

MaaS4EU Virtual Final Conference
October 29th, 2020



MaaS4EU

Business Models

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Our role in MaaS4EU

...to explore how MaaS will affect current travel behavior and design prototype business models for MaaS



End users' preferences for MaaS

Demand for MaaS

Stakeholders' viewpoints and requirements to join MaaS

How MaaS will affect their businesses?

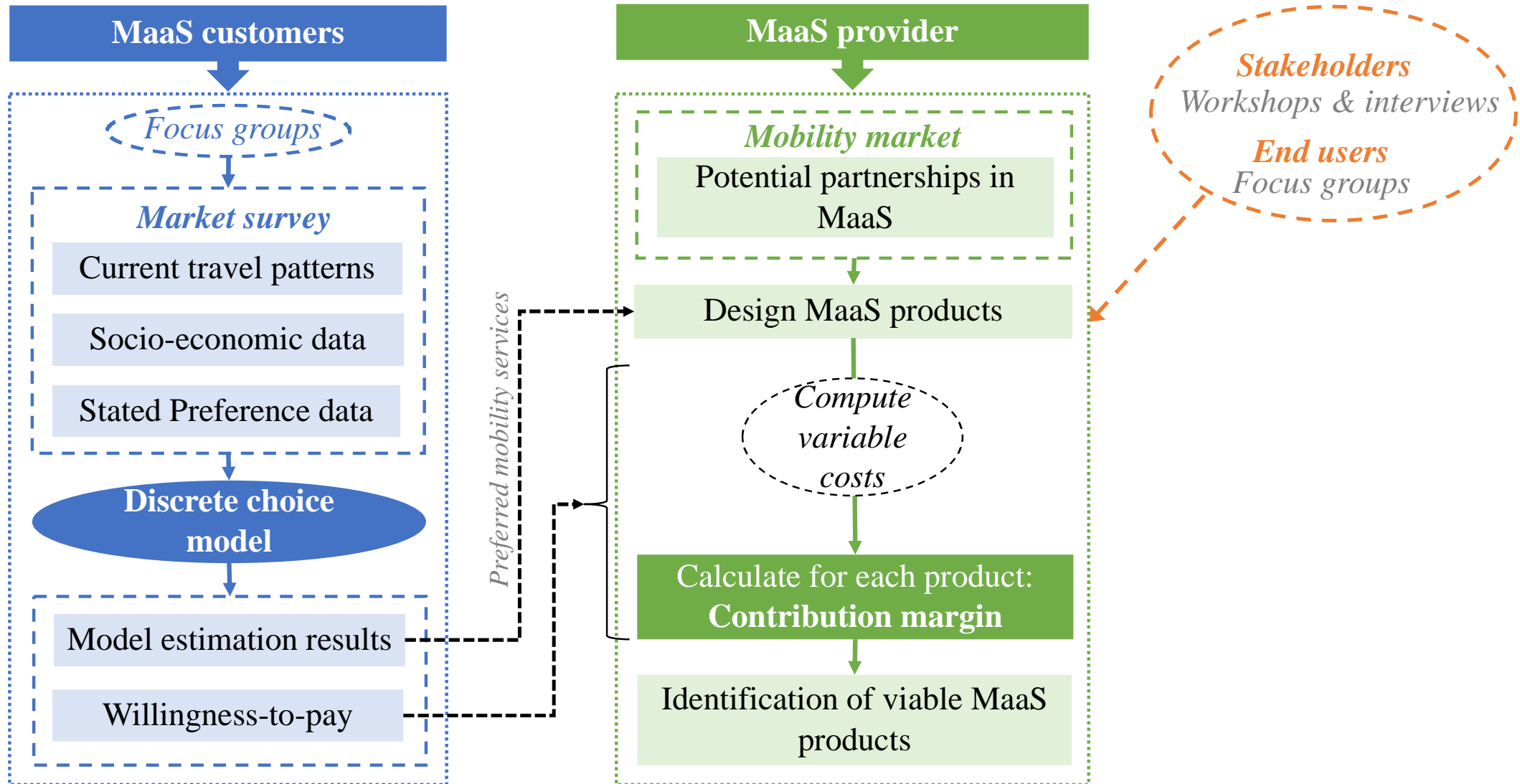


Business models for MaaS

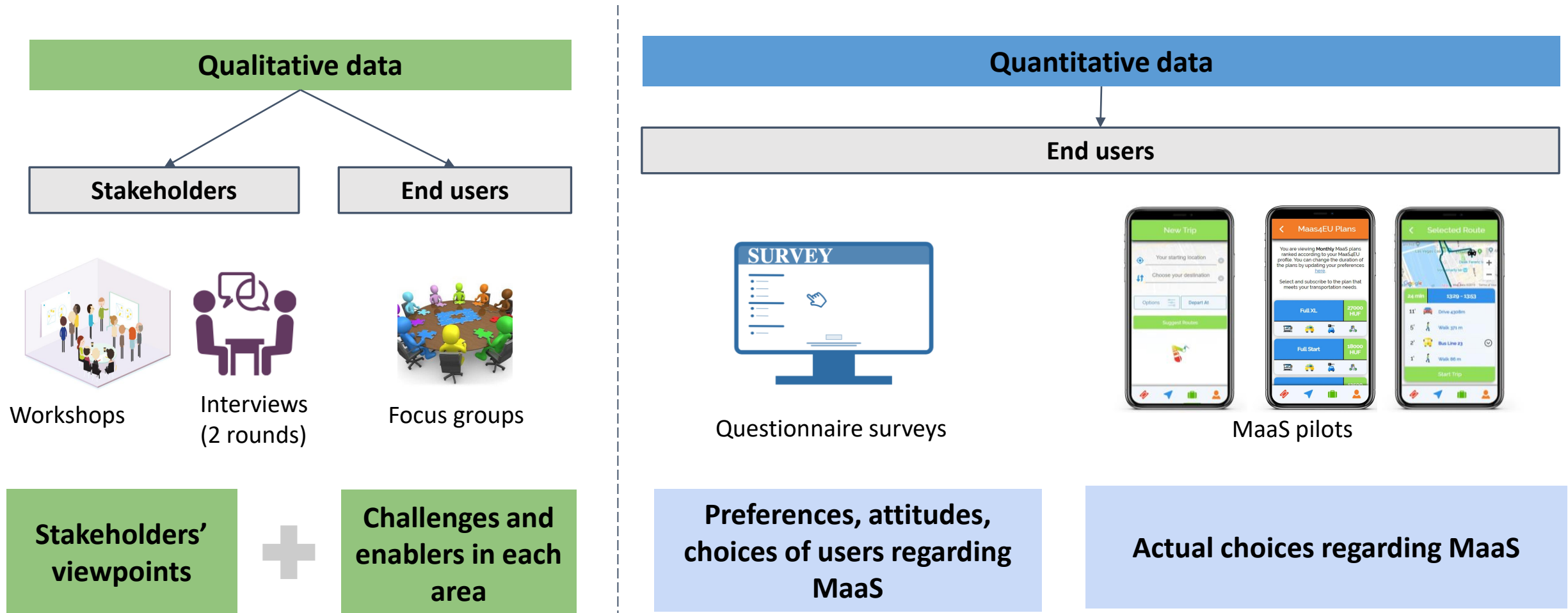
Key research questions:

