Abstract submitted to Cashless Society Roundtable, April 2013, Dublin

MOBILE TICKETING
IT IS NOT ONLY ABOUT ”CASHLESSNESS”
** Work in progress”

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Abstract

In Finland and Sweden SMS payments were introduced in the public transportation sector in order to replace cash payments for single tickets on buses. SMS payments are also used in other areas where the main driver is cash replacement; vending machines, public toilets and parking ticket.

However, mobile and SMS payments are used in many other areas where the use of the mobile phones provides other opportunities and drivers. Mobile payment services are not only about the payment itself or the transaction, the mobile phones can be used as a communication channel to the users. The mobile phone can be used before a purchase, during and after the purchase. The SMS ticket for the public transportation is a very good illustration of these aspects:

- The mobile phone is used as a ticket machine (to buy a ticket);
- The phone subscription is used for the payment;
- The phone carries the ticket (used for ticket issue);
- The phone is used for validation (using manual inspection or an optical reader).

Hence, a mobile payment service is much more than the transaction, the payment is one part but other types of services and values can be added.

In a Swedish research project with public transportation companies KTH researchers look into mobile services for the public transport. The mobile services include integrated solutions for information services, ticketing and payments. For the public transport sector, payment and ticket solutions is one way to attract new types of customers, to decrease barriers for users and to increase the use of public transport in general. These mobile services mainly target segment that do not use public transport on a daily basis, both car drivers (that never or seldom use public transport) and those that quite often (but not always) use public transport.

Form a research perspective, it is interesting to study mobile services for public transport since it is used by many persons – and often. If mobile payments can take off in this area it may be an "island" that can grow.

In the paper we will present different user and travel situations for different market segments, i.e. types of users. A multitude of travelling situations can be presented by different combinations of local, regional and long-distance means of transport (see *Figure 1*). For each segment and types of travel we identify critical situations and the need for ticketing, payment and information solutions.

Market segment	Within SL/UL	UL <-> SL	UL <- SJ -> SL	SL/UL-SJ -> xL	xL-SJ -> SL/UL
Everyday user (always, most of the times)	1				
Changing user (sometimes)	2	4	5	6	
Car driver (never, seldom)	3				
	Local	Regional		Long-distance	

Figure 1. Matrix representing different travelling situations.

SL stands for Stockholm public transport company (StorStockholms Lokaltrafik), UL – Uppsala public transport company (Upplands Lokaltrafik), SJ – Swedisg Railroads (Statens Järnvägar), and xL – any local transport company or a public transport company situated in another region.

Consequently, different user categories have different sets of needs. During a pre-study stage, we have identified different sets of needs and performance of existing solutions in terms of prices, time, flexibility, convenience, and etc. We have identified several solutions that are good or bad (or underdeveloped) from a user perspective. Additionally, we have identified solutions that do not work (although they should), and obstacles that should be removed in order to increase or facilitate the use of public transport. Research findings are briefly discussed below.

1. An ***Everyday user of SL/UL*** has a good knowledge about the public transport, its ticketing and pricing, and uses the public transport to travel to (and back from) work or study on everyday basis. The size of this segment in Stockholm is about 39%. The most common type of tickets used by this category of users is monthly or longer term tickets. Possible additional service that could be provided to this category of users is additional informational service on alternative routes in the case of longer traffic problems and in critical situations.

2. A ***Changing user of SL/UL*** easily switches between different means of transport combining a car, a bicycle and the public transport. Averagely, users belonging to this category use the local public transport (SL/UL) for travelling few times per week. The size of this market segment in Stockholm is about 26%. The most predictable types of ticket solutions used by changing users are single SMS tickets or prepaid tickets on the cards. Possible additional services that could be provided to this category of users are mobile trip planners, additional informational service on alternative routes or parking information.

3. A ***Car driver*** uses ***SL/UL*** very seldom and performs most of the travelling by a car. The size of this segment in Stockholm is about 35%. The most predictable types of tickets used by changing users are single SMS tickets or prepaid tickets on the cards. Possible additional services are mobile trip planners, information on traffic and parking.

4. A ***Changing user*** travels using ***UL<->SL*** sometimes. One of the resent mobile ticketing solutions proves to be highly successful for this market segment. That is a ten-time UL/SL ticket suggested at a competitive price compared with other available options.

5. A ***Changing user*** on the way from Uppsala to Stockholm can use another solution that is ***UL<-SJ->SL*** (e.g. bus in Uppsala, SJ train from Uppsala to Stockholm, and underground or bus in Stockholm). However, this solution takes more time than the previously discussed. In addition, it is more expensive (124 SEK one way compared to 72 SEK in the case of UL<->SL).

6. Completely different situation is related to long-distance trips ***(SL/UL-SJ->xL)*** performed by a ***Changing user*** or a ***Car driver*** (e.g. bus and/or underground in Stockholm, SJ train from Stockholm to Gothenberg, and local public transport in Gothenberg in order to reach a needed destination). A user having little or no previous experience of such a trip needs a good informational service during all the travelling time. Additionally, during the pre-study stage, we have identified that there is no integrated and convenient ticketing and payment solution for this category of trips. Meaning, that an "All-in-One" ticketing service (including SL, SJ and xL tickets) is not available. An alternative travelling solution is a local flight from Stockholm to Gothenberg.

To summarize, these cases highlight the different needs and the performance of different service solutions. In the paper we will present the drivers and obstacle for these the travel cases and how a (mobile) payment/ticket/information service can be designed to reduce (or increase) barriers for using public transport.

During the spring 2013 we will conduct interviews and focus group sessions with travellers in order to assess the usability of existing solutions and to collect the user view in future solutions.