

# Customer driven development of the service landscape

A video based analysis of non-frequent travellers and travellers with functional limitations handling the seamless multimodal door-to-door experience

## *Main topic/workshop:*

1b (day 1) - Travel pattern analysis and process feasibility surveys as a basis for mobility management strategy and actions.

## *Author, organisation and contact details:*

Per Echeverri (PhD)

Karlstad University, Service research center, Sweden

[per.echeverri@kau.se](mailto:per.echeverri@kau.se),

This paper presents a new approach to investigating customer experiences in public transport. It's a work in progress. Still, we are convinced that this project will have some substantial contributions to quality in public transport. After a short introduction where some of the problems we face in passenger transport are described, we discuss the aim of the project, chosen methodology, some preliminary results and possible implications for management and customers.

## **Introduction**

Participating in everyday activities is an important determinant of health and well-being and the opportunities to participate in societal life should be equal for all people (UN, 1993). Some of our daily activities are located outside home. Our activity areas mostly cover great geographical areas. To reach shops, work, leisure activities, etc., we must move outdoors and sometimes go by public transport modes.

We often identify problems for passengers to manage the “landscape” of the transport service. The experience of travelling from door to door in a multimodal transport system is not an easy task. In traffic planning, the expression “the entire travel chain” has been introduced to emphasise the scope of a trip. In the nodes between different transport modes, ordinary people have problems navigating the system. Physical prerequisites and communicative symbols, signs and artefacts are not always in accordance with customer thinking (cognitive categories) and physical movements. These problems are even bigger when it comes to disabled people with different kinds of handicap, sometimes not visual. Travelling is more difficult for a person with one or several functional limitations than for a person without functional limitations (Ståhl 1987). The door-to-door experience invites the passenger to substantial problems, both in the nodes between transport modes as well as in the beginning and end of the trip.

If these problems could be managed in a relevant way we would have a more accessible public transport system. We might see an increased sense of social well being at customer level and much lower costs for the society as a whole. Public transportation would also be more appealing for a broad customer base.

In Sweden we see a radical change in the view of what is quality in public transport. More emphasis is put to customer experiences than specific features of the very service. Also governmental policy say that the Swedish public transport system should be “accessible for all” in the year 2010. Individual citizens should have the ability to reach different areas of the society. Having a handicap or a functional disorder should not be a hinder. There is a clear ambition to create a transport system accessible for all kind of customers. To take in consideration what people find problematic in travel chains and take appropriate measures is a clear cut customer orientation approach and increased mobility for all citizens.

### **Theoretical frame of reference**

In literature a service is defined as something that becomes real when a customer interact with some specific prerequisites (organisational structures, activities, people and other customers). This is refereed to as the service system approach. Some services are based on processes. Public transport services are of this type. Passengers need to manage a system, which could include different modes of transport during a single trip. For disabled people it is important to have trust in each specific links in the chain. If one link is missing the whole trip could be a horrible experience. The lack of trust customers have on the transport system is a problem.

Since service gets real during interaction it is not easy for the customer to get a clear understanding of what one get until the very interaction take place. During this there are a lot of other factors that have impact on the customer experience. The service interaction are surrounded by physical and communicative elements which gives information of what the service really is and gives clues of quality.

There is a body of theories in environmental psychology that tries to explain this. The phenomenon of service environment is also refereed to as “servicescape” in American literature of service management (Bitner 1992). Concepts like design, aesthetics, functional quality and service logic are found in this body of theory. The servicescape could have impact on customers by creating approaching or avoiding behaviour on customer level. Aubert-Gamet (1997) split the environment into a physical and a psychological part, where the psychological part is created in the customer mind. Situational factors have impact on customer perceptions and concrete behaviour.

In consumer behaviour theory we find different aspects of environment as the social and the physical (Peter *et al* 1999). The social environment could be split into a macro (culture, subculture, social class) and a micro social environment. For passengers in a public transport system it is relevant to take into account macro social factors impact on customer attitude, emotions and behaviour. Going “public” is in different societies linked to specific values and norms. For “car goers” public transport is a necessary evil. For disabled people public transport is linked to social well being and quality of life. Managing public modes as an individual is associated to having a “normal” life. The micro social environment includes social interactions between people, reference groups and other customers in the environment. In public transport this social appearance is obvious. Other passengers could change from “just being there” to be “audience”, involved co-passengers”, “helpers” etc. Other passengers could become “co-producers” in the service system. The physical environment includes all non-human, physical aspects and could be divided into spatial and non-spatial elements. Spatial elements include physical objects, architecture, lay out etc. Non-spatial elements include factors like temperature, noise, light, odour etc.

In public transport these factors normally have a substantial impact on customer satisfaction. Bitner (1992) identify three aspects of individual impact: cognitive, emotional and physiological. The spatial features influence customer perceptions of reliability, security, comfort etc. The servicescape talks (“object language” in Ruesch & Kees 1956).

Bitner (1992) identify three types of services – self-service, interpersonal services and distance services. When managing transport services all three are relevant. As a non frequent or a disabled traveller you need to handle parts of an information system, ordering, using telephone or Internet (distance service), handle personal interaction, talking to service persons before, during and after the trip (interpersonal services) and finally handle equipment, elevators etc (self service).

The spatial environment needs to be organised in a way that customer mobility is possible for different customer segments. What is easy and logical for disabled and non-frequent passengers, is easy and logical for frequent passengers. Wakefield & Blodgett (1994) means that service environment/servicescape has greater importance when the service is time consuming and when the service is build on pleasure. They distinguish functional and experience based services. Wakefield & Blodgett (1996) found in a study of leisure services that five factors had major impact on quality perceptions: 1 Accessibility; 2 Aesthetics; 3 Sitting-comfort; 4 Electronic equipment; 5 Cleanliness.

