



GOVERNANCE AND NEW MOBILITY: GECKO WORKSHOP 1

REPORT ON GECKO STAKEHOLDER WORKSHOP 1
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UNIVERSITY COLLEGE LONDON	UK	UCL
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IRU PROJECTS ASBL	BE	IRU
RUPPRECHT CONSULT - FORSCHUNG & BERATUNG GMBH	DE	RC
CAPITAL HIGH TECH SARL	FR	CHT
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1. ABOUT GECKO

The rapid proliferation of new technologies and disruptive innovations are taking the world by storm, threatening well established players across many sectors. Regulators and decision-makers at different levels of government are overwhelmed by the challenge, acknowledging that existing frameworks may be inadequate in terms of protecting society, fostering business development and achieving integrated, sustainable mobility.

GECKO's main goal is to support authorities with tools and recommendations for new regulatory frameworks to lead the transition to the new mobility era of cooperative, inclusive, competitive, sustainable and interconnected mobility across all modes, through evidence-based research.

GECKO provides a holistic approach with innovative concepts, methodologies and forward-looking tools to enable this transition to take place, leading to new, adaptive and anticipatory regulatory schemes and balanced governance.

The project aims to build on the strong networks of its partners to ensure solutions are co-designed and validated. A number of key indicators and cooperation models will help to develop the Regulatory Frameworks Dashboard, through which the maturity of given regulations can be judged with respect to emerging mobility solutions.

GECKO will outline an implementation plan including actions required up to 2040 for policy makers to devise regulatory approaches for disruptive innovations and new regulatory frameworks streamlining uptake. GECKO will advise policy makers on challenges and policies that need to be addressed to move towards integrated, accessible and sustainable mobility across modes for both passenger and freight transport.

The project will provide recommendations to policy makers to enable adaptive and anticipatory regulatory schemes and governance with novel policies that contribute to sustainable mobility goals.

2. OBJECTIVES OF THE STAKEHOLDER ENGAGEMENT PROCESS

The objectives of the stakeholder engagement work package, WP5, are to:

- start up and stimulate debate on impacts of business and operating models on regulatory schemes at EU28 and International (Japan, US, Singapore and China) debate among relevant stakeholders (WP2)
- establish and manage a bottom up consultation process, organise and facilitate effective and meaningful conversations at multi-stakeholder level in 3 thematic working groups on automation and emerging technologies; shared mobility/public transport/Mobility as a Service and digitalisation and data-driven models;
- get input on experience, lessons and practices on technological, social, economic, political drivers and barriers affecting the forthcoming deployment of innovative business models and technologies (WP1 and 2);
- report strategic outlook to set up policy recommendations and roadmap on joint and co-actions addressing societal, economic and political aspects both EU and global strategic agenda and device new regulatory framework and governance in innovative mobility (WP4)

Through WP5, GECKO organises, conducts and analyses the results of an intensive stakeholder engagement process to ensure that the vision, views, challenges, constraints, expectations and ideas of stakeholders are understood and can inform not only future regulations but – more importantly – the foundational principles of future regulation making processes.

One of the key principles in the stakeholder process is an open give and take among all participants. Stakeholders understand that their on-the-ground experience and their expertise are valuable to the GECKO project. Likewise, the project is able to a) bring new insights to stakeholders through its research, data collection and analysis and b) connect stakeholders with one another so that they can also better understand the needs of actors in other areas of new mobility.

3. OBJECTIVES OF WORKSHOP 1

Directly relate to the work currently being done by project partnership, workshop 1 was focussed specifically on obtaining input from new mobility stakeholders on:

- Cooperation models among public and private parties in new mobility
- Regulatory responses to new mobility and new governance models
- Determining how (and how much) to regulate new mobility
- Which economic, social and political variables play a role in the successful introduction of new mobility services

The intention was to gather this input from a range of stakeholders through a pre-workshop questionnaire, exchange among stakeholders from different backgrounds and focussed discussion question.

In addition, the project made it a point to provide case studies and examples to stakeholders both to enrich the discussion and provide stakeholders with new knowledge.



4. WORKSHOP PARTICIPANTS

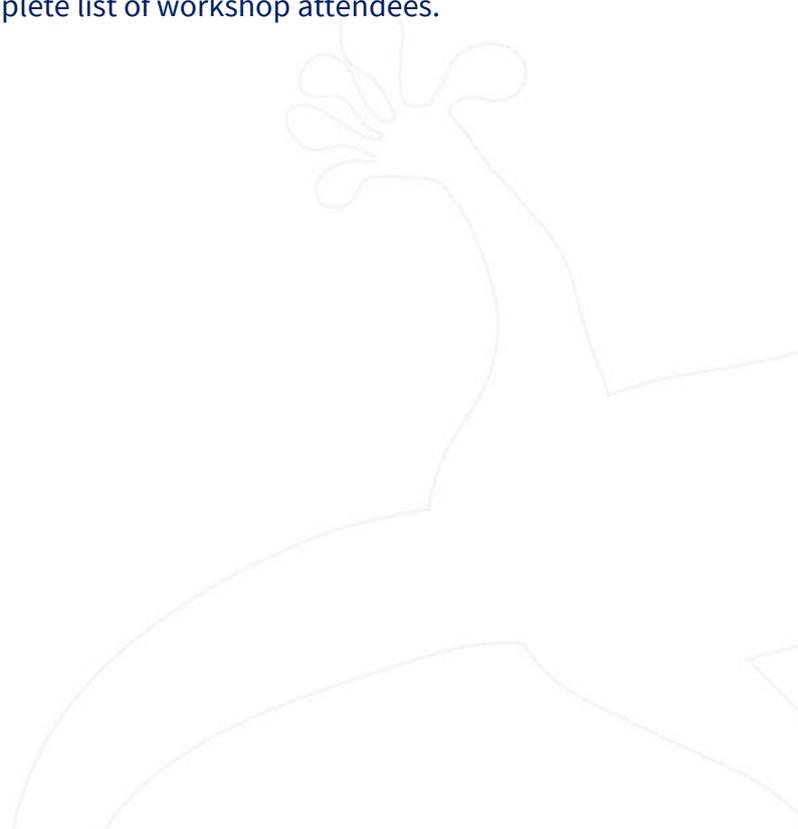
The aim was to have roughly 30 stakeholders attend each of the three planned workshops.

A representative group of 15 “core” stakeholders had been selected to attend all three workshops. This was intended to provide a certain continuity across all workshops. This group represents the geographic areas of Europe (Northwest Europe, Central Europe/ Baltic states, Eastern Europe/ Balkan states, Southern Europe/ Mediterranean, Nordic countries) and beyond, and all three sectors of stakeholder (public – at all levels of government, private – in a range of industries, and other influencers) with a stake in the fields being examined by the project: 1) automation and emerging technologies; 2) shared mobility, public transport and Mobility as a Service and 3) digitalisation and data-driven models. A gender balance was also achieved.

The other 15 invitees were part of the “flex” group, i.e. 15 different people will be invited to each workshop. This was done so as to combine continuity with fresh perspectives at each workshop and to allow us to focus invitations on particular topics areas, backgrounds or mobility areas as dictated by the stakeholder input needed at the given stage of the project.

Several invited stakeholders were in Singapore for the ITS World Congress at the same time as the London workshop. Others were also unable to travel for various reasons. Stakeholders’ travel and accommodation costs were reimbursed to ensure money was not a barrier to participation. In the end, 24 stakeholders attended workshop 1 representing the public sector, the private sector and other influencers (NGOs, associations and research/academia. In addition, 10 members of the GECKO consortium participated as presenters, moderators of small-group discussions and note takers.

See ANNEX 3: WORKSHOP ATTENDEES for a complete list of workshop attendees.



5. PRE-WORKSHOP QUESTIONNAIRE

A pre-workshop online questionnaire was sent out to all workshop attendees (and indeed to all stakeholders) several weeks in advance of the workshop in order to gain as much insight as possible. The questions were designed to gather key stakeholder input, which is difficult to come by otherwise, and to complement the discussions planned for the workshop itself.

The pre-workshop questions were developed by a group of project partners with the specific goal of gathering input needed input for the project at its current stage. 115 surveys were submitted of which 75 were complete and valid. See ANNEX 4: PRE-WORKSHOP QUESTIONNAIRE QUESTIONS for the complete list of questions from the pre-workshop questionnaire.



6. WORKSHOP ACTIVITIES

Workshop activities were planned to provide a good balance of “give” and “take” with the stakeholders, covering the topic areas as described under OBJECTIVES OF WORKSHOP 1. Under the category “giving”, the project provided participants with:

1. the latest development and data gathered by the project
2. a concrete first-hand example of public-private collaboration from Transport for London
3. examples and an overview of the regulation of new mobility in the Asia Pacific
4. opportunities to meet and learn from other workshop participants
5. (for private sector stakeholders) the opportunity to share their products and services with the public sector and other influencers

In exchange, the project requested of participants:

1. completion of the pre-workshop questionnaire to provide input to some of the data needs within the project
2. active participation in several rounds of group work within the context of the workshop with concrete discussion questions

6.1 New mobility solutions: What’s currently out there?

In this session, the project presented results on its research into the development of value propositions for business models for new mobility, looking at the four categories of innovation identified by the project.



