



MyCorridor 3rd Pan European Workshop

‘What we learned from MaaS’

27 October 2020

9.30h-13.15h

WebEx online meeting



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 636626

Agenda

09.30h-09.40h | Introductory remarks and housekeeping rules

9.40h-9.50h | Welcome from the European Commission

9.50h-11.00h | Session 1 - MaaS in Europe – future challenges and opportunities

11.00h-11.05h | Coffee break

11.05h-11.50h | Session 2 - Lessons learned and experiences from the three MaaS projects

11.50h-12.50h | Session 3 - Interactive session organised by MyCorridor

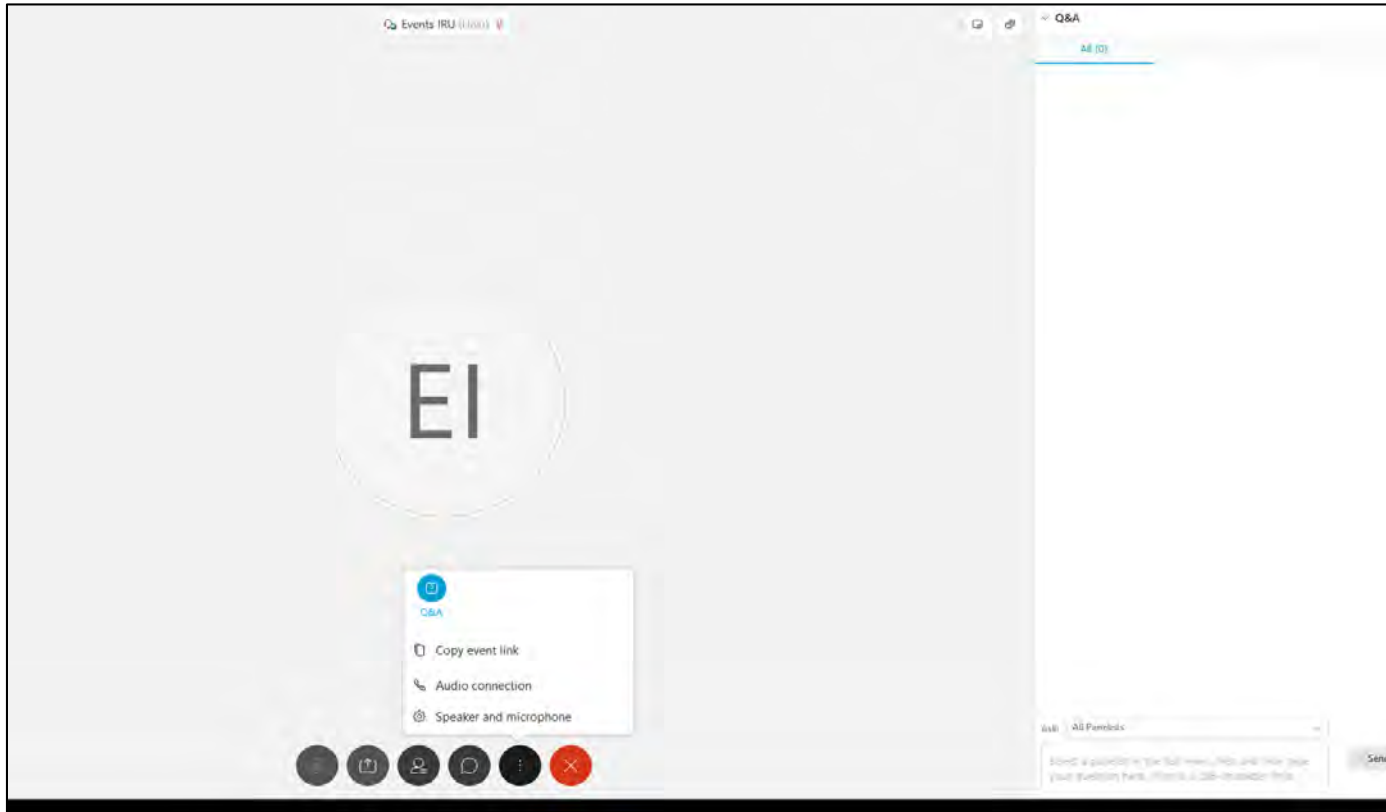
12.50h-13.15h | Concluding remarks

Introductory remarks and housekeeping rules

- Roberto Palacin, Project Coordinator – University of Newcastle

Webinar Housekeeping Rules

- Ensure you have a good internet connection
- You might want to use a headset
- You will be muted from the beginning to avoid any noises
- The chat will be public– your questions will be seen by the speakers and the audience
- Type your questions into the chat on the right of your screen
- Questions will be answered at the end of each sessions



1 2 3 4 5 6

7

1. Microphone
2. Share screen (if permitted)
3. Participants
4. Chat
5. Additional options
6. Close and leave the event
7. Questions and Answers panel
8. Interface and visibility options

Welcome from the European Commission

- Claudia Ciuca, Project Officer - INEA

Session 1: MaaS in Europe

- Eric Mink, Ministry of Infrastructure and Water Management - The Netherlands
- Sagar Singamsetty, Senior Adviser – IRU
- Piia Karjalainen, Secretary General – MaaS Alliance
- Sonila Metushi, Policy Advisor – KNV (Royal Dutch Transport Federation)





Towards an integrated data-driven ecosystem for mobility

MaaS: the Dutch approach

MyCorridor

27 October 2020 – 9:50 - 10:25 CET

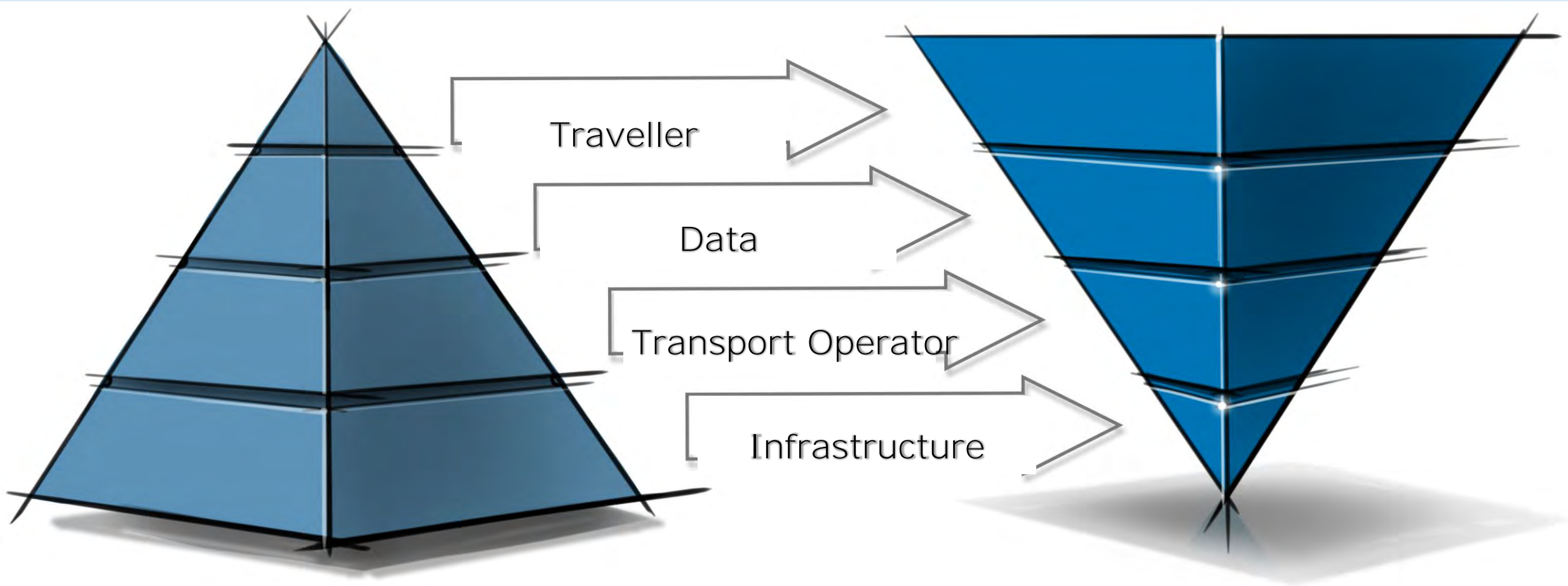
Eric Mink

MaaS program the Netherlands

www.maas-programma.nl

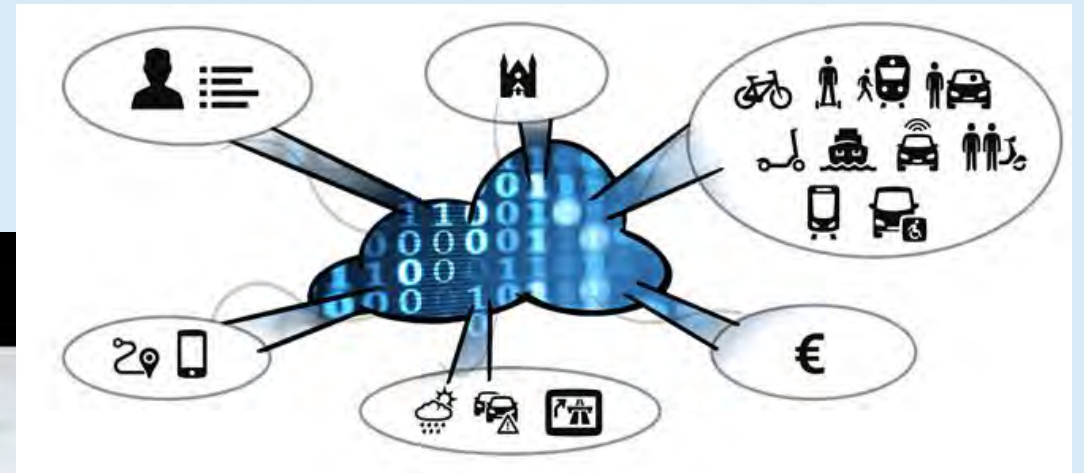


Mobility transition: from infra- to data-driven



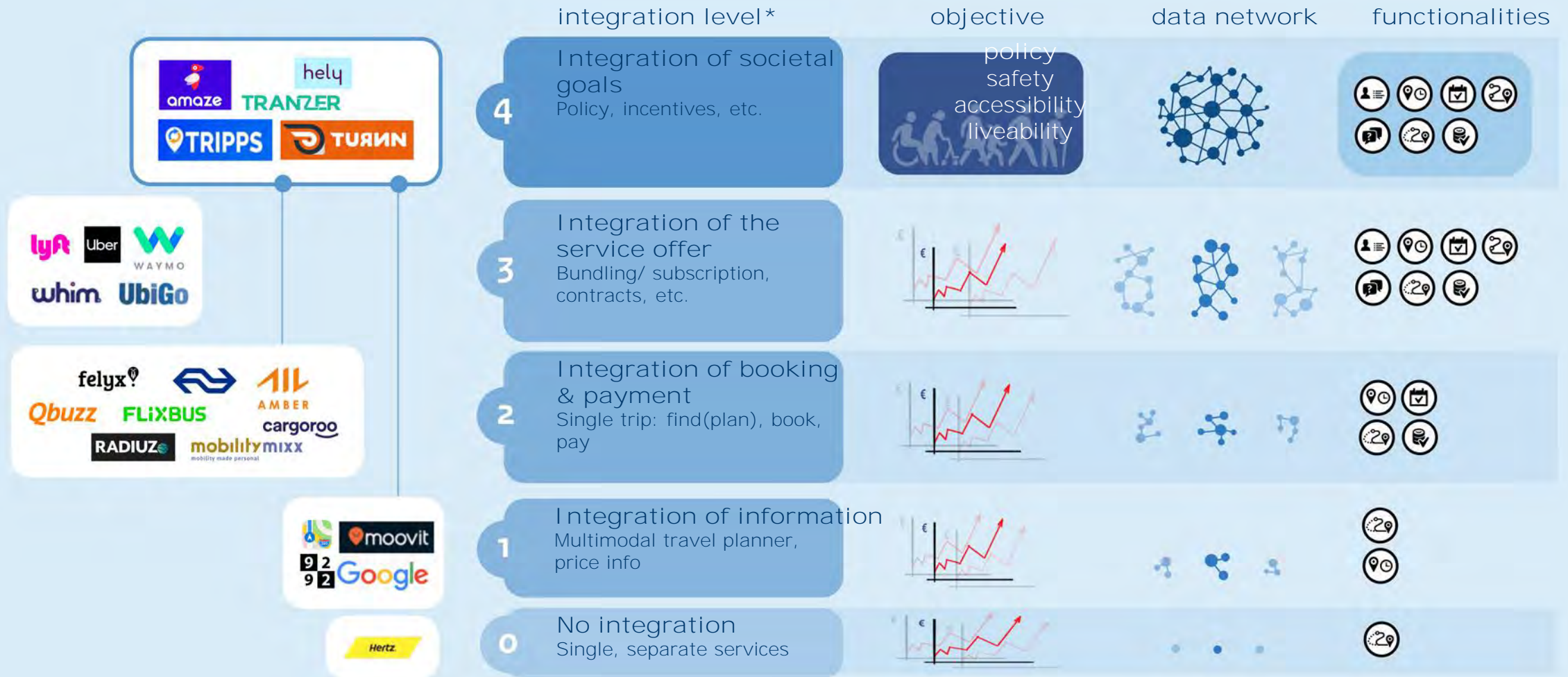


MaaS in the Netherlands: A means... not an end





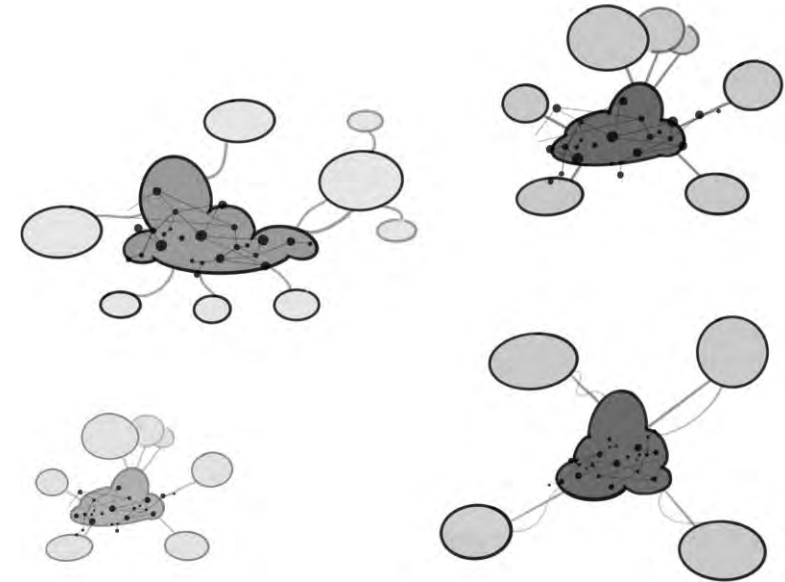
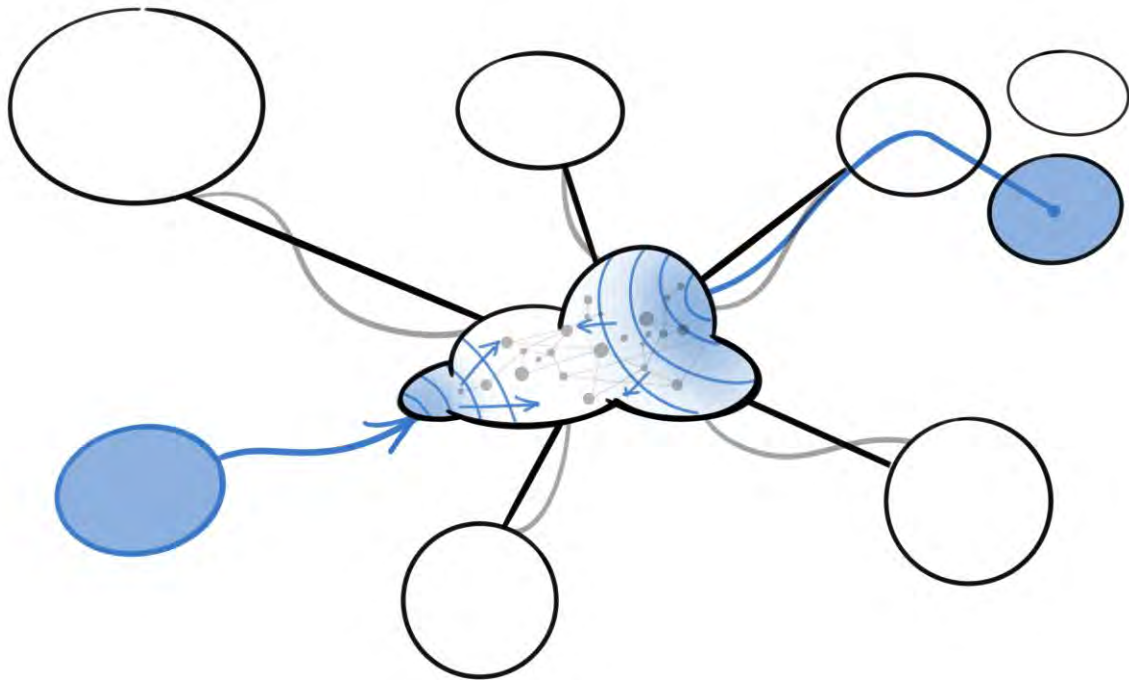
Reaching policy goals with MaaS



