Deliverable 2.2

SPECIFICATION OF JOURNEY TYPES AND CRITICAL STAGES WHERE SERVICE QUALITY MAY BE AN ISSUE

Publishable summary

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Summary of the key findings

The research activity presented in this deliverable D2.2 has concentrated on:

- Defining door to door journey types where terrestrial and public transport forms the primary mode of travelling.
- Identifying the gaps and weaknesses in terrestrial transport, from a passenger perspective and how this can be measured.
- Finding best practice to identify barriers, achievements and future plans in providing journey information.
- Using a qualitative approach to understand what drives and motivates behaviour/attitudes towards passengers using different means of transport.
- Identifying critical stages of journeys where quality of service matters to create a seamless travel experience and which are the important parts of the travel experience.

The analyses that have been carried out in this report have highlighted the inherent complexity of the travelling activity. This is also reflected on the variety of topics and research ambits that had to be considered here, in order to give a more complete picture of the issues at stake. Failing to recognize such complexity can be seen as one of the main causes of the partial successes obtained so far in building a more sustainable, efficient and equitable transport system. A more comprehensive vision of the passenger experience to enable the creation of more effective tools to promote “better” mobility on these three aspects is one of the main ambitions of METPEX.

In line with this framework, some initial answers to the following two main questions are therefore provided: (1) “What are the main weaknesses and critical points of terrestrial transport from the point of view of the travellers?” and (2) “What are the phases of the journey experience that are more critical to improve the quality and the accessibility to transport services?“

Gaps and weaknesses in terrestrial transport

Concerning the planning and organisational phases of a transport system, the main weaknesses of current practice from a passenger perspective (thus letting aside other obviously important issues such as the overall environmental performances and economic viability) can be summed up as follows:

- Individuals make travel-related choices differently from what is assumed in current models and analysis methods. Specifically, behaviours are not only influenced by socioeconomic conditions and performances of different options but also by affective factors. Planning practices have been more or less adapted to new choice paradigms but their foundations have never been radically challenged to come up with a new generation of methods. There is quite a good deal of inertia in this field, where new methods from travel behaviour research (such as activity-based models) are only slowly making their way in the practitioner's toolbox, in general with a temporal lag of almost two decades. This leads to a mismatch between passenger's expectations and the characteristics of the service offer.
- Planning methodologies, practices and underlying philosophies generally suffer from another kind of temporal bias beyond the above mentioned inertia, since they were mostly conceived in a historical phase of growing economy. Nowadays, we see a shift from industry to service-oriented economies, economic stagnation or limited growth, lack of public resources for transport investments, agingpopulation, urban sprawl and increased awareness of environmental and congestion problems. From a passenger viewpoint, this means for example that for some kinds of trips (e.g. peak-hour daily commuting to city centres) it is relatively more convenient, cheaper and/or faster to use public transport, whereas this is not the case for a great deal of other mobility demands.
- Transport planning and programming activities are often carried out at a macro-level, and the available methodologies often do not allow paying particular attention to groups of individuals with particular needs. "Universal services" are therefore not fit for an ever-increasing proportion of the population in most European countries due to a number of on-going trends (aging and related inabilities, "unconventional" or flexible working hours, localisation of dwellings and of other activity points...). Therefore, the needs of more and more numerically consistent population segments are misrepresented or even ignored by current transport provisions.
- As a partial remedy of the above lack of fitness of traditional travel means to the new and diversified needs of passengers, dedicated services targeted to specific population segments have flourished in recent decades (e.g. shared vehicles systems, carpooling, demand

responsive transport, rural transport, services dedicated to physically impaired persons). These are often considered as an alternative to traditional public transport. While this could be considered as a good response to the need of a more personalised offer of services, the overall impact at an aggregate level of such initiatives seem rather limited due to the relative service dimensions. Target groups might be more or less satisfied by such specific services but overall perceptions of the transport system seem not radically affected. Beyond this, their typical unity costs per consumed output are often so high that it is difficult to imagine to organise the whole transport offer according to such working schemes.

- While strategic and policy documents and actions are more targeted to accessibility and economic efficiency issues, perceived comfort and quality are almost exclusively cared at the more tactical level of the service implementation. From a passenger perspective there are frequent initiatives at the strategic level aimed at improving accessibility to transport services that often lack implementation (e.g. intermittent availability of devices to take wheelchairs on board vehicles), whereas on the other hand quality and comfort aspects are often addressed at the tactical level but the overall vision is missing (e.g. lack of a quality plan encompassing different services, that can compromise the overall perception of the whole journey experience despite the high quality levels of the single services).
- Insufficient attention has been paid to the different ways of perceiving quality by different socioeconomic groups. There is a lack of study on the determinants of perceived quality of trips completed through a non-motorized travel means.
- Equity issues are not properly considered in many planning practices.

Concerning the implementation and commercial activity related to the operation of transport systems, the following gaps were found:

- There is a need to increase the easiness of use of many services, particularly for people not familiar with the system under consideration. Identified areas of improvement range from the provision of communication in English to the standardisation of the rules (e.g. if and how to tell the driver to stop at the next bus stop) and of the communication procedures and devices to customers (signposts, displays, timetables). Such needs become ever stronger for rail services
- Not all kinds of disabilities are properly addressed in current services, also in view of the above discussed tendency to organise specific services as a “shortcut” to solve many practical problems.Service organisation should take into account that disability is not synonym of physical disability, and even physical disability is not always just a matter of mobility impairment.

