



**Interreg  
Europe**

European Union | European Regional Development Fund



**PriMaaS**  
Interreg Europe



# Ensuring the sustainability of MaaS

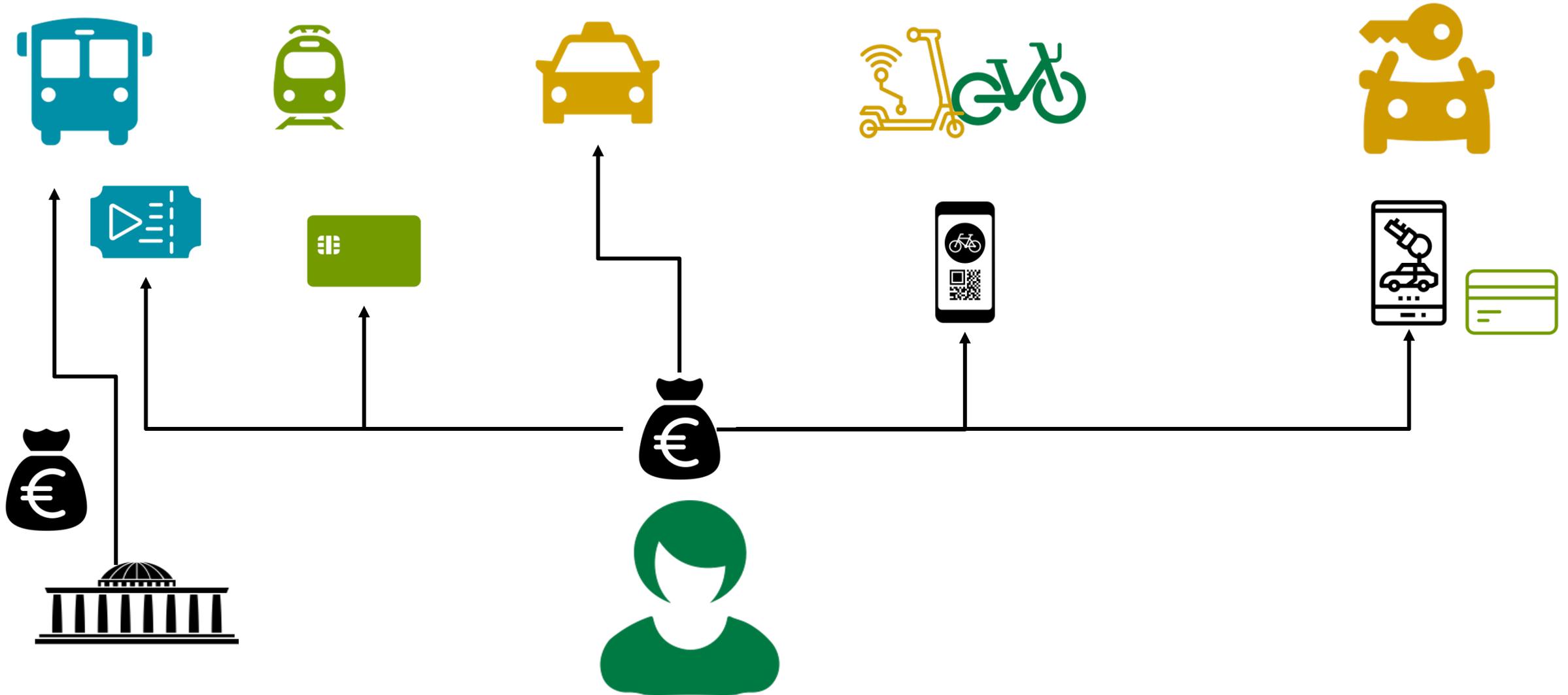
[jorgebandeira@ua.pt](mailto:jorgebandeira@ua.pt)