* by Sochor et al., Chalmers, 2017

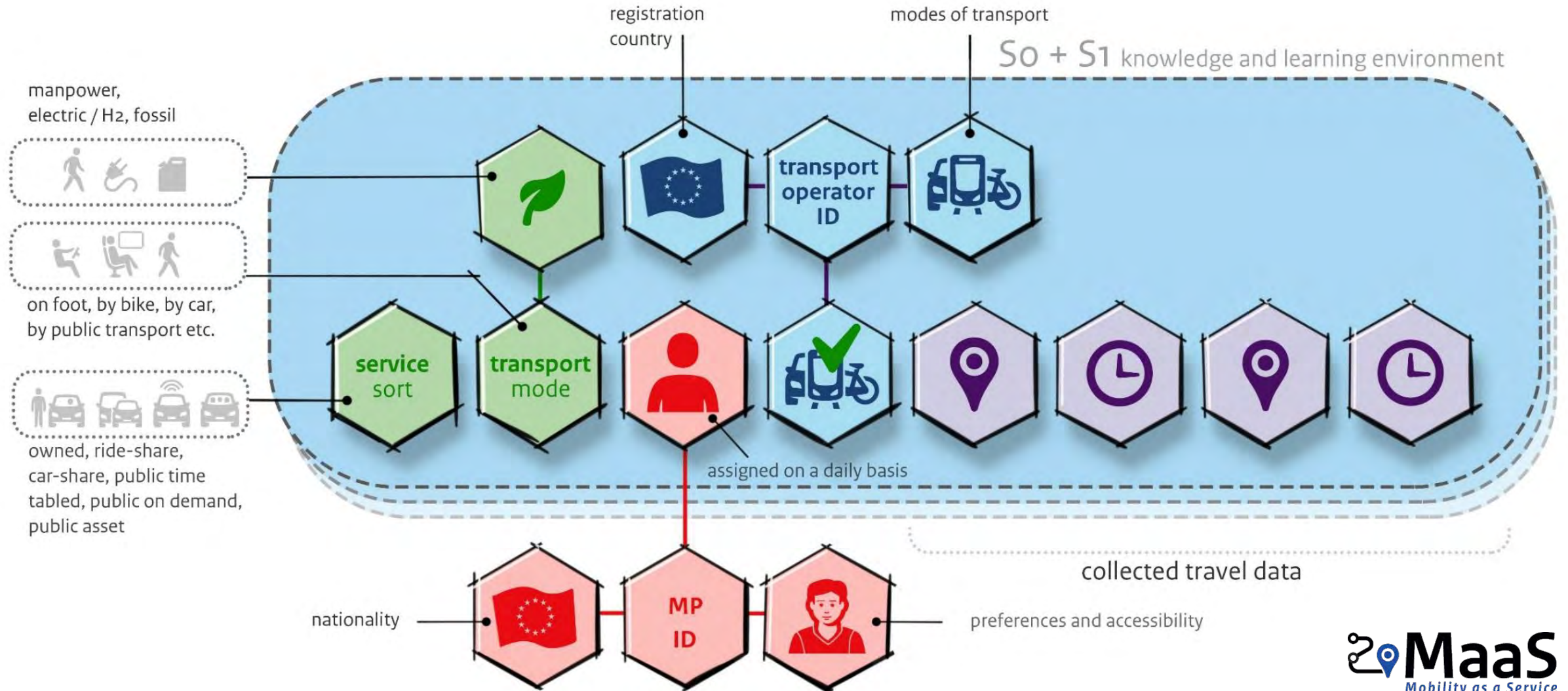


PPP necessary: Ecosystem vs. egosystem





Data string for (realtime) monitoring impact





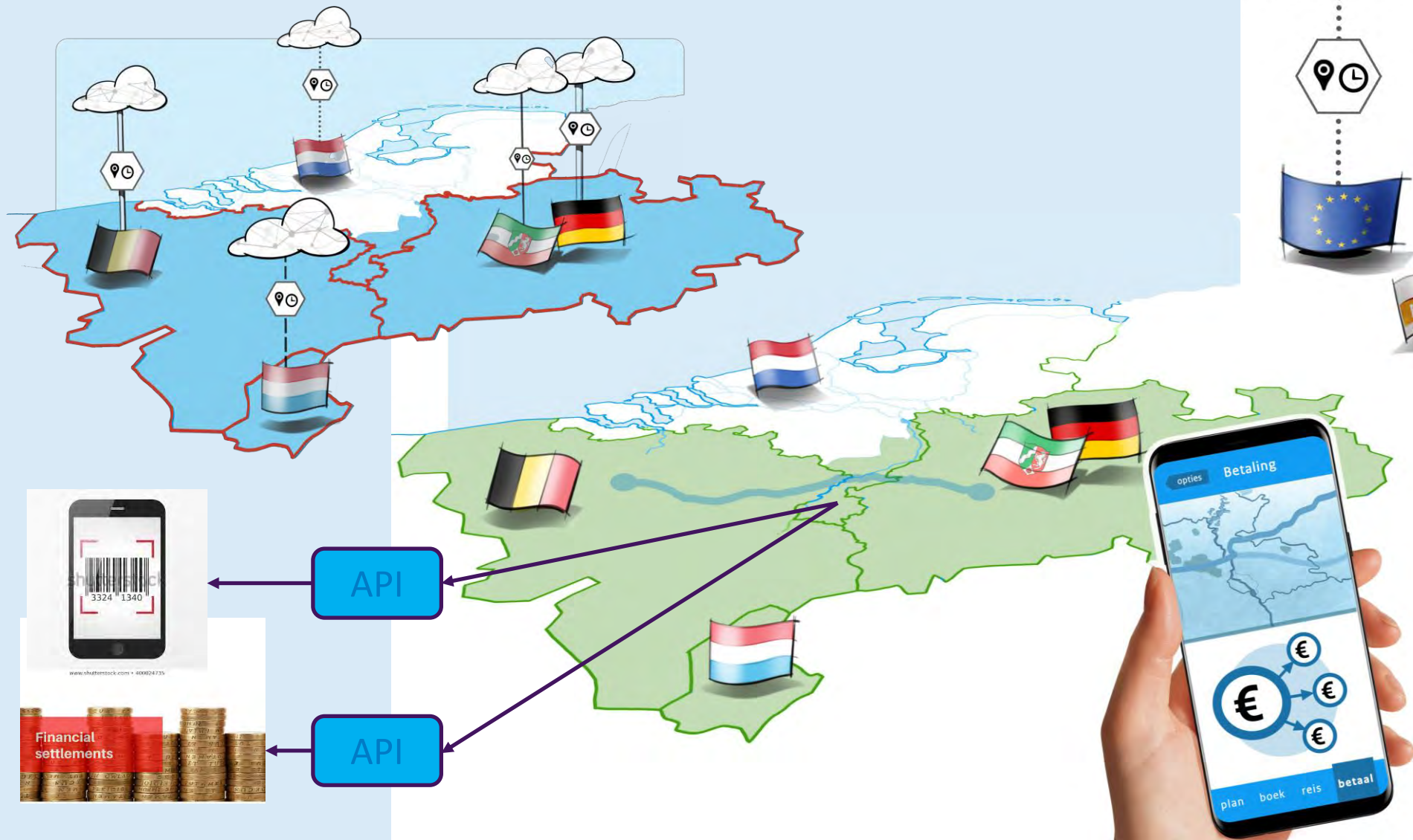
TOMP-API for data transfer MSP-TSO

- Technical interface between Transport Operator and MaaS Provider to describe a MaaS journey
- Open API development in public-private cooperation
- Implemented in national pilots in the Netherlands
- International adoption
- Essential for a level playing field
- See: <https://github.com/TOMP-WG/TOMP-API> with [Blueprint](#) and [WIKI \(FAQ's\)](#)

```
1 openapi: 3.0.0
2 info:
3   title: Transport Operator MaaS Provider API
4   description:
5     An API between MaaS providers and transport operators for booking trips and corresponding
6     <p>The documentation (examples, process flows and sequence diagrams) can be found at <a href="https://github.com/TOMP-WG/TOMP-API">https://github.com/TOMP-WG/TOMP-API</a>
7   version: "0.9.0"
8   license:
9     name: Apache 2.0
10    url: "http://www.apache.org/licenses/LICENSE-2.0.html"
11
12 tags:
13   - name: planning
14     description: gives information about transport asset availability and pricing [free_bike_status and system_pricing_plans in GBFS].<p>The endpoints
15
16   - name: booking
17     description: a booking is the main object exchanged between MaaS-API. <br>See also the MaaS-API global
18
19   - name: trip execution
20     description: supports the complete trip execution process. It covers the trip execution from the start of the trip to the end of the trip.
21
22   - name: trip execution [optional]
23     description: endpoints that can facilitate the trip execution process. It is not necessary for a minimal viable product.
24
25   - name: general
26     description: general information about the system, stations, opening hours [from GBFS]
27
28   - name: payment
29     description: arranges financial settlements
30
31   - name: support
32     description: support for the user while the leg is ongoing
33
34   - name: TO
35     description: the Transport Operator's endpoints
36
37   - name: HP
38     description: the MaaS Service Provider's endpoints
39
40 # security. Allowed methods basic (in header: Authorization: Basic ZGVtb3RwQ0UldzByZA==),
41 # bearer (in header: Authorization: Bearer <token>),
42 # api-key (in header: X-API-Key: abcdef12345)
43 # OAuth2 and OpenId are also available
44 # The exact ways to authenticate will be described in a later version
45
46 # security:
47 #   - bearerToken:
48 #     type: http
49 #     scheme: bearer
50 #     bearerFormat: JWT
51 #   - apiKey:
52 #     type: http
53 #     scheme: apiKey
54 #     apiKeyName: X-API-Key
```




Cross-border ticketing based on ETC

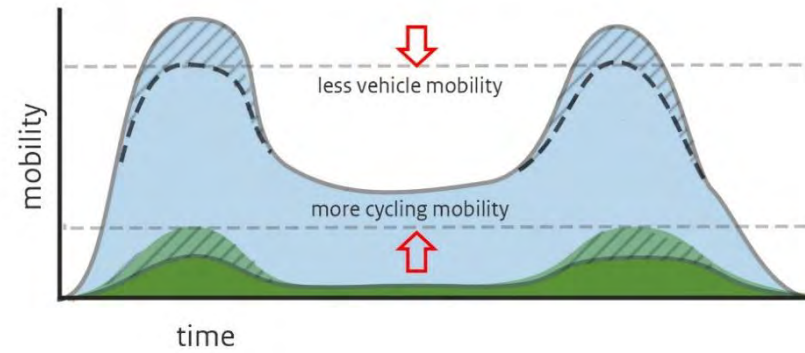




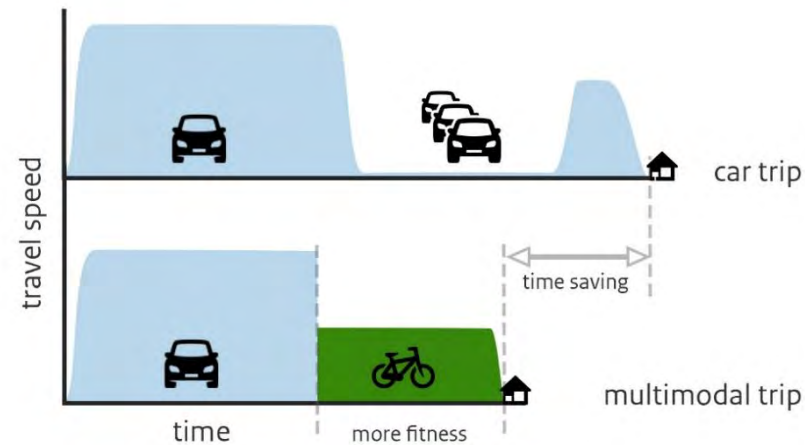
Policy goals: optimizing the mobility system



impact on the mobility system



impact on the journey/ traveller



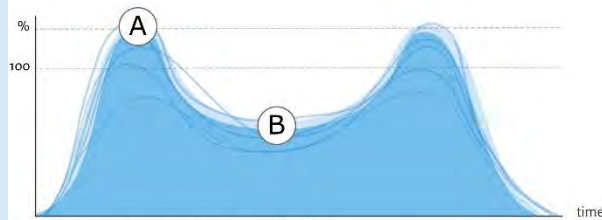
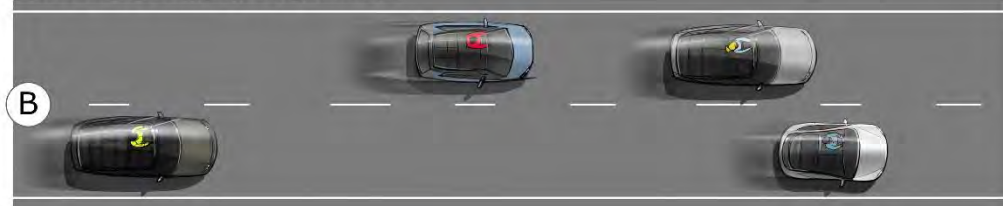


Optimizing vehicle utilization

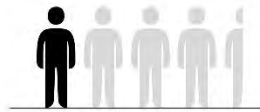
Current rush hour occupancy during weekdays



Current off-peak occupancy during weekdays



Infrastructure occupancy during the day

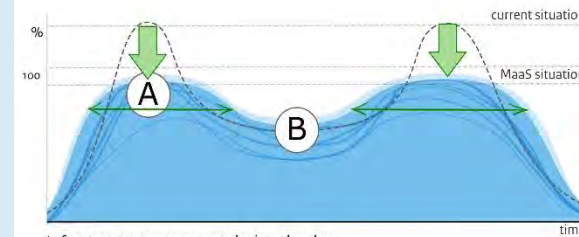


average vehicle occupancy

MaaS rush hour occupancy during weekdays



MaaS off-peak occupancy during weekdays



Infrastructure occupancy during the day



average vehicle occupancy



November 2020						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Upcoming November:

- > 7 pilots going live
- > start data transfer

Discussion time

Eric Mink

MaaS program the Netherlands

www.maas-programma.nl



Sagar Singamsetty, Snr. Adviser
MyCorridor 3rd Pan European Workshop:
What we learned from MaaS

27 October 2020

In the new mobility era

Maas can add value

Digitalisation, decarbonisation and the emergence of the sharing economy are defining a new mobility era.

The objective of MaaS is to provide travellers with a seamless mobility experience that includes collective and shared mobility, thus reducing the reliance on private car use.

The smooth functioning of MaaS systems relies primarily on:

- i. trust and the willingness to cooperate among the different players;
- ii. the availability of data regarding mobility services such as: static data (namely pre-defined information on routes and the general existence of transport services), dynamic data (i.e. real-time data on the availability of mobility services at any given moment), prices of mobility services, and availability of infrastructure; and
- iii. the ability of MaaS providers to provide integrated ticketing services that enable seamless travel by a combination of several transport modes.

Transport operators are the backbone of MaaS

IRU proposals

Transport operators cannot fully buy into the concept of MaaS as their concerns are not addressed both at national and EU level.

Fragmentation of MaaS models and of regulatory responses (or, often, lack thereof) create business and legal uncertainty for transport operators.

- **General:**
 - Transport operators must be able to voluntarily opt into MaaS systems;
 - Control over the MaaS systems by public authorities – should be inclusive, non-discriminatory and confirm to rules on public procurement (EC Regulation 1370/2007);
 - Ranking - charging fees for priority ranking and self promotion should be prohibited.
- **Need for a B2B data sharing governance framework:** recognise the rights of data generators
 - Voluntary provision of data should be the guiding principle;
 - Access (reciprocity); Consent; Portability; and Compensation.
- **Costs:** It must be easy and affordable for all transport operators to plug into MaaS solutions via universal communications standards - minimum data sets, quality of data and avoid data lock-in systems.

Opportunities and Challenges For Transport operators

MaaS is becoming an phenomenon that is increasingly affecting mobility service providers across the EU Member States.

Unlike other transport modes, 80% of the road passenger transport operators are SMEs. This is true for the bus and coach transport sector and even more so in the case of on-demand passenger transport by car (taxi and similar services).

- **Opportunities:**

- **MaaS potential benefits for society** - contributes to more sustainable mobility systems and reduced congestion.
- **MaaS potential benefits for travellers** - seamless travel and potentially a cheaper alternative to private car use.
- **MaaS potential benefits for transport operators:**
 - Bus, coach and taxi operators could benefit from MaaS schemes by finding new selling channels and access to an otherwise unreachable customer base.
 - MaaS operators can help with savings, particularly in respect of the costs involved in marketing transport services, which would otherwise be entirely borne by transport operators.
 - Small and medium-sized enterprises (SMEs) in the mobility sector could especially benefit from MaaS systems as the visibility and cost savings offered could have a considerable impact on their operations.

Opportunities and Challenges For Transport operators

Current MaaS schemes are **not sufficiently** established to state conclusively that they are beneficial in all circumstances. MaaS operators are still struggling to find a stable self-financing business model.

Around 370,000 undertakings employing 2 million people provide road passenger transport services in the EU.

- **Challenges:**

- Natural shift in the market towards the dominant MaaS operators.
- Increase in costs due to absence of uniform standards, which makes interoperability between platform difficult; and increases the risk of data lock-in with one platform.
- Exclusion of certain types of collective transport providers.
- Contractual responsibility, passenger rights and accessibility in MaaS systems.

CONCLUSION – for MaaS to sustain as a business model

- Open, fair and transparent governance system is needed.
- Better integration of services, esp., cross border is needed.
- Forcing a shift in the market structure without addressing the challenges will only prompt an authoritative intervention in the free market economy.



THANK YOU

Achieving Roaming, Scalable MaaS

MyCorridor - 27 October 2020
Piia Karjalainen, MaaS Alliance

**“I guess you guys aren’t ready for that yet.
But your kids are gonna love it!”**





Together towards sustainable multimodal mobility



Creating a common approach of

- Public and private sectors
- Mobility service providers (often local) and tech companies (often global)
- Disruptors and incumbents
- Data providers and data users
- Local and global approaches
- Players with different business models (B2C, B2G2C, B2B ...)

MaaS

European mobility innovation in action





50%
Vehicle-
km
reduction
potential
of MaaS



30%
CO₂
reduction
potential
of MaaS

- by 2050 in scenario of
accelerated uptake of
shared modes combined
with public transport and
strong regulation.



MaaS in transport decarbonisation tool kit

Nail it or fail it....