Four Innovation Categories

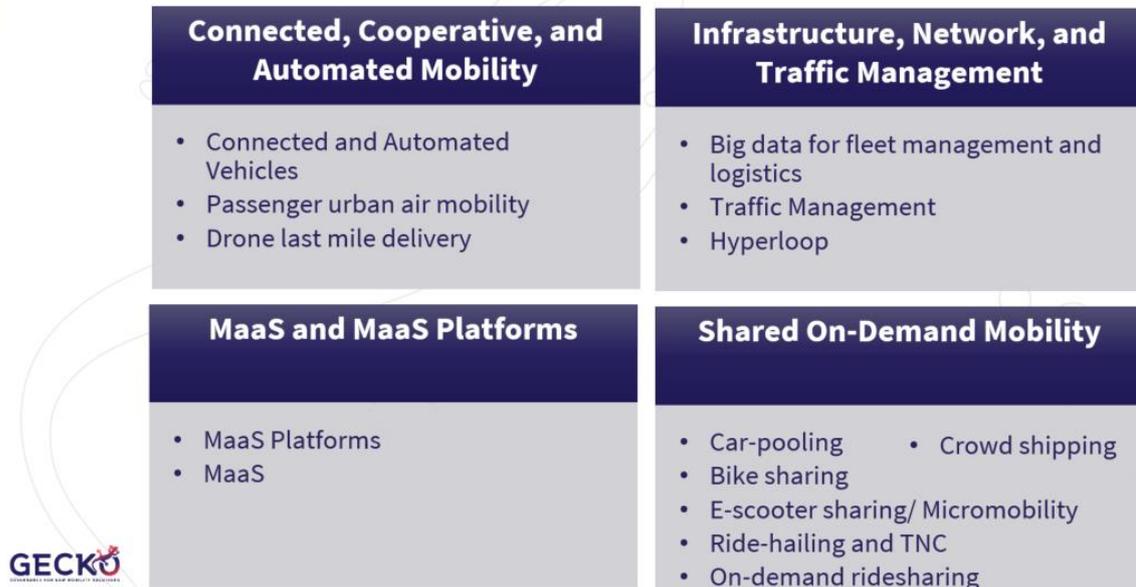


Figure 1: The four innovation categories identified by the GECKO project

Using the example of connected, cooperative and automated mobility, three types of analysis were presented:

- Technological analysis
- Social and behavioural analysis
- Operational analysis

In addition, the project offered an overview of the value chain for connected, cooperative and automated mobility, looking at *value creation* (offering new environmentally-friendly and efficient services, combining advanced services and technologies to meet under-served needs) *value delivery* (mainly through websites but also through presentations at international conferences) and *value capture* (currently mainly through selling products or services or through subscription services).

Again, focussing on connected, cooperative and automated mobility, implications for authorities were drawn.

Implications for Authorities

1. 'New mobility platforms' for data and resource exchanges
2. The 'fit' between the value propositions and regulatory frameworks
3. Revenue-driven Mechanisms: Dominance vs. Partnership
4. Demonstration opportunities and support from authorities
5. An 'adaptive and flexible governance framework that breaks the boundary of industries'



Figure 2: Implications for authorities as identified by the GECKO project

Following the presentation, industry stakeholders had the opportunity to make 5-minute presentations on their products and innovations to small groups to make others aware of the services and technologies available in a range of areas. See Table 1.

Table 1: Overview of activities of industry stakeholders

Organisation	Activities
Airbus (Vassilis Agouridas)	Relying on their experience regarding flying systems, Airbus wants to setup urban air mobility, and is defining what can/should be delivered, the regulatory framework (flying people over people presents some issues). Urban air mobility is not a big technological issue, as algorithms and drones are available today. Regulations on aviation height and noise level is the key issue for Airbus.
Blue Systems (Christophe Arnaud)	Blue System provides a platform that regulates mobility in the city. The company offers a cloud-based software which aggregates data from mobility operators as well as infrastructure operators to better manage and regulate mobility in a city (https://www.bluesystems.ai/smartmobility/). Operators share their data and the company provides all the aspects related to data collection and policy enforcement. They can collect real time data from players and networks such as charging points parking, roads and patrols. Blue System is a neutral enabler for mobility management. They have a “dashboard” showing an aggregate perspective of all the sharing services and vehicles in real time in a given city. To reach this goal, the city must make data sharing mandatory. No personal data is used, only vehicle data is used by the software. This technology was first set up in Los Angeles and is also being implemented in Lyon. Cities such as LA and NYC oblige mobility service providers to share their data.
Bicyclize (Peter Biczok)	<ul style="list-style-type: none"> • Planning and design for municipalities for incentivizing cycling through infrastructure, business model design (pay month/month, rentals), insurance tools, etc. • Bike leasing, with one-month trial period, dealing with service & infrastructure. After 24 months, customers can buy the leased bike with discount (new business model). • Urban planning consultancy
Donkey Republic (Alexander Frederiksen)	The company is a bike-sharing service provider based in Copenhagen (https://www.donkey.bike) and operating in 14 countries, 15 cities (Europe) with 16,000 bikes. They employ a hub-centric model: no fixed docking stations,

and Marion Galan Alfonso)	<p>but not free floating either. Normal bike racks are used for parking the bikes. The racks are visible in the app, but if they are full, the racks disappear from the map. This way, bikes get distributed evenly around the cities. The offer to the city varies and can include whole bike sharing schemes; locks only for existing bikes; only the platform for bike sharing. The actual bike users can rent a bike per hour; they can also get membership which provides ‘keep the bike’ option when the user keeps the bike for 12 h and can travel with it, take it to the office, etc. The company focuses on smaller towns (30-50,000 inhabitants), usually where the bike culture is established. The company shares anonymised information with the municipalities to foster service improvement. They also engage a lot in research through cooperating with universities.</p> <p>The challenges the company has faced so far:</p> <ul style="list-style-type: none"> • Some cities require ‘traditional’ bike docking stations just because they are used to it (then they paint bike racks in special colour, for example) • Competition with personal bikes for rack space – has been solved by the app • Varying regulations in each location (even between city districts) which they have to explore and adjust to • Vandalism (less so in Scandinavia)
Fluid Time Data Services (Gregor Petri)	<p>The company offers a platform for MaaS providers, including payment platform, insurance, data management and analysis, etc. Platforms are customized and consist of the chosen modules. Initially, they provided the platform and its operation, but now it’s the customer who owns the platform and the data, Fluid Time only builds it for them and maintains it if needed. The reason for this lies in the customers’ reluctance to give away the ownership of data and direct connection with their userbase. Thus, the company works in B2B but remains user focused. They position themselves as technology enablers. Recent success story – Aarhus, Denmark (see https://www.fluidtime.com/en/aarhus/). They supplied the platform to the city, and an outside provider serves the mobility app.</p>

Free Now Group (Alan O’Kelly)	<p>Ride hailing app (previously My Taxi). This running app connects licensed taxi drivers to people in a faster way (it only takes 2, 3 or 5 minutes to take a cab). This app can be used in over 9 countries in 100 cities (https://www.your-now.com/our-solutions/free-now). Perception and social acceptance are a challenge. Free Now is part of a company group involved in smart mobility: Reach Now (MaaS), charging stations, e-scooters.</p> <p>One year ago, it was just Mytaxi Now they collect five business units: taxi, e-scooter, bike sharing, ride hilling and MaaS. They connect people to products that already exist.</p>
LIT Transport Ltd. and Papercast (Ursa Hribernik)	<p>This company has deployed mobility solutions for 30 000 vehicles used worldwide in public transport. It provides a range of solutions for public transport including - transit management, improved and accurate information for passengers based on real-time data analysis and solar powered e-paper displays. More information on the company can be found on https://lit-transit.com/our-solutions. Access to data was identified as a challenge during the discussion and it was suggested that open data could be beneficial for the development of better solutions.</p> <p>Papercast support more than 20,000 vehicles and 40 million passenger every day. They have four areas of product: 1) operation manager passenger information system, 2) displays 3) solar power e-display and 4) data analysis. They have a withe label app and a mobility as a service app. They are based in Slovenia and their business covers Asia, Europe, South America and Africa.</p>
Nextbike (Krysia Solheim)	<p>Bike sharing (mostly in Germany and Poland), with smart bikes (geolocation functionality included, connectivity prevents theft and ensures a better control use). In the UK, bike sharing is done through a station-based model. Social factors are considered to offer bike sharing for all.</p> <p>Nextbike has long-term contracts with different cities. No registration is needed and just pay by specific card in some cities.</p>

	<ul style="list-style-type: none"> • smart electric bikes and cargo bikes; dock system (security issues for vandalism) • working with communities of minorities (social aspects) • they have a company specialized in bike sharing insurance
<p>Roland Müller Küsnacht (Christian Heimgartner)</p>	<p>“green light for urban mobility” – better control of traffic lights can add value for cities, especially also with regard to promoting walking and cycling. But people responsible for traffic control are, in some cases, “conservative” and/or focused on their own issue and therefore blind to the possibilities. The result: a call for bids is often done by one specific part of the administration, so that there is no correspondence to the connective characteristic that new mobility solutions (must) have. RMK provides C-ITS-ready technical solutions to make more efficient use of green time and to remove “unusable” green time. Case study results in Dresden indicate reduced waiting time for walking (-38%), cycling (-34%), public transport (-80%) and cars (-38%).</p>
<p>Toyota Motors Europe (Jakob Spranger)</p>	<p>Toyota is moving from an automobile company to a mobility company. They are facing the challenge of changing customer expectations (a desire to be connected at all times, a trend away from car ownership to sharing and less emotional attachment to cars). Future activities intend to make travel connected, seamless, on-demand and personalised. Toyota Europe aims to offer integrated, on-demand mobility for cities, corporations and individuals.</p>



6.2 Cooperation models between public and private parties: What works? What doesn't?

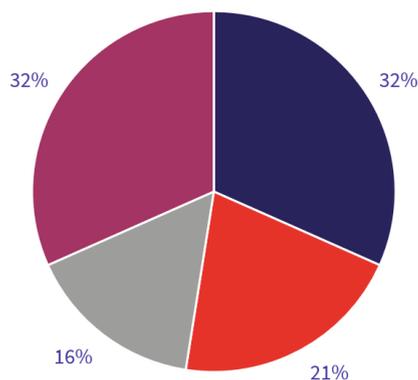
Some key points presented by the project in this section included:

- There are different groups of actors as opposed to homogeneous entities
- There is no clear chain of command
- The problematic aspect of the PPP does not lie in the public or private nature of the network but in partnership and the conditions for collaboration
- Partnership means innovation, i.e. creating something new that could not have been delivered otherwise
- Such partnerships are cooperative in nature, tend to emerge at the local level and build over time

The stakeholders were asked in the pre-workshop questionnaire about the formality of their relationships with the “other” sector and how satisfied they were with these relationships. Results are shown in Figure 3: Stakeholder input - formality of relationships. While there was some difference in perception of the formality of relationships, the satisfaction levels were remarkably uniform (see Figure 4: Stakeholder input - satisfaction with relationships) – with a good number expressing satisfaction but recognising the need for more clarity and formality in future.

