

Measure title: **Mobile internet services in connection to bus information**

City: **Malmö**

Project: **SMILE**

*Measure
number:*

12.3

A Introduction

A1 Objectives

To install a mobile internet service based on already existing:

- a) Real time system with AVL-based buses, (AVL stands for Automatical Vehicle Location)
- b) Customer database and
- c) Internet-based travel planner.

Specific objectives;

The measure objectives are:

- **Objective 1** - 0.5 million more journeys from 2007 to the start of 2009, when SMILE ends
- **Objective 2** - Increased acceptance and awareness by the general public, i.e. existing and potential passengers

Measures 8.1, 8.2, 12.1, 12.3 and 12.7 are, if considered together, all part of the new bus system. The overall goal of a 10% increase in bus travel by the end of 2006 and with 30% by the end of 2010 will be achieved by all of these measures working together.

A2 Description

During 2005/2006 Skånetrafiken improved existing distribution channels (web page, automated telephone service, staffed telephone service, terminal monitors and bus-stop signs) with mobile information/mobile services.

We also complemented the mobile service with digital timetables which can be downloaded to a mobile phone for use off line. This solution has reduced the need for printed timetables for travellers using mobile phones.

The aim is for Skånetrafikens real time system and customer management system to make best use of mobile media such as SMS, WAP, Java and 3G in order to provide customers with traffic and campaign information they request. With improved information more people are expected to choose public transport instead of private car as we can provide accurate traffic information and offer alternatives if problems arise. Flexibility in the face of traffic problems is currently far greater for car users than public transport users

The mobile services are aimed at users in the age group 18-40 years. The target group is strategically important and of high priority within Skånetrafiken, and have overall a high level of technical maturity and experience of using the internet and advanced mobile phones.

B Measure implementation

B1 Innovative aspects

The innovative aspects of the measure are:

New physical infrastructure solution – Obtaining journey information through the mobile phone gives travellers an opportunity to receive updated information, which offers better service and possibilities to plan a journey with different bus lines, using traditional mobile techniques (SMS, WAP) as well as testing the latest techniques such as Java, 3G etc (appendix 12.3. Use of real time applications for travellers).

Timetables in your mobile phone – Digital timetables to be downloaded to a mobile phone for use off line. This reduces the need for printed timetables.

B2 Situation before CIVITAS

Skånetrafiken was not considered by customers to have good planned and unplanned information systems according to SLTF customer surveys. A number of initiatives had therefore been defined to improve customer information.

B3 Actual implementation of the measure

The measure was implemented in the following stages:

Stage 1: Development of Traffic information strategy

(2005-02 – 2008-12) – Development of the Traffic information strategy is an ongoing task during most of the time of the measure period.

Stage 2: Selection of suppliers for developing Mobile Internet services (2006-05 –07) – Suppliers where selected from existing skeleton agreements.

Stage 3: Mobile service version 1.0 (2006-07 - 12) – Defining functions for Mobile Internet services version 1.0. Development and launching of a version for two different technologies, Java and Wap.

Stage 4: Mobile service ver 1.5 (2006-12 – 2007-06) - New version extended with function to show all departures from a chosen stop location, download of timetables to a mobile phone for use off-line, a first version of Statistical information system for analysing usage of Mobile Internet services and a simple Help function.

Stage 5: Mobile service ver 1.6, WAP (2007-07 – 10) – Development and testing for release of a “free” version in WAP. This version has limited functions and does not require member registration at Skånetrafiken. Java is considered to be the premium version with more functions.

Stage 6: Mobile service ver 2.0 (2007-10 – 2008-02) – New version extended with maps with route information, refined search from chosen stop location and improved support for travel planner. Furthermore we have added the possibility to deliver specific customer information and Traffic disturbance information from Skånetrafiken.

B4 Deviations from the original plan

The deviations from the original plan comprised of:

Extra functionality – We increased the functionality of the mobile internet measure with extra funding transferred within SMILE to develop the following functions:

- Show all departures from the location where a traveller is at present
- Maps with route information
- Presentation of timetables for the journeys
- Statistical information system for analyzing usage of Mobile Internet services

- Purchase of bus ticket on a mobile phone. Linked to measure 8.2 Improved security and safety on buses, aiming to minimise handling of cash on board buses. The four steps below illustrate how "Biljett i mobilen" ("Bus ticket in mobile") works:
 1. Send a text message to 72040, write "bim" (bus ticket in mobile) in the message
 2. Open the link in the reply text message, download and install the programme "Biljett i mobilen". This is only needed to be done the first time.
 3. Open the programme, choose city and ticket type, buy ticket.
 4. The ticket is sent to the mobile and is shown to the driver when you get on the bus

See also screen shots below and "Appendix 12.3 Use of real time applications for travellers"

Figure B4.1 Screen shots of steps in purchasing a bus ticket via mobile phone.



B5 Inter-relationships with other measures

The measure is related to other measures as follows:

- **Measure 8.1** - Marketing of new bus route system
- **Measure 8.2** - Improved security and safety on buses
- **Measure 12.1** - Use of real time applications for traveller
- **Measure 12.7** - Bus priority system

In the original application to CIVITAS II 12.3 is related to other measures as follows:

- **Measure 8.1 (marketing of new bus routes), Measure 8.2 – (Improved security and safety on buses), 12.1 (Use of real time applications for travellers), & 12.7 (Bus priority system in Malmö)** – these are all part of the new bus route system and the goal of an overall 10% increase in bus travel by the end of 2006 and by 30% by the end of 2010 is a result of all these measures working together.
- Therefore for the overall goal for increased patronage by 2010 (outside the SMILE framework) it will be difficult to establish which part of the increase is a result of a particular measure, since for the traveller all the measures together form the new travel opportunity.