Integration

- * Technical interoperability
- * * Access to market

Better than owning our own car

- * Flexible
- * * Reliable

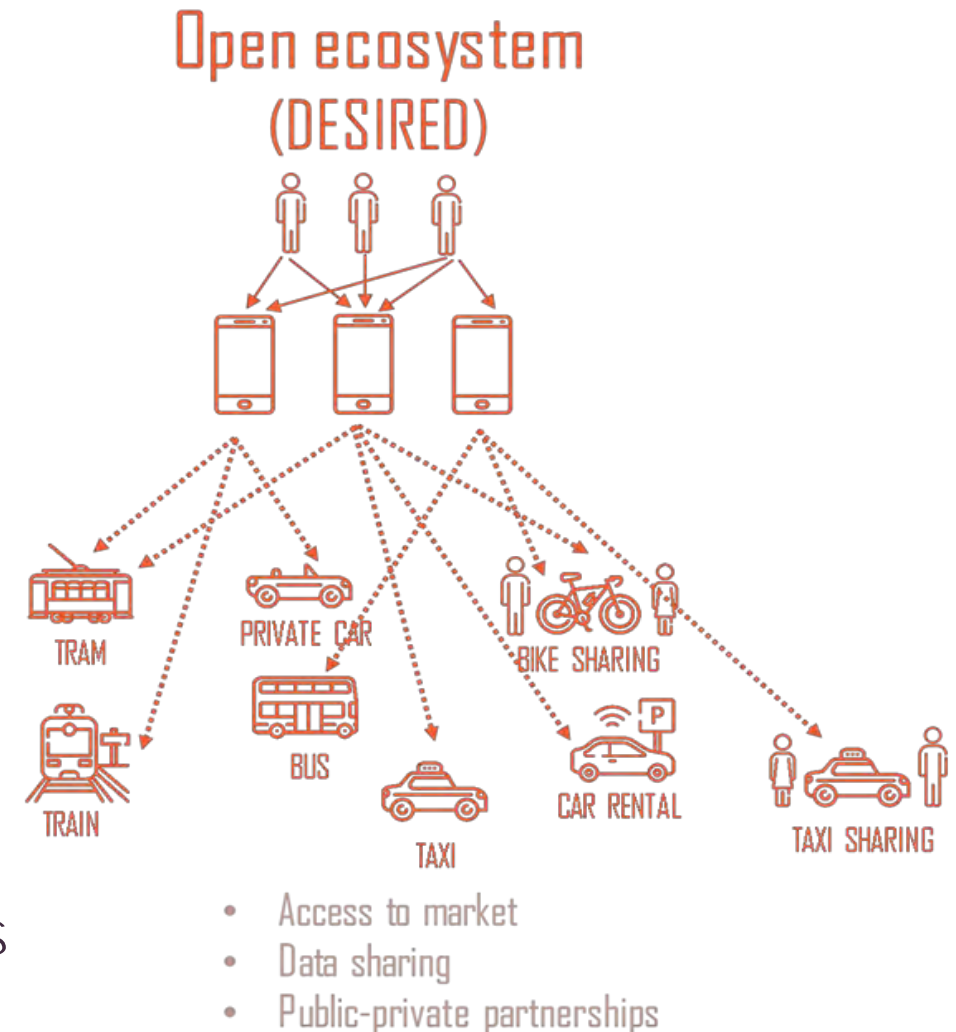
Based on the best local ingredients, but also...

- * Scalable
- * * Roamable

Vision:

Open ecosystem for the benefits of the users

- Governance & Business Models
 - Not a one but many business models
 - Enablers for open ecosystem
 - Trust
- Regulation and delivery of societal value
 - Fair competition & market access
 - Access to data
 - Transport decarbonisation, inclusivity; accountability
 - Market fragmentation
- Technical harmonisation
 - Minimum Interoperability Mechanisms
 - Data Models



Work in progress (by end of 2020)

- Building TRUST with Code of Conduct (Market Playbook)
- Framework for assessment of ENVIRONMENTAL IMPACTS
- Tool Kit for CITIES
- Early explorations on MaaS & TRAFFIC MANAGEMENT

(<https://maas-alliance.eu/maas-alliance-and-tm2-0-publish-report-on-multimodal-mobility/>)



Access to high-quality data



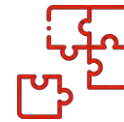
- Digital, machine-readable, non-proprietary availability of data sets
- Incentives for data sharing

Access to service provision



- Market access for new mobility services with fair commercial terms

Access to integration



- Interoperability
- Open APIs
- Access to ticketing

Main enablers in open MaaS ecosystem

Trust



www.maas-alliance.eu
info@maas-alliance.eu
🐦 @MaaS_Alliance

Thank you for your attention!

Piia Karjalainen
p.karjalainen@mail.ertico.com



MaaS-Lab

MyCorridor 3rd Pan European Workshop

Sonila Metushi

Policy Advisor, KNV

Royal Dutch Transport Federation – About us



Care and taxi
transport



Coach transport



Public transport



MaaS-Lab

Koninklijk Nederlands Vervoer (KNV) is the Dutch umbrella Association for passenger transport.



With **MaaS-Lab** transport operators,
MaaS-providers and integrators
together towards an open and
inclusive ecosystem.



The goal is to co-create the enabling conditions for the development of MaaS in the Netherlands.

Focus areas for MaaS-Lab

Facilitate

cooperation with a
MaaS
Afsprakenstelsel.

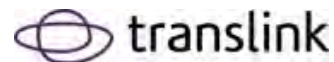
Advocate

for a level-playing field.

Create

a network for
knowledge-sharing.

MaaS-Lab members



Sharing data – two key factors

ROI



+

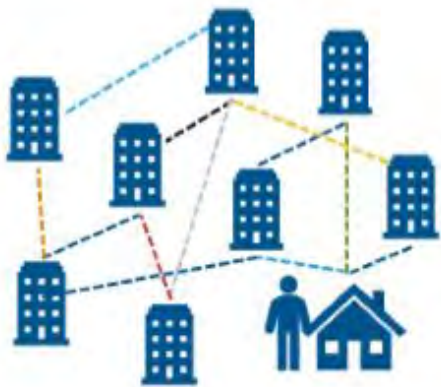
Trust



Return on Investment (ROI) is determined by the balance between effort it takes to share data, and the gain received by sharing data

Trust is determined by the balance between the risks (due to privacy or competition), and the control (due to verification and security) of sharing and usage of data

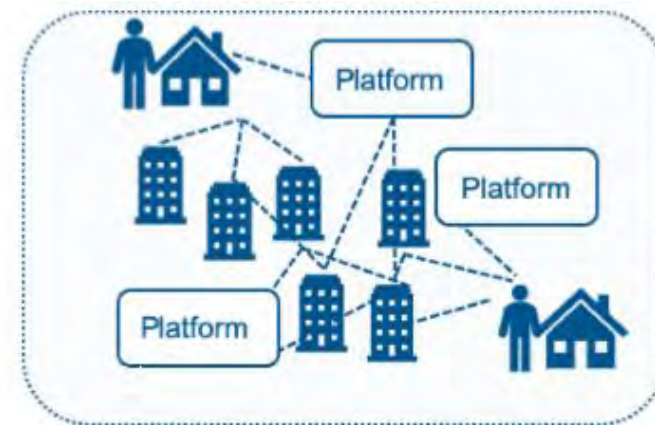




Bilateral agreements



Technical platforms



Afsprakenstelsel



MaaS Afsprakenstelsel

MaaS Afsprakenstelsel is a common set of **minimum agreements** for data sharing and cooperation.



Bron figuur: Mobiliteitsalliantie visie of MaaS afsprakenstelsel (07-2020)



MaaS Afsprakenstelsel – main principles

(1) User-centric

(3) Open

(6) Complementary

(7) Scalable

(9) Value-creation



Bron: Interviews, N = 14; Mobiliteitsalliantie visie op MaaS Afsprakenstelsel (07-2020)

Thank you

Sonila Metushi
Policy Advisor

Website:
Twitter: @Sol_Met and @KNV

Session 2: Lessons learned and experiences from the three MaaS projects

- MyCorridor – Katerina Toulou, CERTH/HIT, Kostas Kalogirou, CERTH/HIT, Sakis Salamanis, CERTH/HIT, Tom Meinders, MAPtm
- IMOVE – Alessandro Barisone, algoWatt
- MaaS4EU – Akrivi Vivian Kioussi, Intrasoft



MyCorridor project: Lessons learnt across its lifetime

Centre for Research and Technology Hellas (CERTH)
Hellenic Institute of Transport (HIT)
Institute of Telematics and Telecommunications (ITI)
MAP Traffic Management

Topics

- Overview of MyCorridor project (Katerina Toulidou; CERTH/ HIT)
- Technical lessons learnt: Android app (Kostas Kalogirou; CERTH/HIT)
- Technical lessons learnt: Backend (Sakis Salamanis; CERTH/ ITI)
- Travellers' experience lessons learnt (Tom Meinders; MAPtm)

MyCorridor



- Mobility as a Service in a multimodal European cross-border corridor
- Starting 1st of June 2017 to last 3 years



Coordinator



Technical & Innovation Manager



SWARCO MIZAR S.r.l.

Industrial Partners



Mobility Market SME's



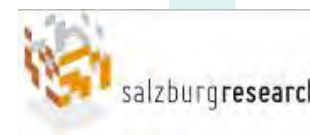
Mobility Agency



ITS Association



Research



Legal firm



Liaison to MaaS Alliance



The mission

To facilitate *sustainable travel in urban & interurban areas & across borders*

replace private vehicle ownership by private vehicle use,

- one element in an *integrated/multi-modal MaaS chain,*
- provision of an *innovative one-stop-shop platform*
- combine connected traffic management, ITS and multi modal mobility, infomobility and added value services
- thus facilitate modal shift.

Innovation: a *technological and business MaaS solution*

cater for interoperability, open data sharing, while tackling the legislative, business related and travel-behaviour adaptation barriers enabling the emergence of a *new business actor* across Europe; the one of a *Mobility Services Aggregator*.



What are we doing?

- Building a **one-stop-shop** for MaaS!



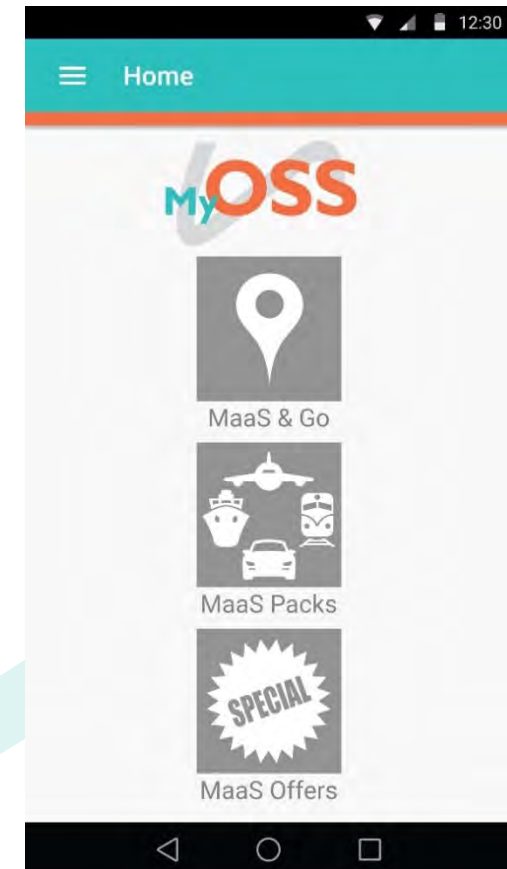
Integrate several types of services to offer in a MaaS pattern.

Services (multimodal):

- ✓ Mobility services
- ✓ Infomobility services
- ✓ Traffic management services (TM2.0 → TM2.1)
- ✓ Added value services (cultural, sports, etc.)

Products:

- ✓ “MaaS & Go”: MaaS coupled with trip planning
- ✓ “MaaS Packs”: MaaS supported via multicriteria search
- ✓ “MaaS offers”: Ready to use mobility packages



Our Unique Selling Points

- **Cross-border seamless service provision**
 - If necessary, an automatic shift to the authorised local aggregator will be made.
- **One Mobility Token**
 - Validation tickets for all mobility products purchased in one digital form.
- **Traffic Management services**
 - TM2.0 services will be offered as a new paradigm in MaaS (towards TM2.1).
- **Hybrid Trip Planner**
 - Individual trip leg mapping of available products through a user-centric matchmaking process.
- **Personalisation**
 - Static & dynamic feedback from traveller trips, providing an all-inclusive experience.

MyCorridor Android app: Lessons learnt and experience

Katerina Toulou

Senior researcher
Experimental Psychologist
Deputy Technical Manager

Kostas Kalogirou

Senior lead Developer
MyCorridor Mobile app



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 636626"

Lessons learnt and experience

- Pre-launch report
 - Google Play creates when app is uploaded for the first time (very useful)
- Follow accessibility guidelines for Android
 - 62 issues found were described on pre-launch report
 - Implementation – fixed (description of images and components)
 - Touch target size – fixed (bigger size)
 - Low contrast – fixed (W3C standards, <https://webaim.org/resources/contrastchecker/>)
- Follow Android performance guidelines
 - Thread processing
 - Distinguish GUI with logic execution parts
- Follow styling guidelines
 - Drawables (images), colours and dimensions

Lessons learnt and experience

- Support multiple languages
- Support multiple device
 - Android OS 7.0 – Android 10.0
 - Flexible layouts(Constraint)
- Privacy issues
 - Use `SharedPreferences ()` to store application data on the device
 - Encrypt `SharedPreferences ()` data
 - Google Play review process may take more than one day!
 - Expect the first time which took 8 days, the range was from a couple of hours to 2 days
- Upload signed Bundle (.aab) instead of .apk
 - Size compressed
 - It is recommended by Google

MyCorridor backend process and operations: Lessons learnt and experience

Sakis Salamanis

Senior lead Developer

Architecture, backend and standardization



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 636626

Recognized technical challenges and lessons learnt

- Transportation services
 - Heterogeneity
 - Fragmentation
 - No formal definition of 'service' exists
 - Tailor-made approaches have limitations
 - Service Data Model → Hybrid approach (custom + OWL)
- MaaS API
 - Modular (microservices) approach → different modules for different functionalities
 - Networking middleware (i.e. RESTful API) should be in place
 - Common data exchange format (e.g. JSON)

Recognized technical challenges and lessons learnt

- **Trip-planning**
 - Lack of open GTFS repositories (e.g. OpenMobilityData former TransitFeeds)
 - Operators are reluctant to provide access to data
 - Using external trip-planning services can create difficulties
 - Need for open, shared transit data repositories (e.g. through National Access Points)
- **Matchmaking**
 - Leg-based approach provides flexibility in planning
 - User-designed solutions should be evaluated for validity
 - Increased complexity → Parallelization at trip level

Recognized technical challenges and lessons learnt

- **Booking, Ticketing and Payment**
 - Integrate certified PSPs: Careful consideration of users' sensitive data (PCI DSS compliance)
 - Preauthorization necessary for pay-as-you-go model
 - Different operators use different ticketing mechanisms → Use existing legacy systems
 - Multiple checkouts → increased complexity → parallelization at selected services level
- **User experience**
 - App responsiveness → parallelization techniques, distributed architectures
 - Results validity
 - High quality level of technical implementations – Dominant apps (e.g. Google Maps)

Recognized technical challenges and lessons learnt

- Infomobility Services (IS)
 - Operators may provide access only to specific information of their service (e.g. parking information)
 - Integrate different IS operators → IS aggregator nodes → MaaS platform integrates the node
- Traffic Management (TM)
 - TM services should be considered products provided by the MaaS platform
 - Different TM operators use different data formats (e.g. DATEX II, SPATEM/MAPEM) → Need for common traffic data exchange formats
 - Integrate different TM operators → TM aggregator node → MaaS platform integrates the node

Recognised technical challenges and lessons learnt

- Added-value services (AVS)
 - Services and APIs providing information outside the transportation domain (e.g. events, concerts, restaurants, bars, weather, etc.)
 - Several providers/APIs: Foursquare API, Yelp API, Zomato API, etc.
 - Integrate different AVS providers → AVS aggregator node → MaaS platform integrates the node
- Trip-monitoring and Push Notifications
 - Set-up of push-notifications server (e.g. Firebase)
 - Track users' locations: carefully select the recording frequency
 - Trigger(s): Approaching or entering specific geographical locations

Recognised technical challenges and lessons learnt

- For service providers
 - Service providers should be able to easily register their services to the MaaS platform
 - Service providers should provide a clear description of the APIs through appropriate documentation
 - Service registration is a semi-automatic process
 - Step 1: The service provider gives the minimum required information for registering the service through the SRT
 - Step 2: The provided information is evaluated in more detail by the MaaS platform's technical team
 - Step 3: The MaaS platform's technical team starts collaborating with the service's technical team
- For MaaS aggregators
 - The MaaS aggregator should have a clear view of the platform's status
 - (Big) data analytics of the platform's usage data can provide useful insights
 - The extracted knowledge could (should) be a commercially exploitable service of the platform

