SUSTAINABLE URBAN MOBILITY AND COMMUNTING IN BALTIC CITIES

A SWOT ANALYSIS FOR SUMBA PARTNER CITIES

ANALYSIS OF THE TRANSPORT SYSTEM IN THE PARTNER MUNICIPALITIES

SUMBA

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1. INTRODUCTION

1.1 Aim of the SWOT analysis for partner cities

SUMBA will provide public authorities responsible for urban transport with skills and tools for transport planning and modelling that support the transition from primarily car-based commuting to inter-modal commuting patterns. In order to support and define tasks later in the project the partner cities are encouraged to perform a SWOT analysis of their transport system with a focus on ontermodality. The results serve as a starting point for further tasks within the project, namely the development of Commuting Master Plans as well as the revision of the Benchmarking scheme.

This document contains information on the methodology, relevant issues related to intermodality and a brief overview of the results achieved with a focus on similar challenges in the partner cities. In addition to reporting the results, this document also serves as a source of information and guideline for interested cities outside the consortium. The document is therefore divided into a section with background information on the methodology and objectives of SWOT analyses, as well as on intermodality in transport and the needs of relevant users. A compendium then lists the relevant topics and aspects developed together with the project partners, which will be taken into account in a SWOT analysis. Finally, the results of the analyses carried out in the partner cities are presented in short form with a focus on the challenges connecting all cities. The detailed reports can be found in the annex to the report.

2. SWOT ANALYSIS WITH REGARDS TO INTERMODALITY

2.1 Background information on SWOT analysis

SWOT analysis is a strategic planning tool and method designed to enable companies, organizations, communities as well as the broader society to determine their position and develop strategies to achieve a pre-defined objective. Embedded in an environment analysis, both internal and external aspects are considered. SWOT is an acronym for Strengths, Weaknesses, Opportunities and Threats.

Strengths describe the positive characteristics and resources that can be used to effectively achieve the desired goals. With regard to the transport sector and in particular public transport, these factors can include both internal factors for the organisation (e.g. PT operator, municipality) and positive key characteristics of a transport mode. In other words: What makes your organisation good? What resources do you have? And is there a clear vision?

In contrast, weaknesses include factors that describe disadvantages, limitations or failures of the PT system or organisational structure that prevent it from achieving the pre-defined goals.

An opportunity is any possibility to improve the external environment, while a threat is any unfavorable current or upcoming situation that is potentially detrimental to the strategy.

Various approaches are conceivable for conducting a SWOT analysis, such as desktop research, expert interviews or surveys. However, the most promising approach is any form of group work, such as workshops with experts or stakeholders, as this ensures that aspects from different user groups are collected and a broad perspective is ensured. To achieve this, as many stakeholders as possible should participate in this process. Possible stakeholders in the field of transport and commuting are PT operators, representatives of local, regional and national administrations, employers, various user groups (e.g. commuters, mobility impaired travellers, non-PT users), local NGOs, neighbourhood associations, etc.

When performing a SWOT analysis, the following aspects should be considered:

- Define your individual aspects correctly, the more detailed the better, because a detailed description and delimitation facilitates the classification and categorisation of the individual aspects;

- Whenever possible, review your aspects and quantify them with current data, e.g. a further increase in the motorization rate is considered a threat, and figures show the increase from 560 (2010) to 600 (2017) per 1000 inhabitants;
- Prioritize your aspects and list them hierarchically;

2.2 Background information on Public Transport and intermodal users

In order to enable cities to assess their transport system both in general and with regard to intermodality, this chapter will give a definition of the term intermodality together with background information on relevant aspects from the users' point of view.

2.2.1 Multi- and Intermodality – Definition and delimitation

Since the terms multimodality and intermodality are often used interchangeably, it is useful to highlight the difference. Multimodality is defined as the use of different means of transport during a given period such as a day or a week (Ahrens et al. 2010; Chlond 2013). Intermodality is generally a special form of multimodality, but with the addition of combining different modes of transport on a single journey (Jones et al. 2000). A particular focus of intermodality is therefore the change from one mode of transport to another, whereas this is not relevant for multimodality (Beutler 2004; Von der Ruhren und Beckmann 2005).

