Mobility as a Service
Can it be even better than owning a car?

SAMPO HIETANEN
CEO MaaS Ltd

SAMI SAHALA
Forum Virium Helsinki
WHAT IF ALL TRANSPORTATION WAS CONVERGED...
... AND TAILORED TO YOUR NEED AS MONTHLY PACKAGES
Mobility as a Service is the Netflix of transportation

15 minutes package for 135 €/month:
- 15 minutes from call to pick up with no more than 15 minutes delay compared to driving.
- No parking hassle

Pay as you’re moved:
- Bike and segway service included
- 20 cents per minute in vehicles with others in
- 30 cents per minute for a nice car
- 50 cents per minute for a personal driver
- Only vehicles that use renewable energy

Business world package for 800 €/month:
- 5 minutes pickup in all EU
- Black car status everywhere
- Working conditions guaranteed

Cup of tea guarantee
- All your rides combined
- Morning tea included
- Tinder extension for a great weekend
- Movember special rides

Family package for 1 200 €/month:
- Enough space and child seats guaranteed
- Always traceable and safe trips for kids
- Includes one long family trip every month
- Home delivery included

4
It’s all about Service Level Agreement (SLA)

It’s easy.

We make it easier.

Maas.fi
As a customer you make a contract with one commercial operator, who provides you all the services chosen by you. Terms of contract may vary, and are up to you and your operator to negotiate.
I can use every mode of transportation depending which best suits my current need

- All fully accessible with one mobile tool
- And everything in one monthly bill

**Personal mobility package 250€/month:**

- Regional public transport
- Up to 100 km taxi services (incl. Uber, Lyft etc.), from where x €/km
- Up to 500 km car sharing
- Up to 1500 km long-haul public transport
- 20 h city bike
From 2006 fast forward to June 2014

And within just a couple of months:
Helsinki makes the list for a super innovative transit system — one that will soon have "a real-time marketplace for customers to choose among transport providers and piece together the fastest or cheapest way of getting where they need to go."
Helsinki ranked #3 in innovation by citie.org

“Helsinki’s vision of mobility on demand, a fully integrated public and private transport ‘one click’ solution, carries the scale of ambition you would more typically expect from a tech start-up and is defining mobility as a service agenda globally”
Helsinki's ambitious plan to make car ownership pointless in 10 years

Finland's capital hopes a 'mobility on demand' system that integrates all forms of shared and public transport in a single payment network could essentially render private cars obsolete. Should we ban cars in city centres?
TRANSPORTATION IS CHANGING TO CONSUMER BUSINESS
Finland

ARPU (Average Revenue Per User)

in Transport
~300 €/month

Telecom
~30 €/month

Global Market

10 000 000 000 000 €
market reshaped

MaaS

Decline of car ownership

New means of transport

Sharing economy

Servicizing

Internet of vehicles

Expensive traffic space

Self driving vehicles

Apps for traffic

Private car usage < 4 %

New means of transport

Decline of car ownership

Global Market

10 000 000 000 000 €
market reshaped

MaaS

Decline of car ownership

New means of transport

Sharing economy

Servicizing

Internet of vehicles

Expensive traffic space

Self driving vehicles

Apps for traffic

Private car usage < 4 %
Helsinki♥MaaS

City’s perspective
25% growth of inhabitants & traffic in central city, in next 15 years
No room for new infrastructure to prevent major congestion
Decrease need to own a car by ensuring plethora of alternatives and making it as easy as possible to use them.
MaaS as a business
Market opportunity: Savings in car expenditure

Spending on transportation per family 2012

Transportation services 930 €
Using a car 2730 €
Buying a car 2450 €

Spending on transportation per family 2020

Transportation services 1600 €
Using a car 2200 €
Buying a car 1900 €

Breakdown of bought products and services

80% Local Service (work) in Finland

20% Digital Services (Global market)

20% Local Services (e.g. maintenance)

80% Imported Gasoline

10% Local Services (car sales)

90% Imported Products (cars)
Transport systems will become consumer business

Service Providers (International Brands)
- Combinations for target groups
- Different packages for targeted groups
- Clearing for transportation, networks and services

Transportation Providers (International Brands)
- Vehicles, public transport, rentals, parking, taxis, ride shares, car shares etc.