C Evaluation – methodology and results

C1 Measurement methodology

C1.1 Impacts and Indicator

Table of Indicators.

Nr.	Category	Relates to GUARD Nr.	INDICATOR Name	Possible DESCRIPTION	DATA /UNITS
13	Society		Awareness level	Degree to which the general public awareness has changed	Survey
14	Society		Acceptance level	Degree to which the general public acceptance has changed	Survey
19	Transport		Quality of PT service	Perception of quality of PT services	Survey/interviews
Local	Transport		Number of passengers	The number of passengers on buses based on on-going ticket registration.	Persons, for different routes over time
MSE12	Economy	14	The value of real time mobile internet service information to customers	What is a customer prepared to pay for actual bus departure information?	Stated preferences

Detailed description of the indicator methodologies:

- **Indicator 13** (*Awareness level*) – Questions about the use of public transport and the experience of the real time signs (travel information) and how it affects the travel habits were asked in the main survey conducted after implementation. This corresponds to **objective 2**
- **Indicator 14** (*Acceptance level*) – The same methodology as for indicator 13 showed the acceptance level and corresponds to **objective 2**.
- **Indicator 19** (*Quality of PT service*) - The same methodology as for indicator 13, with specific questions about the internet services on mobile phones, time and the effect on travel habits and perception about quality of the journey. This corresponds to **objective 2**
- **Local Indicator** (*Number of passengers*) – All measures concerning public transport have as a common goal an increase in the proportion of journeys made by public transport. The number of passengers is one indicator that helps to measure this. To see a change in the number of passengers as a result of this specific measure (real time signs displaying real time travel information at bus stops) and to be able to distinguish this from the new bus routes is difficult. Therefore this indicator was calculated once to assess the impact of all measures on public transport, (8.1, 8.2, 12.1, 12.3 and 12.7) but not specifically for this measure. The basis for this indicator is a series of ongoing ticket counts done by Skånetrafiken. This indicator corresponds to **objective 1**.
- **Indicator MSE12** (*The value to customer*) – A Stated Preference study was conducted after the implementation to estimate the “willingness to pay” for the mobile internet information to customers. This indicator corresponds to **objective 2**.

C1.2 Establishing a baseline

The implementation of this measure is an ongoing process that started before SMILE. The service has been open for use since Mobile service version 1.0, autumn 2006. Since then, version 1.5, 1.6 and finally version 2.0 has been launched.

The opportunity to register as a member at Skånetrafiken's homepage (<http://www.skandetrafiken.se> Mina Sidor) had existed before SMILE started. My Pages is an important source of information about mobile services for travellers and also offers instructions on how to install the software to use this service. The use of mobile phones is high in Sweden but the use of the internet on mobile phones is not so common. The quality of the information a traveller can get with this service has improved with different versions.

One of the innovative aspects of this measure is to reduce the need for printed timetables. To be able to use mobile services as an alternative to a printed timetable a traveller needs to have a mobile phone, information about this service and how to install it.

The success of the measure depends on each individual and to what extent each person 1) has a mobile telephone that can be equipped with the internet 2) has an ability to understand how to install and use this service, and 3) knows that it exists. This development is partly outside the control of Skånetrafiken except from the possibility to inform and campaign about mobile internet services. It depends to a certain extent on how rapidly the society moves towards new sources of information like home pages on the internet and the use of the internet on mobile phones.

Since all this (the trends in society as well as the development of the service) is an on-going process that started well before SMILE with no definite starting point, it is difficult to choose a baseline for the awareness and acceptance of the measure and for the quality of the public transport journeys.

Three different surveys were conducted for this measure, one in April and May 2007 when version 1.5 (the second version) of the software was available, one in October and November 2007 when version 2.0 was available and one in May 2008 when version 2+ was available.

Some of the questions gave a good picture of the level of awareness and knowledge about mobile services and how these had changed over this time. That was the best baseline available for this measure.

The three studies are described in table C1.2.1, C2.1.1 and C2.5.1. The results are different for indicators 13, 14 and 19 over time and are shown in table C2.5.6.

Time of the study	April and May 2007
Sample size	159
Respondents	Bus travellers on board route 32, 4 and 5
Method	Survey onboard the buses
Aim	Pilot study used as a baseline for indicator 13, 14 and 19.
Comments:	The pilot was used to test the method and the questions for the main survey but can be used as a pre study. For measure 12.3 the mobile service version 1.5 was available during this time.

Table C1.2.1 Data from the pre study conducted for measure 12.3

Since the overall goal for all the measures mentioned under B5 is an increase in the number of journeys made, the number of passengers before and after the full scale introduction of the mobile services is important. But since there is a cluster of measures working together, it is difficult to state which part of the travel increase is a result of an individual measure. That is a problem that is further addressed in section C1.3.

The objective for this indicator is an increase of 0.5 million bus journeys as a result of the mobile internet service providing travel information, from 2007 to 2008, when SMILE ends. The first version was launched in autumn 2006. Three updates followed in 2007 and the beginning of 2008. The effect of this measure is not immediate but will start to affect the number of journeys in 2007 and continue in 2008 as well as in future years. Therefore the base year for this measure is 2007 and the baseline for the local indicator "number of bus trips" will be the total number of journeys for the year 2007, table C1.2.2.

Indicator:	Number of passenger journeys
Number of journeys for year 2007	29 163 239

Table C1.2.2 Baseline for local indicator in numerical values.