How formal is your relationship with private sector actors?

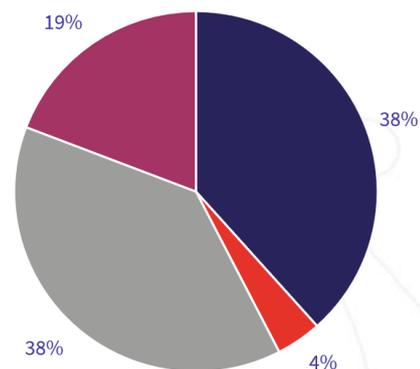
respondents: 19



- We have signed contracts defining our relationship.
- We have a signed memorandum of understanding.
- We share information informally.
- Other: all of the above/ case by case

How formal is your relationship with public sector actors?

respondents: 26



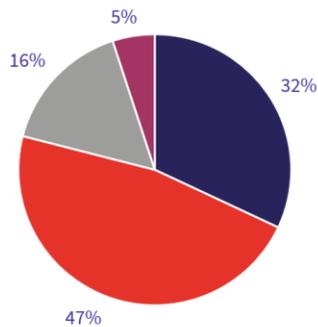
- We have signed contracts defining our relationship.
- We have a signed memorandum of understanding.
- We share information informally.
- Other - please describe.

Figure 3: Stakeholder input - formality of relationships

How satisfied are you with the level of formality of this relationship?

PUBLIC PARTIES

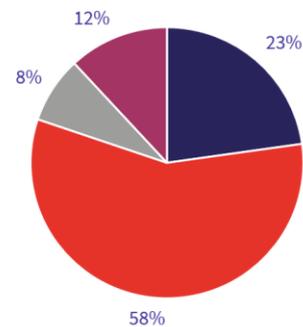
respondents: 19



- We are satisfied. It's working well.
- It's working for now but we foresee the need to be clearer/more concrete in the future.
- We need to be much clearer/provide more guidance to the private sector.
- We currently don't have any relationships as described above with private sector actors.

PRIVATE PARTIES

respondents: 26



- We are satisfied. It's working well.
- It's working for now but we foresee the need for more clarity/concreteness in the future.
- We need much more/clearer guidance from the public sector.
- We currently don't have any relationships as described above with public sector actors.

Figure 4: Stakeholder input - satisfaction with relationships

Dr Polyvios Polyviou of Transport for London described TfL's collaboration activities with the private sector. The presentation slides are available on the GECKO stakeholder LinkedIn group.

In this discussion round, stakeholders were divided into sector groups (industry, public, other influencers) to discuss the main barriers and challenges they perceived to cooperation between public and private stakeholders. The groups were thus divided so that we could compare the perspectives across the different groups. Table 2: Industry stakeholder input - barriers and challenges to private-public collaboration, Table 3: Public sector stakeholder input - barriers and challenges to private-public collaboration and Table 4: "Other influencer" stakeholder input - barriers and challenges to private-public collaboration were completed by the groups through the course of these discussions.

Table 2: Industry stakeholder input - barriers and challenges to private-public collaboration

Industry stakeholders			
What are the main barriers/ challenges in cooperation between public and private parties?	What are the barriers to sharing data between public and private actors?	Others to involve	Solutions?
Procurement	Find a standard?	Alternative entities	Bottom-up platform
Relationships procedures with the transport systems	Data security	Third party authority	More public than private
Lack of governance	Liability	User groups	Regulation
Legitimate expectations for regulations	Privacy and geolocation	Non-users	Regulatory sandbox
Transparency	Incentives for sharing data		Independent intermediary
Ownership of new regulations	Trust		Clear goals from the city
Lack of technical competences and understanding of the public sector	Algorithm sharing		Rule of law for cooperation
Lack of agility (whose?)			
Different goals between public and private sector?)			
Wall against innovation in the public sector			
Policy understanding from the side of industry			

Table 3: Public sector stakeholder input – barriers and challenges to private-public collaboration

Public sector stakeholders			
What are the main barriers/ challenges in cooperation between public and private parties?	What are the barriers to sharing data between public and private actors?	Others to involve	Solutions?

<p>Open or hidden commercial interests of private sector = limited trust</p>	<p>Lack of willingness to share data</p>	<p>External bodies to consult and help (NGOs, user councils, representatives of groups with special needs)</p>	<ul style="list-style-type: none"> • Legislation and regulation (e.g. e-scooters in UK vs. Germany) + local level framework • Data could be collected in public sector and the capacity of public sector could be built to be able to deal with this data. • Sharing anonymised data with the private sector can help address privacy concerns for the public sector and provide more data to private sector for business development. • Focus more on infrastructure • User fees for road use (autonomous transport) • Traditional mobility solutions such as cycling, not taken seriously and could be promoted to achieve environmental policy objectives of the public sector. • Public sector can adopt different approaches to regulate new mobility services, one approach can be to regulate fast, another can be to reflect before regulating. • Better public-public cooperation (i.e. cooperation between different public sector entities), at a vertical level and at a horizontal level, can help break silos and can also be
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			<p>helpful for public-private cooperation</p> <ul style="list-style-type: none"> • National standard for e-ticketing could be introduced; • Technical standards for data sharing could be introduced.
Different cultures, different languages that the public and private sector speak	Business interest of the private sector vs. privacy obligation of the public sector		<p>Data collected in public sector</p> <ul style="list-style-type: none"> • Capacity building in public sector to be able to deal with it
Long duration of public procurement procedures;	Data monopoly, which currently lies with some private sector entities such as Google, who are not willing to share it with other private sector entities or only with some specific entities based on their commercial interests.		Share anonymised data
Political consequences, legislative process	Data often not available with Public Sector entities.		Focus more on infrastructure
Lack of platforms or forums to engage in collaboration, even between two public parties			User fees for road use (autonomous transport)
<p>False expectations (e.g. politicians can sometimes suggest that technology will be used to solve a problem, which may sound good but may be difficult to achieve practically. Similarly hype about certain technologies can also create false expectations)</p> <p>Lack of clarity (e.g. it is not clear which public department to cooperate with, as there is fragmentation of authority in public sector.</p>			Faster? Or more reactive?

Also, sometimes there is a lack of clarity on policy objectives to be achieved by public sector)			
Conflicting interests			Good “old” solutions not taken seriously, e.g. cycling
Who cleans up the mess that might be left behind when things don’t work properly (e.g. bike sharing wave in different cities? In London the public entity had to clean up, but the costs were recovered from the private entity)?			Better public cooperation – vertically and horizontally – away from silos
Traditional favouritism/preference /support toward certain infrastructure or modes (e.g. road infrastructure is built in a manner to support cars and not to support other mobility options such as bikes, e-scooters etc.)			

Table 4: "Other influencer" stakeholder input - barriers and challenges to private-public collaboration

Research, NGOs, Associations, etc.			
What are the main barriers/ challenges in cooperation between public and private parties?	What are the barriers to sharing data between public and private actors?	Others to involve	Solutions?
Different goals	Data sharing is the biggest barrier	Researchers	Living labs
Questions about the impacts (environment, congestion)	Different system and format to collect data	End users	Personalised travel data
Competition between providers	GDPR (privacy issues) <ul style="list-style-type: none"> • Need to inform users about use of their data 	Communities	Neutrality commission to bring all players to the table <ul style="list-style-type: none"> • EU? • National?

Business model vs. public service	Use of data with business sensitivity	Car owners	Guidance or support from EU and national level
Letting the market decide vs. enabling the market to develop	Public sector capacity	Households	Hackathons
Strong competition can be a false objective		Associations (industry and government)	
Rapid upscaling		Young generation	
Different regulations in different public sector jurisdictions			
The aim of the business model isn't necessarily "mode shift"			
National vs. local vs. regional government			

6.3 On the ground: Cities' experience with new mobility

This thematic session addressed the issue of regulating new mobility. It began with an overview of the regulation of new mobility in Asia presented by the UITP Asia Pacific Centre for Transport Excellence. This is summarised graphically in Figure 5 and Figure 6. The complete presentation is available in the GECKO stakeholder LinkedIn group.



