

Sustainable Shared Mobility Webinars



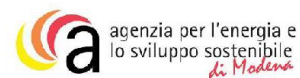
Decarbonising transport systems across Europe



Running through **May & June**

HOSTED BY: Cenex

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TO YOU BY:**





STARS

Shared mobility opportunities And
challenges for European cities



POLITECNICO
DI TORINO

Car sharing in Europe

An outlook on its variants, impacts and a vision for European cities

Marco Diana, Politecnico di Torino (Italy)
& STARS Project Coordinator

SUSMO webinar, 23rd June 2020








This project has received funding from the Horizon 2020 programme under grant agreement n°769513

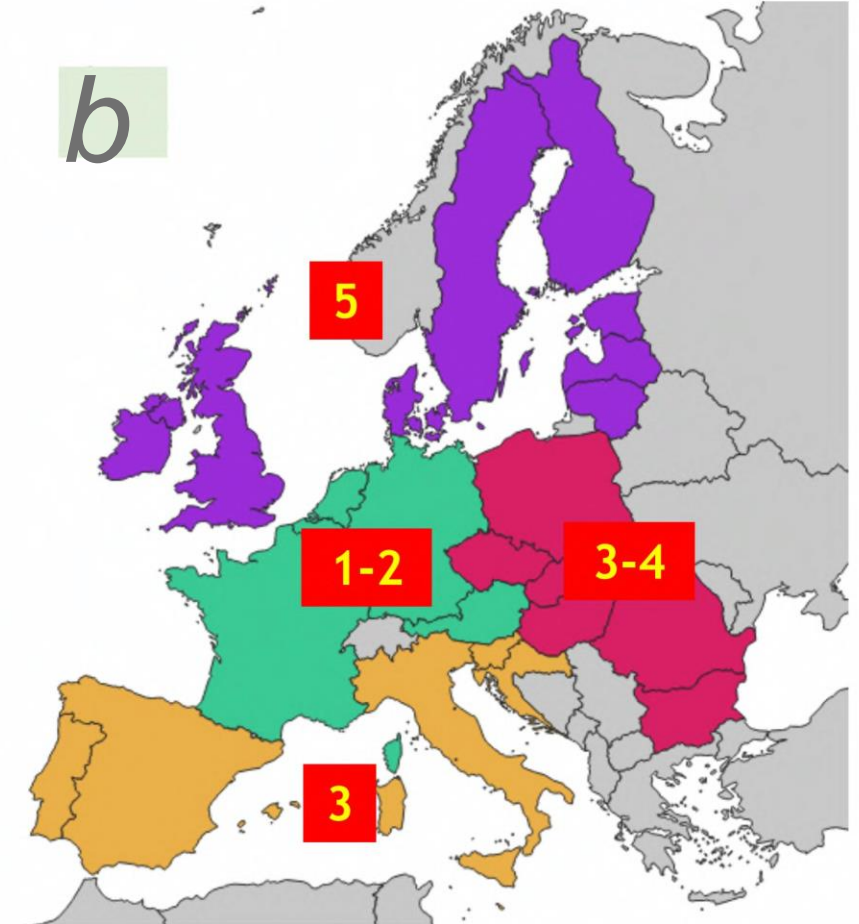
Car sharing is not a univocal concept

Operational characteristics: roundtrip, free floating, stations, operational areas

- * **Juridical scheme of the operator:** corporation, company, association, cooperative; ownership can be public, private or mixed
- * **Business models:** for profit, no profit, fleet ownership scheme, competition versus cooperation with other transport services
- * **Dimensions:** fleet size and composition, number of registered customers, number of trips
- * **Rules for service use:** subscription process, reservation policies, vehicle opening technologies
- * **Pricing policies** for subscription and use of the service
- * ... and, last but not least, **local and environmental factors:** legal and regulatory framework, city policies, socioeconomic trends, cultural factors, performances of other transport modes ...

Five different car sharing schemes

Category of car sharing		Business model		
		Car sharing providers with an own fleet	Peer-to-Peer car sharing	Car sharing among neighbours
	Roundtrip station-based	 Roundtrip station-based		
	Roundtrip homezone-based	 Roundtrip homezone-based	Peer-to-Peer car sharing	
	Free floating with an operational area	 Free floating with operational area		
	Free floating with pool stations	 Free floating with pool stations		



What are the impacts of different forms of car sharing?

Long term and short term impacts

Long-term mobility choices

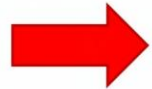
**Person-level
analysis**



- * **Car ownership levels**
- * Public transport passes
- * Levels of use of different transport modes