For indicator MSE12, the value of real time mobile internet service information to customers, there is no point in having a baseline for this measure. The value of information available in the mobile phones is estimated in the Stated Preference study described in tableC2.1.1 and this was done only once, at the end of SMILE. The mobile internet services had at that time gone through several developments described in section B3. If the objective for this measure was to increase the value to customers, a baseline would have been necessary. But this is not the case here. This is first time the value to customers has been estimated. You could consider this estimate to be a baseline for the value to customers; for example if you would be interested in measuring the change in value to customer when the service has developed further.

The modal split before SMILE and this measure could be relevant information for a baseline, even though no indicators are based on this information. During autumn 2003, a survey was made where 10 000 residents between 18-75 years of age were asked to fill in a travel diary. 5181 travel diaries returned. The modal split in Malmö 2003 based on these travel diaries are shown in figure C1.2.3. The survey was conducted during October and November 2003.

Modal split in Malmö 2003, N=12825 travels

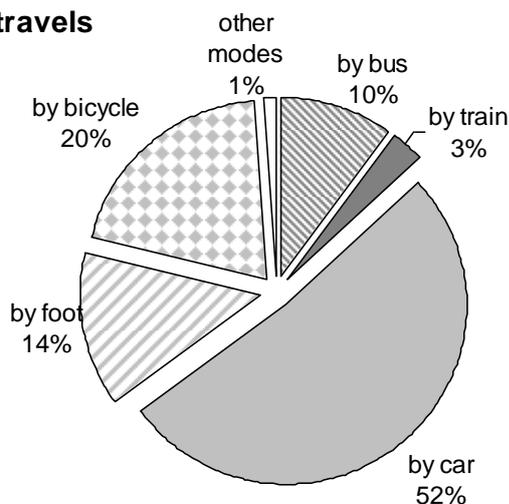


Figure C1.2.3

Results from the travel diary made in October and November 2003 with a sample of 5081 travel diaries.

The respondents are between 18 and 75 years of age and living in the city of Malmö. They have stated the main travel mode for each trip they have made during one day.

C1.3 Building the business-as-usual scenario

As discussed in section B5 and C1, the overall goal for all public transport measures, including this one, was to increase the number of passengers by 10% by the end of 2006 and by 30% by the end of 2010. This goal was formulated at the beginning of SMILE when most of the measures related to 12.3 were planned to be implemented before the end of 2006. In practice, only measure 8.1 was in fact implemented during 2006. Therefore the goal of 10% increase in passenger numbers was no longer valid at the end of 2006.

To establish a “business as usual” scenario for this measure was difficult, not only because all measures related to public transport were working together but also due to the fact that Skånetrafiken changed to a new bus route system at the same time. This of course had a great impact on the number of passengers and was, in itself, not a part of SMILE. Without a thorough investigation of the effects of the route change **alone** it was difficult to build a

business as usual scenario that separated the new bus routes from the effect of other SMILE measures like introducing mobile services for travel information.

The “business as usual” scenario that would work for all measures when taken together would be the trend in passenger numbers without the new bus route system and without any of the SMILE measures in place.

Figure C1.3.1 shows the change in total number of passenger journeys per year. Year 2005 is the base year since it was the start period for SMILE. The route change (not a part of SMILE but included in the overall goal of increased travel) took place in June 2005. Measure 8.1 was running for around 6 months after the change. During 2007 measures 12.1 and 12.3 were fully installed/implemented. Figure C1.3.1 shows the increase in the number of passengers for this period. A trend line based on the yearly totals before SMILE and before the change of route system represents “business as usual”.

Change in number of passengers on a yearly basis for Malmö Bus Routes with year 2005 as a base.

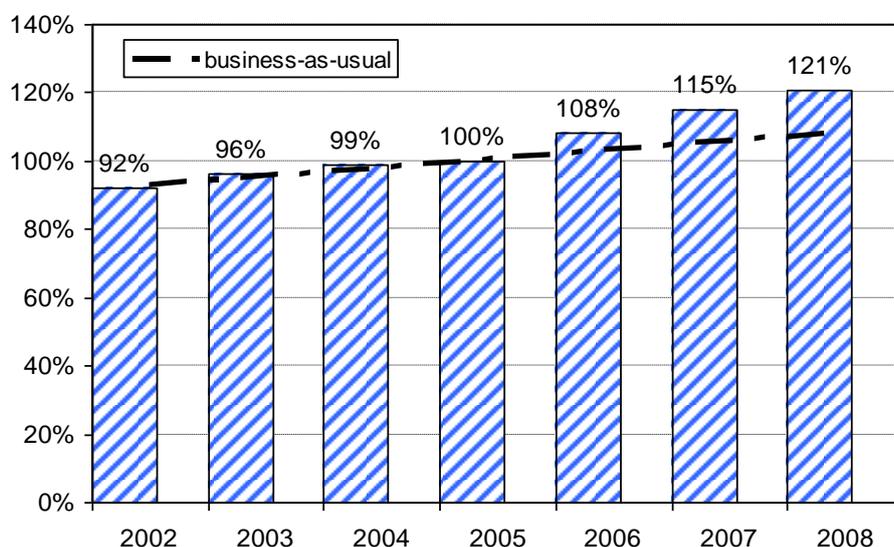


Figure C1.3.1

Number of passenger journeys on Malmö Bus Routes on a yearly basis shown in relation to year 2005, the base year for SMILE.

The trend line “business as usual” is based on the situation before SMILE.