- **MaaS scheme:**
 - MaaS ecosystem and involved actors
 - Potential governance models for MaaS
- **Potential barriers and enablers for MaaS actors to implement or join MaaS**
- **MaaS Business Models (Products and Pricing):**
 - Which services should be included in a MaaS package to increase its value proposition?
 - MaaS pricing (considering people WtP)

Methodology



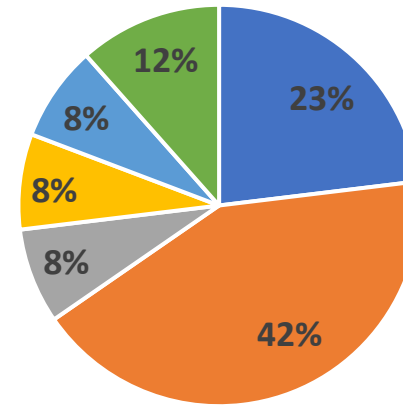
Mixed-method approach to collect data



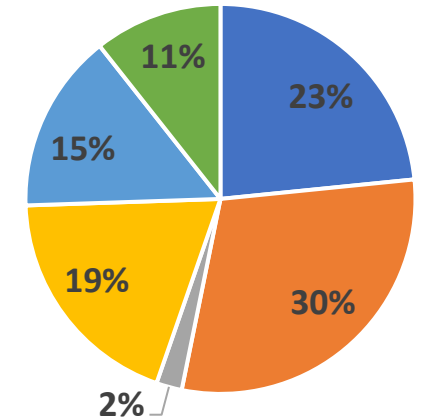
Stakeholders' Data (1/2)



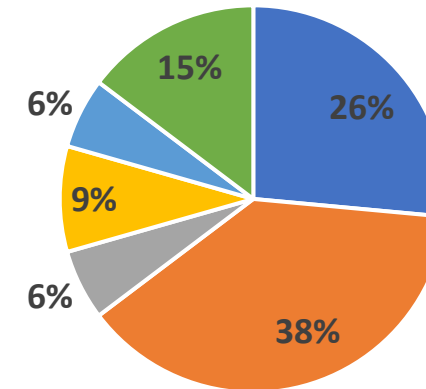
Luxembourg



Greater Manchester



Budapest



3 Workshops (one in each pilot area) organized in round-table discussions

- Structured questionnaire regarding:
 - MaaS key actors,
 - MaaS benefits,
 - Most appropriate revenue allocation models,
 - Financing and funding sources,
 - Potential barriers for MaaS implementation

■ Research / Academia

■ Government/Local Authority

■ IT and data company

■ Public and private transport operator

■ Transport consulting company

■ other

Stakeholders' Data (2/2)

In-depth interviews



Round 1: Potential MaaS operators

- 4 stakeholders in the 3 pilot areas
- Derived their opinion about
 - Critical aspects
 - Challenges
 - Opportunities
 when developing a MaaS scheme in their city

Round 2: MSPs and Authorities

- **>31 stakeholders** (6 Budapest, 6 Manchester, 9 Luxembourg, >10 EU-wide)
- Motivations and challenges for participating in MaaS
- Business and organizational models (MaaS operator, legal status, broker, products)
- Commercial agreements
- Technological readiness for MaaS
- Consumer and passenger rights

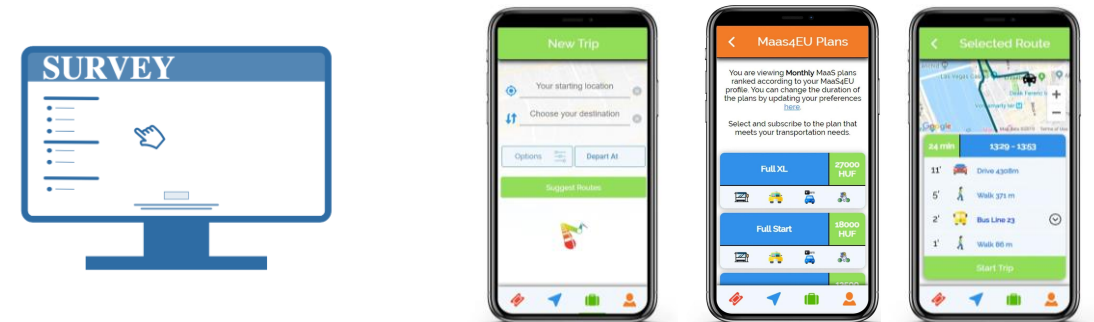
End users' data

Focus Groups



- Discussion guide which included:
 - users' needs
 - privacy issues
 - preferences for MaaS services
 - viewpoints on MaaS app features
- 5 Focus groups, different end users' types, 40 individuals

Questionnaire surveys and app data



- Collection of travel-related data in different waves
- Use of the demand analysis to design the business models for each area
 - Which services should be included in a MaaS package?
 - Willingness to pay