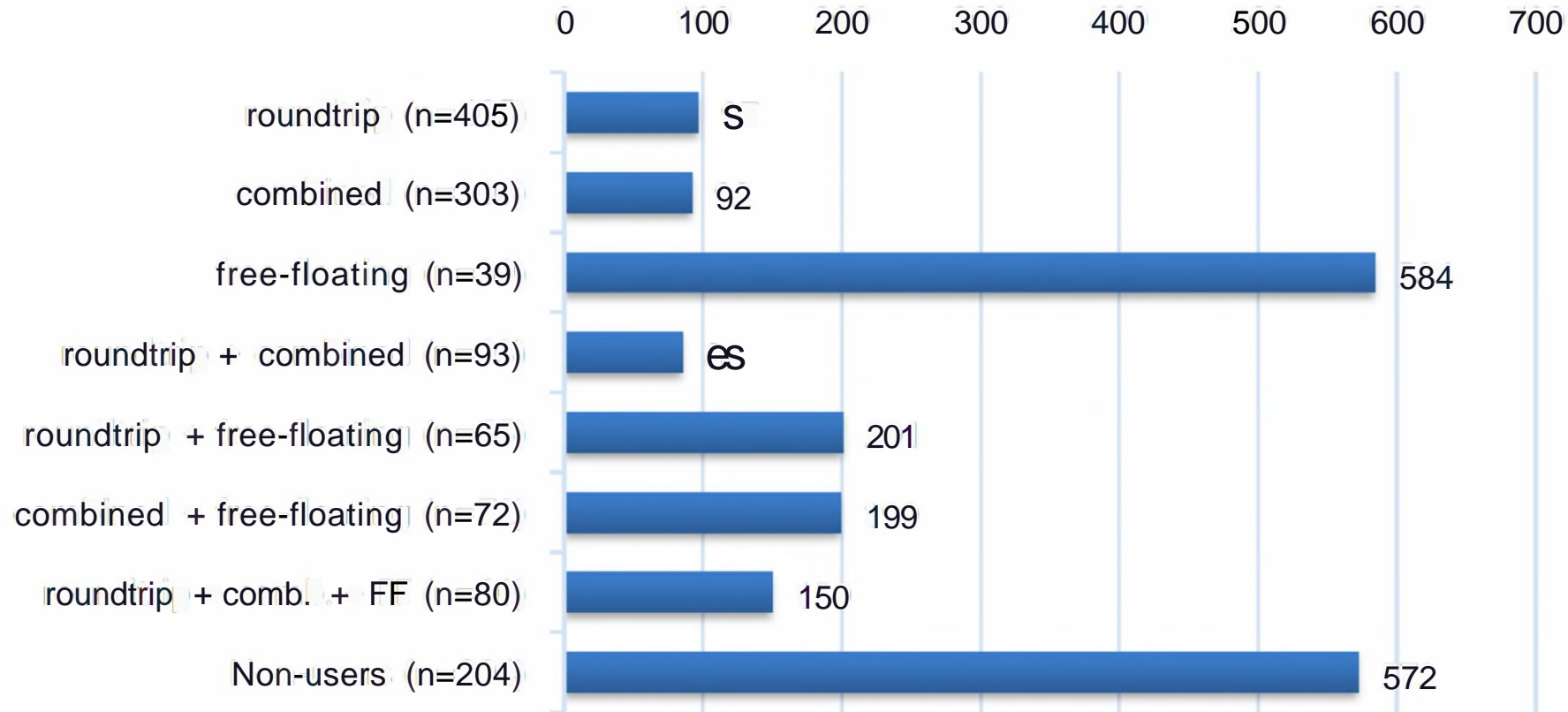
Everyday travel choices

**Trip-level
analysis**



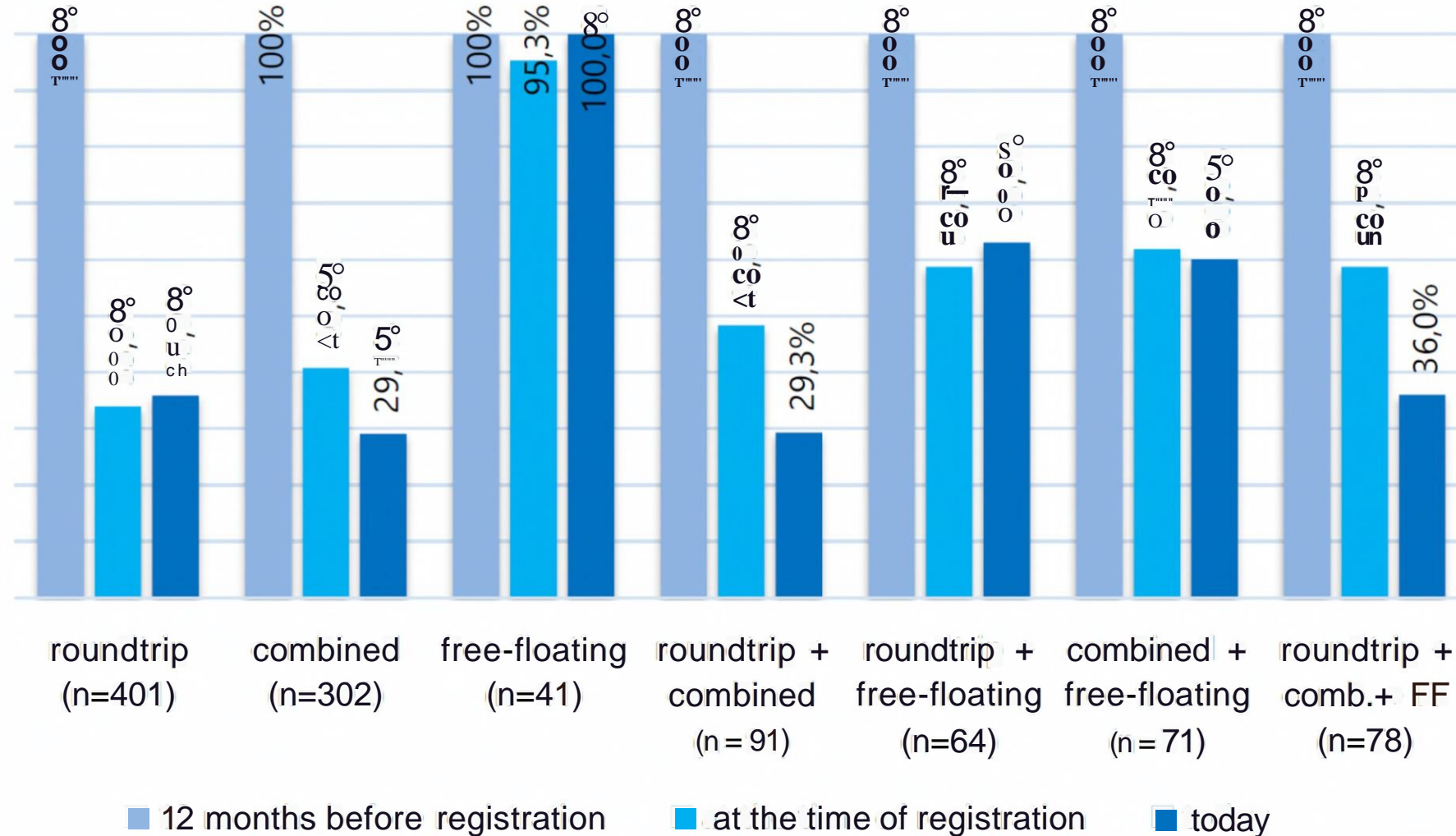
- * Maximum growth potential of car sharing for alternative scenarios
- * Modal choices, number of trips for each mode (private car, car sharing, PT, bike and foot)
- * **Impacts on emissions**, congestion, and parking demand

Car ownership levels in Frankfurt

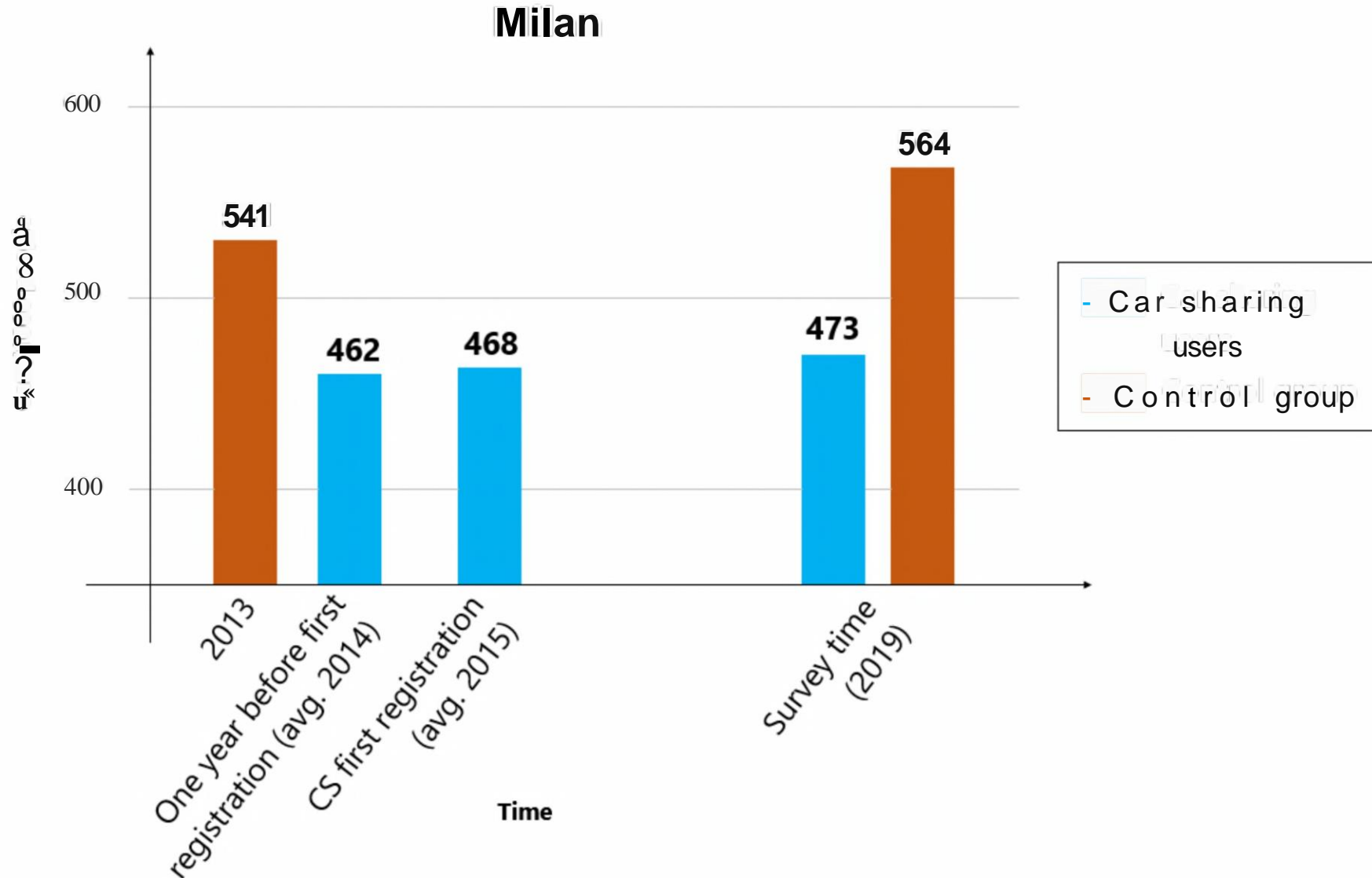


Private cars per 1000 people in selected user groups of the Frankfurt case study

Changes in car ownership in Frankfurt



Changes in car ownership in Milan (free floating)