In addition, there are several different interpretations whether the combination of different means of public transport should be considered as intermodal transport. Consequently, the level of intermodality depends on the definition of intermodality used (Jarass and Oostendorp, 2017). Within the SUMBA project, a combination of at least two public transport modes (e.g. bus and metro) is considered as intermodal travel, as the required transfer is a key element of intermodality, following the suggestion of authors such as Diaz Olvera et al. 2014; Gebhardt et al. 2016; Yeh 2008. Since the use of PT always includes walking, at least five minutes are required to include walking as a separate mode of transport that can be part of an intermodal journey (Diaz Olvera et al. 2014). As intermodal journeys without PT (e.g. car and bicycle) are significantly less frequent, the following explanations concentrate on PT, but new mobility options such as car and ride sharing must also be taken into account.

2.2.2 Key factors of PT quality

With regards to the desired modal shift from private car usage towards public transport together with an increase in ridership, the challenge is twofold: First, to fulfil the needs and expectations of current PT users in order to keep them as regular users in the system. Second, to motivate a modal shift from private car usage to PT, it is necessary to offer a PT system competitive to car usage with regards to the users' needs. For achieving these aims, it is essential to know the needs and expectations along with the respectively desired quality of service.

Redman et al. 2013 reviewed existing research and empirical studies regarding the definition and evaluation of PT quality as well as how it can be improved to increase ridership. The aim of their study was to examine which quality attributes of PT services are attractive to users and what changes in quality attributes of PT services would encourage a shift from private car to PT. They identified several PT service quality attributes which can be roughly distinguished between physical and perceived service quality. To measure the latter ones the response of PT users need to be observed (directly/indirectly) whereas the physical attributes can be measured by making assumptions on the impact on PT users (Redman et al. 2013). See Table 1 for an overview and definition of the most common studied PT quality attributes.

	Attribute	Definition
Physical	Reliability	How closely the actual service matches the route timetable
	Frequency	How often the service operates during a given period
	Speed	The time spent travelling between specified points

	Attribute	Definition
	Accessibility	The degree to which public transport is reasonable available to as many people as possible
	Price	The monetary cost of travel
	Information provision	How much information is provided about routes/interchanges
	Ease of transfer/interchanges	How simple connections are, including spent time waiting
	Vehicle condition	The physical/mechanical condition of vehicles, including the frequency of breakdowns
Perceived	Comfort	How comfortable the journey is regarding access to seat, noise levels, driver handling, air conditioning
	Safety	How safe from traffic accidents passengers feel during the journey as well as personal safety
	Convinience	How simple the PT service is to use and how well it adds to one's ease of mobility
	Aesthetics	Appeal of vehicles, stations and waiting areas to users' senses

Table 1: Attributes of PT service quality (Redmann et al. 2013, p. 121)

Such quality characteristics give a first impression of which aspects have to be considered in the SWOT analysis with regard to PT. All of them are important for PT service in general, but some are becoming increasingly important in relation to users with intermodal travel behaviour. In particular, reliability is considered a key feature for determining PT quality in an intermodal context. With regard to intermodality, passengers are intolerant of the delay on arrival of the connecting vehicle, as reliability and travel time savings have the greatest impact on the intention to use transfer routes (Chowdhury and Ceder 2013).

2.2.3 Key facts about users with intermodal travel behaviour

The change of means of transport is associated with uncomfortable aspects such as distances to be covered, waiting times and orientation requirements (Preisendörfer and Diekmann 2009). Relevant criteria for users who opt for intermodal transport connections are therefore reliability, short waiting and travel times, flexibility and time efficiency. The main criteria relevant to transfer options are smooth and time-efficient travel, e.g. short distances between means of transport, short waiting times and reliable connections. In addition, properties relating to conditions at the transfer point, such as safety, information or comfort, are also described in the literature.