Figure 5: Overview of new mobility regulations in Asia

> NEW MOBILITY MARKET IN ASIA

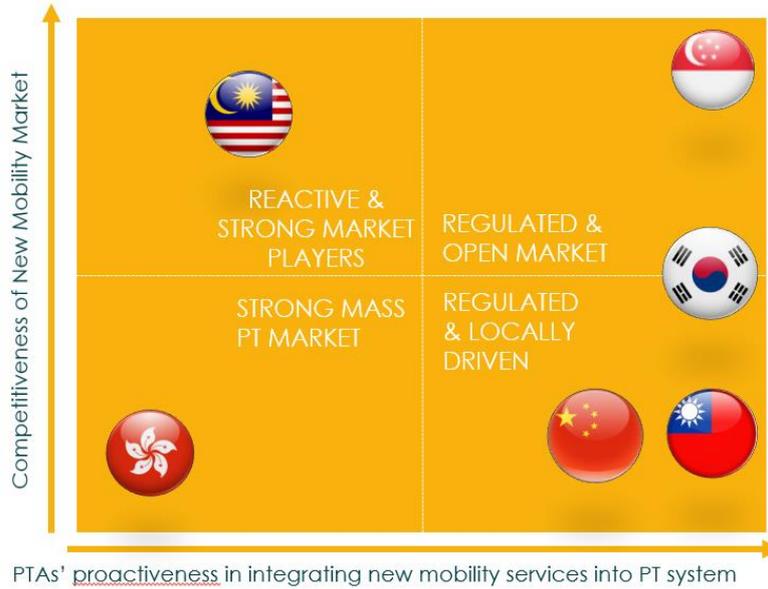


Figure 6: Competitiveness of Asian markets and public transport proactiveness in integrating new mobility

The project presented some of the key elements of regulation and disruptive innovation. These are identified in Figure 7.

Regulation & disruptive innovation

Key elements

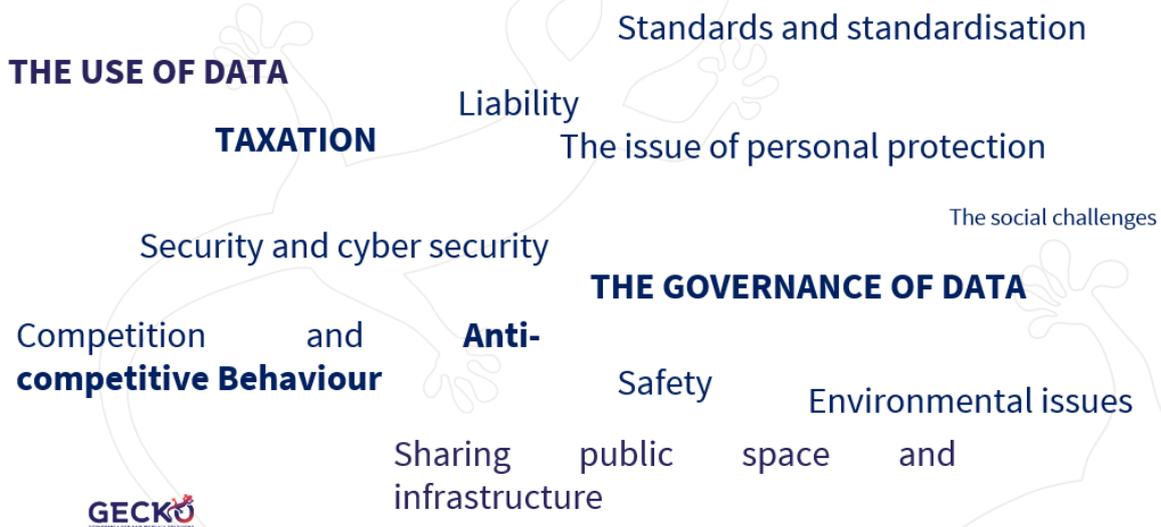


Figure 7: Key elements of regulation and disruptive innovation

In the stakeholder survey, industry stakeholders were asked how existing policies affect their business model. The results are found in Figure 8. Interestingly, an equal number of industry stakeholders found current regulations slowed them down in entering the market as found them supportive of their innovation.

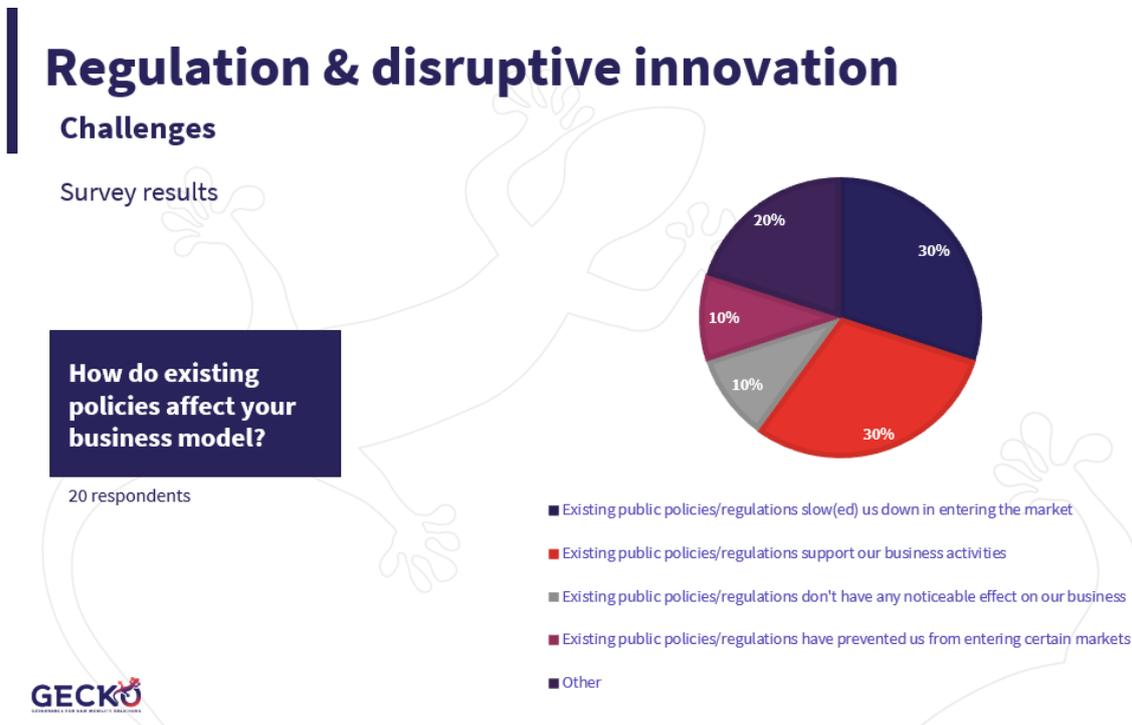


Figure 8: Stakeholder input - how policies affect business models

Examples were presented of case studies being developed within the GECKO project looking at the regulation of new mobility (see Figure 9 for an example from Luxembourg).

Regulation & disruptive innovation

Case Studies

Automated Vehicles in Luxembourg

- The Avenue project
- « Scientific testing »
- The maximum speed is 25km/h
- Level 3 of automation
- The autonomous shuttles are included in the AXA insurance of the whole fleet and are treated as any other vehicle of the same category
- The public liability insurance covers for material damages as well as for physical injuries of third parties
- **Luxembourg is applying the traffic rules that are mentioned in the Vienna Convention on road traffic.**
- **Luxembourg will adopt the rules that the EU will set up in the future.**



Figure 9: Sample case study of the regulation of disruptive mobility innovation

In this discussion session, stakeholders were divided into four groups, each containing representatives of the private and public sectors and other influencers. Each focussed on one of the GECKO thematic areas of:

- Connected and automated mobility
- Infrastructure and network
- Mobility as a Service
- Shared mobility

Stakeholders were requested to *identify the aspects that need to be regulated* in their thematic area, *at what level* the regulation should take place and explain *why they decided on that particular level*. The results are summarised in Table 5 through Table 8: What to regulate and at what level - Shared mobility (below).

Table 5: What to regulate and at what level - Connected and automated mobility

Connected and automated mobility		
Aspects to be regulated	Level of regulation (supra-national, national or local)	Why this level?
Emissions	EU	This standard might already exist.
Shared and on-demand (incentives)	Local	Different areas need different incentives.
Digital privacy	EU	There might be some privacy policy exist in the current EU framework so it would be better to follow existing logic.
Noise levels	Local	City versus rural areas would have different standards and people might have different tolerance levels.
Safety – cybersecurity	EU	Same reason as digital privacy.
Operation parameters	Local	
Type of users for drones	EU	

Table 6: What to regulate and at what level - Infrastructure and network

Infrastructure and network		
Aspects to be regulated	Level of regulation (supra-national, national or local)	Why this level?
Access to space	<ul style="list-style-type: none"> For services like e-scooters and for the size of vehicles (such as trucks), local or national level regulations are needed. For services like Hyperloop supranational regulations may be needed. 	<ul style="list-style-type: none"> Management of public spaces in the cities is better understood by local or national authorities. As they know the city better. Services like Hyperloop involve inter-national travel, hence supranational regulations are required.
Speed aspects 1.1.	<ul style="list-style-type: none"> Slow moving – local Medium – national 	<ul style="list-style-type: none"> It can be at all levels, depending on the speed

	<ul style="list-style-type: none"> • Fast – supra-national 	
Fast paths, fast roads 1.2.	<ul style="list-style-type: none"> • Supra-national and National level 	<ul style="list-style-type: none"> • codes and standards for fast roads such as Highways cannot be regulated at the local level. For the sake of consistency and for maintaining same safety standards they must be regulated at National or Supranational level.
Driving access and access to energy (Charging stations, different fuels)	<ul style="list-style-type: none"> • local 	<ul style="list-style-type: none"> • Needs to be regulated at the local level as the local authorities can permit or restrict entry to Low-emission zones as well as better understand the management of public spaces in the city.
Digital and communication aspects	<ul style="list-style-type: none"> • Supra-national level • All levels 	<ul style="list-style-type: none"> • Digital data, due to the nature of internet, is global and to prevent data monopolization can be regulated at a supra-national level. • But depending on the nature of data (whether it is sensitive, personal or relevant to a particular location) it can also be regulated at the national or local level.
Impacts for space and end-users; Vehicles (design of lanes); Enforcement and education have to be considered	-	-