Pilot testing and travellers' experience: Lessons learnt

Tom Meinders

Traffic Manager

MyCorridor Pilot conduction Activity leader and Dutch Pilot Site Responsible

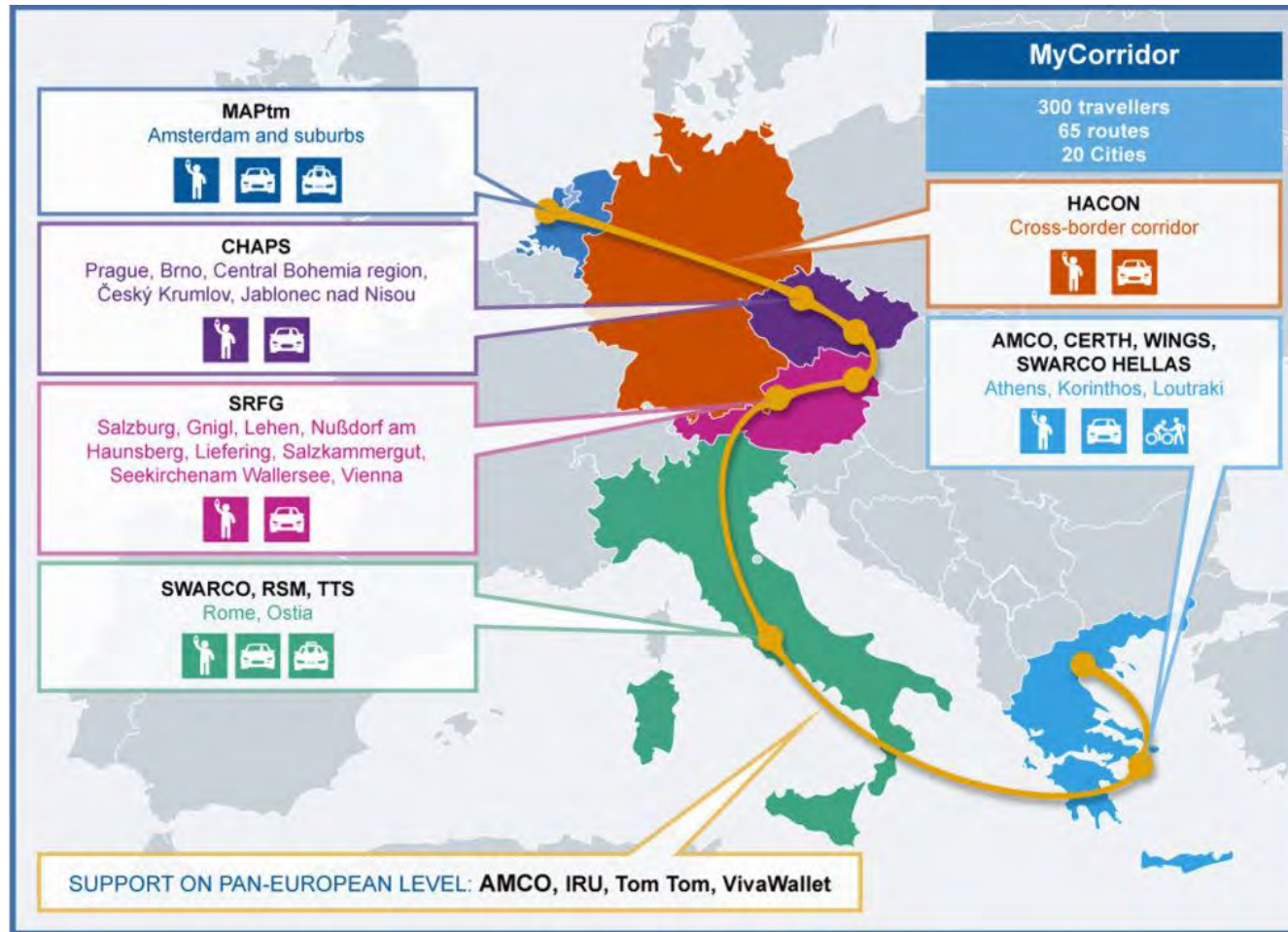


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Agenda

- The pilots
- Service centre
- Challenges / Lessons learnt

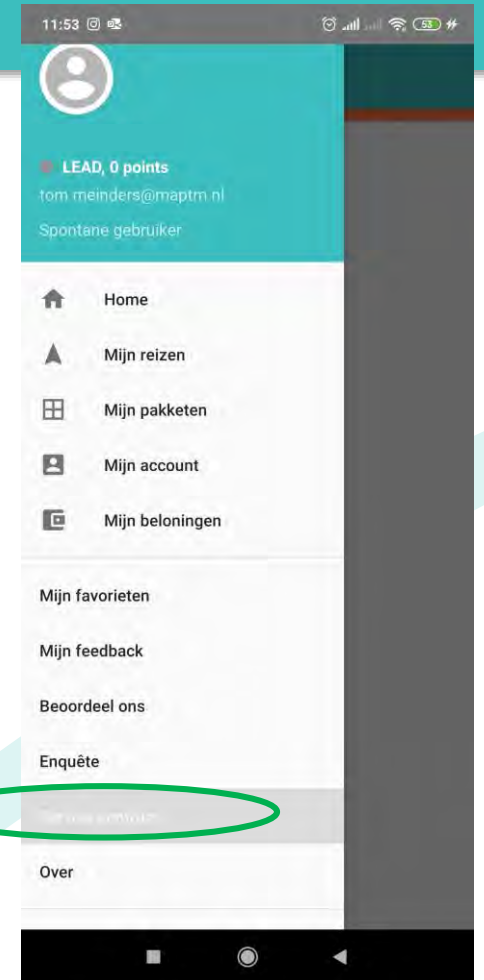
5 pilot sites



- Greece
- Italy
- Austria
- Czech
- Netherlands

The APP

- Android:
- <https://play.google.com/store/apps/details?id=certh.gr.mycorridor>
- iOS:
- <https://apps.apple.com/us/app/mycorridor/id1525696822?uo=2>



Service centre landing page



Logging questions and answers

The screenshot displays the MAP application interface. At the top, there is a navigation bar with the MAP logo and links to Home, Algemeen, STS, and MyCorridor. The user's profile and the time 11:46 are shown in the top right corner. Below the navigation bar, there is a search bar with the text 'rome' and a filter dropdown set to 'all'. A table of logged questions is visible, with columns for id, Started, Site, Description, Action, Priority, Sort, Solution, Reply, and Status. The first row shows a question with id 1, started on 25 mei 20 at 15:59, from the site Rome, with the description 'App doesn't work', action 'answer question', priority 'High', solution 'Technical support', and reply 'Download latest version'. The status is 'Closed'. Below the table, there is a pagination control showing '10 resultaten weergeven'. On the right side, there is an 'ADD: record' form with fields for Name of the project, Communication tool (set to WhatsApp), Asker (Name of the person who asked the question), Country/city (pilot site) (set to Amsterdam), Description (Description of the question), Action (Undertaken action), and Priority level (set to High). The form has 'Cancel' and 'Submit' buttons.

id	Started	Site	Description	Action	Priority	Sort	Solution	Reply	Status
1	25 mei 20 15:59	Rome	App doesn't work	answer question	High	Technical support	Download latest version	Easy easy, download the latest version Android or ios?	Closed

10 resultaten weergeven

ADD: record

Date: 26-05-2020 Time: 11:46

Project name:

Communication tool:

Asker:

Country/city (pilot site):

Description:

Action:

Priority level:

Challenges / Lessons learnt

- User experience
- Users expect the full package
- Difficult to bring in service providers
- COVID-19



IMOVE

Unlocking Large-Scale Access to
Combined Mobility through a
European MaaS Network

Alessandro Barisone, algoWatt



UNLOCKING LARGE-SCALE ACCESS
TO COMBINED MOBILITY THROUGH
A EUROPEAN MAAS NETWORK





IMOVE

Unlocking Large-Scale Access to Combined Mobility through a European MaaS Network

- o Innovative concepts, systems and services towards 'mobility as a service'

- MG-6.1-2016 call, one of the three selected projects (IMOVE, MaaS4EU, MyCorridor)

- o Research and Innovation Action (RIA)

- 30 months duration: 06/2017 – 11/2019

- o Consortium: 15 organizations, 8 countries

- Research: AICENTER (CVUT), I-SENSE (ICCS), RISE
 - ICT/consulting: Softeco Sismat, Mosaic Factor, FIT, Vectos
 - Mobility: Transport for Greater Manchester, 5T, Municipality of Turin, UBiGo, URBI, Västtrafik, EMT Madrid
 - Stakeholders' association: UITP

- o Project coordinator:

Softeco Sismat, now algoWatt (merger in 03/20



27/10/2020

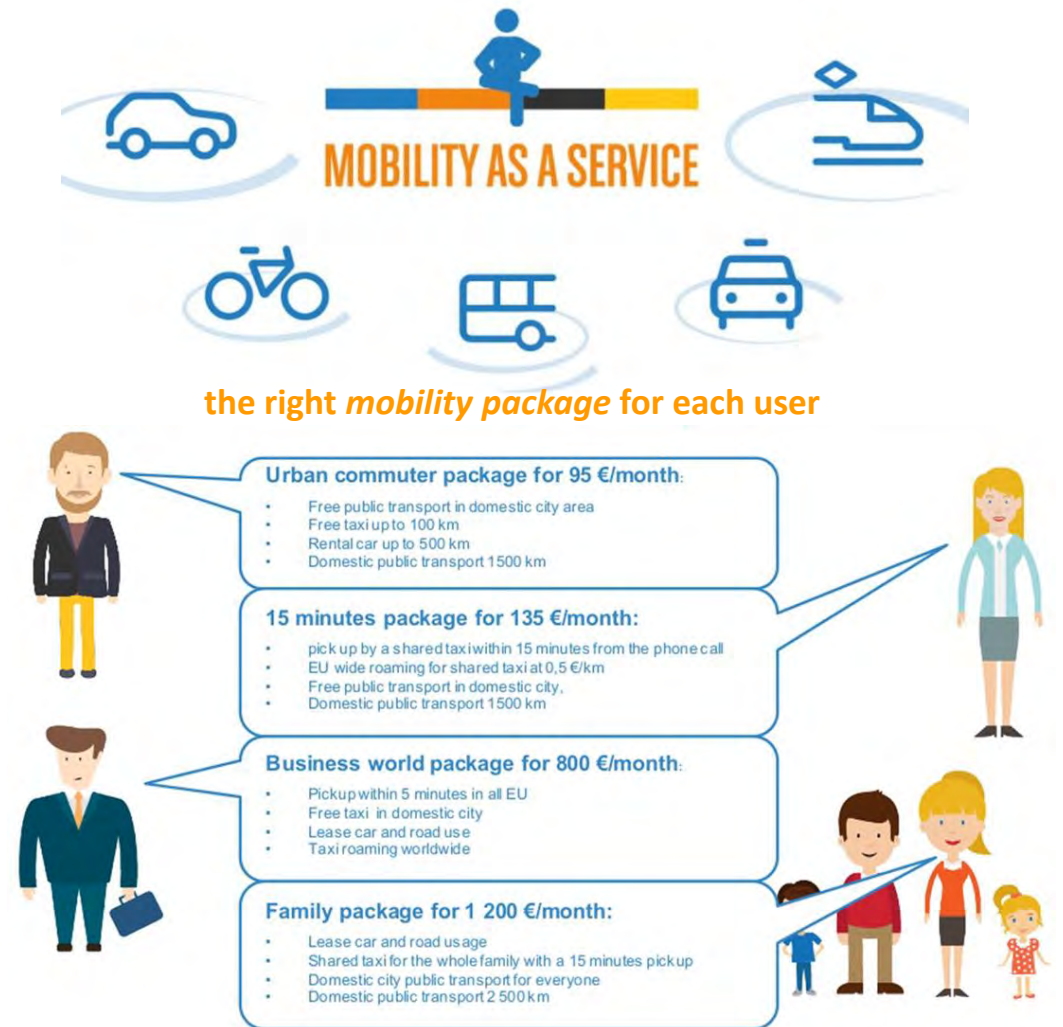
I simply want to move. I want to move simply





Overall Objective

To accelerate the deployment and unlock the scalability of MaaS schemes in Europe, paving the way for a “roaming” service for MaaS users at the European level.





IMOVE Scalability Unlockers



Sustainable business models and organizational MaaS frameworks

- Contracts, T&Cs, ...



Behaviour change strategies

- e.g. incentive models, rewarding schemes, gamification, etc.



User engagement schemes

- Inspired by marketing and XaaS economy



Long-term MaaS interoperability and roaming strategies

- Cross-MaaS, cross-borders

Enhancing framework conditions for MaaS development & operation




IMOVE Software Enablers

Extend the capabilities of existing MaaS platforms through enhanced interoperability and additional features

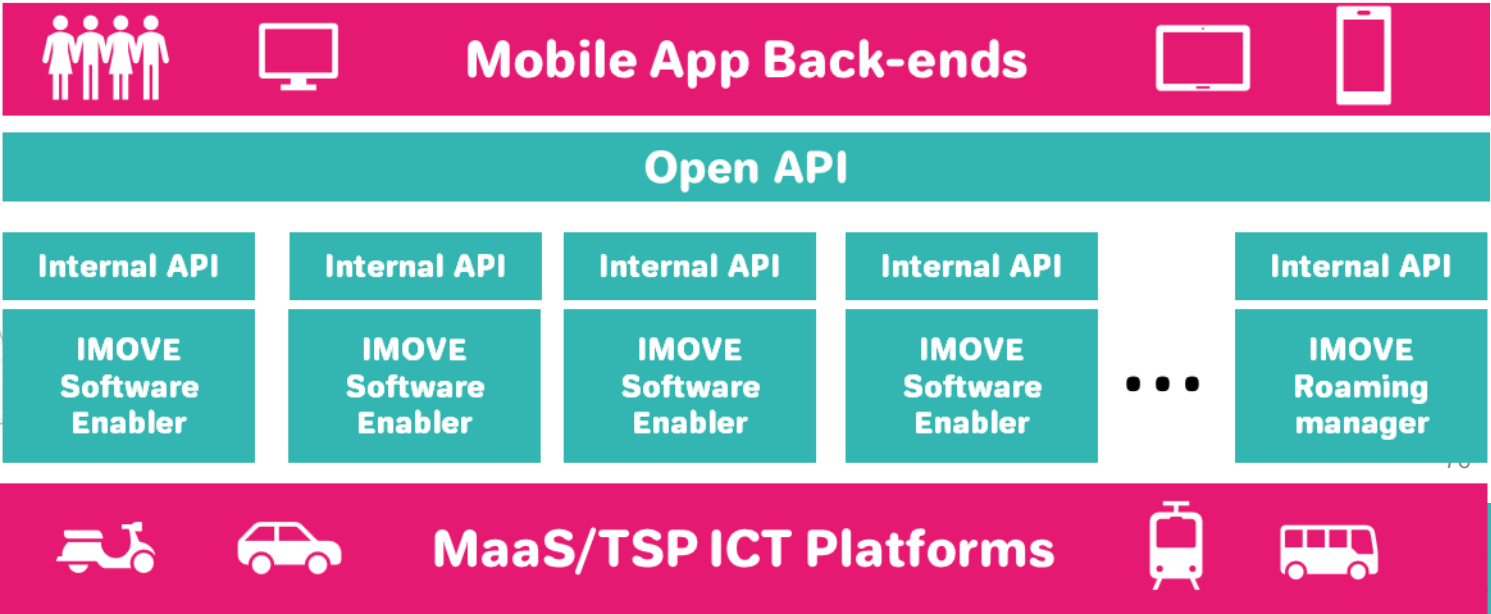
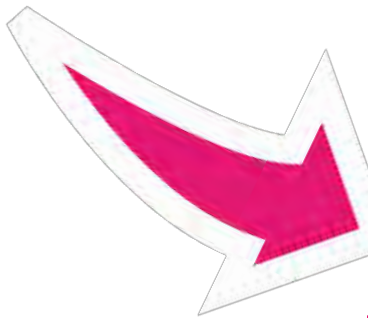
Facilitate the development of new services through a set of ready-made building blocks that can be combined to support different tasks

Pave the way to a cross-border MaaS ecosystem through a common interface for all federated MaaS operators (roaming)



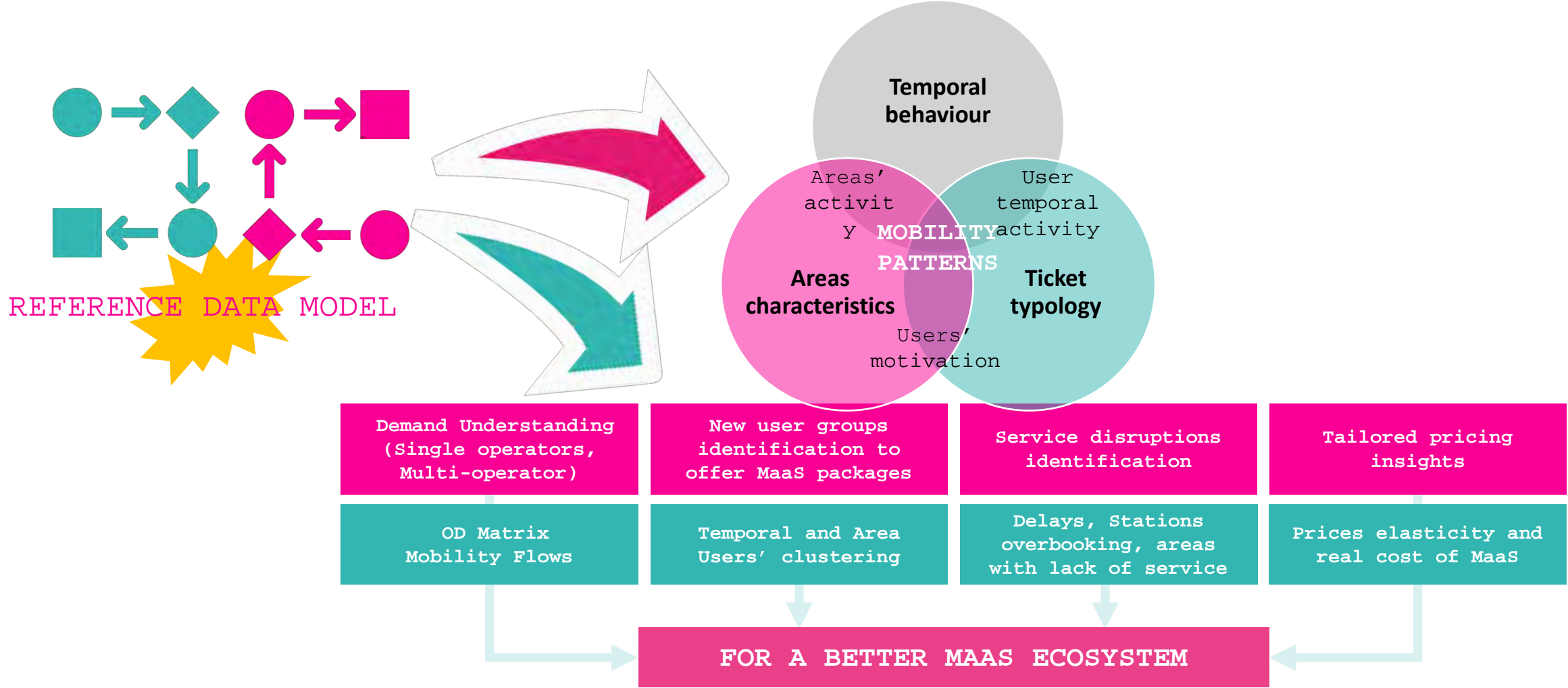
IMOVE Software Enablers

- Identity Manager
- User Tariffs/Price Manager
- User Preferences Manager
- Mobility Organizer (combined solutions)
- Booking Manager
- Mobility Tracker (mobility patterns, analytics)
- Notification Manager (events)
- Incentives & Engagement Manager
- Roaming Manager (cross-MaaS interoperability)





IMOVE Data & Information Exchange Framework





Validating MaaS models: IMOVE Living Labs

Different entities acting as MaaS operators:

- Public Transport Operators (PTO)
- Public authorities
- Private companies

“Living Lab” approach: involvement of local stakeholders

Gothenburg LL - Multiple approaches to MaaS

Manchester LL - PT authority (TfGM) implementing MaaS

Turin LL - Public sector stimulating a MaaS ecosystem

Berlin LL - Private MaaS operator with subscription bundle

Madrid LL - PTO as leader of a MaaS scheme

+ Roaming across MaaS operators



27/10/2020

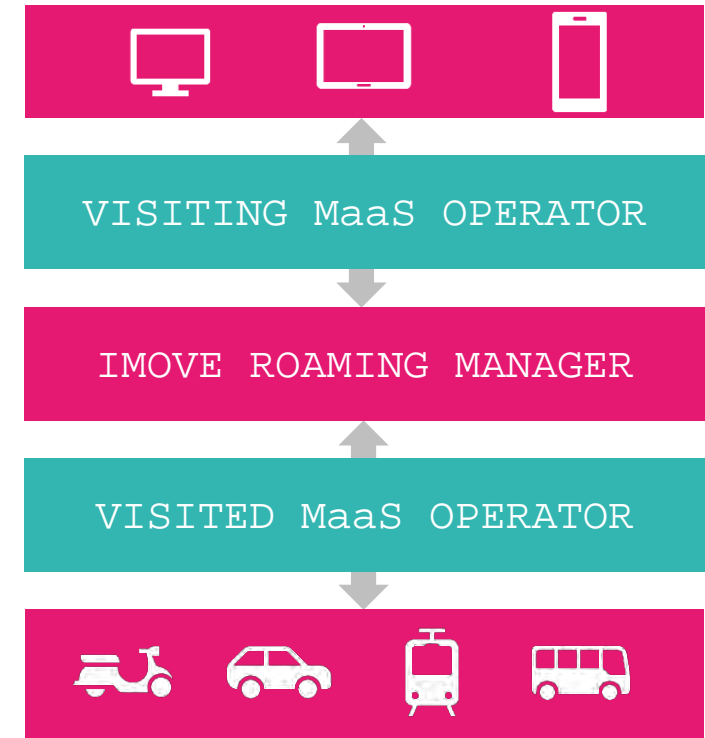


IMOVE Roaming Living Lab

Interconnecting MaaS operators

Concept :