± Car sharing users in Milan are **not reducing** the number of cars owned

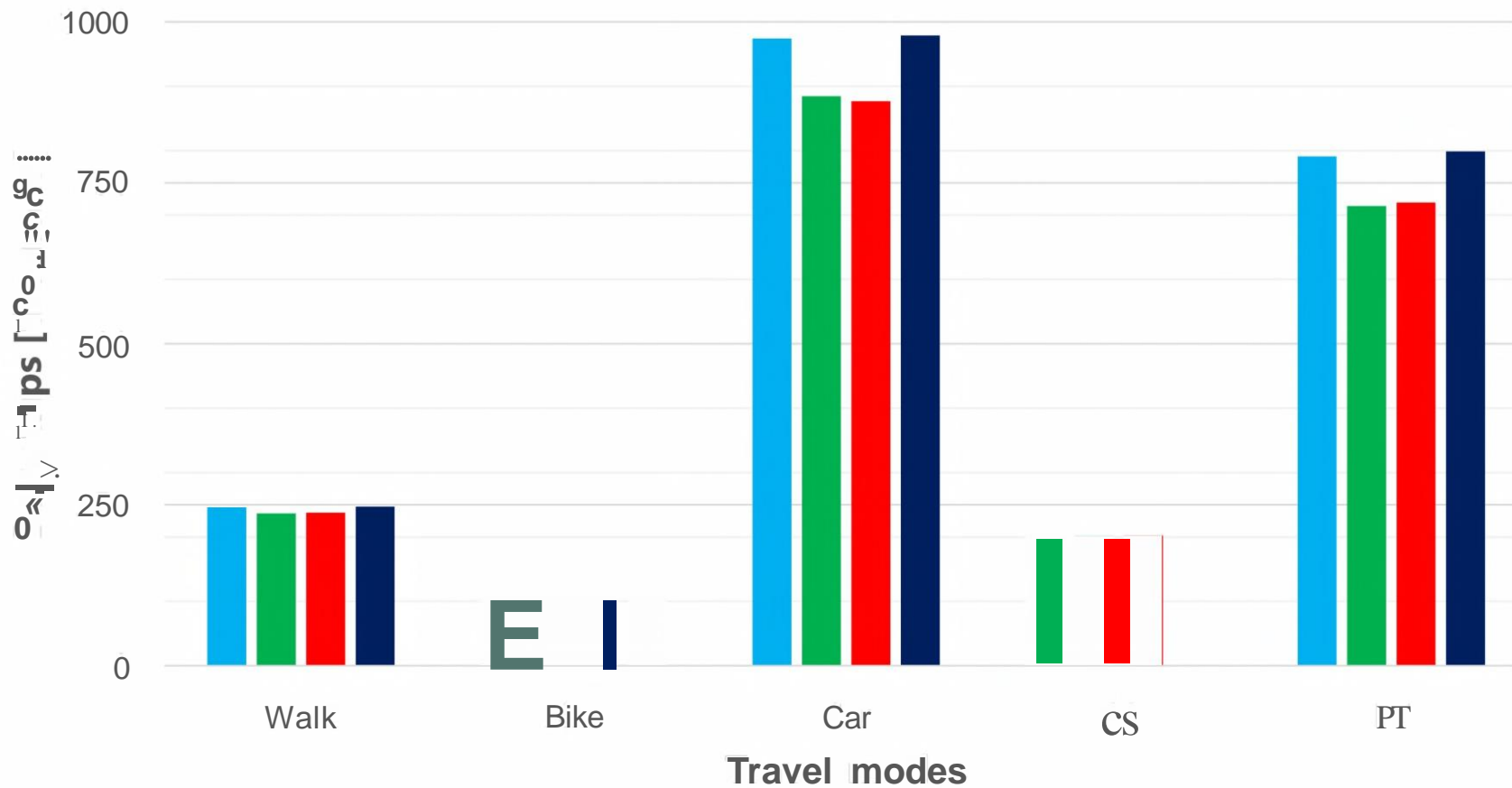
* Not significant early adopters effect

* Positive effect in limiting car purchases

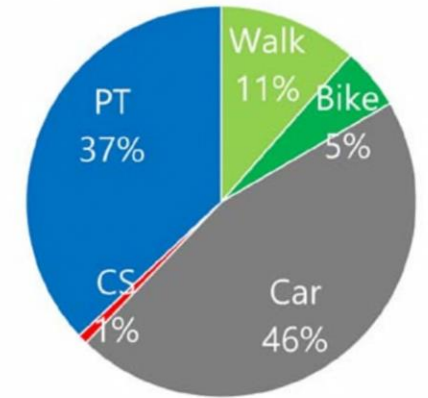
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@s1ARs

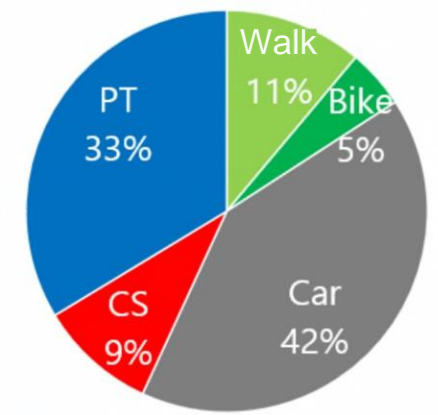
Diverted daily trips and market share - Milan (free floating)



BAU scenario



All switch scenario

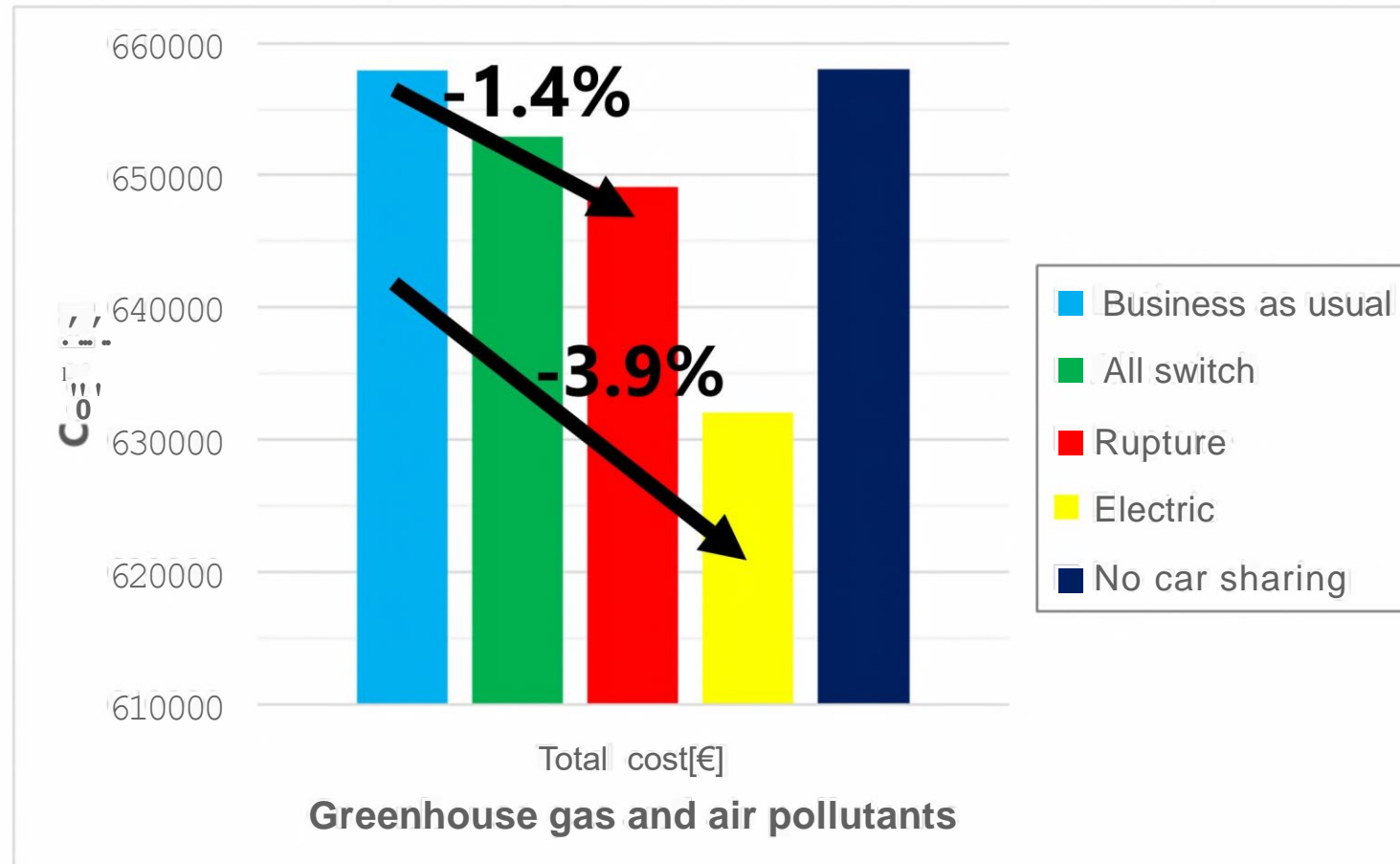


Business as usual All switch Rupture No car sharing

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External costs of pollutants and greenhouse gas emissions - Milan (free floating)



So... what?

Conclusions from this introduction

1. **Growth potential** still good but it is unlikely that car sharing will become a massively used mode in current conditions
2. **Positive benefits** mainly from replacing private cars, smaller ones from changes in daily mobility choices
3. **Different car sharing** schemes may have an appeal to different social groups and a different impact on car ownership and mobility choices:
 - a) **Free floating** is probably less beneficial regarding sharing impacts and modal substitution patterns BUT much more attractive to the «average driver» especially in car => **entry level in the car sharing world**
 - b) **Round trip** is more a niche for «pro-social» individuals BUT higher benefits for cities => an easy car rental scheme for discretionary trips out of the city that makes the **final push to get rid of cars**
 - c) **Peer to peer** even more emphasizing round trip characteristics

Searching for the optimal "service mix"

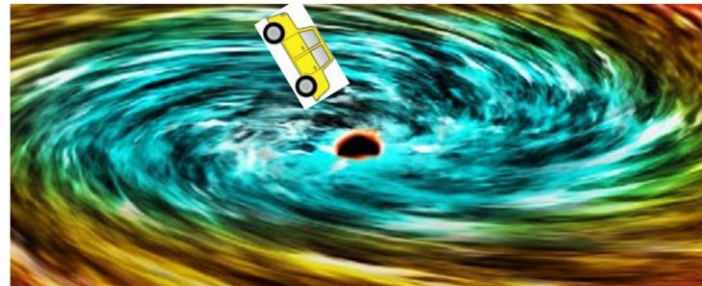
Addiction to car

Free floating services

Try out something new and in fashion "on the fly", no obligation

... ready to make a BIG JUMP? , , ,

Realise that a personal car is not so needed after all



Consolidate the use of shared cars for short trips

Start planning to use car sharing for longer trips

Engage with different means including public transport

Sanon based services

STAR S

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STARS output



Entlastung Carsharing

Vergleichende Befragung Carsharing-Angebote

Stationenbasiertes Carsharing, Free
Verkehrsvorhalten

In den letzten Jahren sind Carsharing-Angebote in Deutschland und anderen europäischen Ländern stark gewachsen. Die Studie untersucht die Unterschiede zwischen stationenbasiertem und free-floating Carsharing sowie die Auswirkungen auf den Verkehr und die Umwelt.

Von der Studie sind folgende Ergebnisse zu erwarten: Carsharing kann dazu beitragen, den Verkehr zu entlasten und die Umwelt zu schonen. Die Studie wird in mehreren Sprachen veröffentlicht.