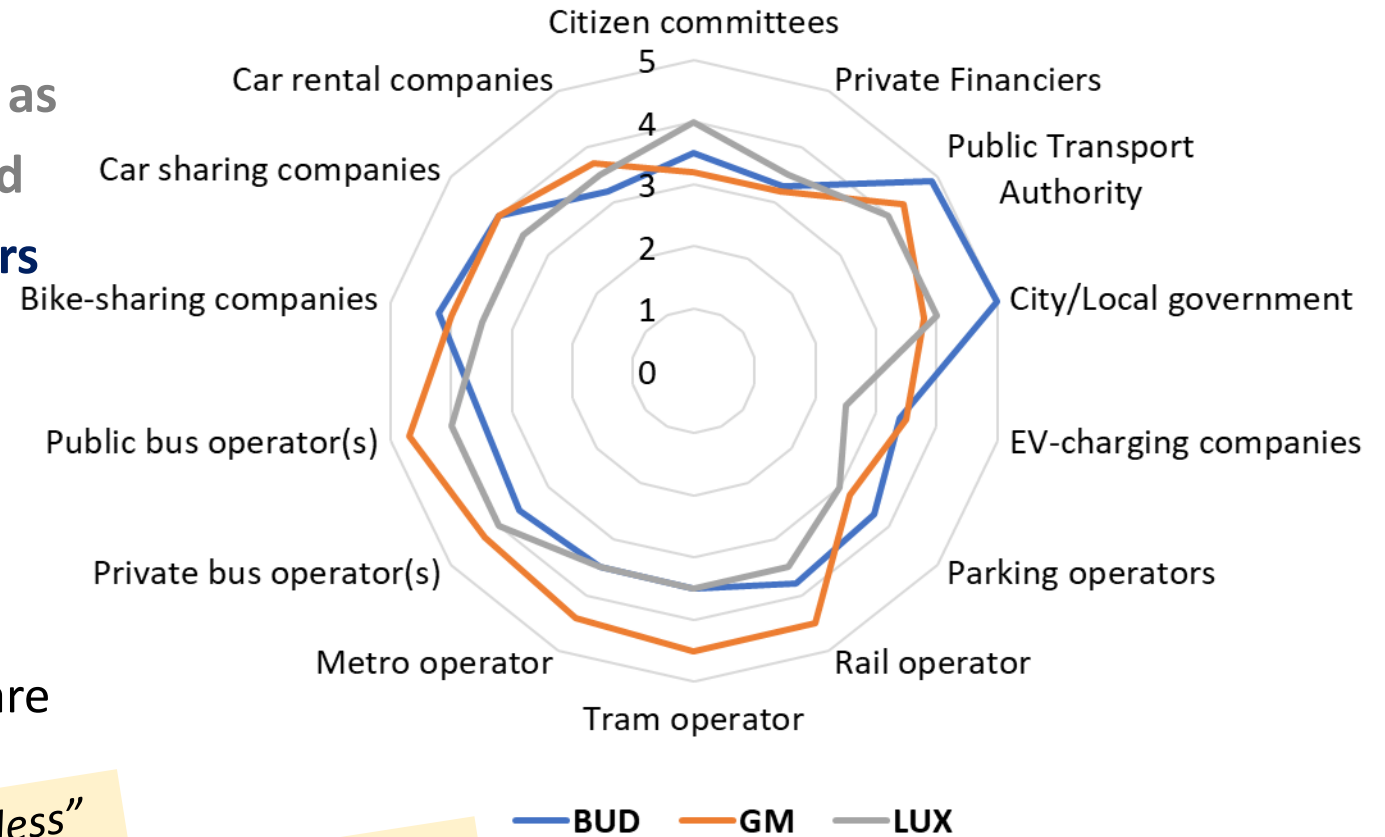
MaaS scheme

MaaS Ecosystem Key Actors

Mobility service providers are regarded as the most important actors in MaaS and especially the public transport operators in a city/region

EU: the role and participation of PT authorities is considered critical for a successful deployment of MaaS.

USA: emerging mobility service providers are more likely to be the champions of MaaS.



Scale from 1 to 5 where 1 means "not important" and 5 "extremely important"

Polydoropoulou, A., Pagoni, I., Tsimipa, A., Roumboutsos, A., Kamargianni, M., & Tsouros, I. (2020). Prototype business models for Mobility-as-a-Service. *Transportation Research Part A: Policy and Practice*, 131, 149-162.

"MaaS without public transport is meaningless"

"Public transport operators should join their forces and materialize MaaS"

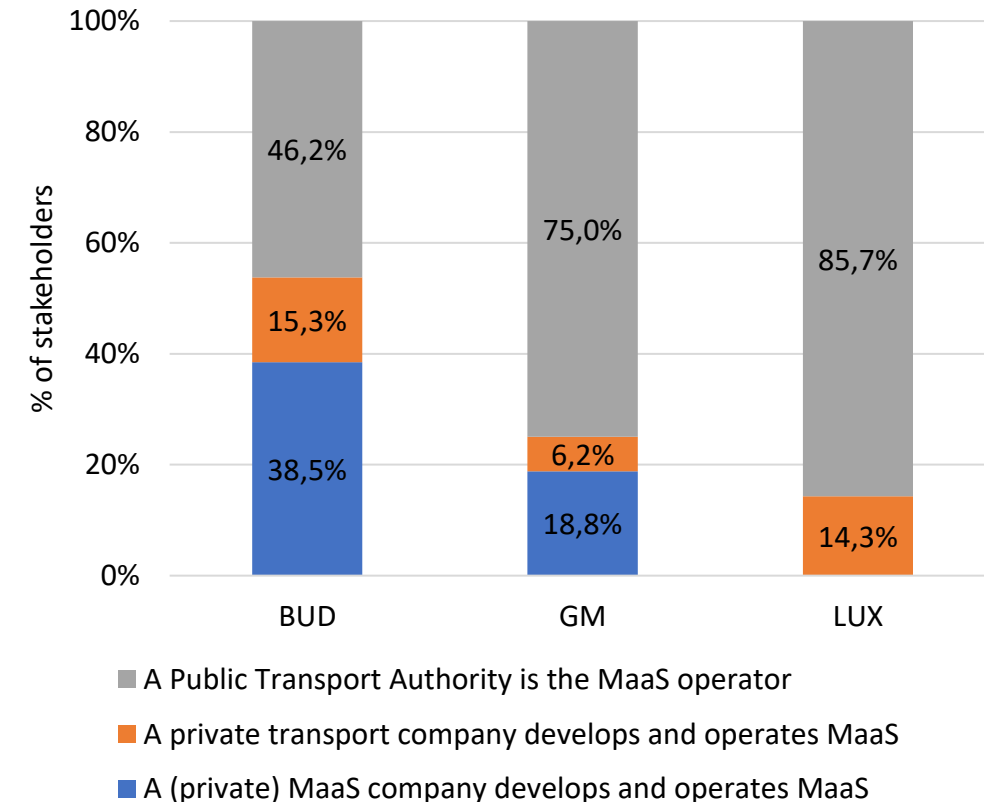
MaaS operator

Current state of practice: Little involvement of public authorities in the MaaS operator's role.

Stakeholders viewpoints: **PTA** provide the main transportation system of a city/region, i.e. metro, tram, buses and trains, and manage other key MaaS elements (scheduling, ticketing)

could deliver a successful MaaS scheme

Public transport entities can **build the needed trust** for such an emerging scheme with minimal risk compared to a private company.