- o Same app and user experience when abroad
- o MaaS operators federated in IMOVE
- o Visiting MaaS
 - Operator complements its offer with improved coverage
 - Mobile app services available also while travelling abroad
- o Visited MaaS
 - MaaS operator reselling/providing mobility services to IMOVE federated ones
- o Service level depends on agreements
 - Contracts between operators
 - Payment clearing for exchanged services





Lessons Learned

MaaS is a very promising transport paradigm, but there are still barriers that slow down the fulfillment of its full potential:

- Level of market readiness (expectations vs. practicalities)
- Perception of risks and uncertainties among ecosystem actors
- Agreements between public and private MSPs (car-/bike-sharing, taxis) may be slower than planned
- Timing of tendering processes

Key Enablers:

- Role of Public Transport Authorities is crucial for a calibrated and trustable offering
- Substantial readiness of technology (core levels L1-L3)
- Engagement of MaaS tech providers from the start of the initiative
- Collaboration (e.g. sharing of information) between MaaS experiences

Thank you

Alessandro Barisone

Research & Innovation

algoWatt

alessandro.barisone@algowatt.com

www.imove-project.eu

@H2020_MOVE

#H2020_IMOVE



UNLOCKING LARGE-SCALE ACCESS
TO COMBINED MOBILITY THROUGH
A EUROPEAN MAAS NETWORK

27/10/2020

81

I simply want to move. I want to move simply



IMOVE received funding by the European Union's Horizon 2020 research and innovation programme under grant agreement number 723314



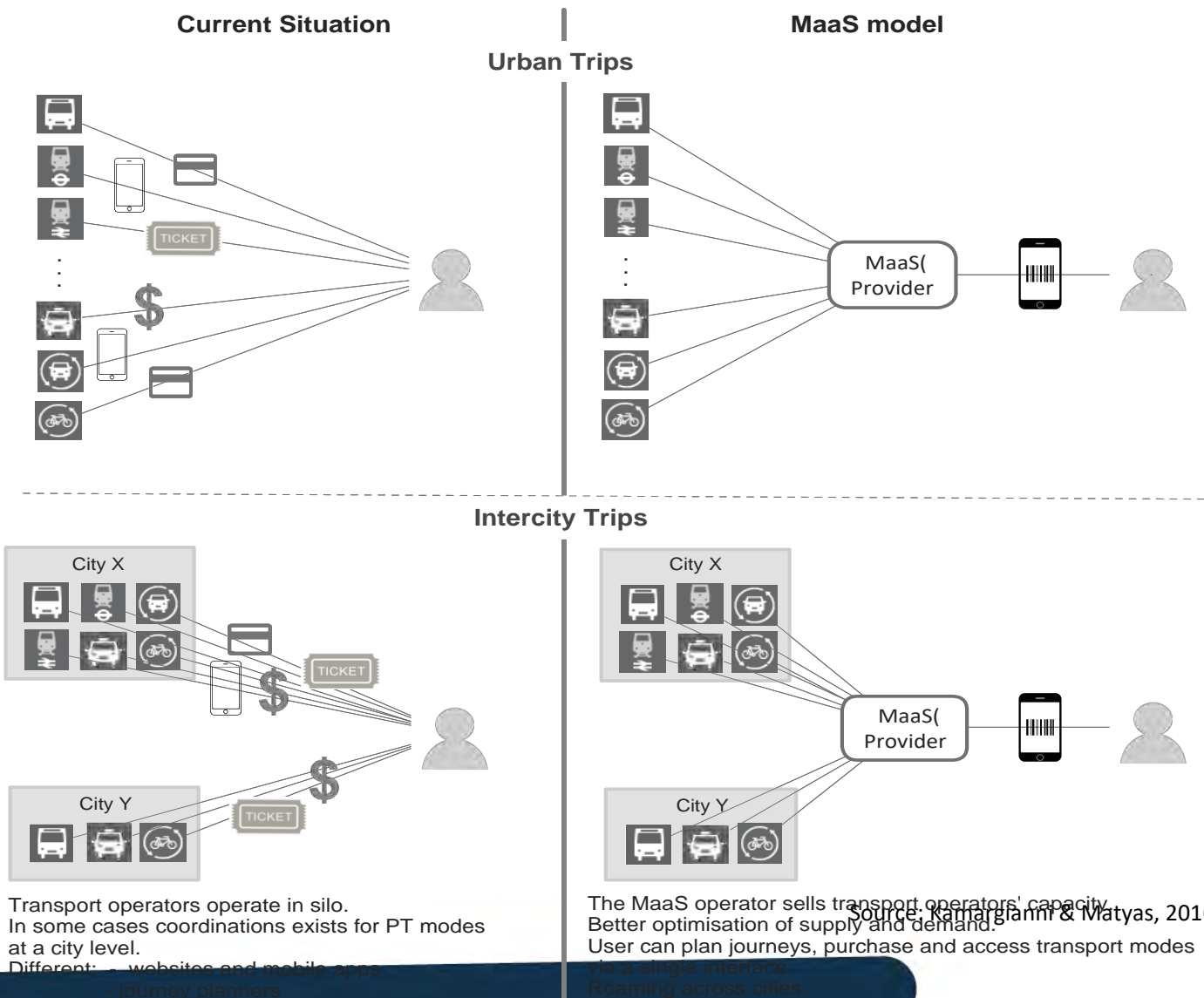
MaaS4EU

MaaS4EU Presentation MyCorridor Final Conference

October 27th, 2020

09:30– 13:15 (CET)

MaaS4EU definition for MaaS



MaaS4EU Vision

Provide quantifiable evidence, frameworks and tools to enable the MaaS concept, by addressing challenges under four pillars:

1. Business,
2. End-Users,
3. Technology, and
4. Policy.



MaaS4EU Partners



Project Co-ordinator



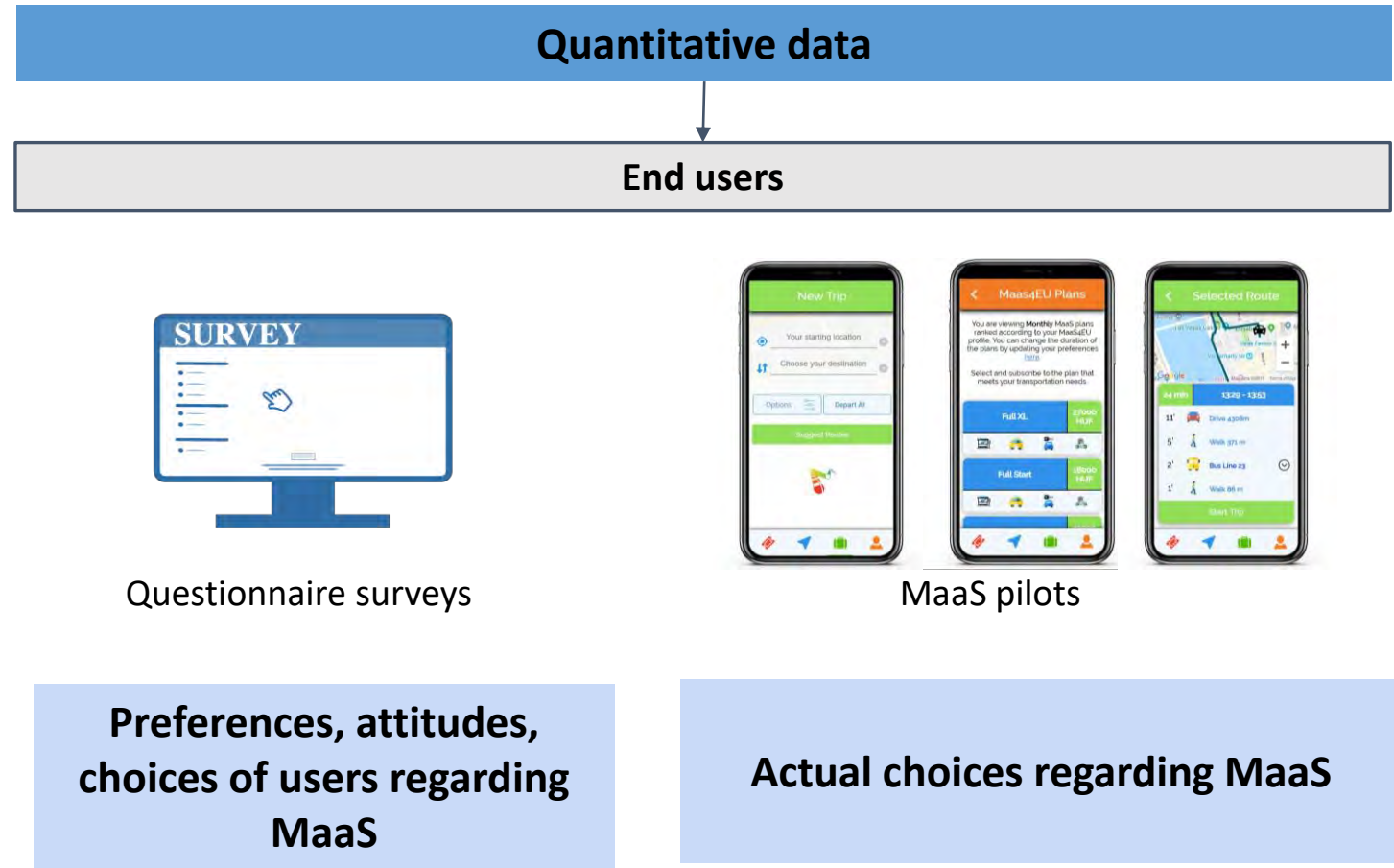
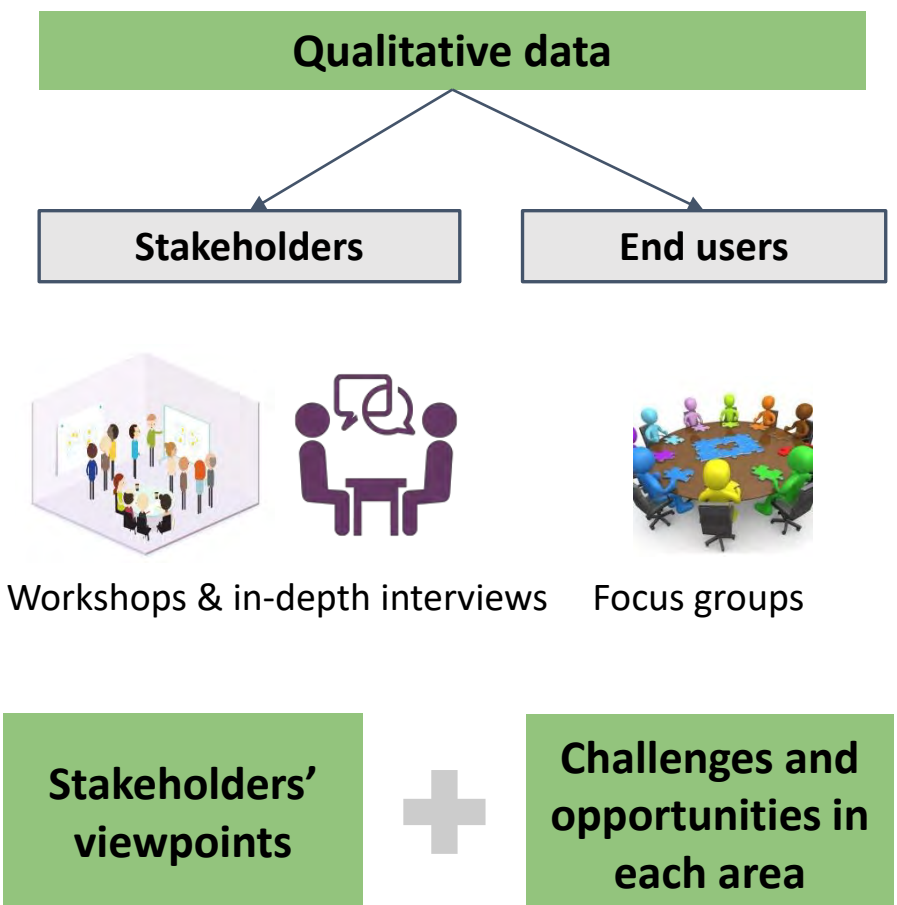
Scientific and Technical Co-ordinator



UNIVERSITY OF THE AEGEAN



Mixed-method approach



Stakeholders' Data (1/2)

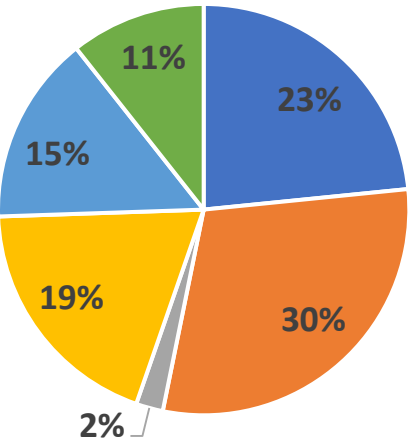


- 3 Workshops (one in each pilot area) organized in round-table discussions
- Stakeholders were asked to answer and discuss a structured questionnaire regarding:
 - MaaS key actors,
 - MaaS benefits,
 - Most appropriate revenue distribution models,
 - Financing and funding sources,
 - Potential barriers for MaaS implementation.

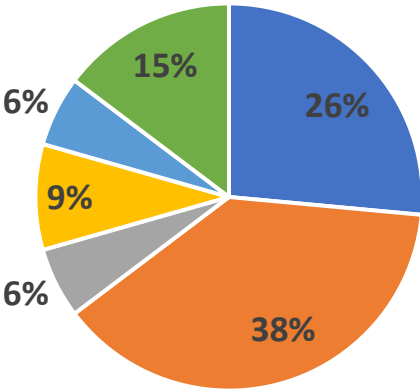
Stakeholders' Data (2/2)

Workshop participants

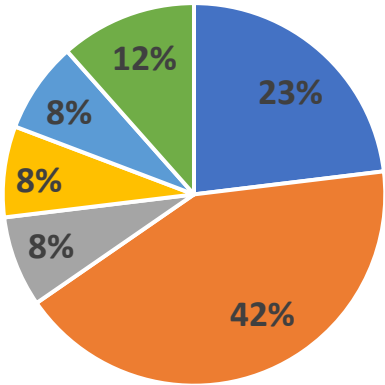
Greater Manchester



Budapest



Luxembourg



- Research / Academia
- Government/Local Authority
- IT and data company

- Public and private transport operator
- Transport consulting company
- other

MaaS operators, passenger associations, financing companies, taxi companies, public transport authorities

Potential MaaS Operators' data

In-depth interviews



- Conducted with 4 stakeholders in the 3 pilot areas
- Derived their opinion about critical aspects, challenges and opportunities to be faced when developing a MaaS scheme in the respective pilot city.
- The interviewees comprised of the potential MaaS operators in each area

End users' Data

Focus Groups



- A focus group discussion guide was developed
- Topics discussed: users' needs, privacy issues, preferences for MaaS services, viewpoints on MaaS app features, etc.
- 5 Focus groups, different stakeholder types, 40 individuals

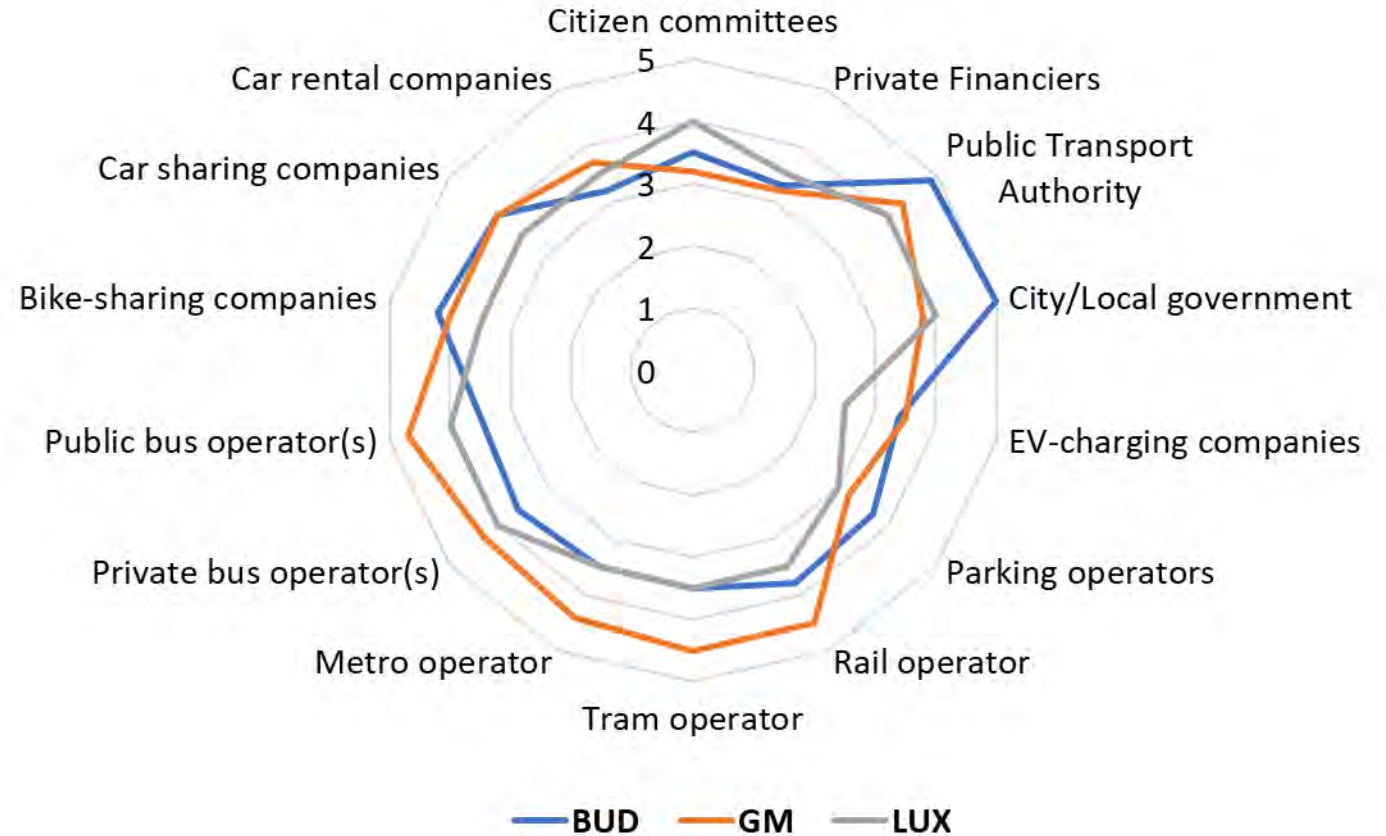
Main Findings (1/4)

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: this does not seem to be the case → PT is not fully developed and 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.

