Experiences from a Field Trial of UbiGo: The case of Mobility as a Service

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What has been tried?

Positive and necessary, but unimodal improvements:
• Focus on car → public transport
• Change the public transport “offer” (vehicles, internet, info, BRT, etc.)
• Introduce new carsharing and bikesharing schemes
And based on people’s choices rather than needs and requirements

Fulfilling the needs of travelers requires multimodal solutions.
“Mobility as a Service” (MaaS) has been proposed as a feasible way forward.

MaaS: a mobility distribution model in which a customer’s major transportation needs are met over one interface and are offered by a service provider (Hietenan, ‘Mobility as a Service’ – the new transport model? ITS & Transport Management Supplement, Eurotransport, Vol 12(2), 2014).
UbiGo (Gothenburg, Sweden)

Real households
Real money
Real services
Här kan du uppgodisera Zon för denna biljett.

- Zone 3
- Spars val

Kan du inte se 30 minuter sen?

- Zone 3
- Spars val

Information

- Zon
- Kribbevagade
- Biljett
- Hertz
- Tax/ biljett
- Stopp
- Guarantee

Härfri biljetter och biljett för ungdomar.

Go:smart

Sochor et al., ITRL, Stockholm, November 29, 2016
Data collection & analysis

Participants (173 adults and 22 children):
• 3 questionnaires (164, 161, 160 responses; 151 completing all)
• 2 x one-week travel diaries (40 & 36 responses)
• 3 post-FOT focus groups
• Post-FOT interviews (14 individuals & 3 households)
• Customer service errands

Non-participants (but who had expressed interest):
• Questionnaire (145 responses of 316 invitations)
• 24 individual interviews
Who participated?

6 months: November 2013 – April 2014
83 subscriptions covering 195 persons (173 adults & 22 children)
20 private vehicles deliberately set aside, 17 from single-vehicle households

The majority…

• live in an apartment & work full-time
• have a driver’s license and public transportation card, but do not necessarily have daily access to a car
• do not subscribe to a carsharing or bikesharing system
• are highly connected
• are likely innovators/early adopters (e.g. change-seeking, curious)
Travel behavior

Utilization (monthly averages) – overestimation of need
- Daily PT tickets: 1920 used vs 2220 purchased (~15% overest.)
- Car hours: 620 used vs 904 purchased (~30% overest.)

A majority of participants (64%) reported travel behavior changes:
- 43% mode
- 34% pre-trip planning
- 21% destination, trip chaining, travel time
- 19% route

Four identified subgroups – shedders, keepers, already carsharers, and accessors – all trialed new travel behaviors and shifted towards more sustainable choices.

“The modes we used didn’t at all match with what we had predicted. It was the total opposite, but it meant that we learned, about how we use the car, how we use the bus, how we use walking, etc.” (IP7).
Travel behavior

Participants: reduced use of (private) car and increased use of other modes. Stated they could better match mode with trip conditions. Became less positive towards private car; more positive towards other modes.

Questionnaire: USE (less-equal-more) ATTITUDE (more neg-same-more pos)

<table>
<thead>
<tr>
<th>Mode</th>
<th>USE (%)</th>
<th>ATTITUDE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus/tram:</td>
<td>4% – 46% – 50%</td>
<td>2% – 46% – 52%</td>
</tr>
<tr>
<td>Local train:</td>
<td>7% – 75% – 18%</td>
<td>3% – 71% – 26%</td>
</tr>
<tr>
<td>Bikesharing:</td>
<td>16% – 61% – 23%</td>
<td>1% – 57% – 42%</td>
</tr>
<tr>
<td>Private bicycle:</td>
<td>19% – 65% – 16%</td>
<td>3% – 83% – 14%</td>
</tr>
<tr>
<td>Carsharing:</td>
<td>6% – 37% – 57%</td>
<td>3% – 36% – 61%</td>
</tr>
<tr>
<td>Car rental:</td>
<td>13% – 59% – 28%</td>
<td>4% – 75% – 21%</td>
</tr>
<tr>
<td>Private vehicle:</td>
<td>48% – 48% – 4%</td>
<td>23% – 74% – 3%</td>
</tr>
<tr>
<td>Taxi:</td>
<td>12% – 68% – 20%</td>
<td>6% – 76% – 18%</td>
</tr>
<tr>
<td>Walking:</td>
<td>6% – 73% – 21%</td>
<td>2% – 82% – 16%</td>
</tr>
</tbody>
</table>
Behavioral changes...over time?