PTA: not willing to take this role



“Public could tie all the kind of different parties together”

“Public authority would guarantee equal opportunities for every transport operator to be included in the scheme”

Collaboration among MaaS actors

Within-MaaS scheme competition:

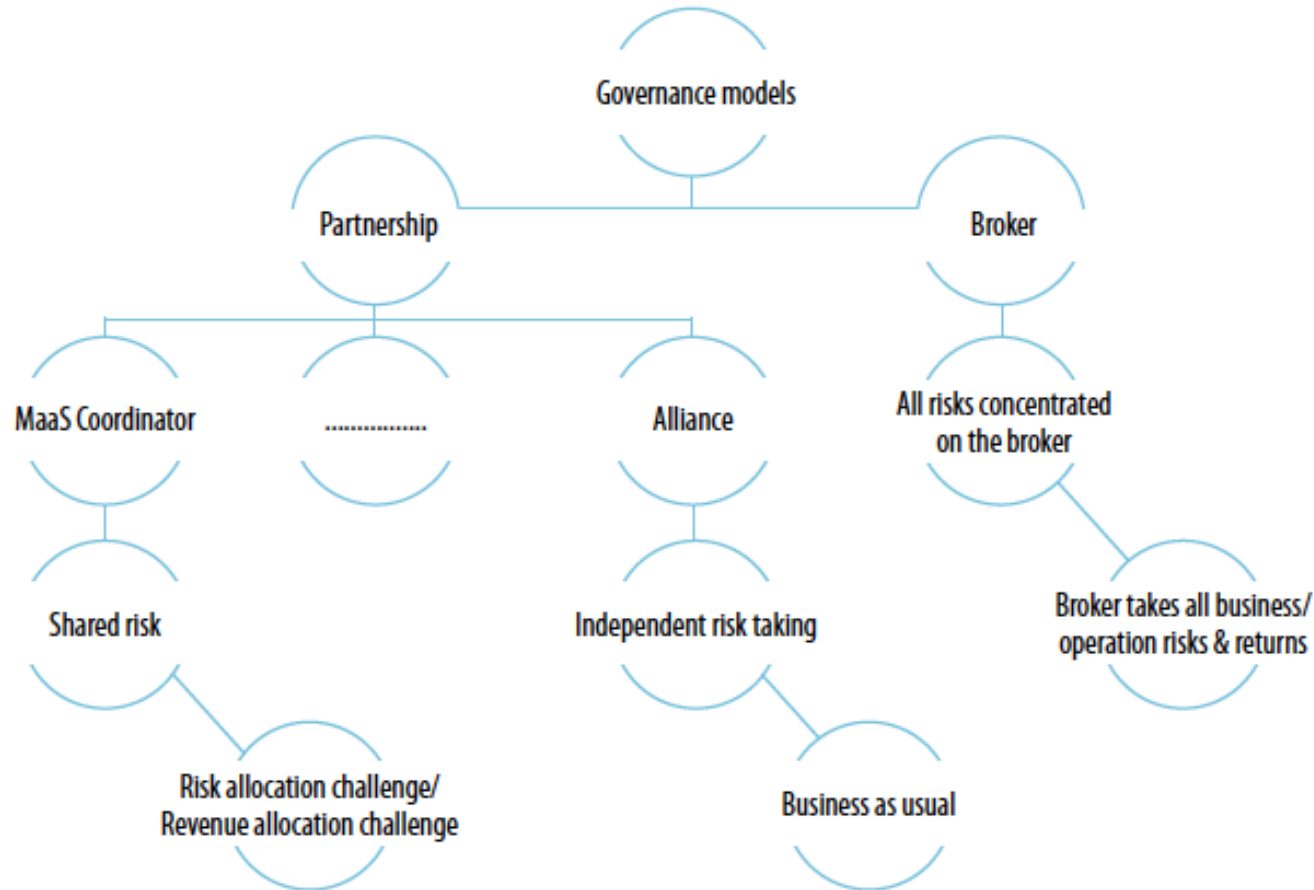
- Competition could be a challenge for the participation of some operators
- Some operators open to collaborate with competitors - competition not preventing them from participating in a MaaS scheme.
- BUT they prefer exclusivity in the scheme.

“We'd obviously prefer if we were, the only ones. But I'm not sure if it would be a blocker”

Allocation of responsibilities within the MaaS scheme

- Responsibilities among the MaaS actors should be well clarified (cooperation agreements)
- The MaaS operator is responsible for the user , while every MSP should take responsibility for their services

MaaS Governance model



MaaS Schemes	Coverage Area	In Operation Y/N	MaaS Operator Type	Urban Public Transport	Bike Sharing	Car-Sharing	Car Rental	Taxi	Rail	Parking	Flights	Coach	Governance Model
STIB+ Cambio	Brussels	Y	PU	X	X	X		X	X	X			Alliance
Qixxit	Germany	Y	PR						X		X	X	Broker Level 2
Moovel	Germany	Y	PR			X	X	X	X				Broker Level 2
Switchh	Hamburg	Y	PR		X	X							Partnership Level 2
Hannover-mobil	Hannover	Y	PU			X		X	X				Partnership Level 2
Mobility Mixx	Netherlands	Y	PR	X	X	X	X	X	X	X			Broker Level 2 & 3
NS-Business Card	Netherlands	Y	PR	X	X	X	X	X	X	X			Broker Level 3
Radius Total Mobility	Netherlands	Y	PR	X	X	X	X	X	X				Broker Level 3
TransitApp	US, Canada, Europe, Australia	Y	PR	X	X	X		X					Broker Level 1
Tuup	Finland (Turku region)	Y	PR	X	X	X	X	X			X		Broker Level 1 & 2
Whim	Helsinki, Antwerp, Birmingham	Y	PR	X	X	X	X	X	X				Broker Level 3 & 5
SHIFT	Las Vegas	N	PR		X	X	X						Broker Level 3 & 5
UbiGo	Gothenburg	N	PR	X	X	X	X						Partnership Level 5

Roumboutsos, A., Polydoropoulou, A., Pagoni, I., Tsimpa, A. (2020). MaaS: The Revenue Allocation Challenge. Accepted for publication in UNECE Report "Transport Trends and Economics 2018–2019: Mobility as a Service"