The new bus route system was implemented in June 2005. (Skånetrafiken)

As can be seen, the increase in the number of journeys after 2005 is greater than for the period before 2005. This increase was a result of the new bus routes as well as all SMILE measures. The increase was also a result of this individual measure.

C2 Measure results

The results are presented under sub headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

C2.1 Economy

Objective 2 - Increased awareness of good public transport

Measured by indicator MSE12 - The value to customer

In April 2008, 256 Stated Preference interviews were conducted among the travellers in Malmö (Table C2.1.1). The aim of this was to establish the “willingness-to-pay” for mobile services. In total, 256 interviews were conducted with travellers, or people with some experience of travelling on the buses in Malmö, where they had to choose between two combinations of fare price, travel time and mobile services (and some other choices relating to measures 8.2 and 12.1). (More about this study in Appendix 12.3 SP-study, in Swedish)

Time of the study	April 2008
Sample size	256
Method	Stated Preference-interview
Aim	To estimate the “willingness-to-pay” for real time information for mobile phones.
Comments	Travellers (or people with some experience of travelling on the buses in Malmö) were interviewed at three major bus stations.

Table C2.1.1 Data about the Stated Preference-study conducted for the “economy” category for measure 12.3

Of the 256 respondents who participated in the SP study 58% were women and 42% men. 47% were under 30 years old and 21% over 60 years old. 32% were aged between 30 and 60. This was similar to the survey presented in table C2.5.1 but with more people over 60. Perhaps this group may have had more time to spend on an interview than the busy “middle aged” and may be a bit overrepresented in this study.

The SP study estimates the “willingness to pay” for real time information for mobile phones in terms of 1) SEK compared to the price of a monthly ticket, 2) SEK compared to a single ticket and 3) minutes travel time compared to the average travel time.

49% had bought a single ticket for their travel (in Malmö City the price for this is 16 SEK) or used a discount card that offered 20% off the price. The rest of the travellers used a monthly card or school card and paid between 380 and 1000 SEK with an average price of 560 kr. The “willingness to pay” a higher fare should be related to this price.

Most of respondents (58%) travelled on the buses every day. The travel time varied between 5 and 90 minutes with an average of 23 minutes for a normal trip on the bus. The “willingness to pay” in terms of accepting a longer travel time should be related to this time.

One specific problem with mobile phone services was that quite a few travellers had no experience of it and therefore had a problem assessing its value. The students who conducted the interviews had all been educated about this service in order to be able to demonstrate mobile internet on their mobile phones. They also had some information material to hand out to those who showed some interest. More specific technical information was also available.

If the respondents showed no interest at all in this service and had no prior experience or a phone with the internet, they got a set of choices where mobile services were missing. Only those respondents who had some experience of this service or showed some interest and took part in the demonstration had to choose between this service and other factors. In figure C2.1.2 this group is represented by the striped bars, and accounts for 43% of all respondents (107 persons) with 50% men and 50% women. 67% were younger than 30 years of age. Only 4% were over 60 years old. Compared to the whole SP study this group was a lot younger with equal proportions of men and women.

Have you used the travel planner in the mobile?

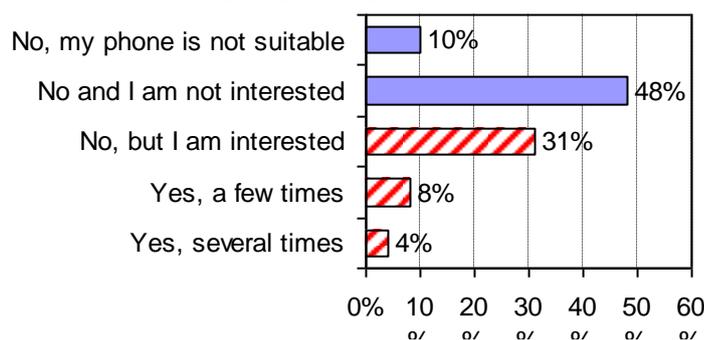


Figure C2.1.2

The key questions in the SP study that separate the respondents in two groups, one with the experience or interest in mobile services who was able to evaluate it and one without. N=254

It was difficult to estimate the value of mobile services. Only few of those who had the choice between mobile services and the price of the journey and travel time seemed to take any account of the factor “mobile services” and because of that it was difficult to estimate a positive value. The differences in price were probably too small as well. But it was possible to estimate the value of travel time. The results of the “willingness to pay” for mobile services are presented in table C2.1.3.

The value to customer for mobile services	SEK/month	SEK/single price	Minutes travel time
Reference value (average)	560	16	23
“willingness to pay” for the mobile service with travel info on mobile phones	No significance	No significance	3
90% confidence interval			0-7
% of reference value (interval)			13 (0-30)
Sample size			84

Table C2.1.3 The results from the Stated Preference study that show the estimates for the travellers’ “willingness to pay” for travel information on mobile phones.

C2.2 Energy

No indicator under the indicator category Energy is associated with this measure. The modal shift described under C2.3 from car to other modes leads to less energy consumption, but the modal shift is not mainly a result of this measure.

C 2.3 Environment

No indicator under the indicator category Environment is associated with this measure.

During autumn 2008, a survey was made of the same design and magnitude as the in 2003. The modal split in Malmö 2008 based on these travel diaries are shown in figure C2.3.1. The survey was conducted during October and November 2008.

The result of the survey 2003 and 2008 shows a change in modal split towards more walking and train travelling and less use of car as travel mode. The percentage that uses bus as the main travel mode has not changed significantly compared to the survey 2003. The small change from 10% 2003 to 9% 2008 is not statistically significant. The shift from car to other modes with less environmental impact will have implications for the environment but not mainly as a result of this measure.