With a focus on intermodal travel behaviour, the DLR Institute for Transport Research conducted an empirical study in 2016 in various districts of Berlin (n=1.098). The results underline the above criteria by adding the following results (Oostendorp and Gebhardt 2018):

- Purpose of the journey: The daily use of intermodal combinations is particularly high for work and educational trips, to a lesser extent for leisure activities, also because such activities do not take place daily;
- Spatial aspects: No significant spatial differences were found in the overall proportion of persons performing intermodal journeys, but the combination of bicycle and PT attracts more users in urban areas, while car use in combination with PT is significantly higher in suburban areas;
- Reasons for intermodal driving behaviour: Travel time and (time efficient) access to the main transport mode are important reasons for the choice of intermodal combinations, e.g. the combination of bicycle and train;
- Combination of bicycle and PT: The „flexible use" of this combination is appreciated by users. For one third of these users, the possibility of bicycle transport within PT is the reason for using this intermodal combination, as it allows flexibility both at the start-

ing point and at the destination;

- Combination of car and PT: The main reasons for choosing this combination were „flexible use“ and „few changes required“, again underlining the key factor of accessibility of public transport (see above).
- Transfer possibilities: The majority of all participants rated reliable connections, short waiting times at the transfer point and short transfer distances as very important. Aspects such as safety, information, weather protection, cleanliness and existing alternative connections were rated as very important or important by more than 50% of all participants. Unexpectedly, car or bike sharing facilities are of very little importance.

3. RELEVANT ASPECTS TO BE CONSIDERED IN THE SWOT ANALYSIS

The transport system is very complex and includes many aspects that influence driving mobility behaviour and the choice of transport modes. In order to consider as many aspects as possible in the SWOT analysis, relevant topics and aspects have been compiled and grouped into dimensions; see Figure 1 for an overview of the dimensions and Table 2 for the full list of aspects.

Figure 1: Dimensions to be covered in the SWOT analysis

The list of relevant topics and aspects is based on the results of an extensive literature research on intermodality in PT and the corresponding user needs, interviews with experts and evaluation of existing SWOT analyses. In addition, the results were discussed in detail with the project partners.

The list of aspects and questions serve as a starting point and support for carrying out the SWOT analysis with the aim of obtaining a comprehensive overview of the topic. However, this list does not claim to be exhaustive and can be supplemented with further topics and aspects which may be relevant for assessing the situation with regard to the respective transport system in general and intermodality in particular. In addition, possible questions were created for each aspect in order a) to make the intended contents behind the terms more understandable and b) to provide a catalogue of questions for the moderation of workshops without claiming to ask all the questions listed.

Table 2 lists the dimensions and topics to be considered in a SWOT analysis, which are described in more detail below.

Polcy and administration	Regulation/Legislation
	Definition of policy goals
	Implementation of policy goals
	Law
	Taxation schemes
	Funding
	Parking management / restrictions
	Transport and urban planning
	Demographic changes
	Geographical constraints
	SUMP
	Cross-border collaboration
	Expertise
	Upcoming projects
Infrastructure	Transport hubs, interchanges and stops
	Layout
	Equipment
	Park & Ride
	Bike & Ride
	Design of interchanges
	Accessibility of PT stops
	Charging infrastructure
	Information and communication technology
	Passenger information system
	Traffic control and management system
	PT vehicles and infrastructure
	Fit for future
	Capacity
	Accessibility of PT vehicles
	Customer needs
	PT prioritisation
	Maintanance
	Built infrastructure for alternative transport modes
	Cycling infrastructure
Transport services	Reliability of PT
	Frequency of services
	Speed
	Accessibility of PT services
	Availability of sharing schemes
Ticketing and fares	Fare scheme
	Price
	Payment
Marketing & Image	Corporate identity
	Image
	Marketing
	Channels

Table 2: Structured list of aspects to consider in a SWOT analysis

3.1 Policy and administration

This topic consists of aspects on the policy level which are influencing the overall transport sector on a long term perspective.

3.3.1 Legislation and regulation

- Definition of policy goals: Are policy goals or strategies related to transport formulated, e.g. a reduction of transport related emissions, a modal shift to reduce car usage? Are objectives and targets defined and quantified (if possible) to underline such policy objectives? Is there a common understanding across different departments and parties regarding a) how the future mobility should look like and b) how the transformation path to such goals might look like? To which extent can such policies and goals be influenced by new elections etc.? On the subject of intermodality: How and to what extent will these aspects influence intermodal and multimodal driving behaviour?