Maas products

Demand Analysis

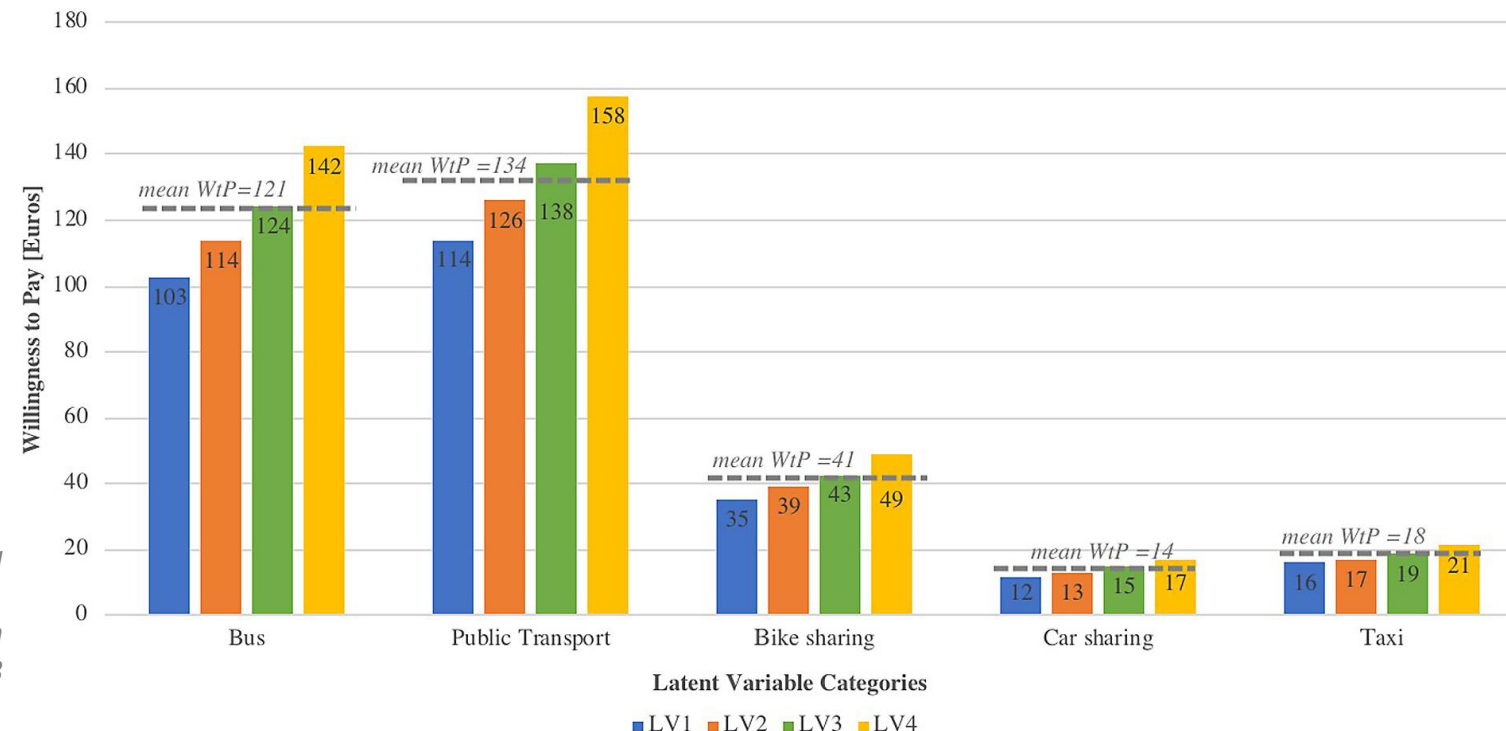
- MaaS → new product → **need to predict individual behavior and market demand**
- Demand analysis in different phases of the project
- **Advanced behavioral models based on discrete choice analysis**, account for attitudes and perceptions

Outputs to business models

- Mobility services to be included in the MaaS products
- Willingness to pay

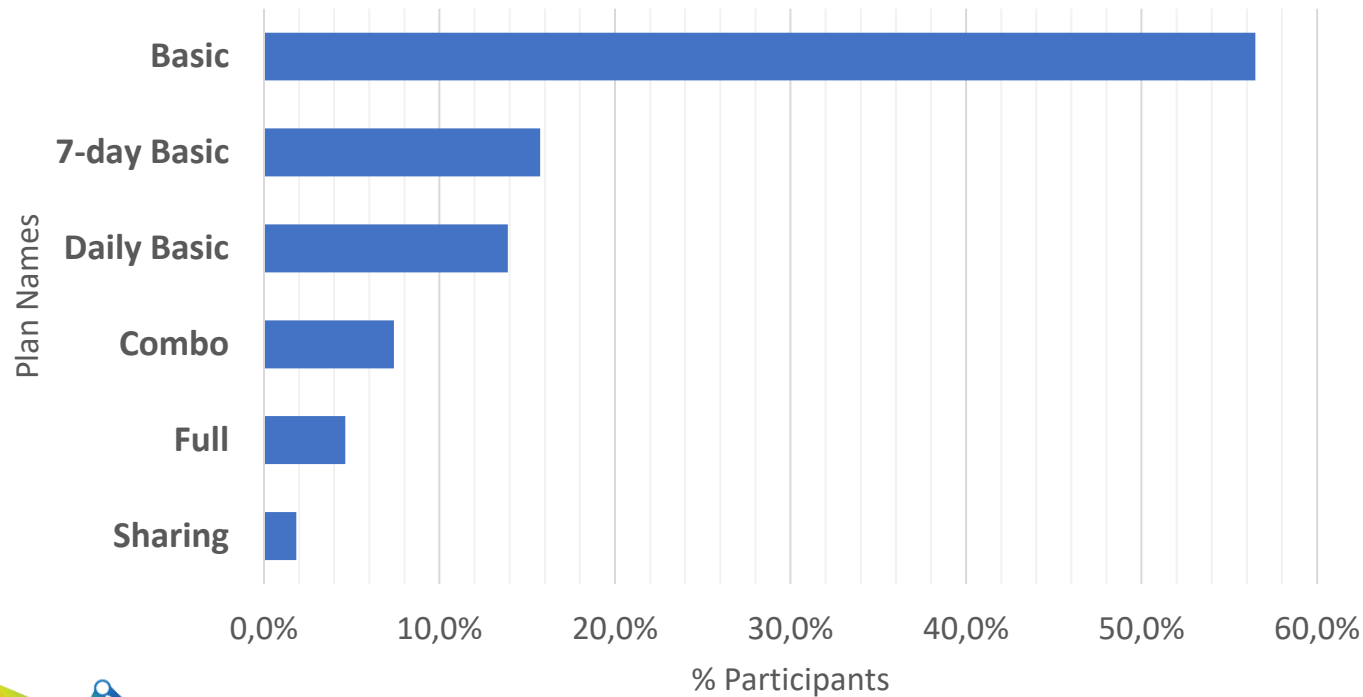
Example for Manchester →

Polydoropoulou, A., Tsouros, I., Pagoni, I., Tsimpa, A. (2020). Exploring Individual Preferences and Willingness to Pay for Mobility as a Service. Transportation Research Record: Journal of the Transportation Research Board, 1-13