Network Providers
- Planning, investments, maintenance

The focus is here

All funding directly from end users

User
Three ways for markets to evolve

<table>
<thead>
<tr>
<th>Winner takes all</th>
<th>Public transportation Takes it all</th>
<th>Roaming ecosystem</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="winner.png" alt="Diagram" /></td>
<td><img src="public.png" alt="Diagram" /></td>
<td><img src="roaming.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

- Mobility as a Service (aggregators)
- Transportation providers
From silos to roaming

- Funding competition between systems
- Multimodality
- Total management
- Roaming systems
- Service providers

Time
PRESENT

MaaS

Maas.fi
The European Mobility as a Service Alliance

Working to create a seamless, demand-based travel experience
Launched at the 2015 ITS World Congress in Bordeaux

Press Release

The European Mobility-as-a-Service Alliance has been launched

20 European organisations join forces to establish the first Mobility as a Service (MaaS) Alliance. This new initiative will work towards a truly European and common approach to MaaS through public and private stakeholder cooperation, providing the basis for the economy of scale needed for a successful implementation in Europe.

The key concept behind MaaS is to put the users, both travelers and goods, at the core of transport services, offering them tailor made mobility solutions based on their individual needs. This means that, for the first time, easy access to the most appropriate transport mode or service will be included in a bundle of flexible travel service options for end users.

The MaaS Alliance builds upon the momentum and drive achieved during the last European ITS Congress in 2014 hosted by Helsinki, where MaaS received political support from the Finnish government. “MaaS is a new approach to changing mobility markets. It relies on existing and developing transport services and has huge chance for global scaling”, says the father of the concept Sandro Becherer, CEO of ITS Finland.

According to Rasmus Lindholm, ERTICO’s Director of Communications and Partnerships Development: “MaaS has the potential to fundamentally change the behavior of people in and beyond cities. This is regarded as the greatest paradigm change in transport since affordable cars came into the market”.

Founding Partners of the Mobility as a Service Alliance include Aalborg University, AustriaTech, Ericsson, ERTICO – ITS Europe, Federation International de l’Automobile (FIA) Region Innovation, Ministry of Transport and Communications, Helsinki Business Hub, IRU, Connexit, ITS Finland, ITS Sweden, ITS Ukraine, MOBINET, National Mobile Payments Plc (Hungary), Swedish Ministry of Enterprise and Innovation, Finnish Funding Agency for Innovation (Tekes), Transport for London, Vinnova, University of Tampere and Xerox.

“Bundling services to simplify access to mobility is a key step to ensure the best use of all modes of transport. FIA Region 1 call upon the transport community to develop and combine these services based on the public’s concrete needs. In the FIA, we believe mobility must be safe, sustainable, accessible and affordable for all”, says Jacob Bangsgaard Director General FIA Region 1.
MaaS Ltd to revolutionize the global transportation market.

And will be the World’s first mobility operator.
Maas Vision

We want to:

• Give you back **90 minutes** to your day
• Make sure you have **freedom of movement**
• Take away the pain of ‘how do I get there’
• Make sure you’re not a polluter

“Helsinki’s vision of mobility on demand, a fully integrated public and private transport ‘one click’ solution, carries the scale of ambition you would more typically expect from a tech start-up and is defining mobility as a service agenda globally”
Introducing the world’s first mobility operator

By offering a choice of simple, monthly mobility packages, including everything from public transport to taxis and rental cars, we will transform the way people move for good.
# User profile – segment sizes in Helsinki Region

## THE TOURIST

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Users</strong></td>
<td>1000 - 4000</td>
<td>15m + (trips)</td>
</tr>
<tr>
<td><strong>ARPU</strong></td>
<td>10-20€</td>
<td>20-40€</td>
</tr>
</tbody>
</table>