Modal split in Malmö 2008, N=11462 travels

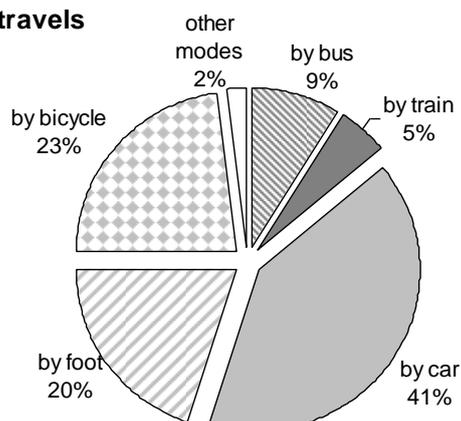


Figure C2.3.1

Results from the travel diary made in October and November 2008 with a sample of 4803 travel diaries.

The respondents are between 18 and 75 years of age and living in the city of Malmö. They have stated the main travel mode for each trip they have made during one day.

Still, there has been an increase in passengers on board the buses in Malmö with around 25% (figure C1.3.1). This could be a result of:

- a) The population of Malmö has increased by 6% during this period,
- b) The number of travellers (or boardings) have increased as a result of more regional commuting, passengers arrive to Malmö with regional buses or train and changes to the city buses and these travellers are not represented in the survey since they do not live in Malmö.
- c) Public transport users are often using cycling and walking as other travel modes when the weather allows, for shorter journeys. During the summer season, the number of passengers are always lower (figure C1.3.1) than during the winter season as a result of that. Both surveys were conducted during October and November but the weather conditions could be rather different autumn 2003 compared 2008. The autumn 2008 were mild with not so much rain and this could postpone the shift from walking and cycling to bus some weeks. This will affect the local journeys more than the longer journeys made by commuters and therefore have a greater impact on the local (city of Malmö) survey than the statistics showing number of passengers.

C2.2 Transport

Objective 1 - 0.5 million more journeys from 2007 to the start of 2009, when SMILE ends.

Measured by local indicator – number of bus trips

500,000 more journeys roughly corresponds to an increase of 1.8% from one year to another. Figure C1.3.1 shows an increase of 7% from year 2006 to year 2007. This increase is in theory a combination of this particular measure (though not implemented until autumn 2007), measure 8.2, 12.1, the trend in passengers in the Skåne region that the “business as usual” scenario shows and the effect of the new bus routes.

Figure C2.5.3 shows that 3% agree completely and 5% agree partly with the statement: real time info on mobile phones means that I travel more. This indicates that this measure has had an effect on the number of journeys through a limited proportion of the population.

The results from the stated preference survey conducted in Malmö in May 2008 will help in trying to “translate” this result into an increase in number of bus trips when compared with the results of the other measures.

Objective 2 - Increased awareness of good public transport

Measured by indicator 19 – quality of public transport service

This indicator was evaluated together with the social indicators described in section C2.5 below. See the details about the method and results there.

C2.5 Society

Objective 2 - Increased awareness of good public transport

Measured by indicator13 (awareness level) and indicator14 (acceptance level).

The objective was to see how the services on mobile phones were assessed by the public transport users and if this service increased the quality of the journey. This was evaluated by a survey described in table C2.5.1

Time of the study	Oct/Nov 2007
Sample size	3313
Method	Main survey conducted onboard the buses
Aim	To collect information from the bus travellers for indicators 13, 14 and 17 and assessing the change in travel behaviour.
Comments	Distributed and collected at the same time on 11 routes in Malmö, with opportunity to post the surveys if the time was not sufficient. Questions were the same as in pre study.

Table C2.5.1 Data about the survey conducted for the “society” category and indicator 19, “transport” category for measure 12.3

The main surveys onboard the buses were conducted during two weeks, one in October and one in November 2007. (Appendix 12.3 Questionnaire) The respondents are described in figure C2.5.2.

Age, sex and access to drivers licences for those who answered the survey N=2882

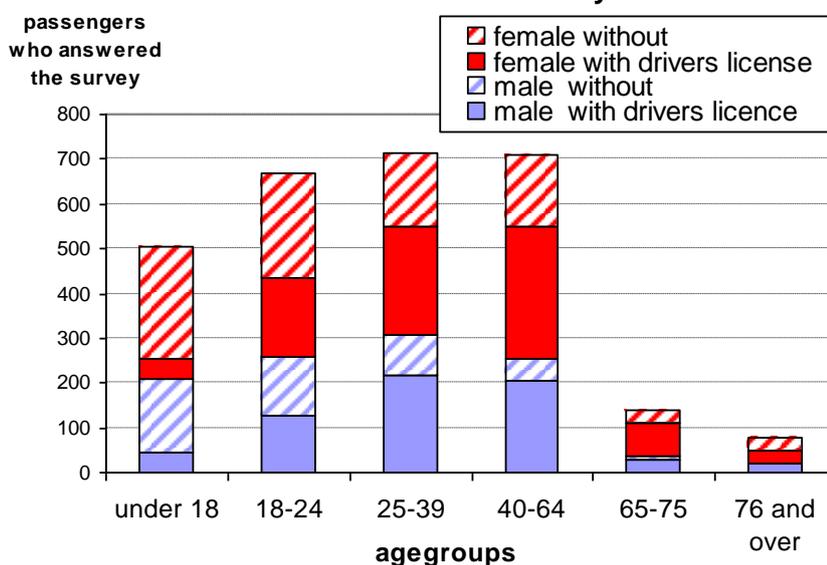


Figure C2.5.2

The respondents of the survey and their distribution of sex, age and access to drivers licence.