MaaS Products in Budapest

Included mobility services in the pilot:



Basic

Monthly Budapest-pass

9,500 HUF/month

Combo Plus

Monthly Budapest-pass

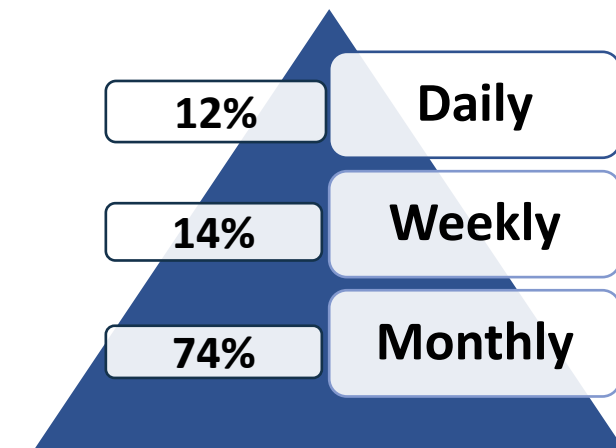
+

Get 6,000 HUF for your taxi trips

+



























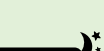
MOL Bubi monthly pass (max. 30 min per ride)

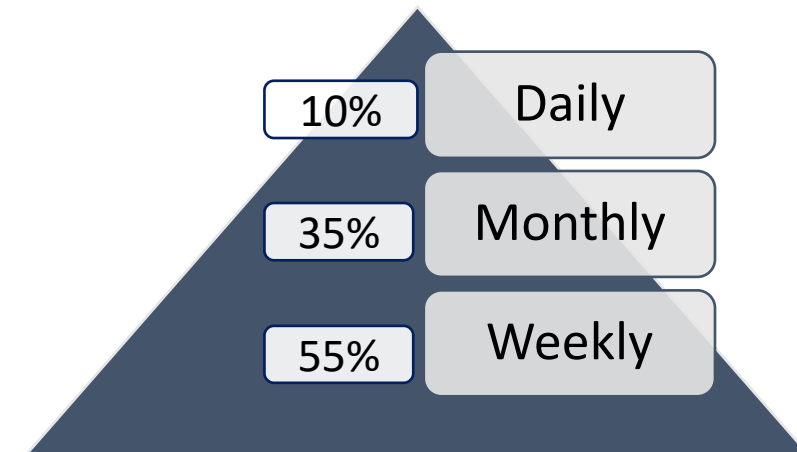
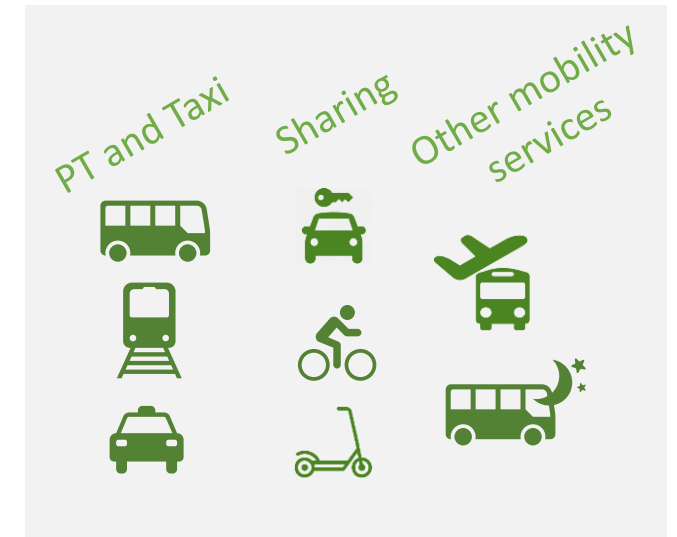
15,500 HUF/month