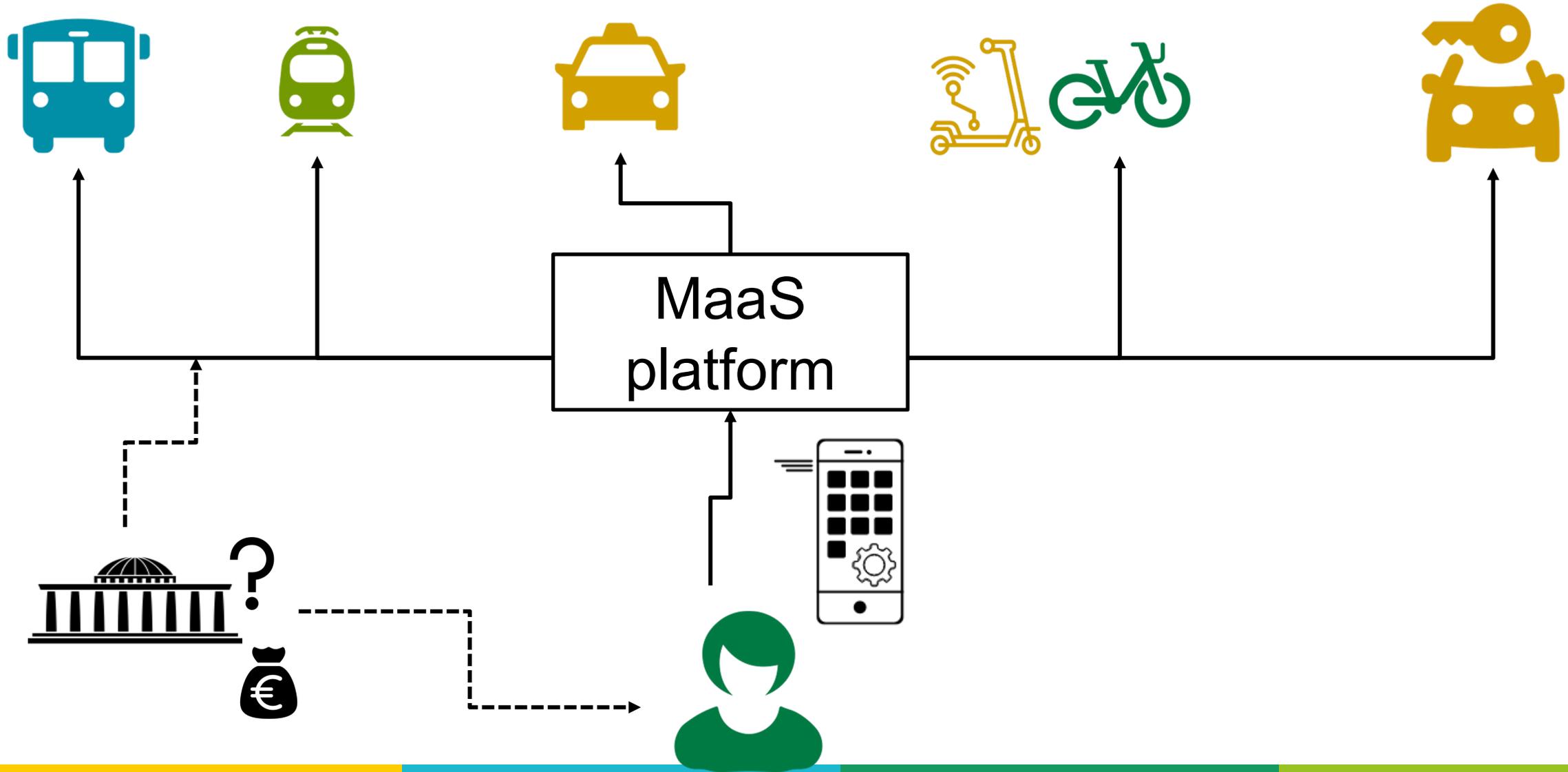
universidade de aveiro

13/12/2022

# Now



# With MaaS



# MaaS ingredients



