticket • Take advavntage of other events (e.g. competitions, shows) to promote PT	• Leasing/purchase of new vehicles • Integration of the new services with the existing ones	importance of Internet in promotion. The service can be realized with trains or boats (depending on the territory) with specific stops and time to visit each area. Bookings and information can take advantage of a simple application, with a particular attention for families and groups.
HOW MUCH? (approx. level of resources requested: low, medium, high)	Medium: between € 50,000 and 75,000	Low: < € 25,000	High: € > 100,000 Euro	High: € > 100,000 Euro
RECOMMENDATIONS TO BE TAKEN INTO ACCOUNT	• Stakeholders involvements • Attention to disabled people's needs • A good promotion campaign to make people aware of the new facilities • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops) • Improving and upgrading physical items or facilitating goods for transport development	• Stakeholders involvement • Attention to people's interests • Attractive events • Volunteers and associations involvement • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the	• Stakeholders involvement • Attention to the context/system • A good promotion campaign to make people aware of the new services • Recurring monitoring to evaluate the service • Deep analysis about which services to be implemented • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops)	• Stakeholders involvement • Attention to the context/system • Volunteers and associations involvement • A good promotion campaign to make people aware of the new services • Ehancing the centrality of clients, by satisfying their needs and tailoring services to particular market segments • Promoting an adequate level of the PT service (e.g. frequency, daily time of service, no. of stops) • Improving and upgrading physical items or

	PRACTICE N. 6	PRACTICE N. 7	PRACTICE N. 8	PRACTICE N. 9
SOLUTIONS TO BE IMPLEMENTED	**Services for disabled and elderly people**	**Promotion of PT with other initiatives**	**Implementation of new PT services**	**PT services for tourists**
	• Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the client's perception of the quality of service • Creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities	perception of security for users • Referring to the client's perception of the quality of service • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning customer expectations with service capabilities	• Improving and upgrading physical items or facilitating goods for transport development • Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the client's perception of the quality of service • Creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing	facilitating goods for transport development • Valorising the supporting facility, e.g. buses or other vehicles that allow disabled people to access • Aiming at the investments in people and high social technology orientation • Assuring comfort and the perception of security for users • Referring to the client's perception of the quality of service • Creating a contingency plan that ensures service to clients in a uninterrupted way and increases the quality level of the service perceived by the clients • Assuring the service "package" is properly designed and well recognizable from actual and possible users • Taking into account clients' reassurance given by the service availability and how the service is supplied (personnel, equipment, accessibility, infrastructure, etc.) • Assessing customer expectations, analysing competitive strengths and weaknesses, and aligning

SOLUTIONS TO BE IMPLEMENTED	PRACTICE N. 6 Services for disabled and elderly people	PRACTICE N. 7 Promotion of PT with other initiatives	PRACTICE N. 8 Implementation of new PT services	PRACTICE N. 9 PT services for tourists
	• Raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions		competitive strengths and weaknesses, and aligning customer expectations with service capabilities • Raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions	customer expectations with service capabilities • Raising PT staff and employees' awareness of the service provided, also by training courses, in order to optimise and strengthen the client/personnel interactions