MaaS Products in Luxembourg

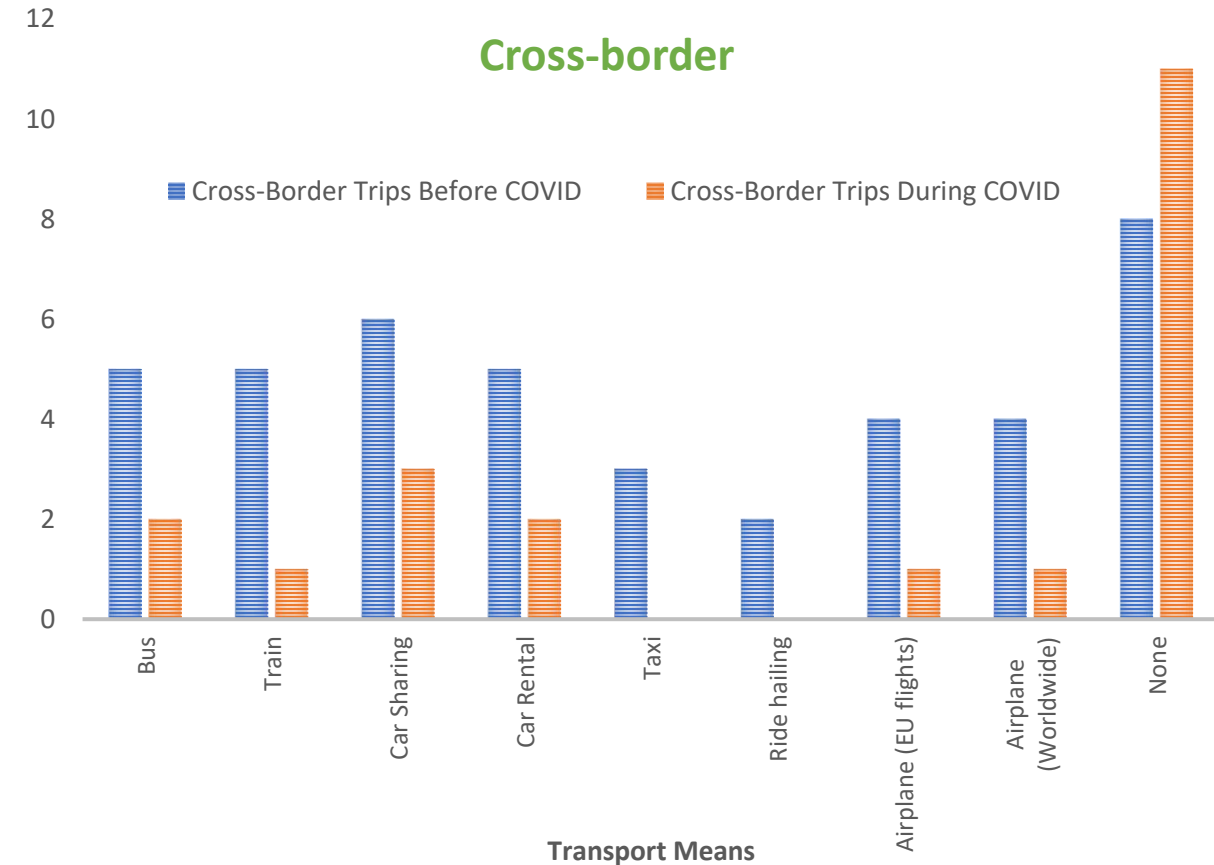
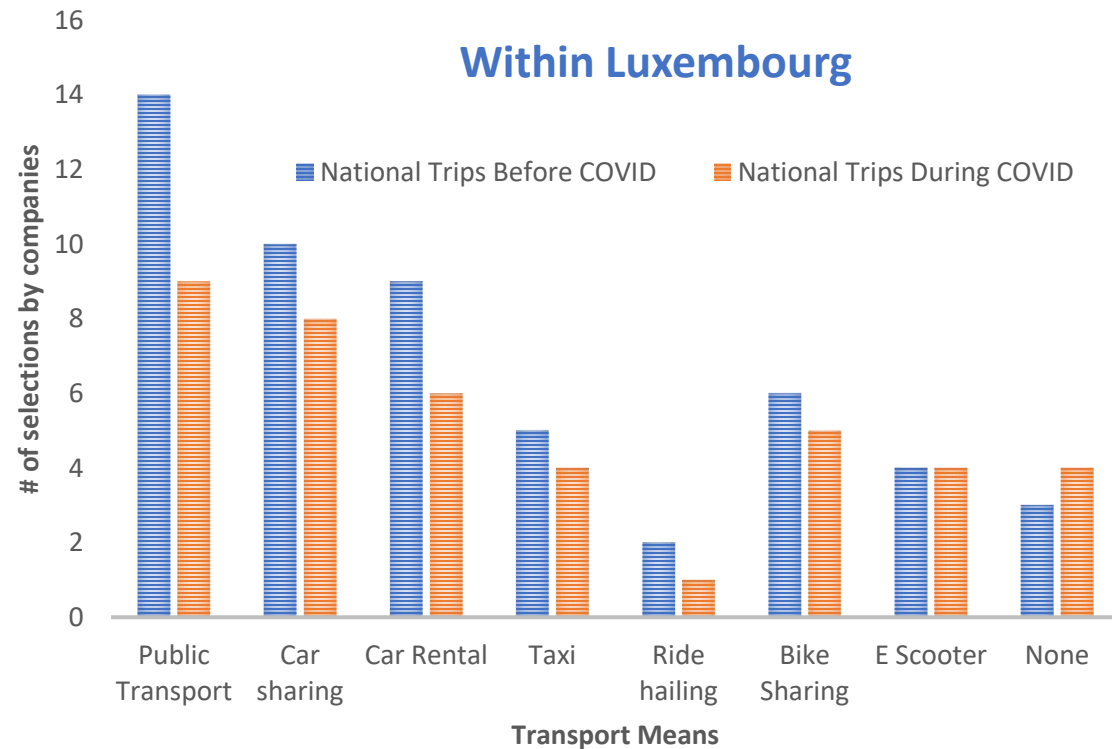
← Increasing popularity

Full Go	Full weekend	Shuttle Airport	Combo Airport Drive	Combo Airport Go	Combo car sharing
					
					
					
					
					
					
					
€145/month	€87/month	€90/month	€216/month	€95/month	€92/month



B2B MaaS Products in Luxembourg

- Survey to companies in the greater region of Luxembourg



MaaS products in the COVID-19 period

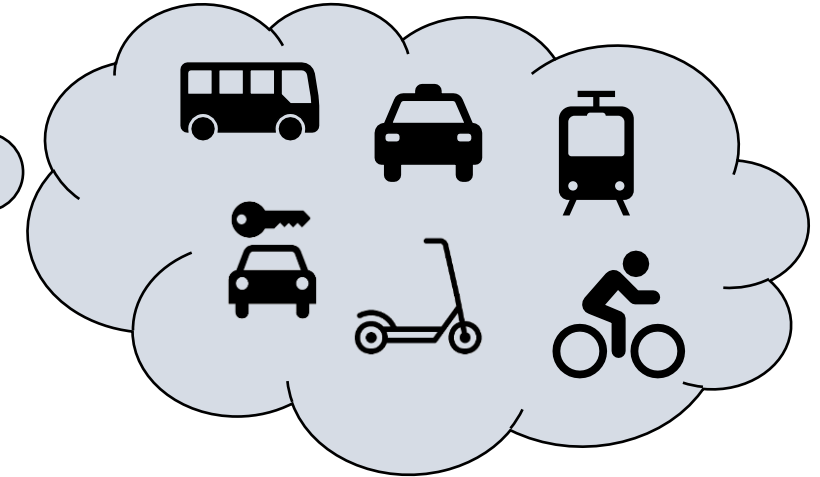
- Manchester pilot
- **Need for different MaaS products**
 - Teleworking → MaaS packages with lower amount of mobility offerings (e.g. usage of mobility services for some days during the month)
 - Governmental guidelines to avoid public transport
 - Changes in people's preferences towards public transport and sharing schemes
 - Active modes: bike, scooter



MaaS Products in Manchester

Considering the new situation of Covid-19

Several mobility services



Small PT & Uber-X

Get 10 daily passes for bus & tram

+

Get £40 with Uber-X (for trips up to 5 miles)

£97/month

Taxi sharing XL

Get £50 for your taxi trips

+

8 hrs car sharing

+

Included (max. 30 min per ride)

£78/month

Combo Full Sharing

10 daily passes for bus & tram

+

Get £40 with Uber-X (for trips up to 5 miles)