## THE URBAN SINGLE

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Users</strong></td>
<td>50 000</td>
<td>11m (trips)</td>
</tr>
<tr>
<td><strong>ARPU</strong></td>
<td>5-50€</td>
<td>500-100k€</td>
</tr>
</tbody>
</table>

## THE LONG DISTANCE COMMUTER

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Users</strong></td>
<td>85 000</td>
<td>13m (trips)</td>
</tr>
<tr>
<td><strong>ARPU</strong></td>
<td>10-60€</td>
<td>1k-120k€</td>
</tr>
</tbody>
</table>

## THE SUB URBAN FAMILY

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Users</strong></td>
<td>140 000 (families)</td>
<td>30m + (trips)</td>
</tr>
<tr>
<td><strong>ARPU</strong></td>
<td>15-70€</td>
<td>3k-150k€</td>
</tr>
</tbody>
</table>
View to mobility and user experience in designing the future services

**Situation of life**
What kind of major events does the user experience in her life?

**Lifecycle**
What needs and necessities during phases of life bring?

**INVESTMENT**
"MONTHLY PACKAGE"

**CONSUMPTION**
"SINGLE JOURNEY"

**Hours**
How does the day of a user look like?

**Calendar**
How does the year of the user look like?
Determinants of travel needs are the basis for pricing, and service level agreements (SLA)

- Urgency
- Speed
- Wallet
- Habits / Attitude / Skill
- Weather
- Route
- Luggage / Co-riders / Gear
- Physical Condition
Initial service descriptions
THREE TYPES OF PRODUCTS FOR CUSTOMERS

SINGLE JOURNEY CUSTOMERS

• Customer buys door-to-door transport with zero commitment
• Mobility app to combine all transport services - the fastest way to destination
• Customers receive journey through single window and payment
• Bonus program rewarding frequent use
• Reporting and separate accounts for private and company use
• Ease of use also in trips that are not ordered – Just start your journey with your account that is connected to credit card

HYBRID CUSTOMERS

• Customers include their own car in the service
• Customers buy bonus packages to assist their transport needs
• Car may be bought and financed through operator or separately
• Packages can also be paid by sharing rides or car

MOBILITY PACKAGE CUSTOMERS

• Operator takes care of all transport needs as a service
• Packages contain enough of different transport services, enough journeys, kilometers or all inclusive
• Simple pricing scheme for journeys exceeding the package
• Packages contain bonus features like morning latte or Tesla weekend and are more affordable than when bought separately
Current market players

HIGH PROFIT

LOW PROFIT

LOCAL

GLOBAL
The operator business model strives for scalable digital global business

Best partner for traffic operators:
MaaS operator creates a quantum leap in efficiency increasing the profitability of traffic operators

HIGH PROFIT

LOW PROFIT

LOCAL

GLOBAL

MaaS Operator

Traffic operators
### Benefits for different customer groups

<table>
<thead>
<tr>
<th><strong>CONSUMER</strong></th>
<th>Tailored, situation-specific mobility for the user’s needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRAFFIC OPERATORS</strong></td>
<td>Increased profit through volume, efficiency and demand response</td>
</tr>
<tr>
<td><strong>OTHER OPERATORS</strong></td>
<td>Profit share and new business, ecosystem benefits</td>
</tr>
<tr>
<td><strong>CITIES AND THE STATE</strong></td>
<td>Better service-level for the citizen, budget savings, decrease of congestion, air quality, etc…</td>
</tr>
<tr>
<td><strong>OTHER COMPANIES</strong></td>
<td>Platform to integrate services, platform to innovate new services</td>
</tr>
</tbody>
</table>
First phase 2016

The intended test area for the MVP includes four key transport areas Helsinki, Turku, Tampere and Tallinn:

- HHT Growth Corridor
- Helsinki Region (HSL Traffic area)
- Turku and Turku region traffic area (9 municipalities)
- Tampere
- Tallinn

Looking for 2 other areas
MaaS Ltd. Plan for going global

- 12-2014 call for interested partners
- 2015 Q1-Q2 business plan with 24 organisations
- 2015 Q3-Q4 seed round for Minimum Viable Product (MVP)
- 2016 three areas with open MVP
- 2017 5-10 areas live
- 2018-2020 going global
Helsinki MaaS

City’s enabling actions
Our train of thought

• New mindset
  • What is MaaS? Public transport? Private business similar to travel agency? Or a taxi central?
  • We don’t need to own and control everything!
  • Focus on results, what in the end actually needs to happen?