Table 7: What to regulate and at what level - Mobility as a Service

Mobility as a Service		
Aspects to be regulated	Level of regulation (supra-national, national or local)	Why this level?
Openness of data and reusing data	Local (national as support)	<ul style="list-style-type: none"> • Local government needs to have integration (conditions may be open)

		<ul style="list-style-type: none"> National to encourage roaming, business integration (institution)
Data standards	N.A.	<ul style="list-style-type: none"> Tech companies are able to interchange – question is more about openness of data
Digital ticket	Local/national	<ul style="list-style-type: none"> Local is focussed on pricing National focussed payment form/enable integration across cities
Competition and competitive behaviour		
Data analysis		

Table 8: What to regulate and at what level - Shared mobility

Shared mobility		
Aspects to be regulated	Level of regulation (supra-national, national or local)	Why?
Minimum age (driving licence)	National but adapted to the local context	Local knowledge
Who operates	Operational aspects at local level	Local knowledge
Space usage (controlled parking) <ul style="list-style-type: none"> Public space (infrastructure) 	Best practices supra-national	
Number of vehicles (and operators)	Safety and standards issues at national level	Transcendental issues, business practicality (e.g. different speeds)
Balance among lobbies		
Safety of end users		
Geographic spread	Cross-border services at supra-national level	
Data sharing		
Specifications		
Type and quality of vehicles (minimum vehicle requirements)		
Connection (public and private parties)	Efficiency at local level	Local knowledge
Integration with existing schemes		
Insurance		

6.4 How (and how much) to regulate new mobility: The GECKO regulatory framework dashboard

In this session, the project presented the first draft of a tool intended to help regulators decide on appropriate regulatory frameworks to address emerging mobility solutions (see Figure 10).

A tool to provide regulatory responses for disruptive mobility solutions

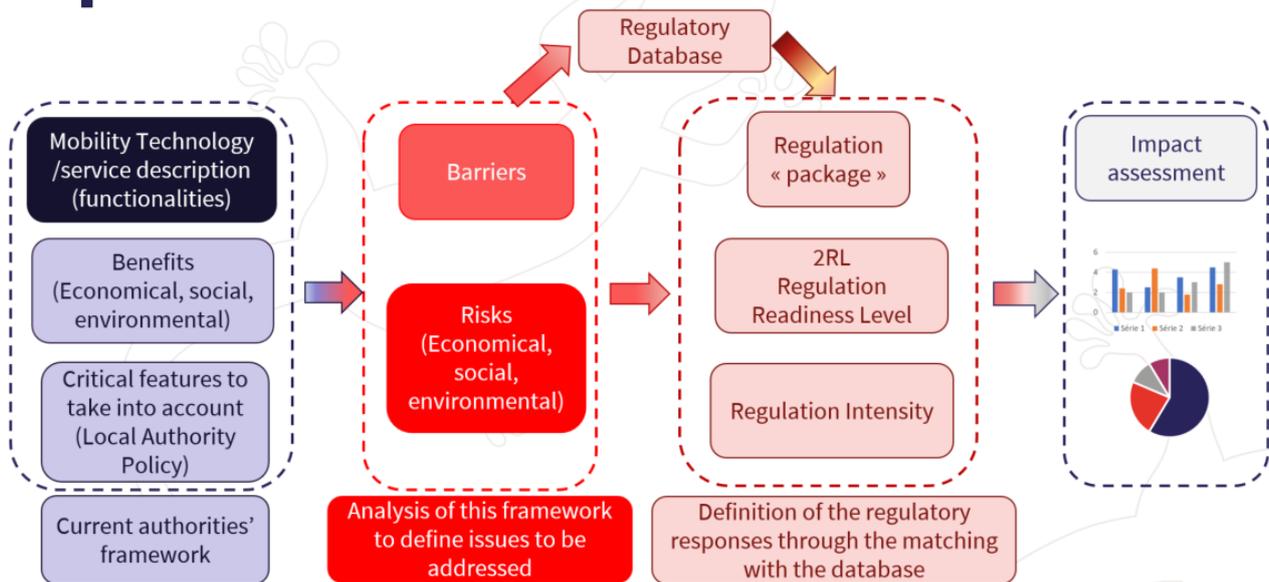


Figure 10: Framework for GECKO tool on regulatory responses

Discussion groups for this topic were again divided by sectors (industry, public and other influencers) as it was hypothesised they might have different views on how (and how much) new mobility solutions should be regulated. Groups were asked about the positive and negative aspects of a range of regulatory instruments as well as where they thought each could be put to best use. The industry stakeholders were divided into two smaller groups in order to facilitate discussion and their results have been combined into one table.

The two industry group tables also received an additional question asking what sort of effect they believed each form of regulation would have on fostering innovation. The group of other influencers (researchers, NGOs, associations, etc.) was asked to consider the point of view of citizens in their responses.

Table 9: Industry stakeholder input - How (and how much) to regulate new mobility

	pros	cons	Where it could work best	Effect on fostering innovation -2/-1/0/+1/+2
EU directives	<ul style="list-style-type: none"> • Harmonisation • General standard, international applicability, same conditions across the board 	<ul style="list-style-type: none"> • Differences/time • Slow, difficult to adapt locally • 	<ul style="list-style-type: none"> • Long-term issues • Business processes, security, safety standards, social or environmental 	+1 <i>(the stakeholders note that it is really hard to evaluate a particular approach because the effectiveness of a particular policy on innovation depends on many factors)</i>
National/regional/ local laws	<ul style="list-style-type: none"> • Local market • Local expertise can be faster 	<ul style="list-style-type: none"> • Entry barriers • Politically fraught, requires businesses to adapt to multiple criteria, requires enforcement 	<ul style="list-style-type: none"> • Operation level • Operations, SLA (Service level agreement) 	+1
Self/co-regulation	<ul style="list-style-type: none"> • Easy implementation • Moves fast, avoids regulation, no enforcement 	<ul style="list-style-type: none"> • Soft law – flexible • Companies don't follow, not in interest of cities/citizens 	<ul style="list-style-type: none"> • Pilot projects • Operations, SLA 	+1
Collaborative approaches	<ul style="list-style-type: none"> • Unify different perspectives • More lobby power/synergies/ greater understanding between stakeholders 	<ul style="list-style-type: none"> • Slow in some cases • Too constrained 	<ul style="list-style-type: none"> • Complex and pilot projects • New/unknown markets 	+1

Taxes/Charges	<ul style="list-style-type: none"> • Clear way to communicate with market • Companies behave; income for city, gives control to city, covers externalities 	<ul style="list-style-type: none"> • Entry barriers difficult to overcome • Can make business model infeasible 	<ul style="list-style-type: none"> • Behaviour change for operators and passengers • Negative externalities like emissions 	+1
Subsidies and incentives	<ul style="list-style-type: none"> • Encourage new mobility services • Makes business model feasible, behaviour change, increases positive externalities 	<ul style="list-style-type: none"> • Market distortion • Flipside of taxes/charges, so it has similar drawbacks 	<ul style="list-style-type: none"> • Peer to peer activity • Enable models/products you want to encourage 	+1
Labelling schemes				
Other				

Table 10: Public stakeholder input - How (and how much) to regulate new mobility

	pros	cons	Where it could work best
EU directives	<ul style="list-style-type: none"> • Are multinational; • can foster interoperability; • can help set standards 	<ul style="list-style-type: none"> • Can be restrictive; • can have complicated language; • can be less focused on rural areas. • Can be less flexible, difficult to change and time consuming 	<ul style="list-style-type: none"> • For safety and security • For social issues • For standard-setting and certification of vehicles • For the allocation of funding • For environment, cybersecurity and data • For technical standards and inter-national mobility



National/regional/ local laws	<ul style="list-style-type: none"> National laws can help set standards and can help protect vulnerable users. 	<ul style="list-style-type: none"> National laws can have complicated language; National laws can be less focused on rural areas. National laws can be less flexible, difficult to change, and time consuming 	<ul style="list-style-type: none"> National laws can work for safety National laws can work for security and Social issues National laws can work for standard-setting and certification of vehicles National laws can work for the allocation of funding National laws can work for finding a good, societal, social and political balance National laws can work for impact assessment and externalities. Regional and local laws can work for operational aspects Regional and local laws can work better also for taxation and charges Regional and local laws can work for physical infrastructure
Self/co-regulation	<ul style="list-style-type: none"> Can provide a common approach for business 	-	-
Collaborative approaches	-	-	-
Taxes/Charges	<ul style="list-style-type: none"> Provide a market-based approach 	<ul style="list-style-type: none"> Taxes are less popular with the public as they are burdensome. 	-
Subsidies and incentives	<ul style="list-style-type: none"> Internalising external costs, can provide a balanced approach 		-
Labelling schemes	-	-	-
Other	-	-	-

Table 11: "Other influencer" input - How (and how much) to regulate new mobility (citizen perspective)

	pros	cons	Where it could work best
EU directives	<ul style="list-style-type: none"> • Providing clarity and stability 	<ul style="list-style-type: none"> • Differences of implementation at national level (however some participants point out each country should be able to implement directives differently) • Can't be too early, can't instil confidence in users 	<ul style="list-style-type: none"> • Climate targets (at macro level) • Product or type approvals
National/regional/ local laws	<ul style="list-style-type: none"> • Local context conditions 	<ul style="list-style-type: none"> • Institutional non decision taking 	
Self/co-regulation			
Collaborative approaches			
Taxes/Charges	<ul style="list-style-type: none"> • Longevity – can plan 	<ul style="list-style-type: none"> • Politically infeasible 	<ul style="list-style-type: none"> • Bonus malus/user pay should target negative behaviour
Subsidies and incentives	<ul style="list-style-type: none"> • Be part of the investment (empower) • Lower costs • Higher rewards 	<ul style="list-style-type: none"> • Long-term uncertainty, potential for exclusion • Market distortion/prevent innovation • Time it takes to create right subsidy plan 	<ul style="list-style-type: none"> • Should target positive behaviours • Should go directly back to users, not to companies
Labelling schemes	<ul style="list-style-type: none"> • Provides certainty – where and how 		
Other			

6.5 What economic, social and political factors play a role in the successful introduction of new mobility services?

In this final discussion round, stakeholders were divided into six mixed groups, with each looking at one possible “success factor” in the introduction of new mobility services.