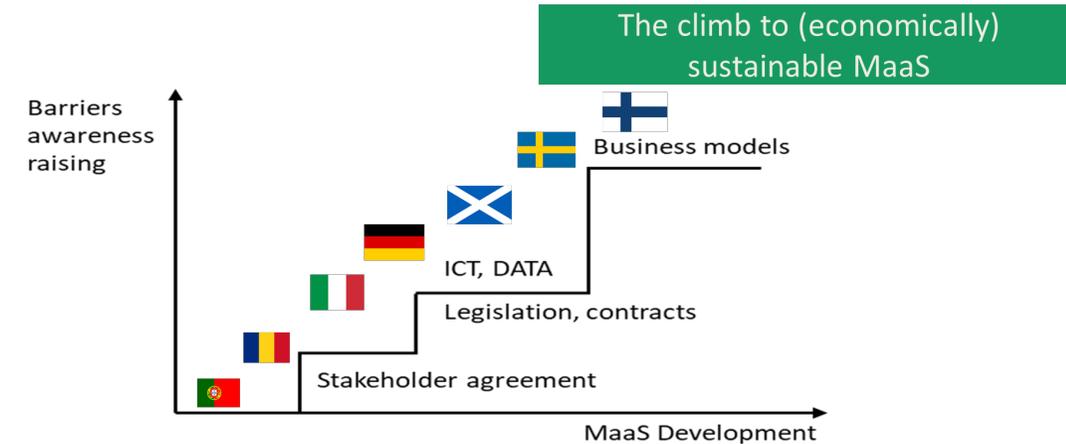
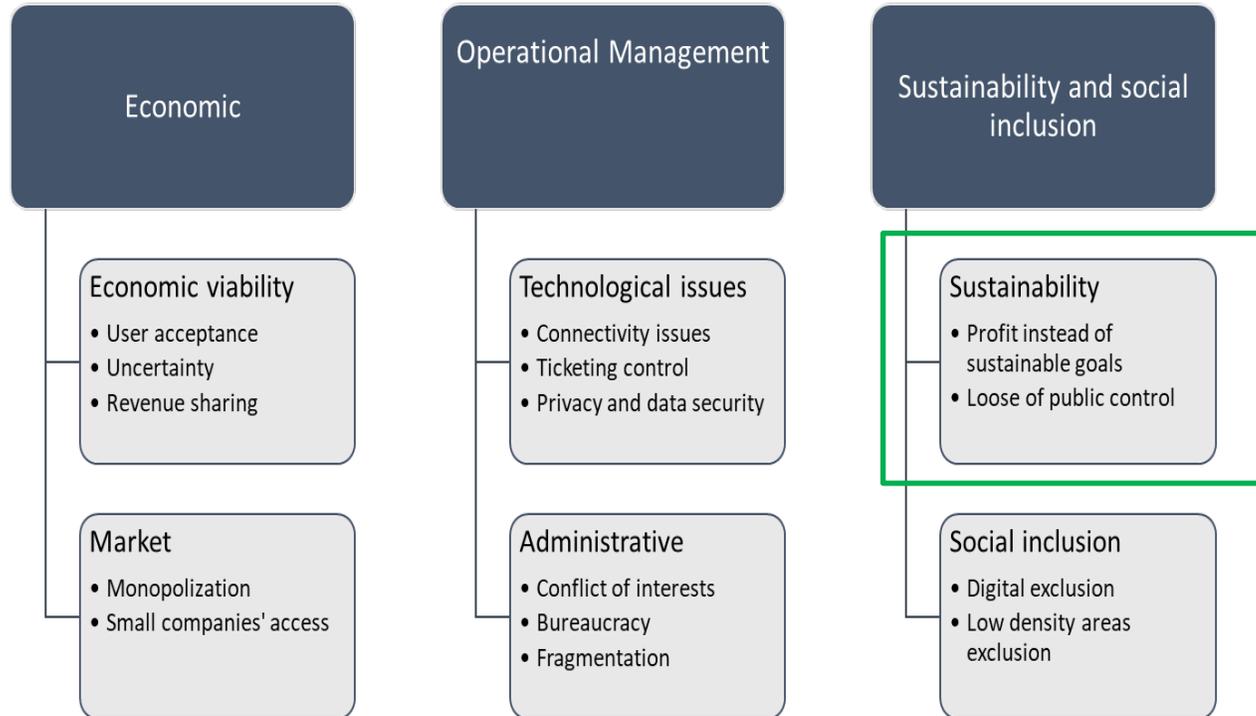
## Potential MaaS advantages