• What kind of roadmap could lead there?
• What can city do to make that happen OR help that happen

→ City as an enabler!
City as an enabler

• What does MaaS need to succeed and grow?
  ▪ Proofing the concept
  ▪ Paying customers, a market
  ▪ Reference cases

• Our options
  ▪ Spend money, fund operators – NOT
  ▪ Spend money, buy MaaS service – MAYBE
    ▪ Current city provisioned transport via MaaS operators?
    ▪ Show an example by own personnel switching to MaaS?
  ▪ Focus on providing best possible environment for the business - YES
For a city: intriguing opportunity and an organisatory challenge

- **Transport**: Reduce need to own a car → traffic fluency, parking space
- **Economy**: New business
- **Sustainability**: Traffic emission targets

**Diagram**:
- Economy
  - New business
- Transport
  - Reduce need to own a car → traffic fluency, parking space
- Sustainability
  - Traffic emission targets
Ingredients for successful MaaS

FRAMEWORK
• Deregulation
• Legislation (eg planned finnish trial)
• Strategies, targets eg transport policy, climate
• Support for business development, investment

TOOLS
• Open Data
• Open interfaces & APIs

ENABLING CULTURE
• Fresh mindset, dare to try
• Embrace digitalization
• Innovative procurement
• Subsidies rethought
• Mobility management: Incentives for choosing alternative mode of transport

CUSTOMERS
• Able & open-minded citizens
• Switch from company cars to MaaS services

Service producers
Mobility operators
Users
Any lessons learned?

- Be more flexible, maintain pace
- Wide cooperation across public sector
- Involve stakeholders outside your own peer
- Organisations not able to grasp new things that fall outside /between departments’ comfort zones
- Traffic planning vs Smart Mobility = focus on infrastructure vs focus on the function
Helsinki City Actions

1. Discussion between stakeholders
2. Revision of legislation and regulation
3. Application of appropriate regulation
4. Deregulation of public transport ticket sales
5. Establishment of the mobility operator market
6. Revision of purchase and subsidization procedures
7. Piloting
Helsinki MaaS
Action plan *DRAFT*

Coordination

- Manage city’s actions, cooperation, R&D and communication of all MaaS activities

Legislation, regulation

- Ensure that legislation, city’s own regulation, transport purchase and other administrative mechanisms develop to benefit MaaS operator business

Business support

- KPI: new mobility related business and international investment to Helsinki region

City as a platform

- Support development of open interfaces and global interoperability
- Ensure necessary infrastructure for MaaS operation is in place

Users

- Collect feedback and needs from users, support piloting of new innovative mobility services and facilitate the actions directed to MaaS users, eg campaigns
Currently, transport services are provided and subsidized separately

Purchase of transportation (incl. socially necessary transportation), public subsidization of PT

Public transport planning authorities and other transport service producers

- Fleet
- Infrastructure
- Data
In MaaS, all transport services are provided and subsidized jointly through mobility operators.

Purchase of transportation (incl. socially necessary transportation), subsidization of PT

USER

Mobility operators

Public transport planning authorities and other transport service producers

Fleet
Infrastructure
Data
Why Cities and MaaS?

• **Transport policy goals achieved**
  – Without public spending
  – Without banning cars

• **New tools for managing transport**
  – Incentives
  – Game rules
  – Customer rights

• **But it won’t happen without strong policy leadership**

• **What is needed**
  – Roaming of transport (operators accessing all transport modes)
  – Game rules (Market description, Data transfer and ownership, customer rights etc)
  – Possible incentives to end users to kick-start markets and to cover low-density areas
  – Mindshift from provider to enabler
SEE MAAS LIVE IN 2016

sampo.hietanen@maas.fi
+358 40 565 7688

sami.sahala@forumvirium.fi
Offering a Service Level of Privately Owned Car Using "Omnimodality"