97% wanted to keep using the service after the pilot ended

93% would recommend the service to others

97% of those who reported behavioral changes were satisfied with those changes...

...but will the changes remain?

• 50% claim the changes will remain
• 32% claim the changes will remain, given that
  — “… we have the same ‘punch card’ system as in UbiGo”
  — “… it is as easy to travel”
• 17% say the changes will not remain
  — Because of moving
  — “… because I will not have access to UbiGo”
Satisfaction with transport

Participants became more satisfied.

No differences in satisfaction between subgroups.

“It’s noticeable now that we’re not in [UbiGo anymore] that it’s like …, it feels awkward to travel in the usual way.”
Contributing Attributes

The “transportation smorgasbord” concept. “The best part is the package; getting a unified solution to get by without a [private] car.” (IP11)

The simplicity of the service – household subscription, one monthly invoice, everything in the smartphone, closer to “pay per use”, daily tickets, etc.

Improved access – more choices, improved choices, mental accessibility.

Improved flexibility – multiple alternatives, reduced sunk costs, better adapt mode choice to trip conditions…but wanted even more!

“It’s not about being a bus user or a pedestrian or; it’s that you’re everything. And having reasonable proportions of each [mode]. To be able to see when I need one and when I need the other. And that was really important. ... And the threshold was low enough to easily cross, to see what [mode] is good for me today?” (IP7).
Contributing Attributes

*Economy* – transportation expenditure more transparent, fewer sunk costs

*Added value/Relative benefit* compared to the existing solution(s) – can be a matter of perception, e.g. perceived effort of adoption

*Trialability (low-risk environment)* – UbiGo was not set up to stimulate behavioral change, but participants used it to actively trial new behavior; to see whether they would still be able to carry out their daily activities. Also, participants could set aside a car with compensation.

*New insights on convenience* – evaluating the alternatives in new ways

“I’ve made use of new modes that I hadn’t tried before” (IP14)

“It was a way to test carsharing that I might not have tested otherwise…[UbiGo] was a way for us to try having a car, to see if we need a car” (IP13).

“We don’t use our car so very much. I’ve been irritated by people saying ‘now that we have kids, we have to have a car’. I’ve thought that we really don’t” (IP3).
Preconditions for MaaS

High customer satisfaction and proof of concept, yet the trial/service ended. Why?

• Lack of timely financial support (e.g. to develop the back-end system) (but not because the business idea was considered unfeasible)
• Regulatory issues
The UbiGo trial was not-for-profit...can/should PT (subsidized) become a service provider to a for-profit MaaS company? Does it want to?
• New concept / type of business (within urban transport)
  = new (unclear/uncertain) business relationships (e.g. potentially new pricing models, brand identities, customer relationships)
• The “project curse”, i.e. “projects end”
  Lacked an in-depth strategy for how to deal with a successful outcome and carry the project to the next level
Preconditions for MaaS

Mobility as a Service relies on **collaboration**, on the notion of a **co-operative and interconnected** transport system (including services, infrastructure, information, and payment), where **boundaries become blurred** not only between transport modes are but also between public and private operators.

Obstacles to Mobility as a Service include (but are unfortunately not limited to):

- regulations and policies
- business & operator models
- mindsets, e.g. roles and responsibilities
- not yet enough empirical evidence…more full-scale trials please!
- (technology)
Design & Human Factors

Research with a user perspective (~25 researchers)
Urban mobility and transport systems one of three application areas

MaaS (Mobility as a Service) projects & activities

• Go:Smart / UbiGo Field Operational Test (2012-2014); quadruple helix project (public and private sectors, academia, users)
• MAASiFiE Mobility as a Service for Linking Europe (2015-2017); partners VTT and AustriaTech
• IRIMS Institutional frameworks for integrated mobility services in future cities (2016-2017); partners Victoria Swedish ICT, Lund University, Trivector, Samtrafiken, K2
• PhD Candidate project (2016-) Integrated Mobility Systems: creating favorable conditions for procurement, development and use; partners Västtrafik and the region of Västra Götaland (VGR)
• Integrated mobility services “strategic case” (2016-)
• Coordinating the End-User Perspective WG (MaaS Alliance) (2015-)
Selected Resources


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Questionnaire on Impacts:  https://www.research.net/r/maasifie-impacts