Main Findings (2/4)

MaaS Operator

Current state of practice: Commercial MaaS developments have been mainly led by private companies with little public authority involvement in the MaaS operator's role.

Stakeholders viewpoints: **PT Authorities** 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.

However, PT Authorities **are not willing** to undertake such a role because **they are lacking the resources** needed to deploy it (*in-depth interviews*).

Enablers and barriers for MaaS implementation

They are identified via the stakeholders' workshops and in-depth interviews regarding the domains of:

Infrastructure
(Digital technologies,
APIs etc.)



**Regulatory and Legal
issues**



**Political culture and
Social values**



Resources and Financing



Main Findings (3/4)

Needs and concerns of the demand side → Focus Groups

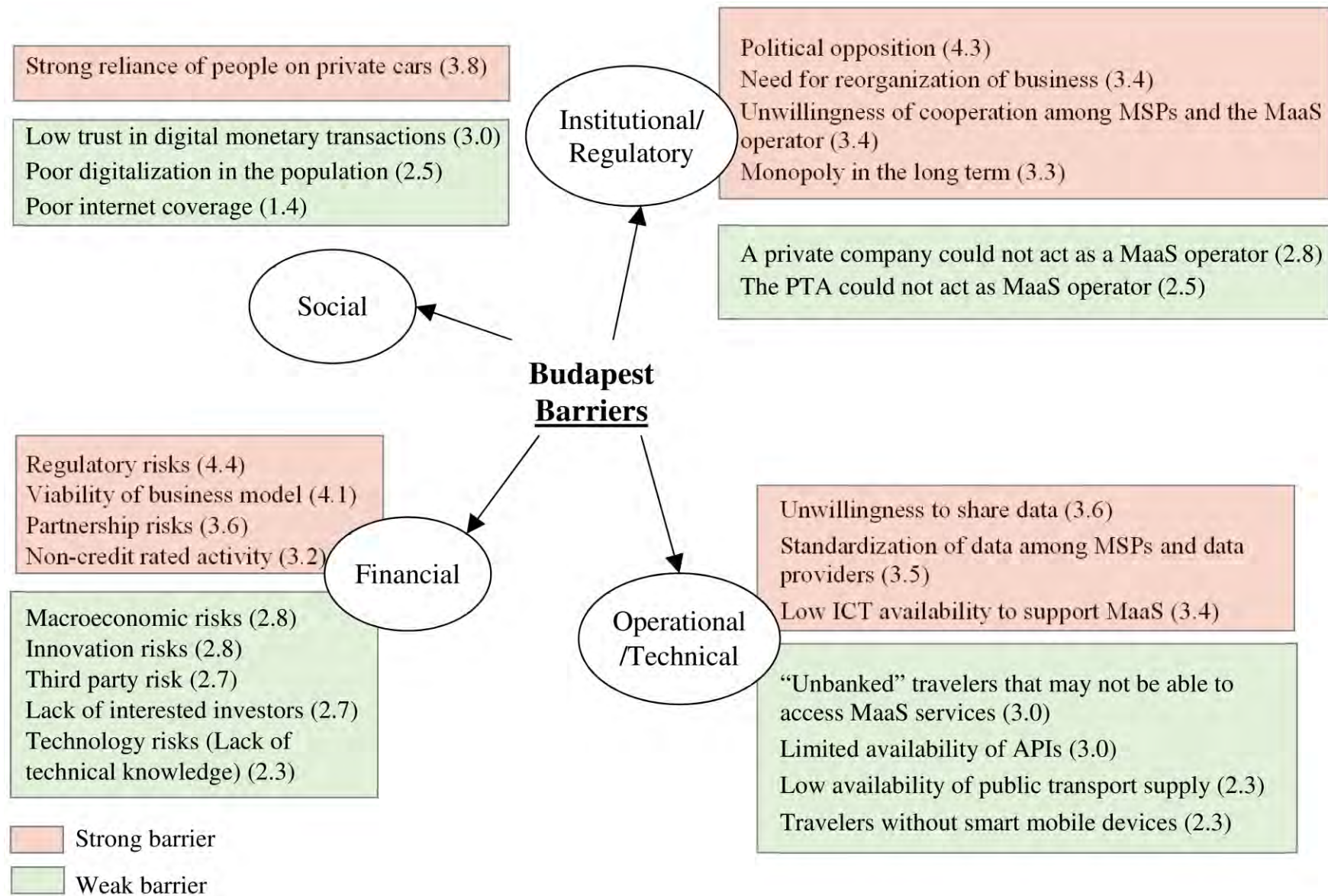
Domain	Focus Groups Statements
MaaS services and features:	<i>"Flexible packages – no other knows what I want"</i> <i>"Put it all in – give people the option to opt out if it isn't suitable"</i> <i>"MaaS should be real-time and all means of transport"</i>
Coverage:	<i>"It would be nice to travel with the same MaaS operator everywhere"</i>
Privacy issues	<i>"It's really worrying being tracked on your phone. They know where you've been"</i> <i>"They already know everything about us"</i> <i>"I don't mind [being tracked] and I'm sure I am already"</i> <i>"That ship has sailed"</i>

Polydoropoulou, A., Pagoni, I., & Tsirimpa, A. (2020). Ready for Mobility as a Service? Insights from stakeholders and end-users. *Travel Behaviour and Society*, 21, 295-306.

Main Findings (4/4)

Domain	Focus Groups Statements
Personalization:	<i>“The system should be self-teaching, examine my habits” “Shouldn’t there be options? Do you want to improve your journey? Do you want to save money? Ride a bike. Do you want to burn calories? Take a walk. Do you want to see more of the city? Go this way by bike...”</i>
App notifications:	<i>“Push notifications in case of delays or changes in service”</i>
Non-mobility services:	<i>“Collectively travellers should get a discount (e.g. car-pooling, car-sharing)” “You could incentivize people – if they’ve cycled 10,000 miles they get a tenner or whatever</i>

Polydoropoulou, A., Pagoni, I., & Tsirimpa, A. (2020). Ready for Mobility as a Service? Insights from stakeholders and end-users. *Travel Behaviour and Society*, 21, 295-306.



Polydoropoulou, A., Pagoni, I., & Tsimpa, A. (2020). Ready for Mobility as a Service? Insights from stakeholders and end-users. *Travel Behaviour and Society*, 21, 295-306.

Conclusions and Policy Recommendations

Systemic enablers and barriers for MaaS implementation

➡ policy interventions should be carried out by the involved actors (i.e. operators, authorities, societies, policy makers) to support a successful MaaS deployment

- **Regulatory barriers:** the traditional transport-sector **policy and regulatory frameworks should be reviewed and adapted** to facilitate MaaS implementation.
- **Lack of standardized APIs:** Policy makers should **establish standards** for the data collection, management and sharing so as to support the interoperability of data and APIs feeds.
- **Issues of data interoperability, need for data openness**

Conclusions and Policy Recommendations

- **Define what types of data can be gathered by MaaS operators: draw a specific Code of Conduct concerning Data Protection and propose a standard certification in this respect;**
- **Infrastructural challenges: PT authorities should exploit the available technological developments and support ticketing innovation on their transport networks**
- **Trust between MaaS actors: MaaS actors should cooperate and compete leveraging co-opetition to create maximum value and promote their businesses. Only if they collaborate, will MaaS potential benefits be delivered to end users and cities.**

Conclusions and Policy Recommendations

- **Create Uniform multimodal passenger rights:** regulations can resolve grey areas about obligations and liability, learning from existing MaaS schemes while waiting the forthcoming EC package on protection of passengers in multimodal journeys
- **As part of the Green Deal** to promote the use of multimodal transportation, also seeking stronger collaboration among MaaS operators and a more integrated transport planning approach at the urban level.
 - Benefit from some countries new legislation on Mobility and their sustainable mobility packages to promote MaaS (e.g. France, Belgium)



Join our MaaS4EU Final Conference

29th October 2020 from 14:00 to 17:30

Register now: <http://www.maas4eu.eu/maas4eu-final-conference/>

Ms Akrivi Vivian Kioussi
INTRASOFT International



MaaS4EU

www.maas4eu.eu

THANK YOU



Session 3: Interactive session organised by MyCorridor

- Quantitative impacts achieved in the different project pilot sites
- Results summary of additional qualitative impacts from other stakeholder groups
- Insights on future deployment recommendations coming from other local stakeholder consultations (covering a range of business-related, regulatory, policy-related issues)



Closing remarks

- Roberto Palacin, Project Coordinator – University of Newcastle

MyCorridor 3rd Pan European Workshop

“Let’s think of MaaS impacts”

Roberto Palacin, Newcastle University

Agenda

- **MyCorridor Impact Assessment** - Gennaro Ciccarelli, TTS Italia
- **Legal aspects of MaaS** – Marie-Claire Smith, Jeremy Godley, Osborne-Clarke LLP
- **Children, young people and MaaS** – David Golightly, Newcastle University
- **MaaS impacts and the future** – Roberto Palcin, Newcastle University
 - Go to www.menti.com and use **94 71 55 6**

MyCorridor 3rd Pan European Workshop

Impact Assessment

Gennaro Ciccarelli, TTS Italia

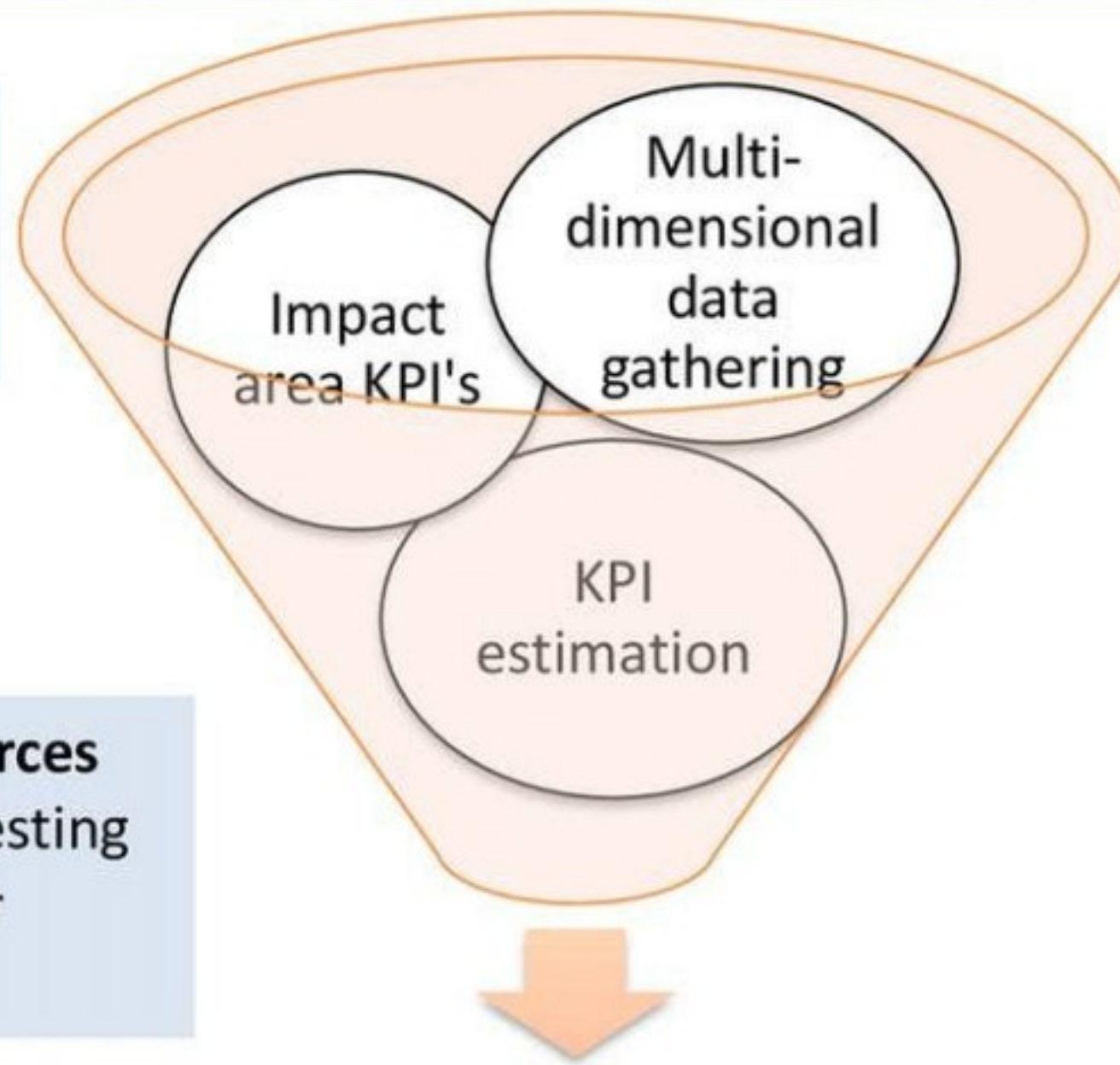
Outline

- Impact assessment from user trials
- Quantitative impacts from stakeholder focus groups
- Business- & policy-related insights from stakeholder consultations

Impact assessment from user trials



Impact area
Environmental,
economic, social



Assessment levels
User-, business-
and societal

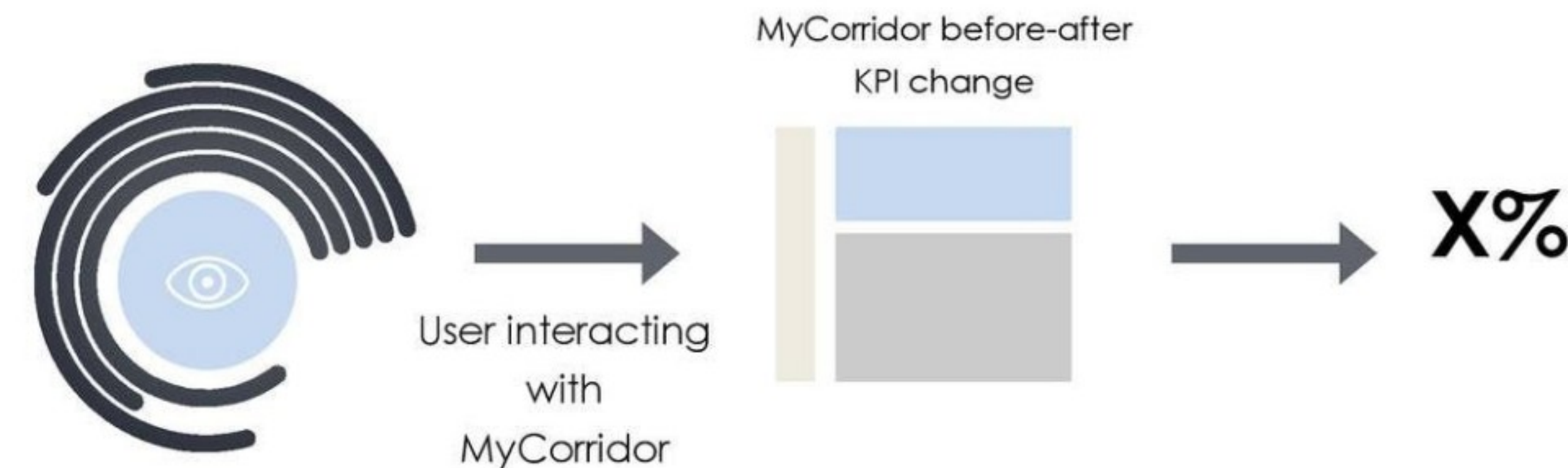
Site-based data sources
Baseline and post-testing
questionnaires, user
logged trips

**Data extrapolation and
knowledge transferability**

Research questions

- Does MyCorridor trigger travel behaviour change mechanisms?
- Does it associate with positive impacts on the transport system?
- Does MyCorridor result in positive societal changes?
- Is the wide general public going to benefit from the intended positive impacts or is it only attractive to a niche group of users?