- Implementation of policy goals: Are policy goals adapted and aligned to all administration levels (districts, municipalities, city, etc.) or do they contradict the objectives at different levels/departments of government? Are regulations and restrictions appropriate?
- Law: Will there be legislative changes (EU, national or local level) affecting the transport sector (e.g. limitation due to emissions (CO_2, NO_x)? If so, how will they affect the transport sector?
- Taxation schemes: Which financing and tax regulations are implemented in the transport sector (e.g. registration tax for motor vehicles, fuel tax)? How and to what extent does it support intermodal and multimodal driving behaviour?
- Funding: How are transport related (infrastructure) projects funded and, in general terms, is funding of PT questioned? Are such funding schemes sufficient and sustainable both in short and long term perspective and do they take cross-border aspects into consideration? Are the funding schemes in line with policy goals and is support for intermodal and multimodal travel behaviour a priority? Are there special funding programmes focusing on intermodality? What is the cost coverage of PT?
- Parking management/restrictions: Is there a parking management implemented and is there an effective enforcement of such parking management? What is the level of parking fees compared to public transport costs?

3.3.2 Transport and Urban Planning

The dimension "Transport and Urban Planning" compromises factors related to administrative stakeholders dealing with transport planning.

- Demographic changes: How do changes in population (size, age distribution) affect the transport system and services? Are transport and urban planning processes capable to address these changes by taking them into account?
- Geographical constraints: Do the cities have geographical constraints resulting in the existing transport system like mountains, rivers, etc., and if yes, which ones? What are possible solutions to overcome such barriers?
- SUMP: Does a Sustainable Urban Mobility Plan (SUMP) exists or is under development? To what extent does this SUMP include aspects regarding commuting?
- Cross-border collaboration: Does the institutional system enable cross-border collaboration (e. g. similar departments)? Are there cross-border collaborations like joined planning activities, procurement, etc. and do they follow formalized procedures?
- Expertise: Is there enough qualified and experienced personnel who can deal with (intermodal) planning (e.g. ability to work with transport models) and is able to work on new projects?
- Upcoming projects: Are there any upcoming projects with impacts on transport (e.g. new housing, shopping or industrial areas; expanded PT network)?

3.2 Transport Services

- Reliability: How reliable (in terms of travel time, schedule and transfer within the network) is PT?
- Frequency: Does the provided frequency comply with customer needs, especially during non-peak hours like evening or on weekends?
- Speed/travel times: Are travel times (PT and in combination with other transport modes) competitive to private car usage, both in general and on certain traffic relations? Are timetables coordinated on interchanges to ensure short waiting times when changing?
- Accessibility of PT services: To what degree is PT reasonably available to its users (e.g. density of stops, number of lines)? Are there disadvantages for certain areas?

- Availability of sharing schemes: Are there sharing schemes like bike, scooter or car sharing schemes available? Are they connected to PT services (e.g. close to interchanges, collaboration in fare schemes and ticketing)?

3.3 Infrastructure

Under this dimension we summarized aspects regarding the build and technical infrastructure supporting the intermodal combination of different transport modes. Furthermore we included PT vehicles. With respect to the combination of car/bike with PT please have in mind that each stop within the PT network regardless of the transport mode can function as an interchange. The term is not only limited to stops where two or more PT transport means cross.

3.3.1 Transport hubs, interchanges and stops

- Layout: Are there layout standards/rules for stops and interchanges defined?
- Equipment: How are interchanges equipped and do the facilities meet customer needs (Availability of shelters, toilets, travel information like timetables or fare schemes)?
- Park & Ride: Are relevant stations equipped with Park & Ride facilities and is the provided capacity sufficient?
- Bike & Ride: Are relevant stations equipped with Bike & Ride facilities and is the provided capacity sufficient? What about weather protection and security?
- Design of interchanges: Are the interchanges designed to support a quick and seamless change of transport means (short walking distances between different transport means, good guidance and information system)? Is there any kind of strategy at planning level of the city to make the interchange easy?
- Accessibility of PT stops: Are the PT stops of all means of transport accessible for handicapped people or people with a limited mobility (e.g. parents with buggies, elderly people, people with bicycles, etc.)? Are there any facilities such as lifts, escalators, ramps to ensure a smooth transfer?
- Charging infrastructure: With respect to electric vehicles: Is charging infrastructure for electric cars or pedelecs already in place or planned?