The success factors were introduced prior to the discussion and printed definitions of each of the GECKO categories of disruptive mobility were provided to each group for reference at their tables. See the descriptions of the success factor in ANNEX 5: FACTORS INFLUENCING GOVERNANCE OF DISRUPTIVE MOBILITY INNOVATIONS and the definitions of the categories of disruptive mobility in ANNEX 6: GECKO CATEGORIES OF DISRUPTIVE MOBILITY.

The success factors are:

- Business ecosystem
- Data management
- Governance
- Environmental aspects
- Social aspects
- Customer protection and public safety

The success factors identified per category, their influence and examples (when available) are provided in Table 12 through Table 17 (below).



Table 12: What economic, social and political factors play a role in the successful introduction of new mobility services? - business ecosystem

Business ecosystem		
Influencing factor	Influence – select from: <ul style="list-style-type: none"> • Almost always positive • Almost always negative • Almost always neutral/ no effect • Sometimes positive and sometimes negative 	Example(s)
Competition	+/-	<ul style="list-style-type: none"> • Innovation and lowering costs (+) • Service quality (+) • Over supply (-) • Price dumping (-) • Reluctance to collaborate (-) • Variety of services (+)
Cooperation	+/-	<ul style="list-style-type: none"> • Oligopoly (-) • Less innovation (-) • Less incentive (-) • Bureaucracy (-) • Market building (+) • Interoperability (+) • enabling innovation (+)
Compatibility	+	<ul style="list-style-type: none"> • Can use existing infrastructure • Lower entry barriers
Complementarity	+	<ul style="list-style-type: none"> • Focus on core business (+/-) • New competencies and capabilities • Fixed organisational identities and roles • It could balance costs and time required for public sector tenders

Lock-ins	-	<ul style="list-style-type: none"> • Long lock-in (-) <ul style="list-style-type: none"> • Bad for users • Not enough innovation/too much stability • Short lock-ins <ul style="list-style-type: none"> • Stable/some responsibility to sustainable solutions (+) • Sunk costs: can't recover costs if short (-)
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Table 13: What economic, social and political factors play a role in the successful introduction of new mobility services? - data management

Data management		
Influencing factor	Influence – select from:	Example(s)
	<ul style="list-style-type: none"> • Almost always positive • Almost always negative • Almost always neutral/ no effect • Sometimes positive and sometimes negative 	
Data ownership and use	+ (clarity is positive)	Uber (What Uber has to give to the city) <ul style="list-style-type: none"> • Share data in order to achieve the best benefit from it
Data quality	+ <ul style="list-style-type: none"> • Need for standards on how to collect • Interoperability, integrity, reliability (more important on technical side) 	<ul style="list-style-type: none"> • Equal to service quality – MaaS – quality of the movement • Velov (France) • Google
Data integration	+ <ul style="list-style-type: none"> • More important in legislation • It should be a unique platform to cluster data • Collaborative government 	<ul style="list-style-type: none"> • E-scooters (Portugal) • City maps • Fluid Time

Data security	+ <ul style="list-style-type: none"> • Destroy information after usage • Regulating usage of data • Cities have to regulate the use (positive under which conditions?) • Cybersecurity system (e.g. photo controlling drones, spoofing attacks, etc.) 	
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Table 14: What economic, social and political factors play a role in the successful introduction of new mobility services? - Governance

Governance		
Influencing factor	Influence – select from: <ul style="list-style-type: none"> • Almost always positive • Almost always negative • Almost always neutral/ no effect • Sometimes positive and sometimes negative 	Example(s)
Economic influences	+/-	<ul style="list-style-type: none"> • Subsidy for e-scooters/bikes to encourage customers (+) • Tax relief (0 tax) on 0-emission vehicles (+) • They can distort the market in favour of a new mobility service. This can be problematic when the positive impact of a new mobility service (e.g. on environment) is not predicted correctly. In such cases the new mobility service can worsen the situation (-)
Political aspects	+/-	<ul style="list-style-type: none"> • Political influence can have very positive effects (e.g. in LA political support led to open data and data shared with service providers was helpful for business development) (+) • Political support should however be aligned with public benefits; if political class has vested interest it can have an overall negative influence (-)

Legislative aspects	+/- 1.3.	<ul style="list-style-type: none"> • The influence of legislation can go both ways (e.g. Israel: creation of a fast lane had good influence for some services while not so much for others) • Legislation gives certainty (+) • But its complexity and slow pace can be challenging (-) • Its complexity can create problems for small businesses but favour big business (e.g. GDPR) (-)
<p>General observations:</p> <ul style="list-style-type: none"> • Collaboration between the public and private sector and other stakeholders can create good governance • Building trust can also help achieve good governance 		

Table 15: What economic, social and political factors play a role in the successful introduction of new mobility services? Environmental aspects

Environmental aspects		
Influencing factor	Influence – select from:	Example(s)
Environmental impact	<ul style="list-style-type: none"> • Almost always positive • Almost always negative • Almost always neutral/ no effect • Sometimes positive and sometimes negative 	<ul style="list-style-type: none"> • e-scooters <ul style="list-style-type: none"> ○ fun (+) ○ less people on public transport (-) ○ cluttering public space (-) ○ quality of life (+) ○ contamination of water (-) • shared e-bikes <ul style="list-style-type: none"> ○ longer life cycle (positive compared to e-scooters)

Backshift effects		<ul style="list-style-type: none"> • local reduction of emissions (+) • kick step scooters are coming back somehow
Environmental legislation		<ul style="list-style-type: none"> • Incentives to cycle (+) • Balancing environmental aspects as legislation of life cycle manufacturing (+) • Integrating new mobility in legislation and considering old mobility legislation (+)

Table 16: What economic, social and political factors play a role in the successful introduction of new mobility services? - Social aspects

Social aspects		
Influencing factor	Influence – select from:	Example(s)
	<ul style="list-style-type: none"> • Almost always positive • Almost always negative • Almost always neutral/ no effect • Sometimes positive and sometimes negative 	
Equity and accessibility	<ul style="list-style-type: none"> • Innovation favours wealthy/trendy locations (young, male mainstream) • Sometimes, certain innovations would benefit some vulnerable groups. 	<ul style="list-style-type: none"> • e-scooters vs. older population as pedestrians (-) • shared cars <ul style="list-style-type: none"> ○ for people travelling to meetings only (-) ○ for the “best” market; not necessarily where needed (-) ○ damages existing public transport viability (e.g. San Francisco) (-)
Ethical aspects	<ul style="list-style-type: none"> • in some markets, leapfrogging to new technology has occurred 	<ul style="list-style-type: none"> • availability of smart phone and bank account (-) <ul style="list-style-type: none"> ○ technology needs
Cognitive-cultural aspects	<ul style="list-style-type: none"> • which algorithm-based issues in how system is designed? 	<ul style="list-style-type: none"> • Autonomous vehicles (Who will be “killed” /injured in incidents?)

Tragedy of the commons	<ul style="list-style-type: none"> Individuals can damage viability for a “common” model 	<ul style="list-style-type: none"> Damage to community, e.g. AirBnB in Barcelona (-) Selfish behaviour of users of common assets as less feeling for responsibility (-) A good/viable shared model becomes a commercial business (-) Vandalism of shared bikes (e.g. Manchester) (-) Driving to school creates road safety issues for all (-) Safety issue/isolation (-)
Data privacy	<ul style="list-style-type: none"> Critical cross-cutting issues 	<ul style="list-style-type: none">
Employment	<ul style="list-style-type: none"> Impact across workforce and economy 	<ul style="list-style-type: none"> What type of employment – “gig”, need for employment, lost jobs (-) Create new jobs (+)
Technological access	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Is supressing walking vs. ride sharing (-) Don’t supress right to do something that is more sustainable Oslo prioritises walking in its MaaS app (+)

Table 17: What economic, social and political factors play a role in the successful introduction of new mobility services? - Customer protection and public safety

Customer protection and public safety		
Influencing factor	Influence – select from:	Example(s)
	<ul style="list-style-type: none"> Almost always positive Almost always negative Almost always neutral/ no effect Sometimes positive and sometimes negative 	
Safety	+	<ul style="list-style-type: none"> Equipment fit for purpose (need standards) <ul style="list-style-type: none"> Can lead to increase in modal shift (+)
Security	+/-	<ul style="list-style-type: none"> Security processes and equipment (CCTV/alarms) (+) Too much CCTV (Big Brother, face recognition, GPS tracking) (-)