- Buying a car: 120 €
- Using a car: 120 €
- Transportation services: 60 €

Same promise of mobility by using more effective tools

MaaS engine
The Market Opportunity: Traffic is a 10 000 B€ market globally

- **Global Traffic market**: 10,000 B€
- **Global Transport infrastructure**: 1,000 B€ (McKinsey 2013)
- **Transportation of goods, logistics**: 33,1B€
- **Households**: 16 B€
- **Government, Municipalities, Subsidised transport**: 3,9B€

http://impulssi.lvm.fi/2015/02/02/liikenne-ja-viestinta-kuuluvat-yhteen/
The creation of MaaS operator(s) will increase household spending on transportation services and lessen the need to own a car for households. Hence while the total spending of households to transportation increases with inflation, the spending for services may even two-fold.

### Spending(€)/person/month

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2020 (projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL for transportation</td>
<td>248 €</td>
<td>260 €</td>
</tr>
<tr>
<td>Transportation Services</td>
<td>78 €</td>
<td>166 €</td>
</tr>
</tbody>
</table>

### Total Market for Transportation Services / month

<table>
<thead>
<tr>
<th></th>
<th>Finland in Total</th>
<th>Capital City Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL Market</td>
<td>210 m€</td>
<td>42 m€</td>
</tr>
<tr>
<td>Capital City</td>
<td>450 m€</td>
<td>89 m€</td>
</tr>
</tbody>
</table>

### Total Market for Transportation Services / year

<table>
<thead>
<tr>
<th></th>
<th>Finland in Total</th>
<th>Capital City Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL Market</td>
<td>2,4 bn€</td>
<td>0,5 bn€</td>
</tr>
<tr>
<td>Capital City</td>
<td>5,4 bn€</td>
<td>1,1 bn€</td>
</tr>
</tbody>
</table>

Finnish household yearly spending on average is 930 € for transportation services, 2450 € for buying vehicles and 2730 € for using the vehicles. The total spending was 15.3 bn€ of which for transportation services 2.4 bn€. We project that the use of transportation services will increase while the spending on privately owned cars will diminish. (Source: Tilastokeskus)
Market opportunity: Household expenditure on transport in Europe

Annual spending in EUR

- Germany
- United Kingdom
- France
- Italy
- Spain
- Netherlands
- Poland
- Belgium
- Austria
- Greece
- Denmark
- Portugal
- Finland
- Romania
- Czech Republic
- Hungary
- Bulgaria
- Slovenia
- Lithuania
- Serbia
- Slovakia
- Luxembourg
- Latvia
- Estonia
- Cyprus
- Iceland
- Malta
- Macedonia

Source: Eurostat

*Current prices. All statistics for 2013 except Spain and Romania 2012.
It scales because the components are already there -- and growing
The long term aim of the MaaS ecosystem is to enable the innovation of novel services linked to its core business. The first mobility service is created by combining the existing services that are essential to deliver seamless mobility.

Second, the objective is to connect sharing services to the ecosystem. This requires some legislative issues to be resolved at least in Finland.

The third cycle of service innovation is to enable the creation of new services related to moving packages, goods and cargo in a tailorable manner.

Finally the MaaS ecosystem fosters the innovation of entirely new complementary services that challenge the existing norms.
The best way to everywhere

Mobility as a Service

PRIVATE AND SHARED TRAFFIC

DEMAND-BASED TRAFFIC

SCHEDULED TRAFFIC
Seed investors and funding

- Over 2,2 M€ in funding for Minimum viable product
- Finnish Funding Agency for Technology and Innovation Tekes
- Transdev, a French transportation giant offering land, rail and passenger transport services
- Karsan Otomotiv Sanayii and Ticaret AS, a leading car-industry family of Turkey
- Sampo Hietanen CEO and founder
- Kaj Pyyhtiä CXO and co-founder
- InMob Holdings
- Korsisaari
- Neocard
- GoSwift
- MaaS Australia
- Goodsign
- IQ Payments
- Delta Capital Force.