- better information,
- better planning,
- greater interoperability
- easy booking and payment,
- personalization,
- focused on the needs of the user
- reduced need for car ownership,
- more intelligent networks
- optimization of supply and adaptation to demand...
- Greener mobility ... if mainly focused on the PT and low carbon modes

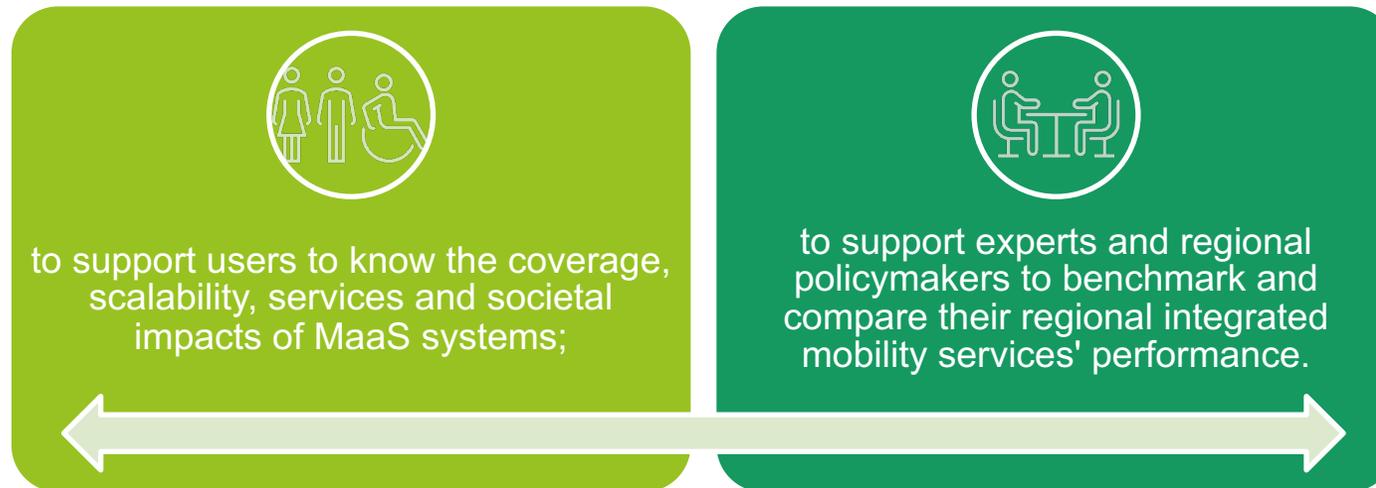


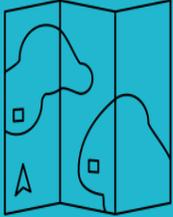
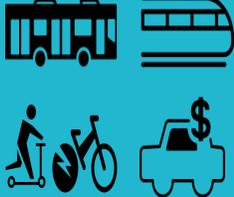
but are we really getting there?