Liability (insurance)	+	<ul style="list-style-type: none">• Clear for mobility services (+)<ul style="list-style-type: none">○ Customer for poor behaviour○ Company if equipment faulty○ Automated: complex but needs to be clear
General observation: All leads to trust in the system/operator/equipment – increased behaviour change		

ANNEX 1: WORKSHOP AGENDA



GOVERNANCE AND NEW MOBILITY: GECKO WORKSHOP 1 AGENDA

24-25 October 2019
Nunn Hall, University College London Institute of Education
20 Bedford Way, Bloomsbury, London

Thursday, 24 October

Activity	Format and actors
12:30 Lunch	• All
13:30 <i>Welcome, introductions and project overview</i>	• Yannick Bousse, UITP; Bonnie Fenton, Rupprecht Consult; all
14:15 <i>New mobility solutions: What's currently out there?</i>	• Context setting: Ping-Jen Kao, University College London • 5-minute product/service introductions: industry stakeholders
15:15 Coffee/tea break	
15:45 <i>How one of the biggest transport authorities in the world works with the private sector in new mobility</i>	• Presentation: Polyvios Polyviou, Transport for London
16:05 <i>Cooperation models between public and private parties: What works? What doesn't?</i>	• Context setting: Yannick Bousse, UITP • Cross-sectoral discussion: all
17:15 Wrap up of the day	
17:30 End of day 1	
19:00 Dinner – Antalya Restaurant 103-105 Southampton Row, Bloomsbury, London	• All

Governance and New Mobility 2

Friday, 25 October

Activity	Format and actors
8:30 Morning coffee/tea	
9:00 <i>New Mobility in the Asia-Pacific</i>	• Presentation: Gayang Ho, UITP Asia-Pacific
9:15 <i>On the ground: Cities' experience with new mobility</i>	• Context setting: Anne Reynaud, IRU • Identifying needs for regulation: all
10:05 <i>How (and how much) to regulate new mobility: developing the GECKO regulatory framework dashboard</i>	• Context setting: Caroline Busquet, Capital High Tech • Assessing different forms of regulation: all
10:55 Coffee/tea break	
11:25 <i>What economic, social and political factors play a role in the successful introduction of new mobility services?</i>	• Context setting: Anastasia Tsvetkova, Åbo Akademi University • Evaluating influencing factors
12:15 Wrap up of the day	
12:30 Lunch	• All
13:30 End of workshop – thanks for coming!	

Stakeholder Coordinator: Bonnie Fenton, Rupprecht Consult +49 173 726 3681

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ANNEX 2: WORKSHOP DATES, TIMING AND CONTENT

	Workshop 1	Workshop 2	Workshop 3	Final conference
Dates	Oct 2019 (M11)	May 2020 (M18)	November 2020 (M24)	May 2021 (M30)
Related event	Project consortium meeting	<i>International Transport Forum</i> The GECKO mid-term stakeholder event will also be planned as an ITF side event.	TBD	
Location	London	Leipzig, Germany	TBD	Brussels
Project information and knowledge for stakeholders	D1.1 New mobility services and technologies, knowledge bank (M6) D2.1 Regulatory responses and governance models (M6)	D1.2 Business models for new mobility services (M10) D1.3 End users' perspectives and mobility needs (M12) D2.2 Main economic, political and social variables (M12) D2.3 Cooperation models among public and private parties (M12) D2.4 Regulatory approaches and governance models for disruptive innovation (M15) D3.1 GECKO frameworks dashboard (M14)	D1.4 New mobility services and business models (M26) D2.5 Regulatory responses and governance models (M26) D3.2 GECKO impact assessment (M20) D3.3 GECKO compliance map and future requirements (M24)	D4.1 Guidelines for new governance models (M30) D4.2 Adaptive Roadmap 2040 (M30) D4.3 Joint Position Paper (M30)

**Input
requested of
stakeholders**

D1.2 Business models for new mobility services (M10)

D2.2 Main economic, political and social variables (M12)

D2.3 Cooperation models among public and private parties (M12)

D2.4 Regulatory approaches and governance models for disruptive innovation (M15)

D3.1 GECKO frameworks dashboard (M14)

D3.2 Impact assessment (M20)

D3.3 GECKO compliance map and future requirements (M24)

D4.1 Guidelines for new governance models (M30)

D4.2 Adaptive Roadmap 2040 (M30)

D4.3 Joint Position Paper (M30)



ANNEX 3: WORKSHOP ATTENDEES

GECKO stakeholder workshop attendees, 24-25 October 2019, London			
	name		organisation
1	Vassilis	Agouridas	AIRBUS
2	Christophe	Arnaud	Blue Systems
3	Giles	Bailey	TravelSpirit Foundation
4	Karen	Barrass	Enviroconsulting
5	Peter	Biczok	Bicyclize
6	Yannick	Bousse	UITP (GECKO consortium)
7	Caroline	Busquet	Capital High Tech (GECKO consortium)
8	Pasquale	Cancellara	Polis (GECKO consortium)
9	Bonnie	Fenton	Rupprecht Consult (GECKO consortium)
10	Maciej	Florczak	ZTM - Public Transport Authority Warsaw
11	Alexander	Frederiksen	Donkey Republic
12	Marion	Galan Alfonso	Donkey Republic
13	Thomas	Geier	Vervoerregio Amsterdam Regional Transport Authority
14	Florence	Ghiron	Capital High Tech (GECKO consortium)
15	Michael	Glottz-Richter	City of Bremen
16	Christian	Heimgartner	Roland Müller Künsnacht AG
17	Gayang	Ho	UITP (GECKO consortium)
18	Maria	Holmes	Road Safety Authority Ireland – did not attend
19	Urša	Hribernik	LIT Transit Ltd.
20	Ping-Jen	Kao	University College London (GECKO consortium)
21	László Sándor	Kerényi	BKK Centre for Budapest Transport
22	Georgia	Kouta	University College London (GECKO consortium)

23	Yoann	Le Petit	Transport and Environment
24	Valerio	Lubello	Bocconi University (GECKO consortium)
25	Melinda	Matyas	University College London (GECKO consortium)
26	Marisa	Meta	FIT Consulting (GECKO consortium)
27	Gavin	Miller	UK Driver and Vehicle Standards Agency
28	Alan	O'Kelly	FREE NOW group
29	Gregor	Petri	Fluidtime Data Services GmbH
30	Polyvios	Polyviou	Transport for London
31	Anne	Reynaud	IRU (GECKO consortium)
32	Jayant	Sangwan	Corte (GECKO consortium)
33	Steven	Sarasini	Research Institutes of Sweden AB
34	Izzet	Senturk	Bursa Teknik Üniversitesi
35	Krysia	Solheim	Nextbike
36	Jakob	Spranger	Toyota Motors Europe
37	Bronwen	Thornton	Walk 21
38	Anastasia	Tsvetkova	Åbo Akademi University (GECKO consortium)
39	Mustafa	Yilmaz	Sivas Cumhuriyet University

ANNEX 4: PRE-WORKSHOP QUESTIONNAIRE QUESTIONS

1. Your name
2. Your organisation
3. Are you:
 - a. a public policy maker
 - b. someone from the private sector who creates or offers new mobility services or technologies
 - c. a researcher, NGO representative or other with a (non-business) interest in new mobility technologies, issues or solutions

<i>(public sector respondents)</i>	<i>(private sector respondents)</i>	<i>(other influencer respondents)</i>
	<p>Your place in the market</p> <p>How would you define your business' level of market readiness?</p> <ol style="list-style-type: none"> a) 0 (perception of need) b) 1 (basic research) c) 2 (needs formulation) d) 3 (needs validation) e) 4 (small-scale stakeholder campaign) f) 5 (large-scale early adopter campaign) g) 6 (proof of traction) h) 7 (proof of satisfaction) i) 8 (proof of scalability) j) 9 (proof of stability) 	

	<p>How would you describe your position in the market in which you are active?</p> <ul style="list-style-type: none"> a) Entering an existing market b) Re-segmentation of an existing market as a low-cost player c) Re-segmentation of an existing market by employing a niche strategy 	
	<p>How would you describe the level of maturity of the market you are in?</p> <ul style="list-style-type: none"> a) Introduction/Development Stage b) Growth Stage c) Maturity Stage d) Decline Stage 	
<p>Your relationship with the private sector</p> <p>How formal is your relationship with private sector actors in the field of new mobility? (If you have no such relationship or more than one relationship to describe, please explain this under "other".)</p> <ul style="list-style-type: none"> a) We share information informally. b) We have a signed memorandum of understanding. c) We have signed contracts defining our relationship. 	<p>Your relationship with the public sector</p> <p>How formal is your relationship with public sector actors with regard to your new mobility activities? (If you have no such relationship or more than one relationship to describe, please explain this under "other".)</p> <ul style="list-style-type: none"> a) We share information informally. b) We have a signed memorandum of understanding. 	

d) Other – please describe.	c) We have signed contracts defining our relationship. d) Other – please describe.	
<p>With refence to the previous question, how satisfied are you with this level of formality in your relationship?</p> <p>a) We are satisfied; it's working well. b) It's working for now but we foresee the need to be clearer/more concrete in the future. c) We need to be much clearer/provide more guidance to the private sector. d) We currently don't have any relationships as described above with private sector actors.</p>	<p>With refence to the previous question, how satisfied are you with this level of formality in your relationship?</p> <p>a) We are satisfied; it's working well. b) It's working for now but we foresee the need for more clarity/concreteness in the future. c) We need much more/clearer guidance from the public sector. d) We currently don't have any relationships as described above with public sector actors.</p>	
Please rank the importance of your cooperation with private sector actors with regard to new mobility solutions (0=not important at all, 10=imperative)	Please rank the importance of your cooperation with public sector actors with regard to new mobility solutions (0=not important at all, 10=imperative)	
	<p>Overall, how do existing public policies/ regulations affect your business model?</p> <p>a) Existing public policies/regulations have prevented us from entering certain markets. b) Existing public policies/regulations slow(ed) us down in entering the market.</p>	