KPIs in progress



Impact assessment from user trials



Targets



MONITORING PERIOD

From March 2020 to
October 2020



PILOT SITES

5



USERS

$60 \times 5 = 300$



TRIPS

$180 \times 5 = 900$



Overall status as of 18/10

163

No. of users
across pilots

781

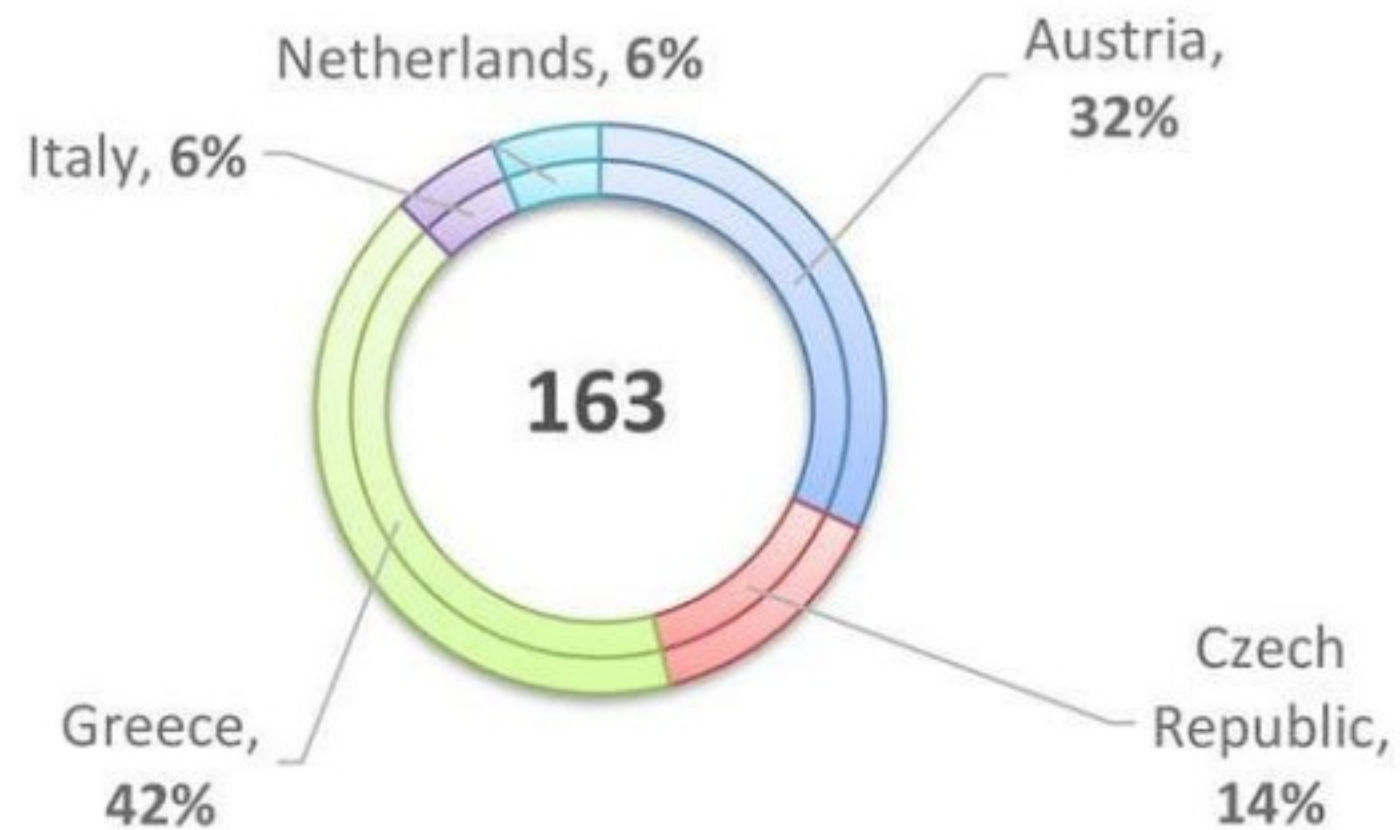
No. of trips
across pilots



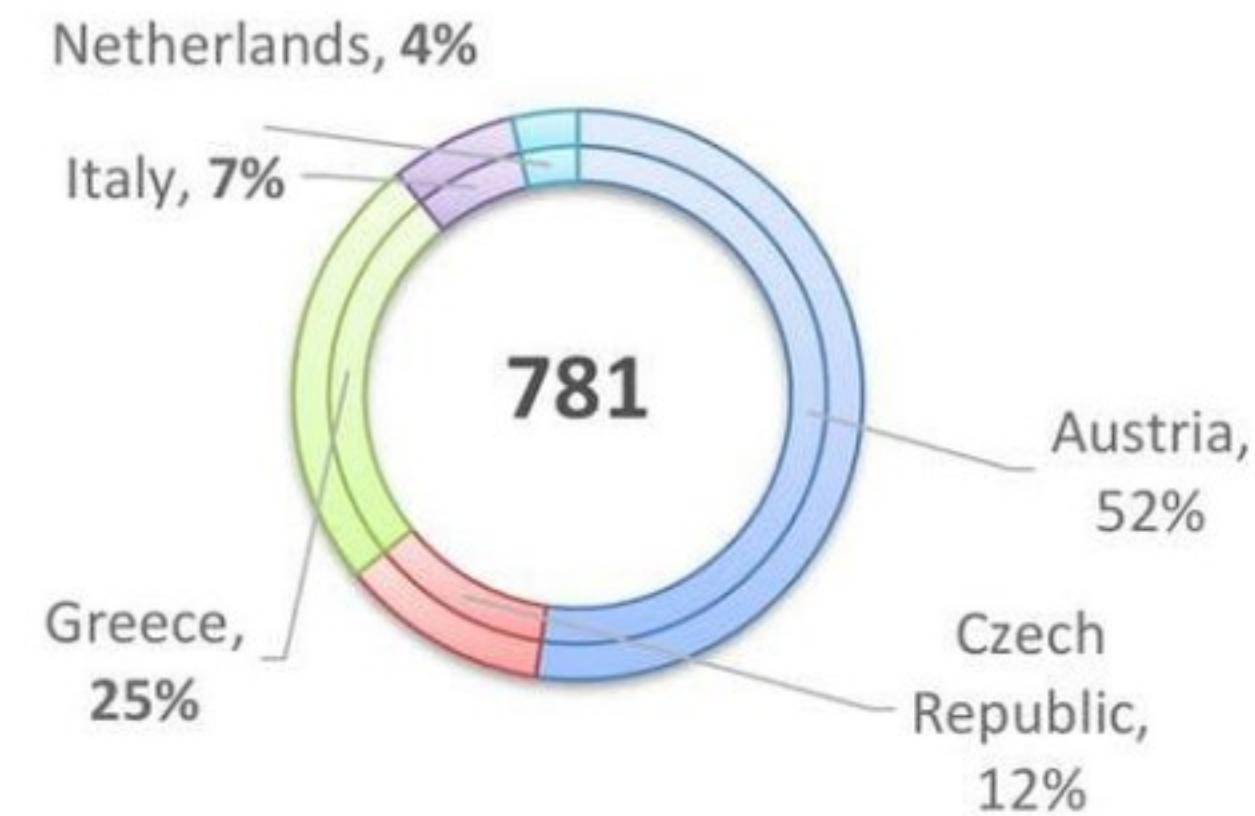
*Tidal distribution of trips
across pilot sites due to
travel restrictions*



Logged users so far



Logged trips so far

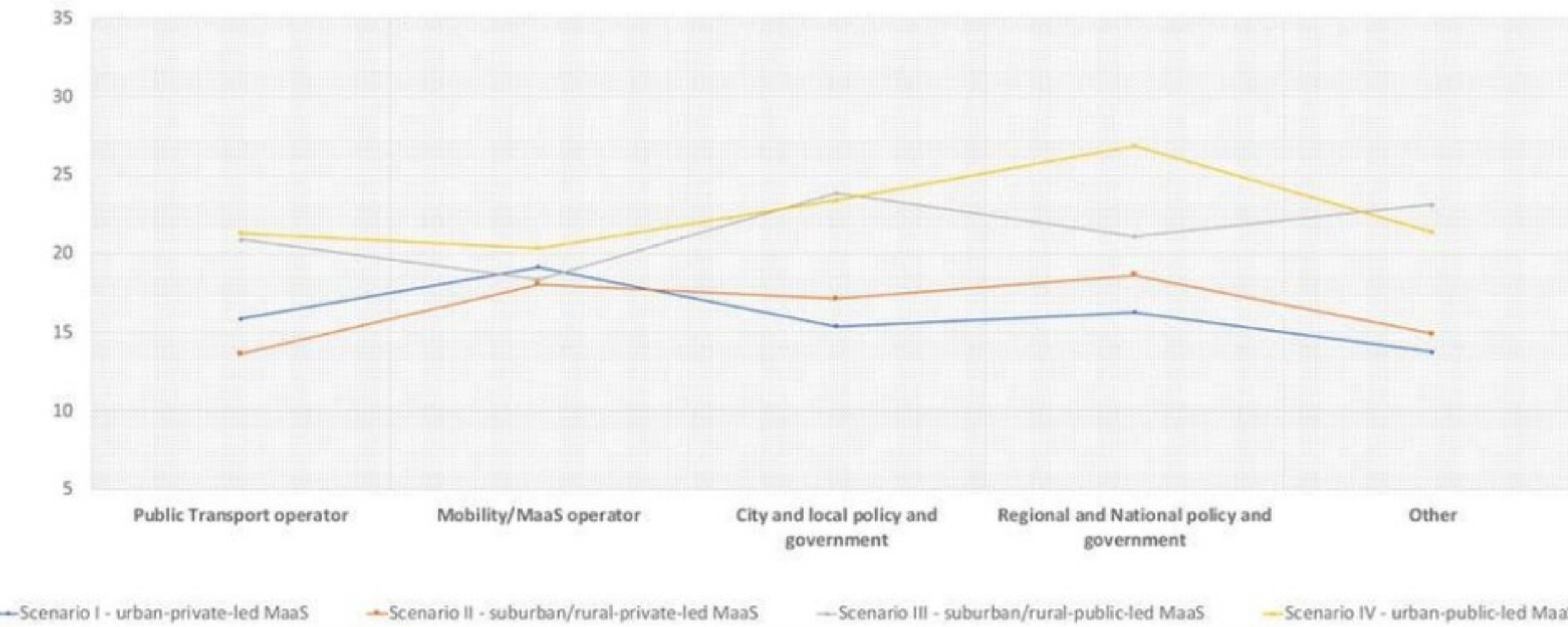


**Pilot operations severely
impacted by COVID-19
→ Evaluation & IA still in
progress**

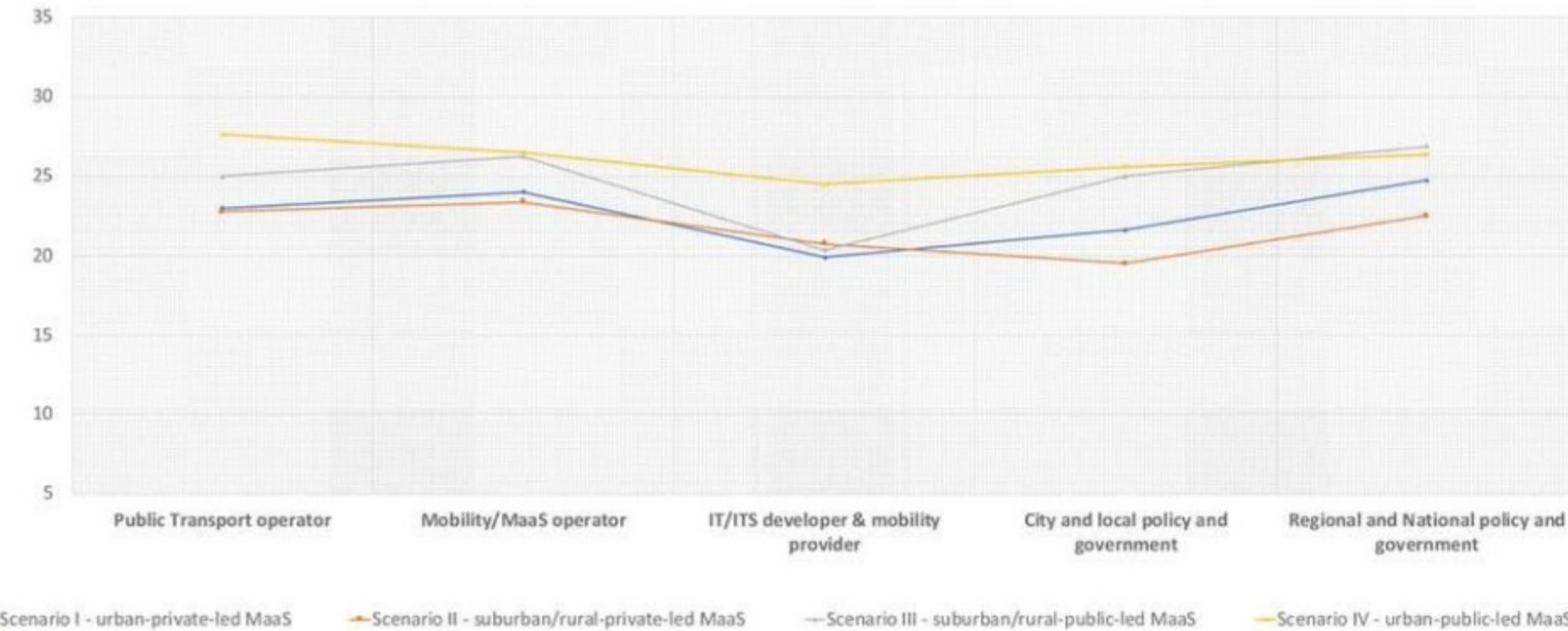
Quantitative impacts from stakeholder focus groups



Average (across criteria) weighted scenario impact scores for Austria

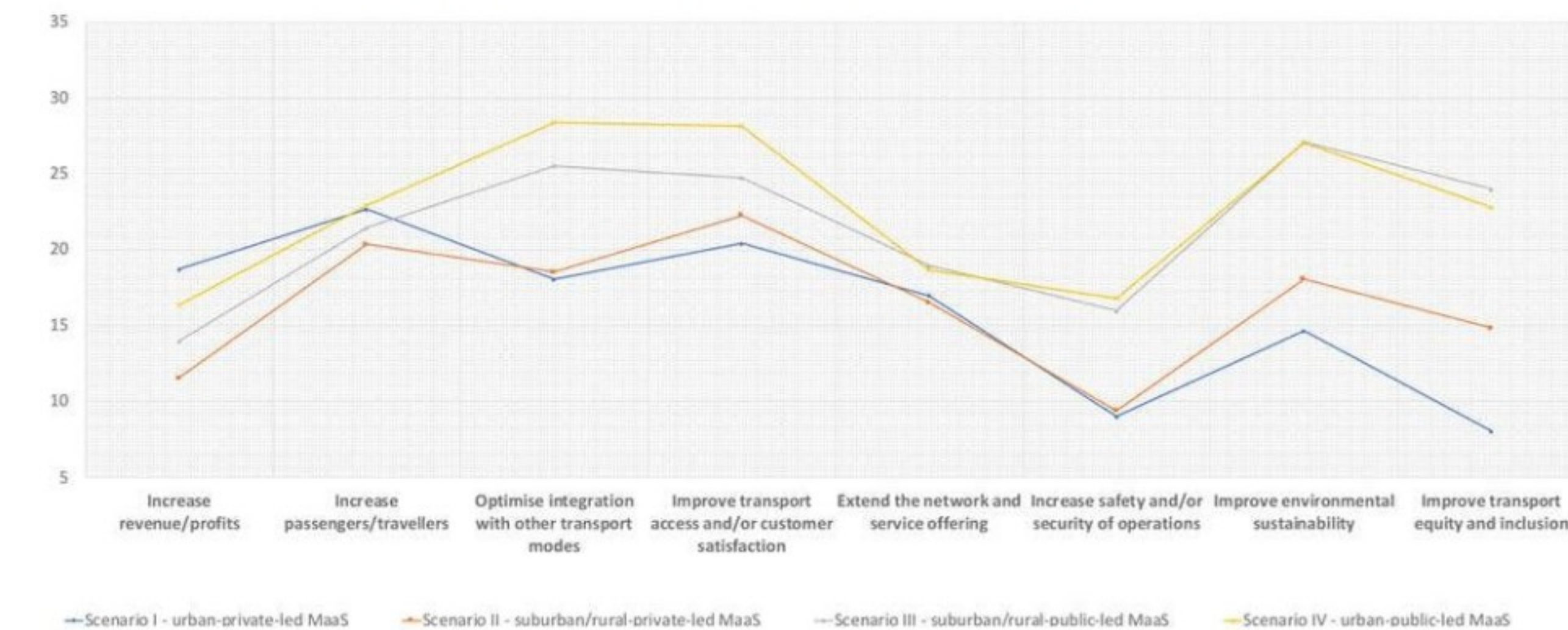


Average (across criteria) weighted scenario impact scores for Italy

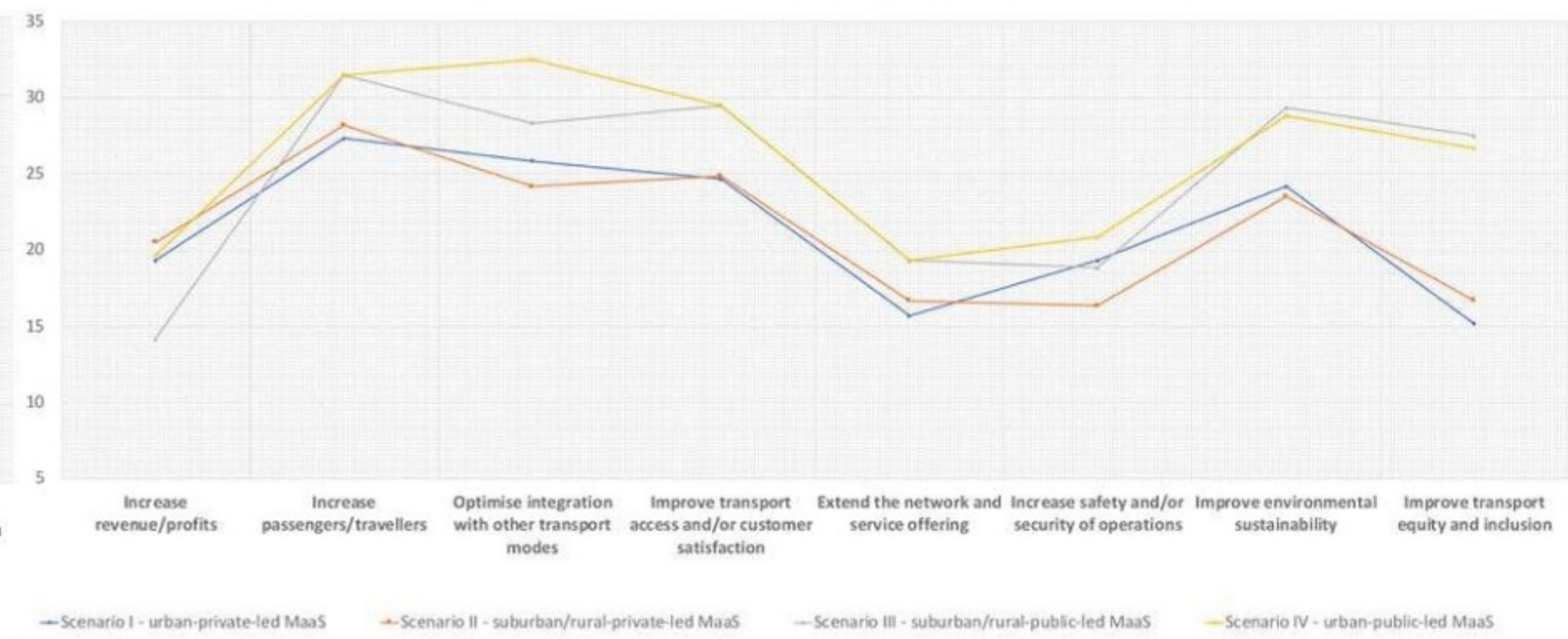


Austrian and Italian stakeholders favour Public-led MaaS deployment scenarios!