# Risks, challenges and barriers towards sustainable MaaS



## Multidimensional indicator of MaaS Systems performance



Coverage		Functionality		Sustainability	
					
<b>Geographic area</b>	<b>Multi modality</b>	<b>Integration of services</b>	<b>IT personalization</b>	<b>Environmental policy</b>	<b>Social cohesion policy</b>
5	4	2	1	2	3
4		1		2	
$(5+4+2+1+2+3)/30 = 0,5$					

# Try your self



MATLAB App

Coverage		Functionality		Sustainability	
Geographic Area	Multimodality	Integration of Services	IT Personalization	Environmental Policy	Social Cohesion Policy
1	1	1	1	1	1
0		0		0	

Creating/editing file | Access data

Operator Name:

Operator Region:

Operator Country:

Name File:

Final Result:

PriMaaS Interreg Europe MULTIDIMAAS

Transportation Research Procedia  
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## Multidimensional Indicator of MaaS systems Performance

Jorge M. Bandeira <sup>a</sup>, Eloísa Macedo <sup>a</sup>, João Teixeira <sup>a</sup>, Gennaro Cicarelli <sup>b</sup>, Mihai Niculescu <sup>c</sup>, Niklas Fischer <sup>d</sup>, Matthias Gather <sup>d</sup>

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**Free tool (Beta)**

**Methodology – Scoring criteria**

# Geographic area

Ranking	Characteristics	Examples
1	Single Municipality	Erfurter Verkehrsbetriebe GmbH (EVAG)
2	Metropolitan Area	SL (Stockholm Public Transport), Navigogo
2	City + single longer distance PT service	DB-Regio
3	National Level	Resplus (via Samtrafiken) BlaBla car
4	Multiple discontinued cities/regions	Uber
5	Generalized cross border service	Flixbus, Google maps

# Functionality

## Integration

## IT & Personalization

Score	Characteristics	Example	Score	Personalization <sup>IT+</sup>	Example
Yes +1, No 0	<b>General Info</b>	Aimo	Yes +1, No 0	<b>App</b>	EU-BIKE
Yes +1, No 0	<b>Trip Planning</b>	<u>Movit</u>	Yes +1, No 0	<b>Voyage Customisation</b>	orariotrasporti
Yes +1, No 0	<b>Payment-Ticketing</b>	<u>AMT Genoa</u>	Yes +1, No 0	<b>Personalization</b>	AMT
Yes +2, No 0	<b>Bundling-Subscription</b>	Whim	Yes +1, No 0	<b>Automated personalization</b>	Google mpas
			Yes +1, No 0	<b>IoT Integration</b>	

## E.g. Environmental contribution

Rank	Description	Example
1	Generic Environmental Information or strategic target	Tripshare SEStran
2	Customization Environmental Goals	Free Now
3	Gamification for promotion of Environmental goals	Navigogo
4	Active or Dynamic Pricing with environmental goals. Discounts for sustainable travel choices	MTR Express
+1	Integration with regional or urban planning strategies. Clear Evaluation Framework	Riviera Transport

	Coverage		Functionality		Sustainability		Overall	Sochor et al., 2018	Transport Tech., 2018	Lyon et al., 2019
	Geo	Modes	Integration	Person	Environ	Social				
Whim (Helsinki, FI)	2	4	5	2	1	1	0,5	3	4	4
SWA Mobil (Augsburg, DE)	2	4	3	3	0	0	0,4	3	4	4
VMT App (Erfurt, DE)	2	3	3	3	0	0	0,37	2	4	4
DB Navigator (DE)	3	2	3	3	0	0	0,37	2	4	
Google Maps (Erfurt, DE)	5	3	2	4	0	1	0,5	1	0	1
Moovit (Coimbra, PT)	4	1	2	2	1	0	0,3	1	0	1
<b>AMT (Genoa, IT)</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>0,6</b>	3	3	4
Uber (Stockholm, SW)	4	1	3	3	2	1	0,4	1	NA	2
Ubigo (Stockholm, SW)	2	4	5	2	1	1	0,5	3	4	4
Resplus (Swdeen)	3	4	5	1	1	1	0,5	3	2	3
FreeNow (Timisoara, RO)	4	1	3	3	0	0	0,3	1	NA	2
Flixbus (International)	5	1	3	1	0	0	0,33	1	NA	2