50 Internationaler Verkehrsmittel (VIV) 4.10

PERFECT LITERATURE
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15 November

A multimodal perspective in the study of car sharing switching intentions

Mo Dianad Reado Carat

Department of Environment, Land and Infrastructure Engineering, Torino, Italy

ABSTRACT

The introduction of innovative mobility services such as car sharing leads to changes in users' travel habits, inducing a shift of travel demand from existing travel modes. An analysis of such changes should be performed to promote car sharing, managing travel demand effectively. Policies should be developed to induce the switch only from private modes, avoiding the shift from public transport and active modes. In order to reach this aim, data from a mobility survey carried out in Turin (Italy) were used to study users' choices. Decision Trees were adopted to complement the analyses following an econometric approach. A decision tree was estimated for each mode used by respondents in a specific trip, to identify trip attributes affecting the intention to switch to car sharing. Thus, threshold values of each variable that entice a shift are mode-specific, thus better informing policies aimed at maximizing the benefits of car sharing.

KEYWORDS

Shared preferences; travel surveys; travel demand; car sharing; SMOTE technique



85% CAR SHARING IN EUROPE

How social, cultural and emotional factors influence users and non-users of car sharing



CONTEXT

There is an urgent demand to reduce pollution in cities, especially by limiting the aggregate of transportation on the environment (bad air quality, noise, reduced green spaces, etc.). Car sharing appears a sustainable solution to tackle these issues. The results of the STARS Deliverable 2.1, the following five types of car sharing have been identified in Europe: station-based: bringing back a shared vehicle to the same station; trip homezone-based: bringing back a shared vehicle to the same homezone; floating with an operational area: a shared vehicle can be left at any place in an operational area; peer-to-peer car sharing: shared vehicles among private drivers, either individuals or community groups or peer-to-peer.



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Car sharing in Europe

The growth of car sharing
in a business as usual scenario



Recommendations to Help
Policymakers Implement
Car Sharing in Europe



Europe: a Multidimensional
Classification & Inventory

The results of the STARS Deliverable 2.1, the following five types of car sharing have been identified in Europe: station-based: bringing back a shared vehicle to the same station; trip homezone-based: bringing back a shared vehicle to the same homezone; floating with an operational area: a shared vehicle can be left at any place in an operational area; peer-to-peer car sharing: shared vehicles among private drivers, either individuals or community groups or peer-to-peer.

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Thank you

Get in touch for more information!



All of the reports of the project will be available for download on the STARS website: www.stars-h2020.eu



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Contact us: h2020stars@gmail.com



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[@StarsH2020](https://twitter.com/StarsH2020)

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TAKING
COOPERATION
FORWARD



SHAREPLACE Shared mobility and Regional transport
integrated **PL**anning for a better connected Central Europe

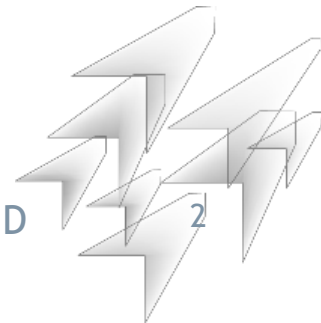
SuSMo - Sustainable Shared Mobility Webinars

23.06.2020

OUR OBJECTIVES

SHARED mobility and REGIONAL transport integrated PLANNING for a better connected Central Europe

- ✓ Develop an innovative approach in order to improve connectivity of sustainable mobility systems at **local**, **regional** and **transnational** level
- ✓ Support the **integration** of **shared** and **flexible** mobility options into traditional transport networks



OUR PILOT REGIONS

1

Ulm, DE



2

FUMO, AT



3

Zalaegerszeg, HU



4

Osijek, HR



5

Bergamo, IT



6

Crema, IT



TAKING COOPERATION FORWARD

3

An open mobility ecosystem for the city and the region

- ✓ creating a multimodal open platform
- ✓ integrating bike sharing in the ecosystem



DRT and CARPOOLING for peripheral areas

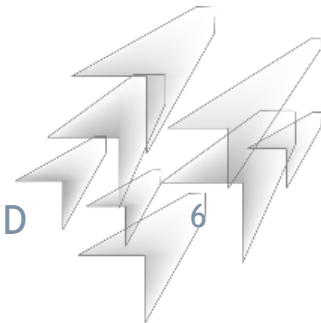
- ✓ DRT as solution for areas without public transport
- ✓ Carpooling for commuting towards industrial areas





Building a common network

- ✓ open mobility ecosystem
integrating different existing,
long and city range services
- ✓ creating conditions for future
shared services (car and bike)



CARPOOLING for attraction poles

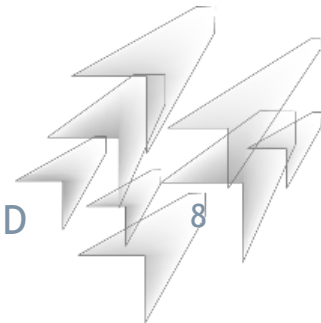
- ✓ Sharing to integrate existing networks in space and in time
- ✓ better integration between scheduled and shared services





DRT 2.0 attracting new demand

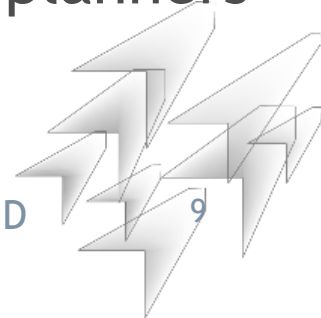
- ✓ mobility hotspots and shuttle services connected to on demand
- ✓ Better integration between scheduled and flexible services



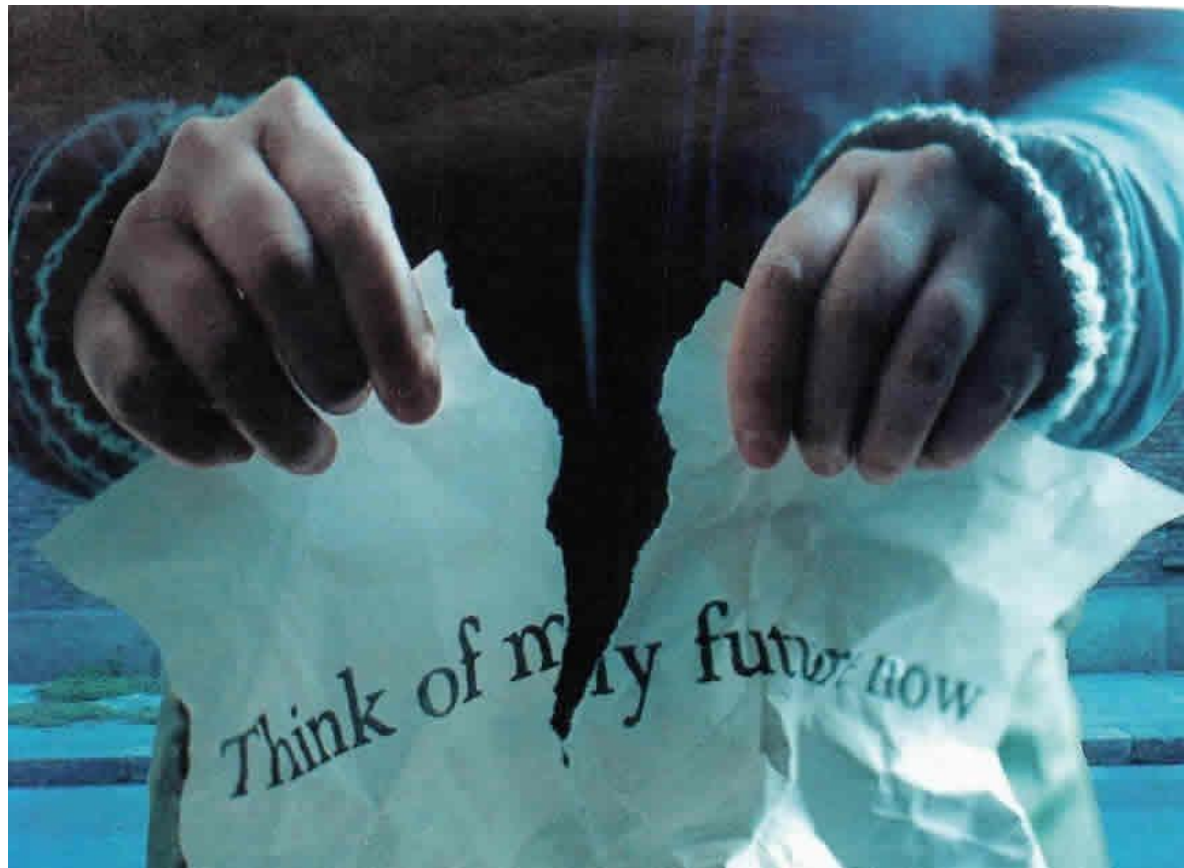
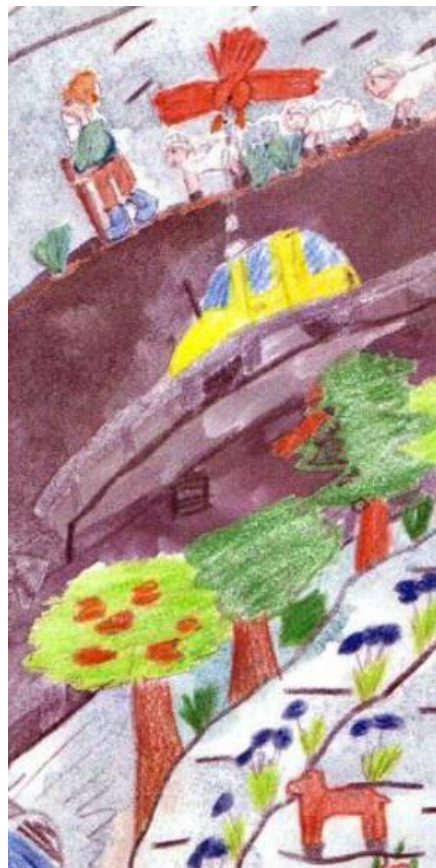
OUR MAIN OUTPUTS