3.3.2 Information and communication technology

- Passenger information system: Are there passenger information systems in use or envisaged like a real-time departure information (via screens, web, or app) or an intermodal transport planning tool (web, app)? Do they effectively work and if not, why?
- Traffic control and management system: Is there a traffic control and management system in use to monitor the traffic (e.g. to align departures at interchanges for ensuring a smooth transfer even in case of delays) and to prioritize PT (e.g. traffic lights equipped with priority measures for PT acceleration)?

3.3.3 PT vehicles and infrastructure

- Fit for future: What is the average age of vehicle fleet; is there a need for replacement due to requirements (barrier-free, emissions), customer needs or maintenance costs?
- Capacity: Is the provided transport capacity sufficient in peak hours? Will it meet demand in the future?
- Accessibility of PT vehicles: Are all transport modes accessible for disabled people or people with a limited mobility (e.g. parents with buggies, elderly, people with bike)?
- Customer needs: Does the PT vehicles meet user needs like barrier-free, modern appearance or new needs like wifi and power sockets? Is it possible to carry a bike within PT?
- PT prioritisation: Does the infrastructure design support prioritisation for PT (e.g. dedicated bus lanes, separated tram tracks, adapted traffic lights)?

- Maintenance: Is the built infrastructure well maintained and able to cope with weather problems such as snow?

3.3.4 Built infrastructure for alternative transport modes

- Cycling infrastructure: Is there a bicycle network implemented and supported by appropriate bike lanes? Are such networks connected to PT? Are there parking facilities for bikes available?

3.4 Ticketing and fares

- Fare scheme: Is there a fare scheme in place which allows the combination of different transport means (e. g. the combination of bus and tram with one ticket)? Does such fare scheme take cross-border aspects into consideration, e. g. a fare scheme combining the city and the hinterland? How easy is buying a ticket for non-daily users of PT?
- Price: Are ticket costs a barrier for certain user groups, i.e. is PT affordable for all different user groups? Are there fare reduction schemes for certain user groups? In comparison with private car usage, are the costs of PT competitive?
- Payment: Which ways for payment are available and do they meet customer needs? Are new ways of payment already implemented (e. g. by mobile phone, app)? Are solutions for single payment platforms across different transport providers and transport means (e. g. PT, bike sharing) available and deployed?

3.5 Marketing / Image

- Corporate identity: Is a corporate identity and design implemented and what does it include (layout of stops, vehicles, advertisements, etc.)?
- Image: What is the image of certain transport modes (e.g. popularity of cycling or PT use) in general, and across different transport operators as well as different user groups who use (a certain mode of) public transport? Are these images fostering a modal shift or are adjustments necessary?
- Marketing: Is there a marketing strategy to foster usage of PT, bike, etc. and if yes, by whom? Is it successful?
- Channels: What kind of channels are used to promote PT, cycling, sharing schemes, etc. (e. g. web page, social media)?

3.6 General information

In order to classify the overall situation of a city and to compare the results of the SWOT analysis with those of other cities in order to identify common problems and challenges, it is helpful to have some background information and data about the city / district itself and its transport system. In addition, this information serves as a starting point to support the arguments in the SWOT analysis with quantified data.

This includes aspects such as

- Population (in total, age distribution, recent and expected developments, living areas, density of population);
- Developments with spatial impact (new housing or commercial areas, new or upgraded transport infrastructure);
- Relevant stakeholders (Public authority bodies, PT operators, private transport operators, transport and tariff associations) and how do they interact;
- Commuters (numbers, main traffic relations, recent developments in numbers and modal share);
- Transport situation (motorization rate, number of cars and bicycles, ridership, congestion, emissions);
- Description of PT network including available transport modes, number of lines and

stops, times of service;

- Park & Ride / Bike & Ride facilities (number of stations provided with such facilities and share in total, utilised capacity);
- Bike and car sharing schemes (number of providers and vehicles, covered area, integration in PT).