- The above results can be generalised by noting a lack of coordination and unifying vision on the way services are operated, that generates inconvenience for passengers, beyond being a source of economic inefficiency.

Concerning the information systems and technology a conservative attitude and a slowness in accepting and then implementing technological innovations was observed in this sector. This could be due to a shortage of investments and to the amount of resources needed to cover of operating expenses. These gaps on the supply and managerial side of the service provision are only apparently unrelated with the passenger perspective, where the following areas of improvement are identified:

- Information gaps were observed in most of current terrestrial travel services: among the most common “missing items” the review has found schedules and network maps, real-time arrival and departure times, in-vehicle information, information on potential connections with other services, and also the possibility of having information different from travel times and costs to inform decisions that could not exclusively be done according to the utilitarian decision-making paradigm (e.g. informing on the environmental footprint of the trip). This latter and often overlooked aspect could be strategically important for future transport systems.
- The existence of several information barriers related to transport services is widely documented. While information gaps refer to a bare lack of information, information barriers point at the difficulty of elaborating the yet available information in a useful way for the traveller. The most critical points concerning this issue seem to be the possibility of combining information from different modes to have a good information at the level of whole door-to-door intermodal journey and the possibility of accessing reliable information in particular for international trips.
- The lack of standardisation of the “information protocols”, for example in ticketing systems or in railways operations, is another widely indicated problem, that can be seen as one aspect of the more general lack of coordination across different transport. This problem is even greater when considering the way in which information is presented (graphical user interfaces etc.).

Identification of critical phases in the journey experience

The gaps and weaknesses that were reviewed in the preceding subsection are not equally spread over the whole journey experience. There are in fact

some key phases that are more critical than others to shape the overall perception of trips. This is basically due to two intertwined factors:

- Not all phases that constitute a journey experience, nor the different states that can be recorded during a trip cognitively impact in the same way the individual traveller.
- Transport providers have often failed to fully take into consideration such complexity of the travelling activity, typically limiting their analyses to their "core business", i.e. the particular trip stage that they serve, possibly with some attention paid by policy decision makers to transport mode interchange issues. All the remaining aspects of the journey experience are much less frequently considered.

Trying to propose a more comprehensive analysis framework, the "journey experience" concept that has been adopted in this deliverable has allowed to highlight the following critical elements that should be particularly investigated through the METPEX measurement tool:

- The time component is perhaps the single most important factor that impacts the overall travel perception. Past efforts have almost uniquely focused on the minimisation of both travel times and wait times, mainly through the improvement of the performances of the service. However, recent research is showing evidence of an intrinsic utility of the travelling activity, so that the issue of service quality regarding travel time should be more inclusively considered according to the following guidelines:
  - The length of the travel time can be a more serious or less serious source of inconvenience depending on the actual state of the traveller and of the vehicle. In particular, when the vehicle stops, when it is moving through an uninteresting environment or when the traveller is not engaged in a concurrent activity (talking over the phone, listening to music…), minimising travel times is particularly likely to improve the passenger experience.
  - Wait times can be treated along the same lines, although their negative effect on the overall journey experience is obviously much more relevant. Beyond its mere minimisation, two possible ways to improve the travel experience on this aspects are to improve the comfort in waiting areas and to engage the travellers in some concurrent temporary activity.
  - The provision of trip-related information to passengers can radically change the journey experience also concerning the evaluation of travel and wait times. This is particularly true in case of unexpected events and subsequent delays that are likely to dramatically impact the passenger evaluations in particular for public transport means.
  - With the opening of market competition, several different providers are sometimes offering the same transport service. It could be worth to check the impact of the amount of time spent in comparing different offers on the overall perception of the journey experience.

- Concerning the different elements that compose the journey experience, there is a lack of clear understanding on how the pre-trip information acquisition process impacts on travel choices and on the overall evaluation of the journey. In particular, no firm consensus has emerged as to how travellers decide to access information, or how they actually incorporate this information into their travel choices.
- Another critical phase of the journey is when passengers need to change travel means. Interestingly enough, criticisms here could be linked more to the change of service operator than to the change of vehicle and/or of travel means. This has to do with both the possibility of actually receiving pre-trip and on-trip information in a consistent a coordinated manner for the whole trip. An important role is also played by the physical movements and other actions (including ticketing issues) that are needed to accomplish a multi-leg trip. These two aspects (multimodal information and multimodal interchanges) have been addressed in past research efforts, but there is probably a residual need for a research approach encompassing both of them.

As a final note, it should be kept in mind that the above critical aspects of the journey experience could have a different relative importance according to the kind of trip under consideration. There could be the need for cluster or classify journeys and accordingly develop different sub-models. When looking at the clustering variables, the balance must be struck between the need of considering as many as possible aspects, and the need for interpretability and generalizability of the results, particularly important for METPEX where eight different demonstration sites from different European countries are foreseen.