SHAred mobility and **RE**gional transport integrated **PL**Anning
for a better connected Central Europe

- ✓ **Technology as enabler:** joint development of technology-based service hub
- ✓ **Business for sustainability:** innovative business models for integrated mobility
- ✓ **Participative approaches:** Engagement strategy and co-design approach guidelines for mobility operators, planners and policymakers



GRAZIE PER L'ATTENZIONE

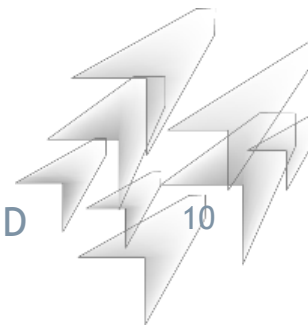


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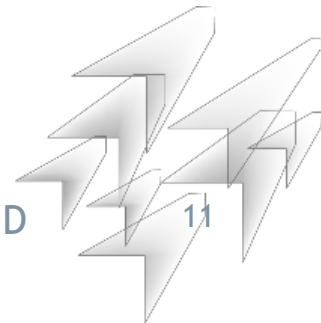
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Shared mobility during and post COVID-19 lockdown

How shared mobility creates space for citizens

Johannes Rodenbach
Policy and Project Officer at
Autodelen.net (Carshare Belgium)

Autodelen.net



Impact COVID-19 lockdown on shared mobility in Belgium

Revenue car, bike, scooter and kick scooter sharing: -70/-80 %



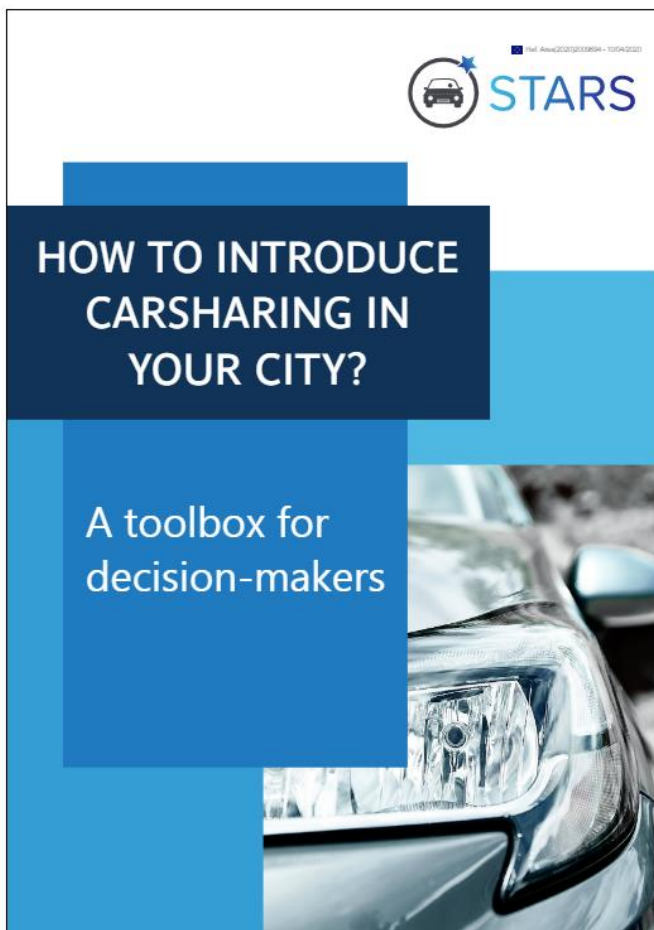
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Policy recommendations for relaunch shared mobility

www.stars-h2020.eu/policy-toolkit



Ensure a EU legal framework for car sharing

Both the 2009 MOMO report and recent research carried out in the STARS project (D2.1) show a significant development of car sharing organisations and initiatives in the EU, over the last decade. That's why there is a strong need for a European legal framework for car sharing. This should clearly define indicators to be recognised as a car sharing operator with "room for innovation". This framework will ensure a level playground and a concept lead by socio-economic innovation. In this way, the word car sharing can be ownership.

Invest in perfect and safe walk

Living without owning a car and safe mobility alternative transport and safe walking policy recommendations walking and cycling shared transportation vehicles areas. Future investments locations combining different pedestrian or cyclist point

Adopt a mix of car sharing

The STARS project (D2.1) features. Drivers can use a owned cars via online platform suitable mixture of car sharing 1 fleet in areas which are no urbanized regions or the city eye on its different form

Rethink fiscal a mobility budget

According to the STARS project around 20% in all Europe for car rental. Since car sharing and liveability of neighborhood. In addition, current fiscal policy as they are one of the biggest for a mobility budget and employees a number

Invest in on a car sharing

As stated in the STARS project, friendliness of car sharing as a service (MaaS) on "mobility hubs". These "transport and other share car ownership. Within these hubs" are currently being

Include car sharing in more policy areas

In order to create an optimal policy framework, car sharing itself should be included in other policy areas, as it covers different topics such as mobility, public space, new housing developments and even social cohesion and work. Integration of car sharing in all these fields avoids conflicting legislation. For instance, fiscal policy can have an immense positive or negative impact on car sharing and access to an affordable shared car can make all the difference to find a job. To maximise integration, it is important to work with a car sharing and/or shared

Integrate car sharing management plan

The STARS survey (D2.3) pointed out that barriers for car sharing schemes. In order parking policy is needed, based on the Each category of car sharing system requires parking places to parking permits. More policy and spatial planning enables cities of parking places in certain areas, resulting in addition, the rise of electric mobility charging stations represents an opportunity

Tell citizens and stakeholders of car sharing

The integration of car sharing in parking by reducing the number of cars in a city by private cars. However, many citizens sharing and how it works. Moreover, if shared vehicles takes time. It is a mental barrier, they tend to adopt it quickly. They could inform and communicate on the quality of life for inhabitants.

Support car sharing to be integrated into

A broader social transition towards sustainable solutions to private car ownership. Establishing an action plan for car sharing goals on short and medium term, is the the Sustainable Urban Mobility Plans parking policy, integration of car sharing of "mobility hubs", targeting non-traditional (shared) cars. Considering car sharing is essential to maximise its social, environmental

Be a car sharing user

In Belgium, recent researches show that travel more than 10 000 km per year these vehicles are not used at all. Why car sharing at the same time and optimal

POLICY BRIEF 10

Recommendations to Help Policymakers Implement Car Sharing in Europe

Car Sharing in Europe: a Multidimensional Classification & Inventory

Based on the results of the STARS Deliverable 2.1, the following five types of car sharing have been identified in Europe:

- Roundtrip station-based: bringing back a shared vehicle to the same parking location.
- Roundtrip homezone-based: bringing back a shared vehicle to the same neighbourhood.
- Free-floating with pool stations: a shared vehicle can be returned at different spots, but always in a dedicated car sharing hub/station.
- Free-floating with an operational area: a shared vehicle can be left at any parking place in an operational area.
- Peer-to-peer car sharing: shared vehicles among private drivers, either in (closed) community groups or peer-to-peer.

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Policy recommendations for relaunch shared mobility

Communication



Communication campaign to keep on cycling



Minister of Mobility in Flanders during launch of communication campaign to “keep on cycling” (14/05/2020)



Deputy mayor of Antwerp Koen Kennis on the new kick scooters of Poppy (16/06/2020)

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Policy recommendations for relaunch shared mobility

Practice what you preach!



Launch shared cars of Valckenier Share in Southern part of Flanders
cooperation with local governments (22/06/2020)

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Policy recommendations for relaunch shared mobility

Rethink fiscal system -> lower VAT

	Public transport	Taxi	UBER	Car rental	Car sharing	Bike sharing
Belgium	6%	6%	6%	21%	21%	6%
France	10%	10%	10%	20%	20%	20%
Denmark	0%	0%	N/A	25%	25%	25%
Germany	7%	7%	7%	19%	19%	19%
Italy	10%	10%	N/A	22%	22%	22%
Poland	8%	8%	8%	23%	23%	23%
Portugal	6%	6%	6%	23%	23%	23%
Spain	10%	10%	10%	21%	21%	21%

Table 4. Comparison of VAT rates for competing forms of mobility across Europe



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Deliverable 3.2: Review of the impacts on the automobility market

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Policy recommendations for relaunch shared mobility

Make brave decisions! Redistribute public space!