4. SWOT ANALYSIS IN THE PARTNER CITIES

Based on the documents presented, the partner cities carried out their respective analyses based on the methodology of the SWOT analysis. In addition to a survey (Riga, Olsztyn), the majority of the cities conducted workshops with internal and external stakeholders. In some cases, these were supplemented by the results of recent household surveys (e.g. Tallinn, Olsztyn). The analysis looked at the transport system as a whole, the existing framework conditions and aspects with a focus on intermodality. The cities use the catalogue of questions and topics as a stimulus and starting point for the discussions, not all of them were or could be addressed in all cities.

It is also necessary to emphasise that the cities involved in the project show a great heterogeneity with regard to parameters such as their significance in the respective national urban system, population, area size as well as the design and level of development of their urban transport system. For example, the cities of Riga and Tallinn are capitals and each the primary city in its respective country with a high population. According to the ranking of the population figures, the district of Altona ranks third among all partner cities, but is itself only a district of the city of Hamburg with correspondingly less influence, especially with regard to traffic planning. There are also great differences with regard to the existing transport system, while the larger partner cities have a well-developed local transport system with a large number of transport modes, so in the smaller cities rail-bound public transport systems are rather a minority. This heterogeneity leads to the fact that, on the one hand, aspects and topics do not have the same significance in all cities or that the granularity of the levels of consideration is different. The topic of intermodality also plays a different role, in the larger cities such as Tallinn, Riga and Hamburg it is much more important, while the smaller cities tend to focus on improvements for the general use of environmental transport. In return, this heterogeneity offers the potential to learn from each other and to exchange experiences and best practice examples. However, a comparison of the results also shows that some challenges are relevant for almost all participating cities. For each partner city, the prepared results are available together with a detailed analysis and description of the framework conditions and are attached to this report. Below is a brief summary of the results and key findings for further work in the project.

In order to obtain an overview of the most important topics, the individual aspects highlighted by the cities have been assigned to the dimensions and sub-topics presented in Table 2. Due to the complexity of the topic, the individual aspects have also been assigned to several categories depending on the specification, and also to several of the four levels (SWOT) depending on the consideration or individual aspect. For prioritisation, the cities were asked to list the aspects in order of importance or to name the 8 most relevant aspects. Accordingly, up to 8 aspects for each of the 4 levels (SWOT) have been included in the overview.

In the overall view, it becomes clear that, relative to the number of aspects, the topics in the „Policy and administration“ cluster are the most important, followed by the „Transport services“ and „Ticketing and fares“ clusters. The clusters „Infrastructure“ and „Marketing / Image“ play a subordinate role.

In the topic cluster „Policy and administration“, the existing definition of policy goals is regarded as strength by the majority of cities, but the implementation of the goals is regarded as a weakness or threat. This is partly due to contradicting interests or lack of ownership of strategic goals across different departments (Tallinn, Växjö). Similarly, a lack of funding hampers the implementation of the goals; almost all cities classify this aspect as a threat or weakness.

Cross-border collaboration is also an important issue and, depending on one's point of view, is seen as an opportunity or an obstacle to improving transport systems. This applies to cooperation across city boundaries (Olsztyn, Riga) and different administrative levels (Hamburg-Altona, Tallinn), joint financing and cooperation between different transport providers. For example, Tallinn has stressed that train and bus transport should be harmonized so that they will support intermodality rather than competing each other. Another important issue is the aspect of demographic changes, which almost all cities see as a threat. On the one hand, an increase in population and a resolving pressure on the PT system especially during peak hours is expected (Hamburg-Altona); on the other hand, new requirements are emerging for the public transport system (aging population, diversification of needs). Furthermore, in many cities this leads to the expansion of the road infrastructure with an accompanying increase in the attractiveness of the car (Riga). However, the growing population is also seen as an opportunity to win new customers for public transport and generate additional income (Hamburg-Altona, Riga). Upcoming projects are another topic of great importance for cities and include aspects such as the expansion of road infrastructure (Riga, Tallinn), rail-bound public transport (Olsztyn), new residential and commercial areas and shopping centres (Tallinn). Accordingly, depending on the situation and individual consideration, the topic is seen both as strength or opportunity (Riga, Tallinn, Tartu, Växjö) and a threat (Hamburg, Olsztyn, Siauliai, Tallinn). A lack of combined land use and transport planning as well as segregated planning of different transport modes (Hamburg-Altona, Växjö) is hindering the development of a sustainable transport system. In contrast, closer networking and stronger orientation of new residential and commercial areas towards existing or planned PT infrastructure is seen as an opportunity (Tallinn).