In total, 61% are female and 39% are male. 18% of all respondents are under 18 years old, 23% are between 18 and 24 and 51% are between 25 and 65 years of age. 8% of the respondents are over 65.

In comparison to the travel survey conducted in 2003 in Malmö with a sample of 5451 residents between 18 and 75 years of age, this survey shows similar distribution of men and women among bus travellers taking into consideration the difference in age groups. The gender split between male and female respondents was generally balanced in favour of women, except for the under 18 age group which showed a roughly equal distribution.

The success of this measure depends partly on public transport users' access to a mobile phone as well as how each individual uses the internet as a source of information. This had to be assessed by different questions in the survey, and the results are shown in figure C2.5.3.

The use of a mobile phone was very high, 94% of the passengers had one. The level of knowledge about mobile service was higher than the experience of it. 64% knew about this service, 12% had used it some of the time and 5% had used it frequently. 16% were members of "My Pages" and 17% didn't know what it was. 19% used WAP on their mobile to access services like email and Google and 10% didn't know what it was. 16% brought a time table. (Figure C2.5.3)

This shows that the use of the internet services on mobile phones is not so common among the passengers. The awareness of the service is rather high but the experience of it is a lot lower. Almost 20% of the passengers seem to be more used to this new technology than the others.

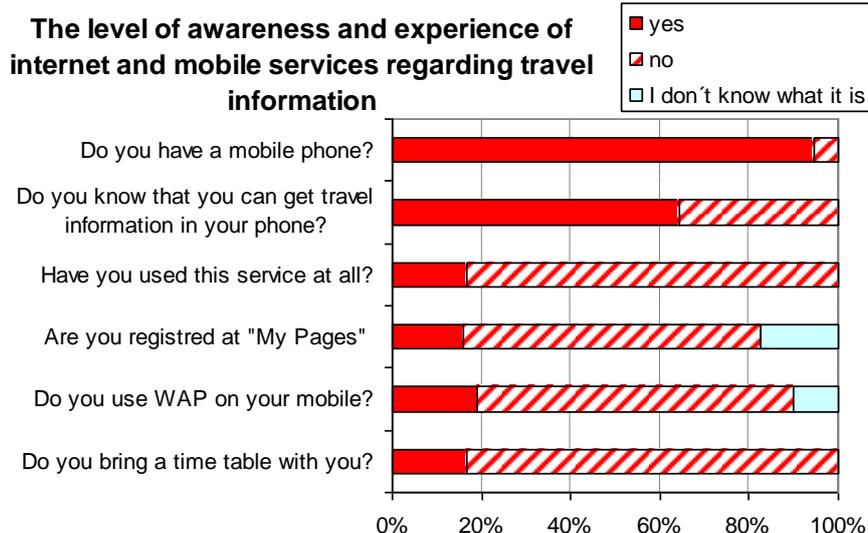


Figure C2.5.3
Results from the onboard survey conducted in October and November 2007 with a sample of 3313 passengers.

To get a picture of how the travellers valued information services on mobile phones, the respondents were asked to rate seven statements about mobile services (figure C2.5.4). Figure C2.5.3 shows that only 17% have used the service at all and this has an affect on the answers. The percentage of "I don't know" answers is high in figure C2.5.4. The one statement about mobile services that most respondents agreed to was "mobile services are nothing for me". For the more general statement "it is important to know if the bus is delayed" close to 75% agreed completely or partly. 8.5% said that mobile services meant they travelled more by bus (complete or partial agreement).

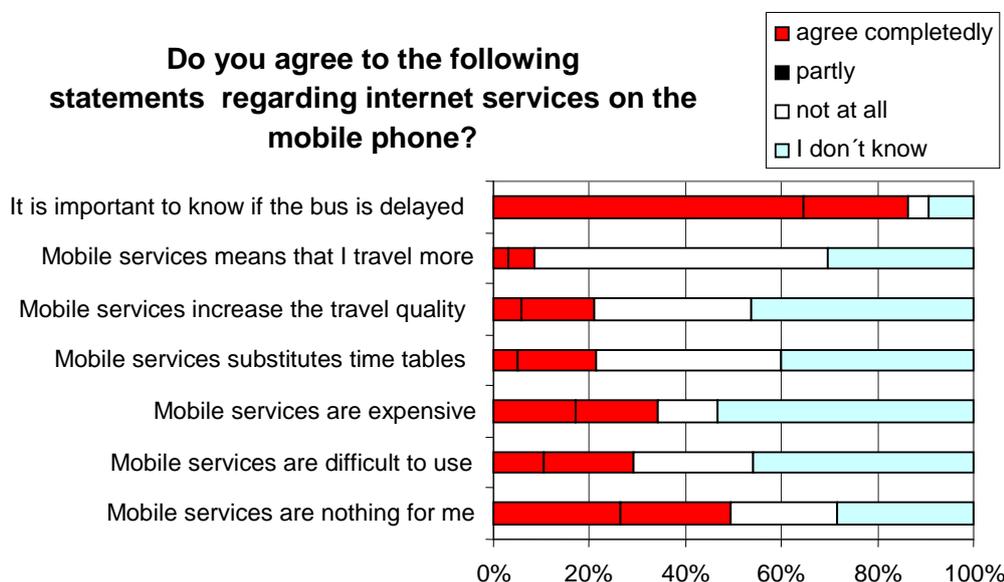


Figure C2.5.4
Results from the onboard survey conducted in October and November 2007 with a sample of 3313 passengers.