+

£50 for your taxi trips

+

2 hrs car sharing

+

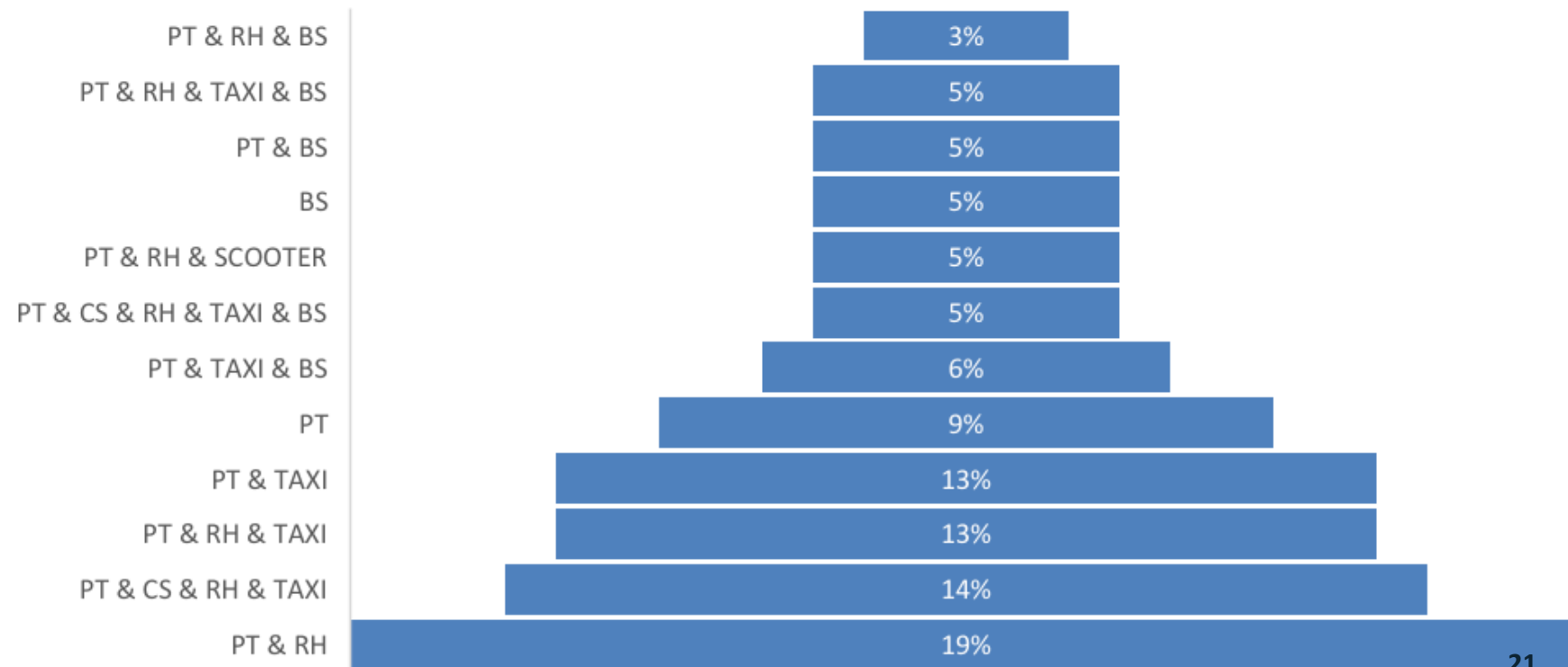
Included (max. 30 min per ride)

£161/month

MaaS Products in Manchester

- **Popular mobility services:**
 - Public Transport (almost in all designed products)
 - On-demand (taxi and ride hailing)
- **Not popular services:**
 - Car sharing
 - Scooters

“Design your ideal MaaS product”



Viability of business models

- In some cases, **customers' WtP > MaaS operator's costs** to provide the product
- **WtP < MaaS operator's costs** --> not viable products



MaaS operator should secure discounts from mobility service providers

- MaaS market is still at an early stage and even commercial MaaS schemes led by private companies rely on investors in order to offer and further develop their services



What we have learned...



- Variety of (emerging) mobility services
- Coopetition among partners
- Trust among the involved actors and the MaaS operator (*BUD, MAN*)
- Investment in new technology (*e.g. LUX: small companies which do not have the financial resources to invest in MaaS*)



- Citizens with strong reliance on their private cars (*MAN, LUX*)
- + Citizens positive towards new technologies (*MAN*)



Strong support from the public transport authority (*BUD*)
Prevailing regulatory framework



Electronic ticket (*-BUD, +LUX, +MAN*)
APIs (*+planning and booking data, - ticketing and payment data*)



More details in our publications..

- Polydoropoulou, A., Pagoni, I., Tsirimpa, A., Roumboutsos, A., Kamargianni, M., Tsouros, I. (2020). **Prototype business models for Mobility-as-a-Service**. *Transportation Research Part A: Policy and Practice*, 131, 149-162.
- Polydoropoulou, A., Pagoni, I., Tsirimpa, A. (2020). **Ready for Mobility as a Service? Insights from Stakeholders and End-users**. *Journal of Travel Behaviour and Society*, 21, 295-306.
- Pagoni, I., Gatto, M., Tsouros, I., Tsirimpa, A., Polydoropoulou, A., Galli, G., Stefanelli, T. (2020). **Mobility-as-a-service: insights to policymakers and prospective MaaS operators**. *Transportation Letters*, 1-9.
- Polydoropoulou, A., Tsouros, I., Pagoni, I., Tsirimpa, A. (2020). **Exploring Individual Preferences and Willingness to Pay for Mobility as a Service**. *Transportation Research Record: Journal of the Transportation Research Board*, 1-13.
- Tsouros, I., Polydoropoulou, A., Tsirimpa, A., Pagoni, I. (2019). **MaaS for tourists? Modelling user preferences in two European cities**. 9th International Congress on Transportation Research, Athens, Greece, 24-25 October, 2019.
- Tsirimpa, A., Tsouros, I., Pagoni, I., Polydoropoulou, A. (2020). **Modelling MaaS plans and commitment length: Experience from two European cities**. 5th Conference on Sustainable Urban Mobility (CSUM2020), 27-29 May 2020, Skiathos island, Greece.
- Polydoropoulou, A., Tsirimpa, A., Pagoni, I., Tsouros, I. (2018). **Mobility-as-a-Service Ecosystem: Insights to policy makers**. 7th Symposium of the European Association for Research in Transportation conference (hEART 2018), 5-7 September, 2018, Athens, Greece.



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THANK YOU

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