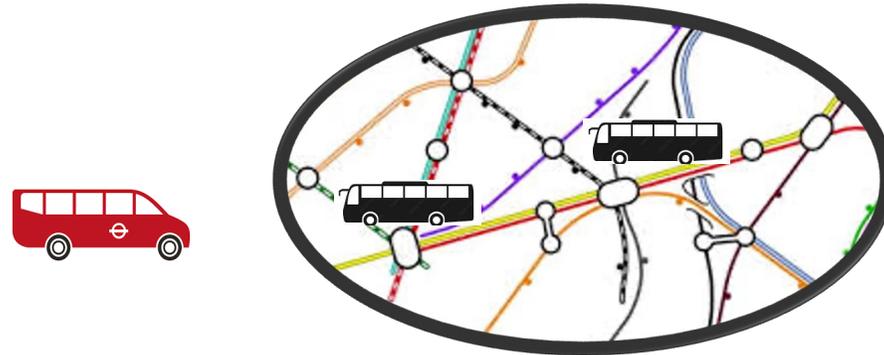
# Take away messages

**MaaS: From a simple tool that makes planning and payment more convenient to a key instrument for sustainable mobility is a long journey!!**



# Take away messages

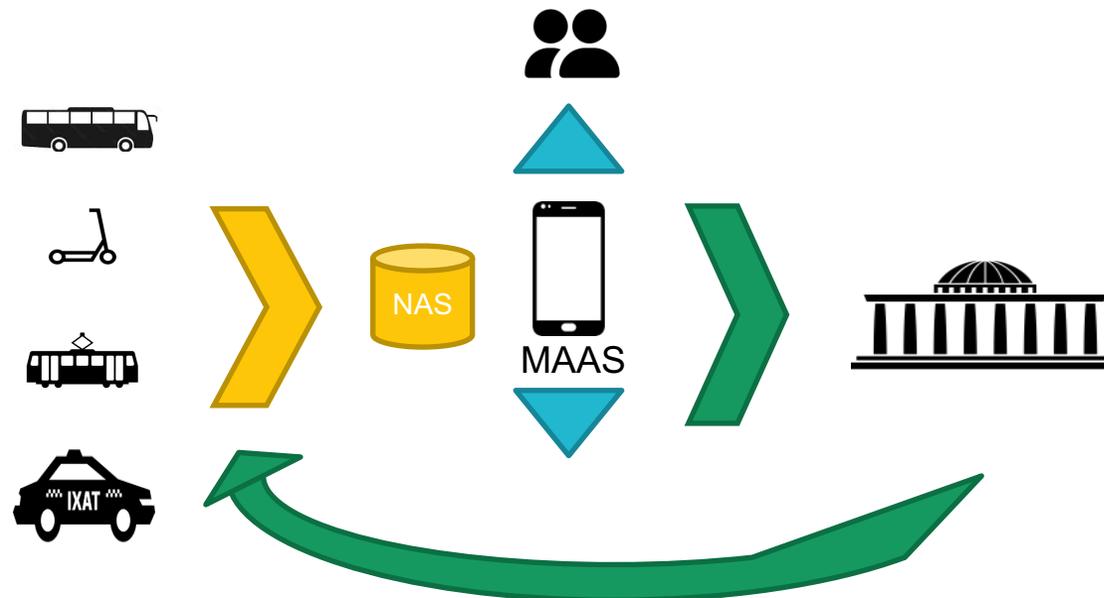
Vital: high-quality **PT in urban zones** and innovative DRT systems in rural/peri-urban areas



# Take away messages

Need: Greater clarity in data sharing standards

- upstream - mobility offer data that feeds MaaS systems
- downstream data **provided by the MaaS brokers to public authorities**