The results in figure C2.5.4 reflect the fact that this service is fairly new and most passengers have no actual experience of it. If customers have no experience of a service, it is difficult to evaluate the actual service and passengers' expectations about it. To get a better assessment of the actual service, those who said they had some experience (17%) were singled out. Of this group (444 respondents) 55% are female and 45% are male, a more even distribution than for the whole sample. The age distribution was different as well, 26% were under 18 years and 35% were between 18 and 25 years of age compared to 18% under 18 and 23% between 18 and 25 years of age for the whole group. Only 2% of respondents over 65 in this group had experience of the mobile services. Those who had some experience of the mobile services were younger and as a result of this the percentage of men is higher than for the whole sample.

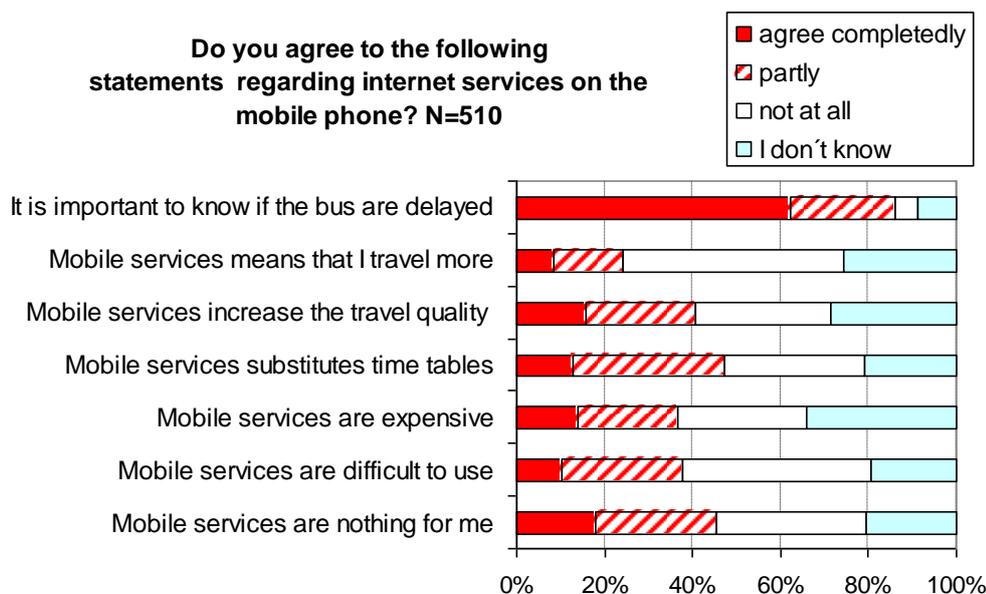


Figure C2.5.5

Results from the onboard survey for those who had experience of using mobile services (17% of 3313 passengers).

Of this group, 29% were registered on "My Pages" and 33% said that they used WAP on their mobile phones. The results of how this group rated the statements concerning mobile services are presented in figure C2.5.5. The alternative "I don't know" is less common in general.

All participants in this group have used mobile services, at least some of the time. However, nearly 50% still agree completely or partly with the statement "mobile services are nothing for me". 40% agreed that mobile services increase the travel quality and 24% that it means they travel more. These figures are a lot higher than for the whole sample.

This shows that the use of mobile services is more common with the younger generation, even though the use of mobile phones is very high in every age group (94% in total). It is probably the use of the internet in general and the internet on mobile phones in particular that divides the passengers into "users" or "non-users".

Conclusions

In table C2.5.6 the results of the awareness and acceptance level as well as the level of perception of quality of public transport are presented. In the table the results from two (and in one case three) studies are presented with the results from the major study in brackets.

The objective for the social indicators is increased level of awareness and acceptance. The perception of quality is an indicator as well and can be used as another way of describing the acceptance of the measure. As discussed in section C1.2 it is difficult to present a baseline for these indicators. But in order to determine an increase more than one observation is needed. In table C2.5.6 the results from two studies are presented chronological and they all show an increase in the level of awareness and acceptance, except for the percentage of those who had used the service.

Indicator	Awareness	Acceptance	Perception of quality
April/May07 (Oct/Nov 07) April 08	Indicator 13	Indicator 14	Indicator 19
Percentage that know they could get travel information on their mobile phones	64 (64)		
Percentage that had used this service at all	20 (17) 12		
Percentage that are registered on "My Pages"	15 (16)		
Percentage that means mobile services substitute time tables		16 (21)	
Percentage that means mobile services make them travel more		3 (8)	
Percentage that means mobile services increase the travel quality			19 (21)

Table C2.5.6 *The results for the social indicators from the different studies.*

As discussed in section C2.1 and C2.5 the experience of the mobile services on mobile phones is a lot higher among the younger passengers. A study with younger respondents will therefore affect the level of experience. For the pilot survey conducted in April/May 2007 the percentage of respondents under 25 years was 46%. For the main survey in Oct/Nov 2007 the percentage of respondents under 25 was 41% and the percentage of respondents under 30 years in the SP study conducted in April 2008 was 47% (with 20% under 20 years). The different percentages of young people can explain the decline in experience of this service.

C3 Achievement of quantifiable targets

No.	Target	Rating
1	0.5 million more journeys from 2007 to the start of 2009, when SMILE ends	*
2	Increased acceptance and awareness	**
NA = Not Assessed 0 = Not achieved * = Substantially achieved (> 50%) ** = Achieved in full *** = Exceeded		

C4 Up-scaling of results

This measure is in a way already accessible for everyone. As discussed in section C1.2 it depends on the individual if these services will be used or not. If all passengers were registered on "My Pages" and had a phone with this service installed and were using it, then that would be an upscale of the users. This would probably mean that the number of journeys increased a bit further, since 24% of those who used the service said they travelled more. But, on the other hand, this group is younger and maybe their views on mobile services may to some extent reflect that.