Picture: Koen Wynants



Ghent // Pictures: Het Nieuwsblad

Visualisation: Bundesverband CarSharing

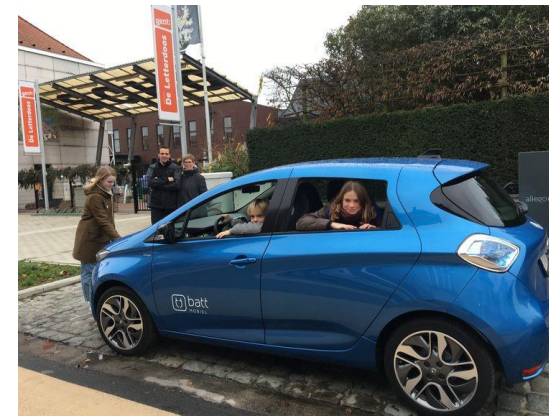
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Policy recommendations for relaunch shared mobility

Zero emission subsidy for shared e-cars

In 2019 car sharing providers requested a zero emission subsidy for 422 shared e-cars in the Flanders region

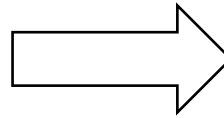


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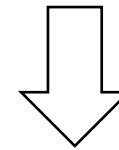
Support for shared mobility providers in Flanders region (Belgium)



Minister of Mobility in Flanders Lydia Peeters provides extra oxygen for the mobility offer

Deelmobiliteit

Ook de sector van de deelmobiliteit deelde in de klappen. Met het oog op de modal shift en het snel kunnen overstappen van het ene vervoersmiddel op het andere is de deelmobiliteit een belangrijke aanbieder. De Vlaamse regering heeft een bedrag van **460.000 euro** voorzien om het huidige aantal deelwagens en deelfietsen op peil te houden maar ook om ervoor te zorgen dat de veiligheidsmaatregelen rond hygiëne op peil gehouden kan worden.



460,000 euro to keep up the current number of shared cars and bikes and to invest in extra hygiene measures

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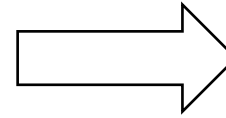


EUROPEAN UNION

Uptake of shared mobility in the Netherlands

Ov-mijders

Corona jaagt ov-reizigers de deelauto in



Corona chases PT-travellers
into shared cars

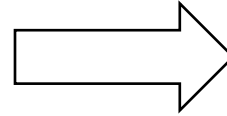


Auto van Greenwheels in Amsterdam. Beeld ANP



Uptake of shared mobility in the Netherlands

deelauto's toeneemt. De bezettingsgraad van Greenwheels-auto's steeg in mei met 30 procent ten opzichte van dezelfde maand vorig jaar. Vorige maand kreeg het bedrijf er bovendien een recordaantal nieuwe abonnees bij, ruim de helft meer dan het aantal nieuwe klanten in mei 2019. Dat terwijl vlak na de afkondiging van lockdownmaatregelen het gebruik van de rode deelauto's halveerde.



The occupancy rate of the Greenwheels-shared cars increased by 30% in May 2020 compared to the same month last year.

Thank you, and SAVE THE DATE!

SHARED MOBILITY
ROCKS
2020

**DECEMBER 8
BRUSSELS**

INTERNATIONAL
SHARED MOBILITY SYMPOSIUM
UNCONVENTIONAL, SURPRISING AND HIGHLY INSPIRING

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Sustainable policy response to urban mobility transition

SUSMO Webinar

June 22, 2020

Dr. Imre Keseru

Vrije Universiteit Brussel - MOBI Mobility Logistics
and Automotive Technology Research Centre

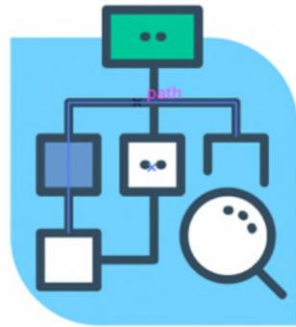


SPROUT will provide a city-led innovative policy response that will be capable of harnessing the impacts of new mobility solutions in a way that makes them more attractive to the users and more sustainable for the society as a whole.

5 Key Objectives



Understand the transition in urban mobility



Foresee and identify the impact of the drivers of urban mobility transition



Formulate a city-led innovative policy response

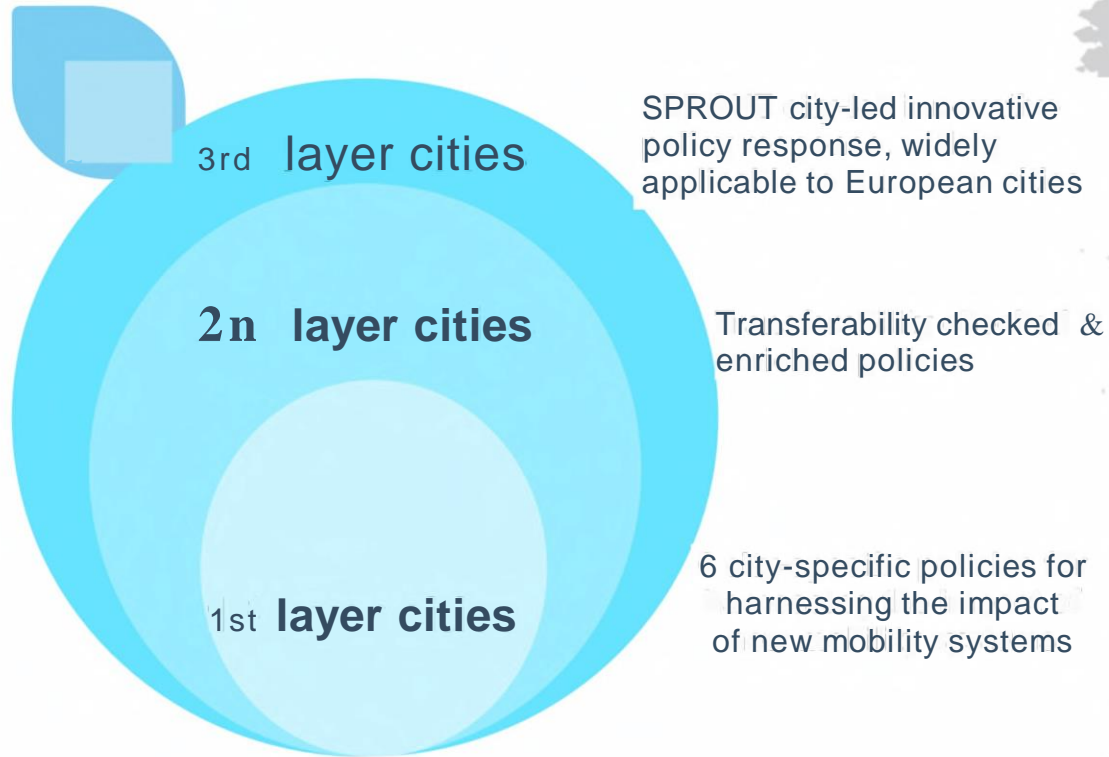


Provide tools to enhance local policy-making capacity



Navigate future policy on urban mobility

SPROUT Cities



6 pilots

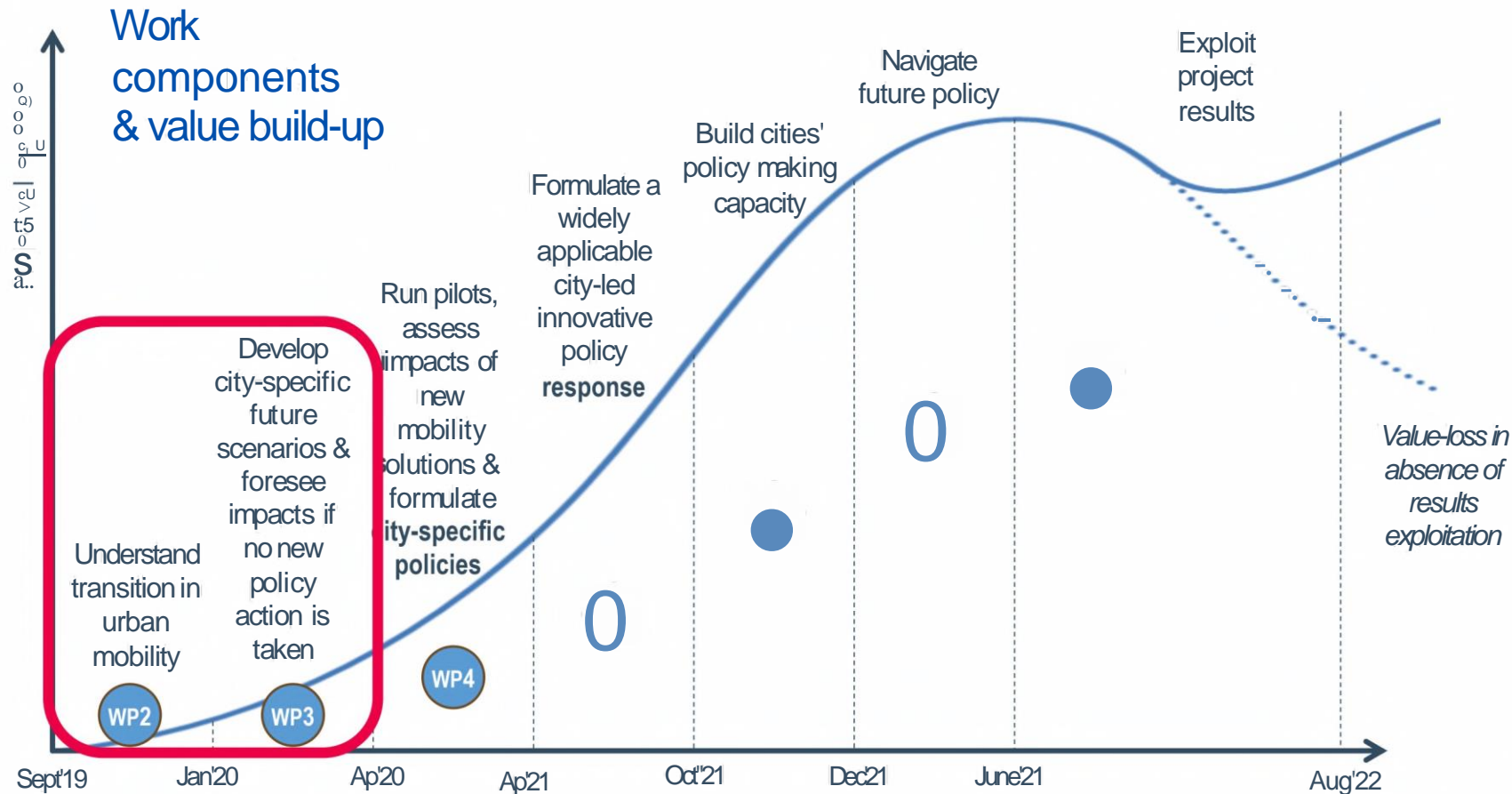
Pilot (1 st layer) cities	New mobility solution to be tested	Validation (2 ^d layer) cities
Valencia, Spain	Intermodal urban passenger/freight node for collective public & private transport	Hertogenbosch, the Netherlands
Municipality of Padua, Italy	Self-driving pods for cargo-hitching	Ioannina, Greece Gothenburg, Sweden
Kalisz, Poland	IoT in urban logistics	Arad, Romania Mechelen, Belgium Ile-de-France, France
Budapest, Hungary	Shared passengers' mobility	Hertogenbosch, the Netherlands Arad, Romania Birmingham, UK Minneapolis, USA
Tel Aviv, Israel	Data driven urban mobility planning and traffic management strategies to prioritise nonmotorized transport modes and vulnerable road users	Almada, Portugal Birmingham, UK
Ningbo, China	Hyper-local logistics	Almada, Portugal