In the cluster „Transport services" the strengths and opportunities predominate, in particular the dense network and thus the access to the public transport network is regarded as opportunitiy (Riga, Siauliai), but the travel speed in comparison to the car as well as the frequency are weak points of the system (Siauliai, Tallinn). The cities of Hamburg-Altona, Riga and Växjö see bicycle and/or car sharing schemes as an opportunity to positively change the transport system in terms of sustainability and intermodal transport, while this is not yet an issue for other cities.

With regard to the infrastructure, the access, design and equipment of the stops are viewed critically, especially the rail-bound means of transport (Olsztyn, Siauliai, Tallinn). The access to the vehicles is also not possible for all users, since often old vehicles with a high entry level are still used and therefore no longer meet the requirements of the users (Riga, Siauliai, Tallinn), this is justified by the age of the vehicles. Explicitly designated parking facilities for P&R and B&R do not exist in many cities (e.g. Olsztyn, Riga) and would offer an opportunity to strengthen intermodality and the use of public transport. In Hamburg-Altona fees for using such parking spaces have been introduced; a decrease of attractiveness is expected and therefore seen as threat (Hamburg). The use of bicycles on partial routes is made considerably more difficult by cycling infrastructure that does not exist or exists only partially, but some partners are expanding the infrastructure for this (e.g. Hamburg-Altona, Olsztyn).

In the last two areas, „Ticketing and fares" and „Marketing / Image", many aspects considered to be strengths face few weaknesses and opportunities. Thus, the partially free public transport in Tallinn is seen as strength as well as the joint payment system for public transport and bike sharing and the corporate identity of public transport. The latter is also seen as strength in Hamburg together with the unified fare scheme, which covers all transport means as well as the major public transport systems.

5. SUMMARY AND CONCLUSIONS

The analysis of the traffic systems based on a SWOT analysis is suitable to get an overview of the topic. The partner cities made it clear that the workshops were helpful and valuable in obtaining the different perspectives of individual stakeholders on the topic and discussing them

together in order to gain a better understanding of the transport systems. However, the complexity and conflicting tasks of individual stakeholders make it difficult to conduct workshops and derive results. The understanding of the methodology varied; a stronger professional monitoring of the process (e.g. by moderators) could partially improve the results, but this was not possible and planned within the framework of this project.

The main aspects presented will be incorporated into the further work of the project, e.g. in the development of the Commuting Master Plans and the revision of the Benchmarking scheme.

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ABOUT SUBMA

WHY DO WE NEED SUMBA?

More and more people chose to live in suburbs while they continue to work in cities, resulting in high number of daily commuters. Commuter traffic is still dominated by private cars, resulting in problems such as

- congestion
- air pollution
- high demand of parking spaces
- higher costs of public transport.

SUMBA will address commuter transport and help to mitigate these problems!

OUR ACTIVITIES

The urban transport system can be reshaped to an intermodal network that off ers a combination of various transport modes, including bike and car-sharing. This helps cities to achieve a more attractive and environmentally friendly commuting system. SUMBA will develop and test tools that help urban and transport planners to assess, plan, and integrate intermodal mobility solutions into transport plans and policies of their cities and municipalities.

OUR PARTNERS CITIES

Hamburg (Germany)
Tallinn city, Union of Harju municipalities (Estonia)
Tartu (Estonia)
Riga (Latvia)
Växjö (Sweden)
Šiauliai (Lithuania)
Olsztyn (Poland)
Associated cites Gdynia, Warsaw suburban region, Słupsk municipality (Poland), and Helsinki (Finland)

EXPERT PARTNERS

German Aerospace Center, Institute of Transport Research
Baltic Environmental Forum Latvia, Estonia and Germany
Earth and People Foundation

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