C5 Appraisal of evaluation approach

Overall a good evaluation. A better design of the SP study would have been preferable with sample sizes more comparable for the different groups. It would also have been better to use computers for the Stated Preference study to enable a situation where the different stages in price and time were directly related to the price paid and the actual travel time for each individual. This would probably have given stronger estimates.

The evaluation showed that, for this measure, the level of experience was low and therefore it was difficult to measure awareness and experience of different aspects. Mobile internet services are not something that everyone notices, like real time signs or cameras on board the buses and that has the effect that it will take longer to reach higher levels of awareness and acceptance. It would have been preferable to have a longer time between information about the latest versions and the surveys.

C6 Summary of evaluation results

The key results are as follows:

- **Key result 1** – the awareness of the mobile service are a lot higher than the experience of it. That reflects the fact that this measure depends on access to a mobile phone and the knowledge to install and use this service. This is a lot more common among the younger passengers (under 30) than the older. The group who have experience of the service and are registered on “My Pages” and have used WAP on mobile phones are at present close to 20% of the passengers.
- **Key result 2** –the lack of experience of the service reflects the ability to rate different aspects of it. The number of respondents answering “I don’t know” varies between 30 and 60%.
- **Key result 3** - mobile internet services increase the number of journeys, 8 % said that they travelled more.
- **Key result 4** - mobile services mean a higher travel quality for 21% of the passengers.
- **Key result 5** - the ‘willingness to pay’ for mobile services has been difficult to estimate in a Stated Preference study. The best estimate shows a value of 13% (3 minutes) of the travel time for mobile services with a 90% confidence interval that includes zero. The designer of the study states that few of the participants took any notice of the factor ‘mobile services’.
- **Key result 6** - the acceptance of this technology and the experience of it will probably increase in the future as the society as a whole gets more and more reliant on the internet as an information source. It will probably be the youngest passengers that lead this development.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Barrier 1** – a potential barrier exists because not all travellers have access to the latest technology mobile phones with the access to the internet needed to be able to fully use this service.
- **Barrier 2** – a further barrier exists because some travellers are not familiar with the latest mobile phone technology and have no desire to use it. 48% of respondents from a sample size of 256 actually said that they had not used the traveller planners on their mobile and were also not interested in using it.
- **Barrier 3** – a potential barrier to the evaluation exists because it is difficult to rate the success of the services and people's views, perceptions and experience of it when many respondents do not have the latest technology mobile phones and have not used the mobile service.
- **Barrier 4** – there appears to be a wide range of this type of technology coming to the market and it will be important that the applications converge in terms of compatibility from location to location (where potentially different systems may be in place) and across the various mechanisms by which the end user might choose to access the information.

D1.2 Drivers

- **Driver 1** – the rapid move to an information based society, particularly amongst younger generations, backed up by the necessary technology development and the commercial drive to exploit these opportunities.
- **Driver 2** – one of the key drivers is an increase in the number of journeys. However, this was a result of a combination of measures, including measures 8.2 and 12.1 and it is difficult to ascribe this particular increase in the number of journeys to a particular measure.
- **Driver 3** – one of the key drivers is also an increase in people's awareness of the mobile service as a result of the survey work which can mean further increase in the number of journeys.
- **Driver 4** – it is perceived that the system of mobile service is user friendly and has the potential to develop further in the future offering additional functions to Travelplanner.
- **Driver 5** – Ability to purchase a bus ticket on a mobile phone minimises handling of cash on board buses thus improving security and safety on buses.
- **Driver 6** – Development of Traffic Information Strategy with guiding principles helped the formulation and realisation of this measure.

D2 Participation of stakeholders

- **Stakeholder 1** – The mobile services are aimed at users in the age group 18-40 years. The target group is strategically important and of high priority within Skånetrafiken, and have overall a high level of technical maturity and experience of using the internet and advanced mobile phones.
- **Stakeholder 2** - Skånetrafiken (Skåne regional transport authority) has a leading role in measuring coordination, project leading and implementation.
- **Stakeholder 3** – Private consultant Combitech AB is a principal participant with the role of project administration, documentation and responsibility for developing test-cases.

- **Stakeholder 4** – Private Consultant Softhouse with the responsibility for application development of JAVA solution.
- **Stakeholder 5** – Private Consultant Cap Gemini with the responsibility for application development of WAP browser solution.
- **Stakeholder 6** – Local and Regional transport authorities with various responsibilities for mobile services and their requirements.

D3 Recommendations

- **Recommendation 1** – It is recommended to develop a marketing strategy and identify the key user groups and messages that will lead to the optimum marketing aimed at a further increase in the level of awareness and the number of journeys.
- **Recommendation 2** – To ensure that Traffic Information Strategy forms part of the local and national transport policy to encourage uptake of similar measures in other cities and towns and to ensure compatibility between regions.

D4 Future activities relating to the measure

Further development of this service, *Mobile service ver 2.+*, is planned to enhance the service to the passengers. To further evaluate the success and the impact of the measure it will be worth repeating some of the surveys to achieve comparability between ‘before’ and ‘after’ measure implementation. This will enable a better understanding of the measure’s performance and offer recommendations for its future development and its wider geographical application once it is more established. Hopefully, more travellers will benefit from the ability to use mobile services to plan their journeys which will result in an increase in the number of journeys and achieve the modal switch to public transport.