Budapest - Expectations

- **Better understanding** of needs related to shared mobility **services** and micromobility
- Better understanding of needs related to the **legislation** of micromobility
- Analysis for pilot **interventions**
- Understanding the **role of micromobility** to reach the mobility goals



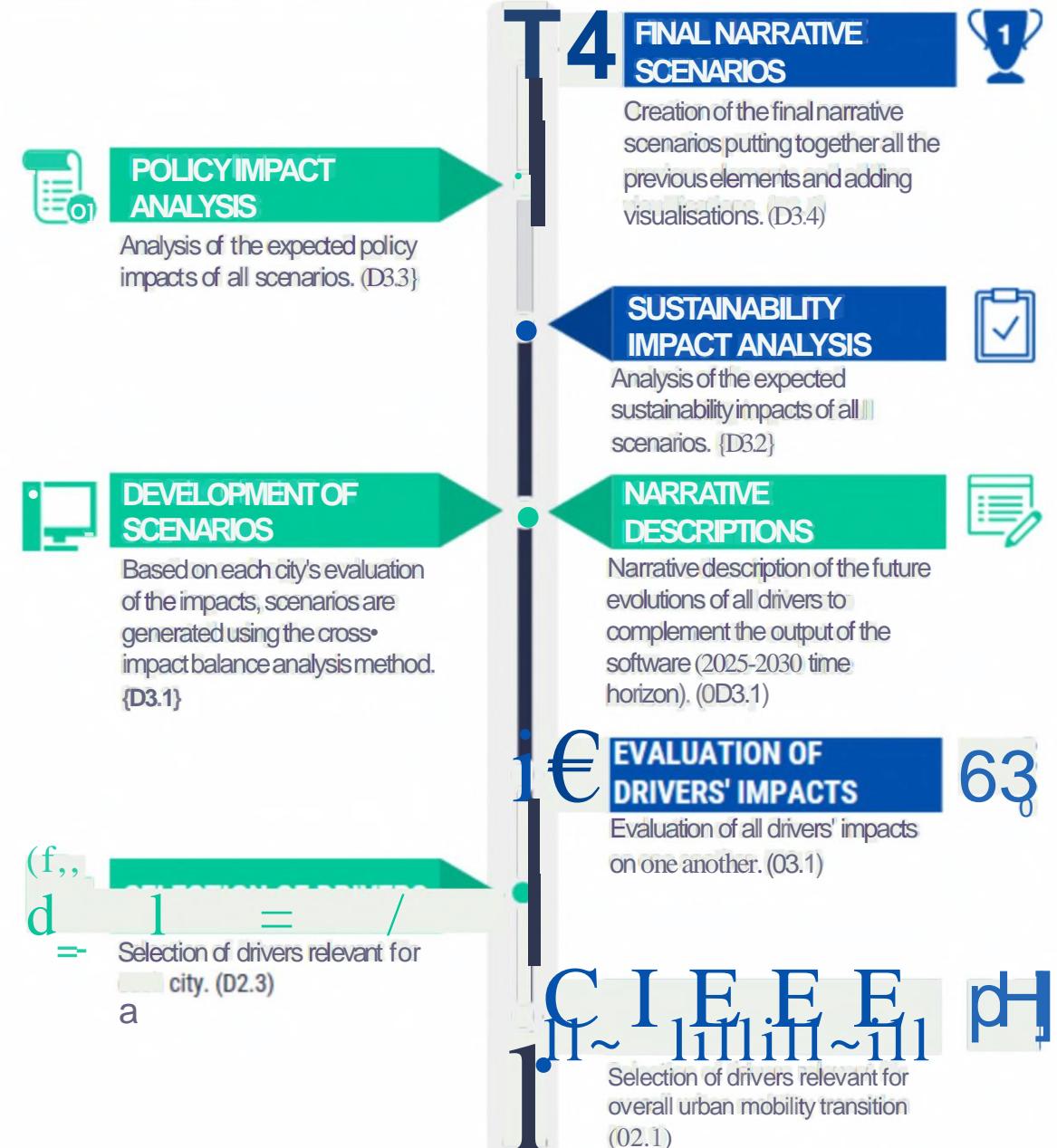
SPROUT broad work plan



Scenario building in SPROUT

The scenariobuilding process

Process steps and timeline



Drivers of urban mobility

Political Drivers

- **Liberalization**
- Political agenda
- Transparency and corruption
- Tax policy

Economic Drivers

- New employment arrangements
- Tourism
- **New business models**
- **Economic growth and crisis**
- Transformation of retail

Social Drivers

- Migration
- Urban structure
- Demographic composition
- Health consciousness
- **Changing behaviour to car ownership**
- **Environmental consciousness**
- Safety
- Security concerns
- **Individualisation**
- The rise on-demand delivery requirement

Technological Drivers

- **Electrification of mobility**
- Adoption of smart-city technology
- **Consumer- and citizen-oriented digitalization**
- Automation