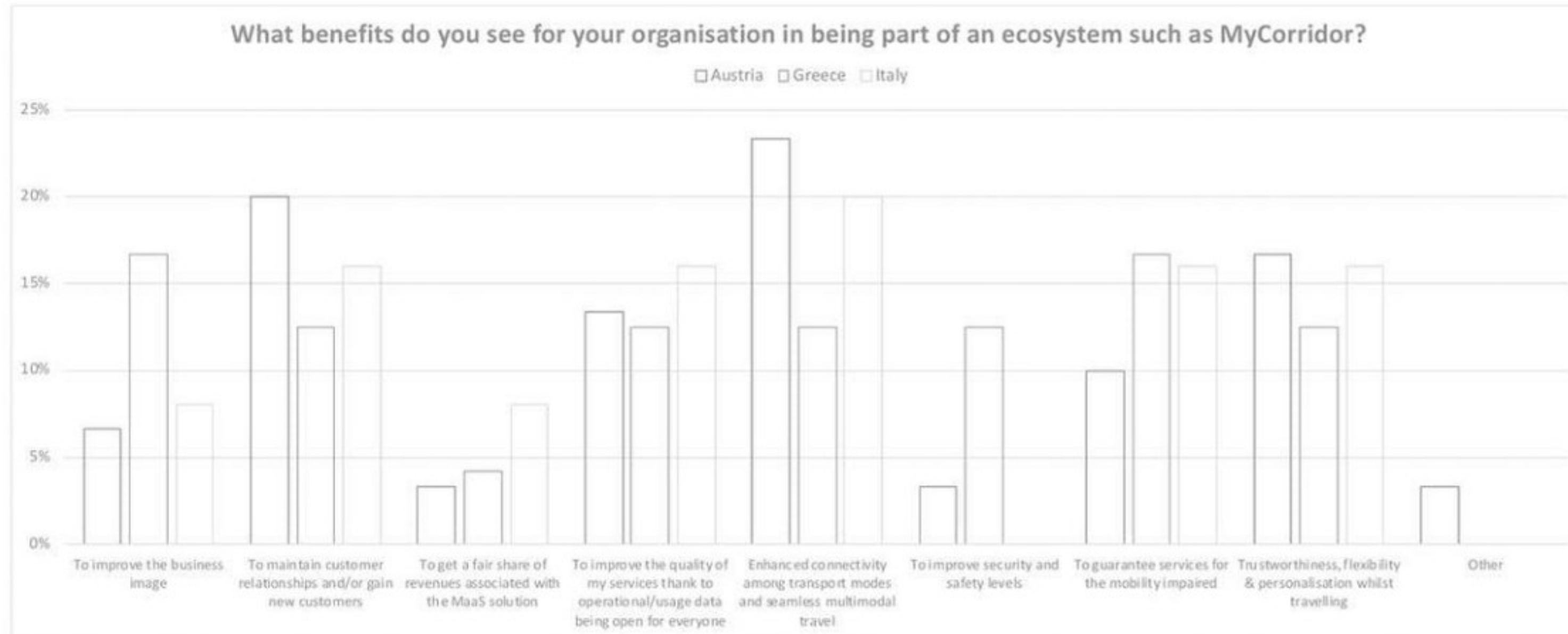
Average (across stakeholder categories) weighted scenario impact scores for Austria



Average (across stakeholder categories) weighted scenario impact scores for Italy



Business- & policy-related insights from stakeholder consultations

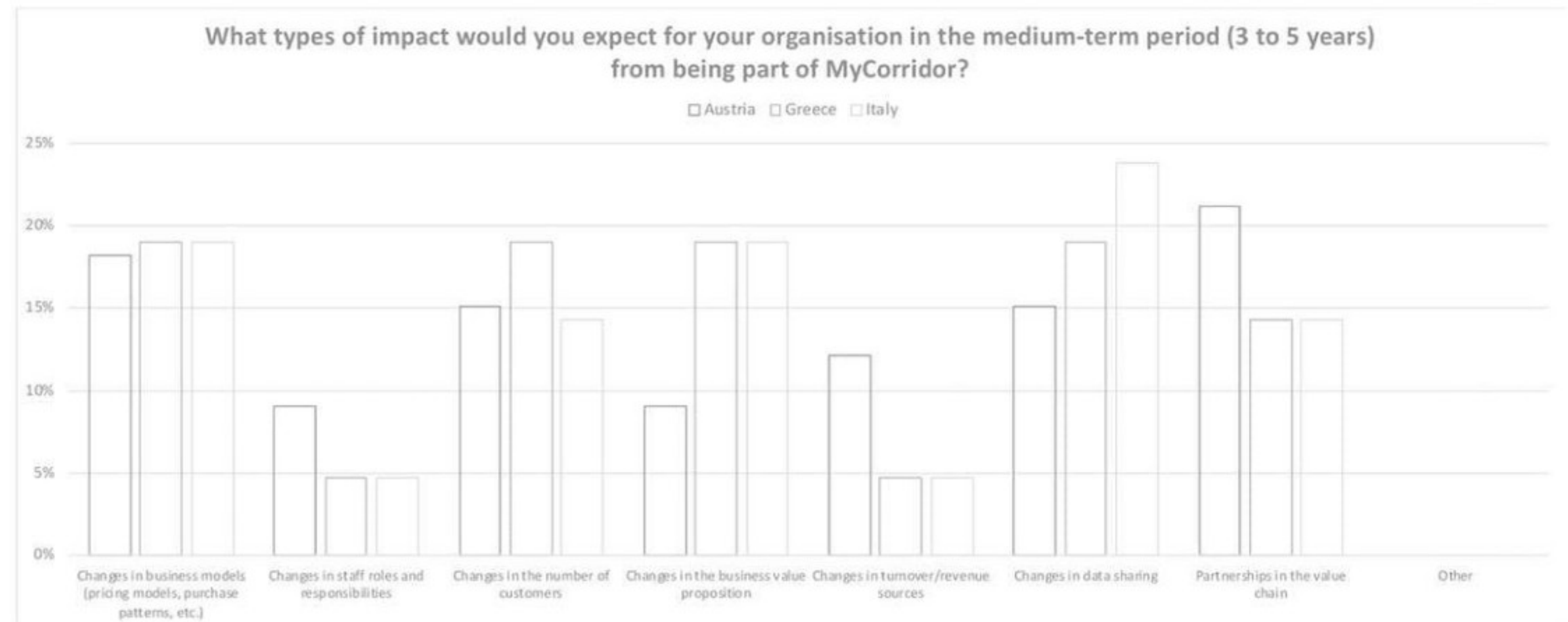


Most popular benefits:

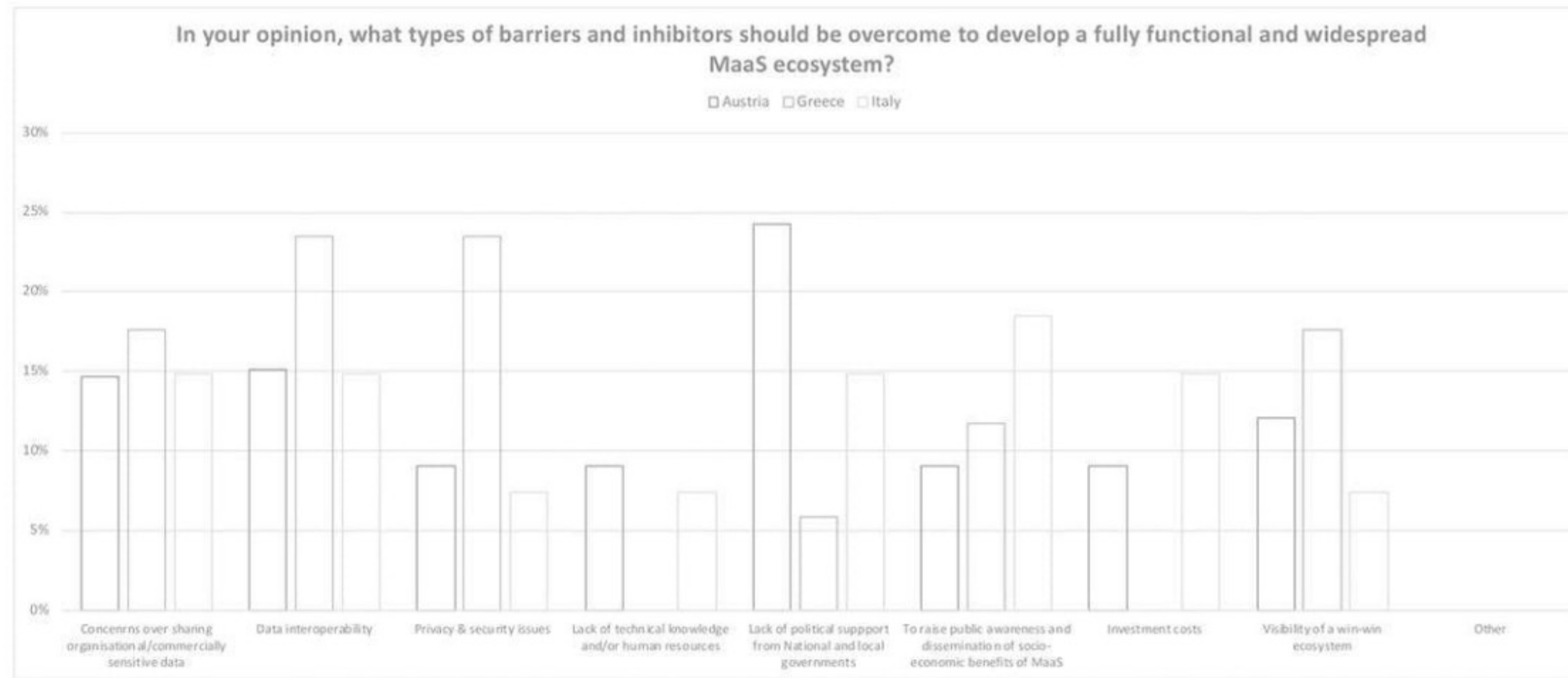
- Enhanced connectivity and seamless travel
- To maintain or gain new customers
- Flexibility & personalisation whilst traveling
- To guarantee services for mobility impaired users
- ...

Most popular impacts:

- Changes in BM
- Changes in customer numbers
- Changes in data sharing practices
- Changes in value proposition
- ...



Business- & policy-related insights from stakeholder consultations



Most popular barriers:

- Concerns over sharing data
- Interoperability issues
- Lack of political support
- ...

Most popular changes:

- Data sharing standards
- Usage data open to all providers
- Public Authorities to act as guarantor for data exchange
- To embed TM into MaaS planning
- ...



THANK YOU!





MaaS: Navigating the legal landscape - lessons learned

MyCorridor 3rd Pan-European workshop

The MyCorridor project

Jeremy Godley, Osborne Clarke LLP

Marie-Claire Smith, Osborne Clarke LLP

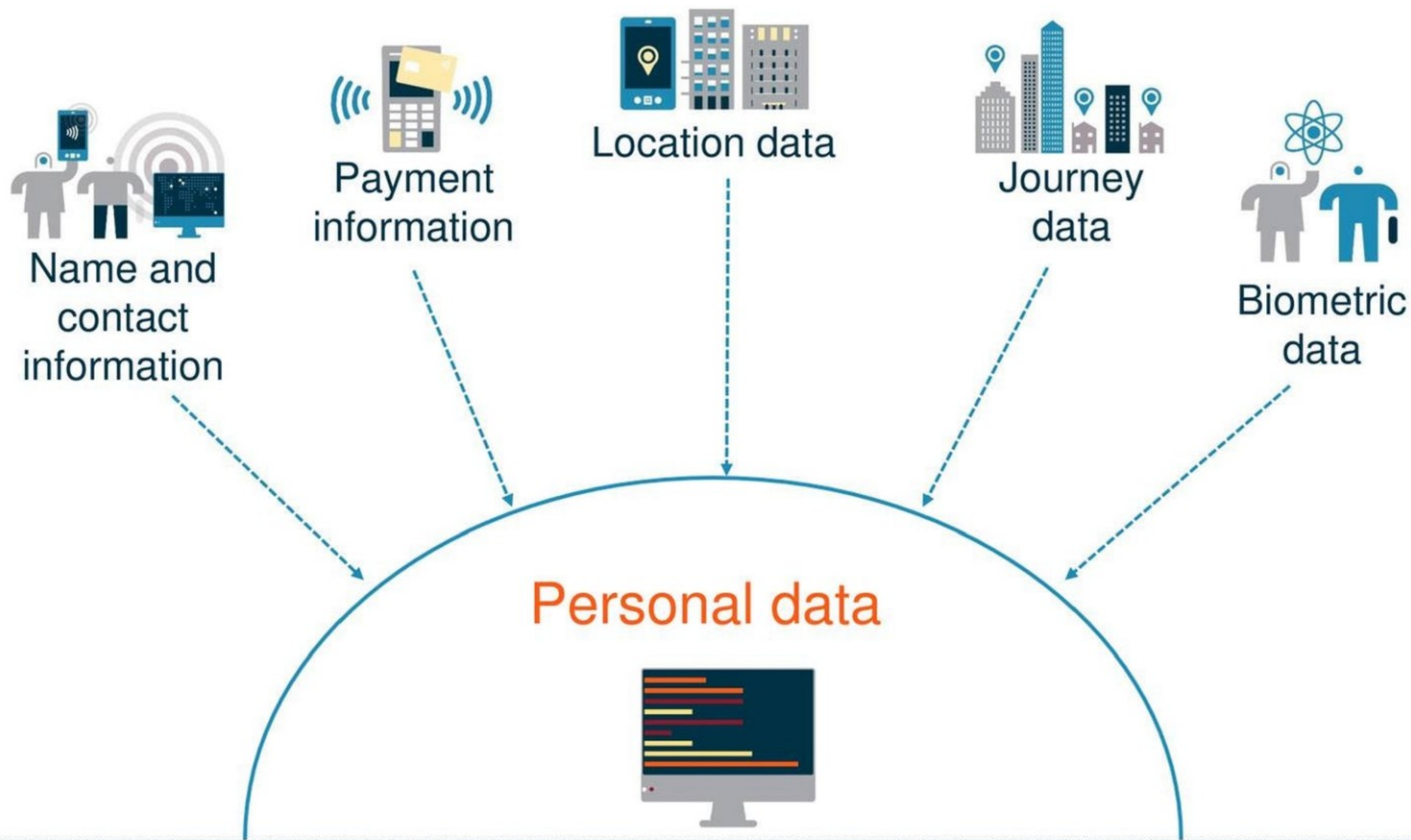


Legal considerations identified and lessons learned

- **Data protection**
- **Data standardisation**
- **Regulatory framework**
- **Payments regulation**
- **Competition law**
- **Platform regulation**
- **Contractual framework**
- **Liability**
- **Consumer law**



Lessons learned - Data



Other Lessons Learned – Interoperability, Contractual Framework and Payments

Interoperability – Greater interoperability (including in ticketing) is required to deploy seamless cross-border MaaS.



Contractual Framework – Liability between MaaS stakeholders – limiting liability exposure.



Payments – Assess the regulatory, operational and contractual constraints from the outset.



Thank you



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advising across
8
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with
1
client-centred approach



MyCorridor 3rd Pan European Workshop

Future: Children, Young People and Mobility as a Service

David Golightly, Newcastle University

Motivation

- Importance of children and young people
 - Major users of public transit – for education, early work, leisure and social
 - Younger children increase dependence on private car
 - Children and young people are future MaaS users – perceptions now shape the future
- But rarely considered in MaaS literature, or travel literature generally
- Need to if we are to tailor services to them
- Children and young people have unique and changing needs and perceptions
 - Unique views of what it is to navigate around the world
 - Social needs
 - Independence and growth

Method

- Three focus groups in the Newcastle area
- Young children, older children and young people
- Current perceptions of travel
- Understanding the MaaS concept through Lego Serious Play
- Perceptions of MaaS
- Transcription and thematic analysis



Themes

1. Young people's experiences of travel
2. Safety and trust
3. Conceptualising choice
4. Use of technology
5. Status and identity



Major points

- Actively think about their travel, and how to do it
- MaaS perceptions are shaped by (negative) perceptions of public transit
- Need a strong, public brand
- Not concerned around IT, but some around 'surveillance'
- Car is still a status symbol



Conclusions

- Children and young people are active in their choice of travel
- Mobility is critical for independence – mobility, socialisation, learning about the world
- Active participation in MaaS design

More at...

- Casadó, R. G., Golightly, D., Laing, K., Palacin, R., & Todd, L. (2020). Children, young people and mobility as a service: opportunities and barriers for future mobility. *Transportation research interdisciplinary perspectives*, 100107.

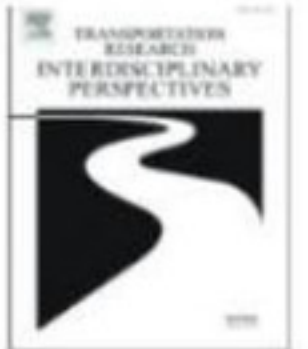
- <https://www.sciencedirect.com/science/article/pii/S259019822030018X>



Contents lists available at ScienceDirect

Transportation Research Interdisciplinary Perspectives

journal homepage: <https://www.journals.elsevier.com/transportation-research-interdisciplinary-perspectives>



Children, Young people and Mobility as a Service: Opportunities and barriers for future mobility



Regina Gairal Casadó^a, David Golightly^{b,*}, Karen Laing^c, Roberto Palacin^b, Liz Todd^c

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Children and young people

User needs

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Usercentred design

ABSTRACT

The following paper examines the needs and perceptions of children and young people (age 8–18) towards Mobility as a Service (MaaS). MaaS offers a new paradigm in the access, planning and pricing of travel. To date, however, young people's views and needs have not been explicitly considered within this context. This is despite more general transport work demonstrating that young people have specific needs and perceptions that could influence their use of MaaS now, and their ongoing perceptions of MaaS across their life. Views of young people towards the MaaS concept were captured through workshops using Lego™. Thematic analysis identified specific considerations for young people's perceptions of MaaS around the experience of travel, travel choices, technology, safety, and status and identity. These results include barriers to acceptance and adoption of MaaS, but also reservations regarding the underpinning transport services. These results also demonstrate the importance of recognising young people as active agents in the use of transport rather than passive users, while sharing many of the concerns of adult users. Young people have a rich and complex voice that needs to be considered in the context of a digitalised 21st century transport service provision and understand young people as having agency around their travel choices. As such this paper fills a critical research gap in the MaaS literature.

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