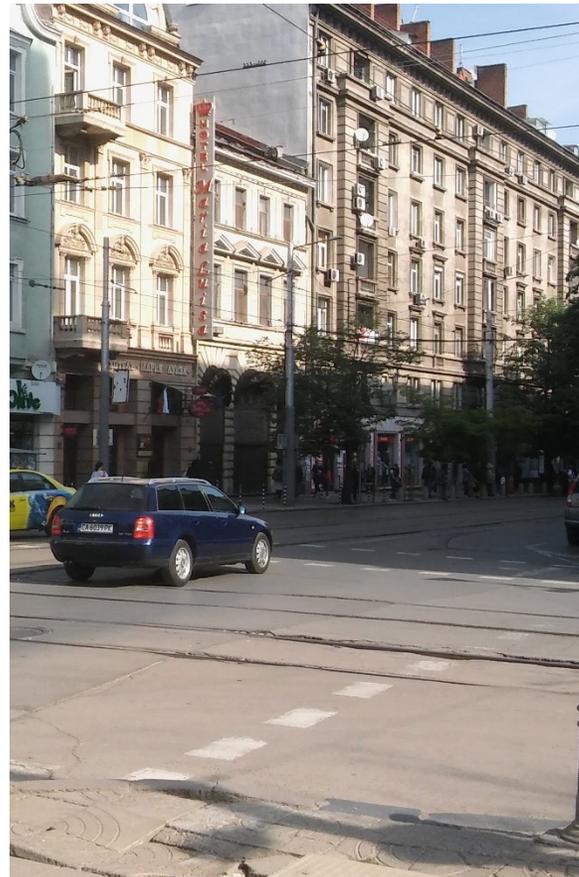
a) transparent KPIs in terms of modal distribution and average ecological footprint of the users of each MaaS service.

b) to involve public authorities and private operators to include societal goals in MaaS platforms

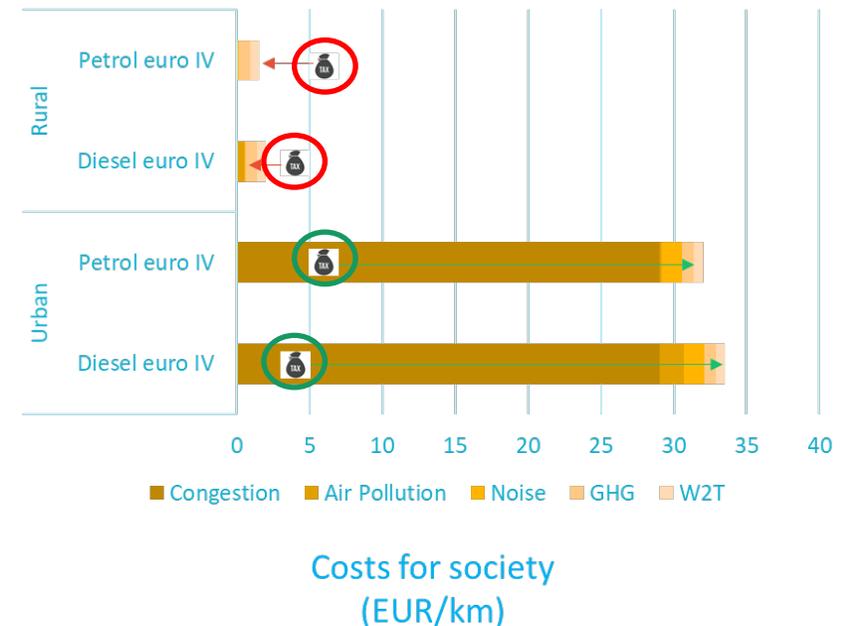
# Take away messages

"the car is always there"

Considering **road use as a service** - (smart charging of mobility externalities)



## Externalities and taxes



Obrigado!



jorgebandeira@ua.pt

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*Project smedia*