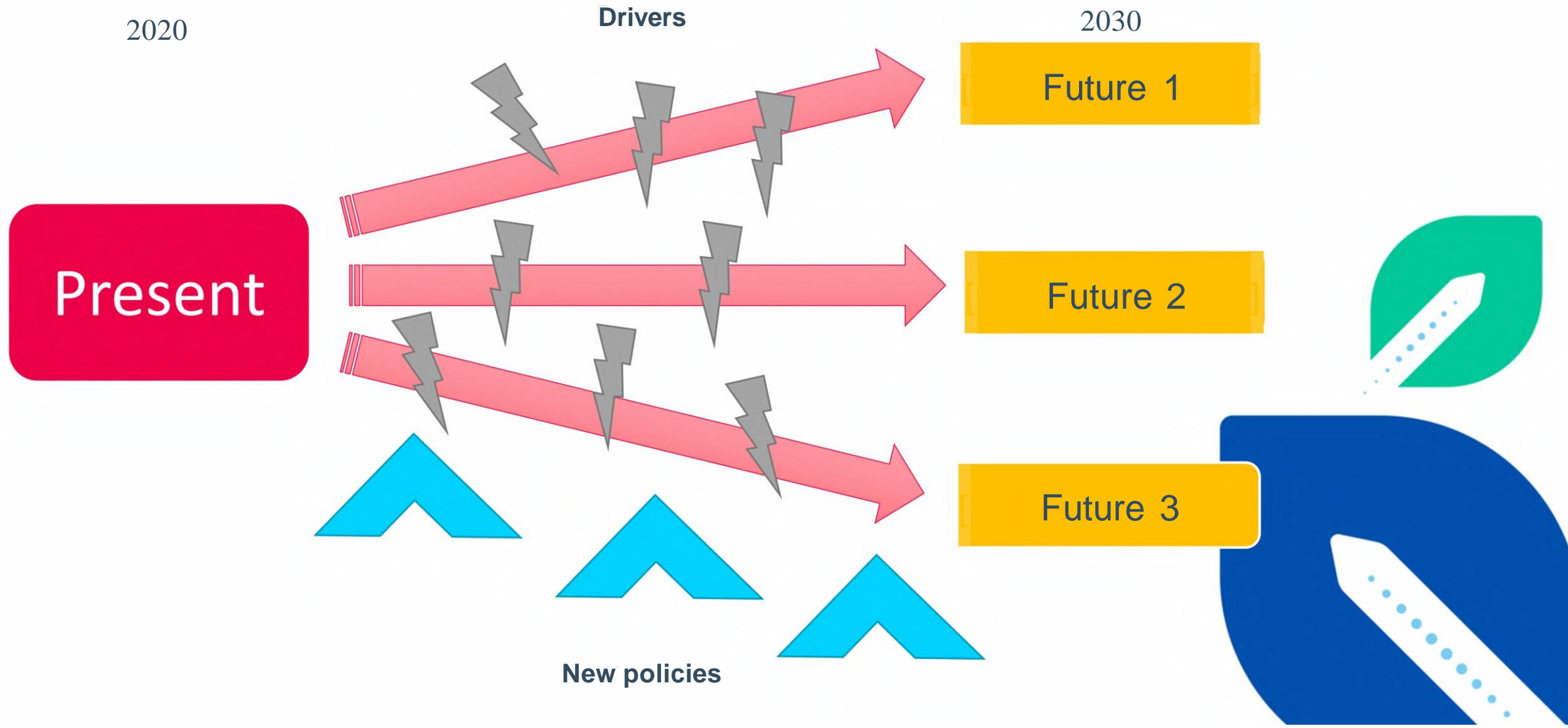
Environmental Drivers

- **Climate change Local**
- **environmental quality**

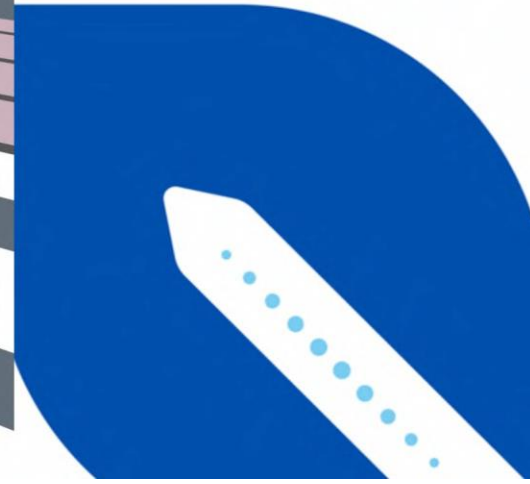
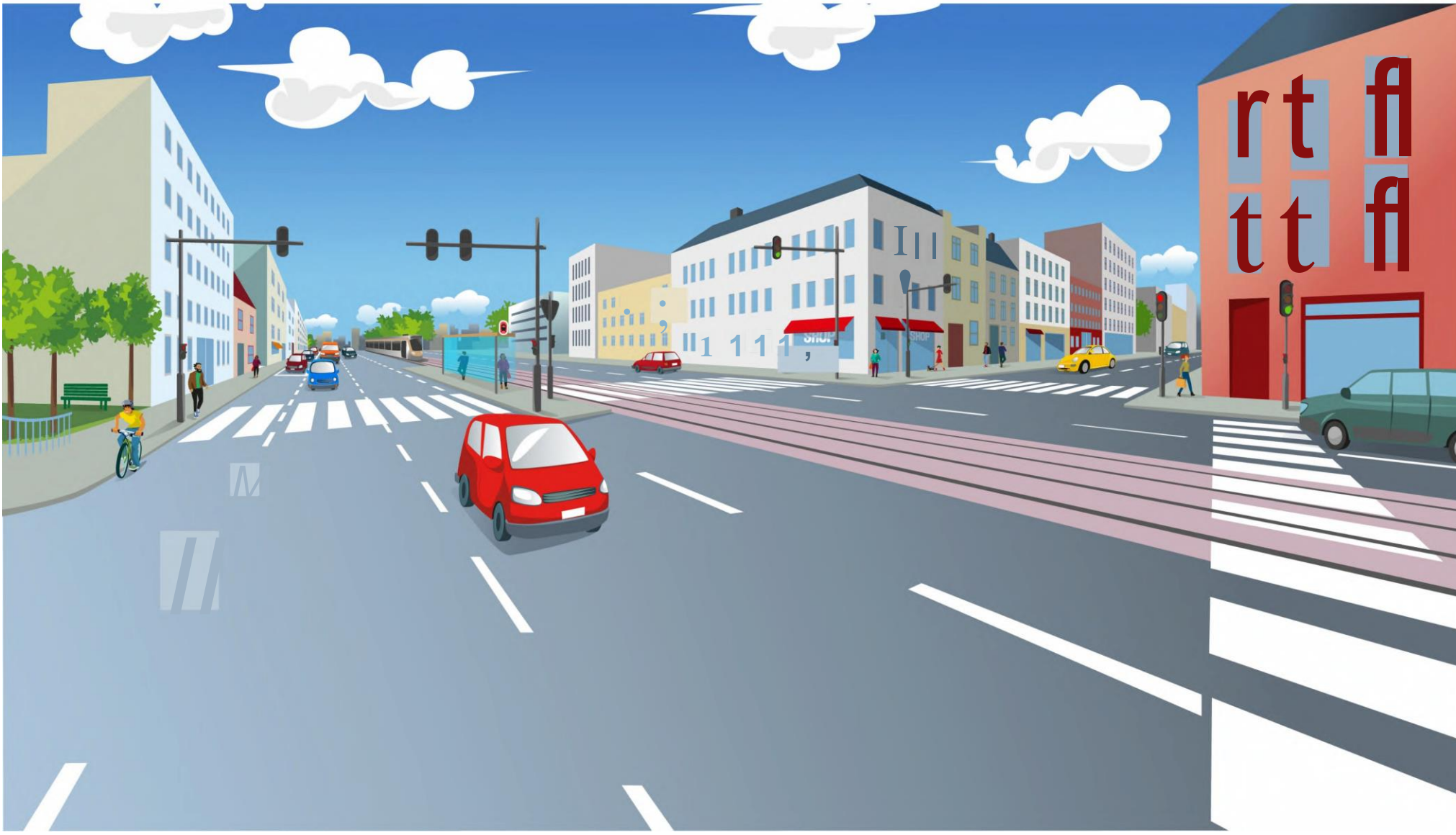
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- Labour and employment laws
- **Consumer protection laws**
- **Data and privacy laws**
- Health and safety laws

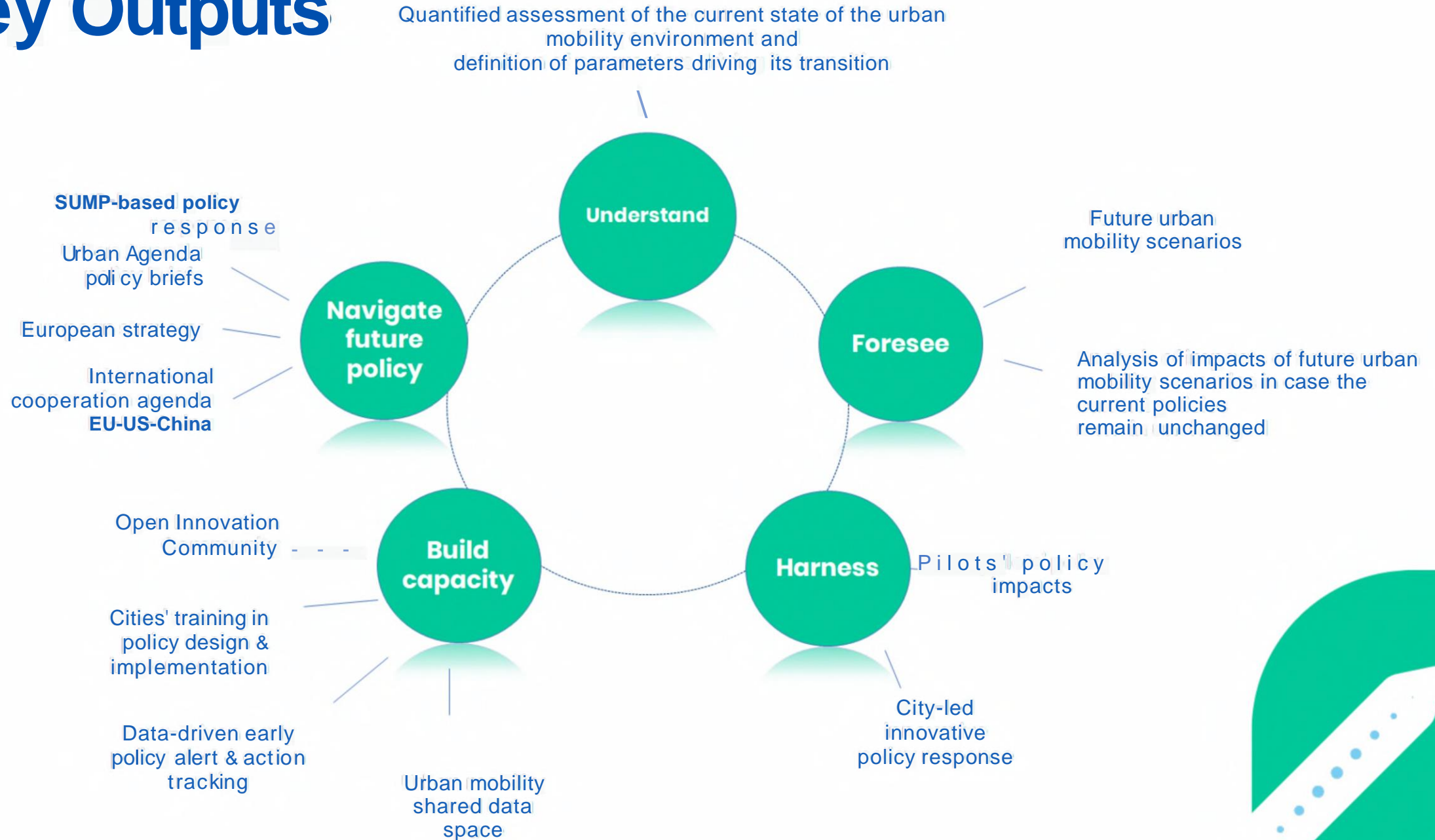
Scenarios for the business as usual



Using creative scenario building for cities



Key Outputs



Thank you!

[www. sprout-civitas.eu](http://www.sprout-civitas.eu)

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