### **Aim of the project**

These problems are highlighted in this study and the project focus on the customer experience as a resource for developing a more accessible, safe and functional travel environment. The aim of the study is to develop a more profound methodology to investigating customer quality. Though the case used in this project is public transport, several areas could take advantage of this approach. We would like to focus on important factors in the service process. For this we draw on different theories like environmental psychology, service quality and communication theory. The specific aim is to develop a methodology that gets close to the subjective experience of accessibility and quality in public transport environments.

### **Methodology**

Studying customer perceptions is not an easy task. Traditional surveys, with its fixed and *à priori* concepts are not very good for collecting relevant data of this subjective and very personal experience. There will always be a substantial gap between the collected data and the experience of what really happened out there in the natural occurring situation. Other methods relevant for documenting perceptions are personal interviews. These methods go closer to the phenomenon and could better respond to the subjective experience of transport. The verbal exchange between the respondent and the interviewer can manage the retrospective version of the complex experience.

Still this kind of data is retrospective by nature. Collected data represent an experience of a former situation, as it comes to memory during the interview. Retrospective methods makes it difficult to identify what really had impact on customer perception.

To overcome these data problems researcher develop different kinds of observational methods to get closer to the phenomenon. Researcher could participate in natural situations, taking field notes and document environmental details by cameras. This also gives a distance to the

customer perceptions of good or bad quality. There is a need for approaches, which could collect data on the spot, natural occurring data during the very experience. This kind of data is introspective by nature and is the best representation of what people really perceive.

We will use two different samples. One consists of seven individuals with functional disorders (1 Severe loss of sight; 2 Complete loss of sight; 3 Inability to use lower extremities/wheelchair user; 4 Reliance of walking aid/rollator; 5 Complete loss of hearing; 6 Parent with child in a baby carriage; 7 Difficulty interpreting information.).

The second sample consists of people without any functional limitations. Three of them we define as non-frequent travellers. The other three we define as frequent travellers. Both groups will face two “well known” travel chains and two “un known” travel chains.

In this study, different customers are equipped with a mobile microphone to document customer perceptions, thoughts and emotions, during a trip from their home to some chosen destination. During the transport a second person (researcher) use a mobile video camera to document the physical and communicative environment perceived by the customer.

The passengers are triggered to contribute to the researcher by a “think-loud methodology”, a psychological method for documenting spontaneous and introspective perceptions of the travel experience. We catch empirical data “on the spot”, which is more accurate, contextual and dynamic in comparison with traditional retrospective surveys and interviews.

### **Preliminary results**

This work is in progress. For the moment we have just finished some tests with a few people with functional disabilities (severe loss of sight, reliance on walking aids). But in the sample we will invite ordinary passengers without any functional limitations to participate in the project. The video technology and the think-loud methodology are tested. Though some preliminary findings are at hand.

People use the think-loud methodology quite easy. They find it convenient to report on different things in the environment. Since we follow them in natural occurring situations, during real life trips, they could directly point out physical details, communicative signs (or lack of signs), good or bad accessibility etc. The data is extremely valid and reliable.

The real life experience remind them of other experiences in the past, which they can report on as well. Our test persons come up with more vivid data, because of the direct link between the first grade experience and the physical or social environment the experience is related to.

They report on problems managing the final link (from final transport mode to final destination). Getting information on this final part of the door-to-door experience is critical. Electronic information systems are difficult to use.

Handling telephone menus are really tricky (even for frequent passengers). The overcrowded and noisy environment makes it more difficult to concentrate and hear what the automatic voice is saying. Some new services (ordering footlights for Stockholm subway, using telephone) are suffered from malfunction.

## Implications

The study has some implications for marketing information procedure. The method, using natural occurring data “out there”, could be a tool to get more detailed information on actual purchase and consumption of transport services. Passenger perceptions could be the starting point for re-engineering different service components, produced by different actors in the transportation system. Different commercial transport sectors (bus, taxi, train, tram, airway, boat etc), community authorities, regional authorities and different customer representatives could use this kind of information as a platform for a more profound dialogue, promoting a long term, accessible and sustainable society.

On customer level we see how physical attributes, spatial factors, self service machines, guiding sounds, communicative signs (or lack of signs), transport noise etc. are important factors. The travel process is perceived as difficult, less accessible and gives a sense of being unsecured. Passengers hesitate to use the public modes in the first run with social segregation and high community costs as a consequence. We find that this methodology has potential to use the customer as a service innovator for customer driven development. Often accessibility is associated with adaptations when environment should be designed for equal use for all citizens from the beginning. Passengers report on a sense of being stigmatised (Preiser & Ostroff 2001). The marketing function could give more accurate information to passengers, in before hand.

During the conference we will give a presentation of the study and give some examples by using a video presentation, just to illustrate some of the natural occurring “servicescape” problems but also some opportunities this methodology gives to transport planners, developing transport services for different kinds of customers.

Using new video technology, for a better understanding of customer experiences of service processes for ordinary and disabled travellers could be of substantial help in the development of public transport systems. This approach could have a substantial impact on customer level on switching from costly road based special transport modes (different kind of taxi vehicles), which is very expensive to society, to public transport modes. Developing work in and between organisational entities involves several actors. We see challenges to organisational cross boundary co-operation in the network of actors.

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