	<ul style="list-style-type: none"> c) Existing public policies/regulations don't have any noticeable effect on our business. d) Existing public policies/regulations support our business activities. e) Other - please explain 	
<p>Challenges to regulating new mobility</p> <p>Please rank the following challenges to the regulation of new mobility solutions from most challenging (1) to least (6).</p> <ul style="list-style-type: none"> a) Data-related challenges: privacy b) Data-related challenges: safety c) Data-related challenges: security d) Data-related challenges: interoperability e) Cooperation challenges between public and private parties: creating best market environment while achieving policy goals f) Energy transition challenges: fostering innovation while ensuring that the disruptive innovations are compliant with policy goals. 		
<p>In your opinion, are there any important challenges missing from the list above? If yes, please name it/them.</p>		
<p>Existing (or proposed) regulations</p> <p>Please name and briefly describe a regulation in your jurisdiction that has (had) an effect on the introduction of new mobility. Please consider "regulation" in the broadest sense in answering this question. (Note, some stakeholders responded to the questions on regulations in an earlier survey. If you have already done so, there is no need to answer them again (unless you have more information to share!). Please feel free to skip the next 8 questions.</p>		



Does the regulation you describe above affects the transport of:

- a) goods
- b) people
- c) goods and people

With regard to the regulation named above, is it a regulation that:

- a) has already been put into force
- b) will soon be put into force
- c) should be put into force (in your opinion)

Again, with regard to the regulation named above, what physical jurisdiction does it affect? Please name the affected neighbourhood, city, country, etc.

Is the regulation you describe a(n) (please select the single best response):

- a) EU directive
- b) national/regional/local law
- c) technical standard
- d) self-/co-regulation
- e) recommendation
- f) open method of coordination
- g) form of education or information
- h) tax, charge, fee or fine
- i) penalty
- j) liability and compensation scheme
- k) subsidy or incentive
- l) deposit-refund system

- m) labelling scheme
- n) tradeable permit scheme
- o) call for tender
- p) I don't know

Please select ALL categories that are affected by the regulation.

- a) Cooperative, connect and automated transport technologies
- b) Alternative fuels and electric mobility
- c) Shared/on-demand mobility (car sharing, peer-to-peer sharing, ride sharing, ride hailing, bike sharing, etc.)
- d) Mobility as a Service and platforms: MaaS ecosystems, journey planners, ICT platforms, etc.
- e) Infrastructure, network and traffic management systems

Please select ALL of the mobility services affected by the regulation.

- a) services with stations (car, bike, moped, etc.)
- b) free-floating services (car, bike, moped, scooter, etc.)
- c) carpooling
- d) car sharing
- e) crowd shipping
- f) private hire vehicles
- g) taxis
- h) on-demand buses
- i) autonomous shuttles
- j) MaaS or other similar platforms for journey planning (city, mapper, whim, etc.)
- k) vehicle communication
- l) public transport by boat
- m) boat (inland water freight)

- n) suspended public transport (cable car, etc.)
- o) transport by drone
- p) plane transport
- q) train transport
- r) transport by metro
- s) transport by tram
- t) transport by bus
- u) multi-modal freight service
- v) other - please describe

For each of the categories, decide whether your regulation has had/is expected to have a positive or negative impact in each of the categories listed and whether the regulation has removed/will remove barriers in those categories.

	social	economic	environmental	political	legal	organisational	security-related	safety-related
positive impact	<input type="checkbox"/>							
negative impact	<input type="checkbox"/>							
removed barriers to mobility service	<input type="checkbox"/>							

Please describe the most significant (expected) impacts in a few words.



ANNEX 5: FACTORS INFLUENCING GOVERNANCE OF DISRUPTIVE MOBILITY INNOVATIONS

Hand-out provided to stakeholders in advance of workshop.

Factors, influencing governance of disruptive mobility innovations

Business ecosystem

- **Competition:** competition with other mobility solutions within and between business ecosystems
- **Cooperation:** required cooperation between different private and public parties in order to successfully implement a mobility solution
- **Compatibility:** the need to be compatible with existing technologies, infrastructure and business models
- **Complementarity:** the need for other technologies, infrastructure, business models in order to realize the benefits of a mobility solution
- **Lock-ins:** barriers for implementation of new mobility solutions created by existing technologies, business models, standards and infrastructure

Data management

- **Data ownership and use:** clarity regarding who will own data collected as part of a mobility solution (traffic, payment, personal etc.), how it will be shared and what it will be used for
- **Data quality:** for certain mobility solutions to work it is crucial that the data (e.g. traffic schedules, real-time vehicle locations, etc.) is precise and reliable
- **Data integration:** it is necessary to integrate the data generated by different actors in order for mobility solutions to realize their benefits
- **Data security:** data required for operation of various mobility solutions contains private information (e.g. credit cards, names, addresses, locations and movements), which needs to be properly protected

Governance

- **Economic influences:** economic influences such as taxes, tax reliefs, subsidies, etc. impact new and existing mobility solutions, creating advantages and disadvantages for certain actors
- **Political aspects:** governmental support, changes in political course, lack of harmonization form political environment that supports or obstructs implementation of mobility solutions
- **Legislative aspects:** legislation can both support and obstruct implementation of mobility solutions

Environmental aspects

- **Environmental impact:** the impact of new mobility solutions on the environment needs to be assessed
- **Backshift and rebound effects:** a potentially environmentally sound mobility solution can in fact only shift environmental costs to another place or provide fewer environmental benefits than expected
- **Environmental legislation:** existing or missing environmental legislation can support or obstruct implementation of mobility solutions

Social aspects

- **Equity and accessibility:** new mobility solutions entail various level of accessibility and their use can be challenging for certain groups of people due to physical, economic or technological limitations
- **Ethical aspects:** certain new mobility-related technologies or business models bring up ethical issues that are difficult to resolve
- **Cognitive-cultural aspects:** the switch to new mobility solutions often requires a change in people's mindset and revision of what has been taken for granted
- **Tragedy of the commons:** disregard and vandalism are often observed in relation to objects and infrastructures that are considered to be common or 'no one's'

Customer protection and public safety

- **Safety:** it is crucial to ensure safety of the users of new mobility solution (passengers) as well as the society in general (pedestrians, local population, etc.)
- **Security:** it is crucial to ensure security of the users of new mobility solutions as well as any affected stakeholders
- **Liability:** in certain cases it is unclear whose liability it is when an accident happens in the context of a new mobility solution

ANNEX 6: GECKO CATEGORIES OF DISRUPTIVE MOBILITY



GECKO workshop on governance and new mobility

London, 24-25 October 2019

For your reference, we provide these categories of disruptive mobilities being addressed in the GECKO project:

COOPERATIVE, CONNECTED AND AUTOMATED MOBILITY

A connected vehicle is defined as a motor vehicle "that connect to other vehicles and or devices, networks and services outside the car including the internet, other cars, home, office or infrastructure"^[1]. Most modern vehicles and drones already have connected devices. In the future, they might directly interact with each other and with the road infrastructure. This interaction is the domain of cooperative mobility, which is enabled by digital connectivity between vehicles and between vehicles and transport infrastructure^[2]. An automated vehicle is defined as "a motor vehicle which has technology available to assist the driver so that elements of the driving task can be transferred to a computer system^[3]." In contrast, an autonomous vehicle is defined as "a fully automated vehicle equipped with the technologies capable to perform all driving functions without any human intervention^[4]." Examples of disruptive innovations in this category include connected and automated vehicles, passenger urban air mobility, and drone last mile delivery.

INFRASTRUCTURE, NETWORK AND TRAFFIC MANAGEMENT

"Infrastructure" can be defined as innovations in infrastructure management, pricing, taxation and finance, digitalization and integration.^[5] Network and traffic management "provides guidance to the European traveller and haulier on the condition of the road network. It detects

^[1] [Gowling WLG, Are you Data Driven?](#)

^[2] [Intelligent Transport Systems](#)

^[3] [European Parliament, Briefing January 2016, Automated Vehicles in the EU.](#)

^[4] [European Parliament, Briefing January 2016, Automated Vehicles in the EU.](#)

^[5] [Transport Infrastructure Expert Group.](#)

GECKO category definitions 2

incidents and emergencies, implements response strategies to ensure safe and efficient use of the road network and optimises the existing infrastructure, including across borders. Incidents can be unforeseeable or planned: accidents, road works, adverse weather conditions, strikes, demonstrations, major public events, holiday traffic peaks or other capacity overload."^[6] Examples of disruptive innovations in this category include big data for fleet management and logistics, TM 2.0, and Hyperloop.

MAAS AND MAAS PLATFORMS

"Mobility-as-a-Service (Maas) is a user-centric, intelligent mobility management and distribution system, in which an integrator brings together offerings of multiple mobility service providers, and provides end-users access to them through a digital interface, allowing them to seamlessly plan and pay for mobility."^[7] "The Maas Platform is the IT structure that is used by the Maas Operator to provide the final service of mobility to the end-users". Examples of disruptive innovations in this category include Maas and Maas platforms.

SHARED ON-DEMAND MOBILITY

Shared mobility and on-demand mobility are two trends emerged as a response to the change in traveller need for cheaper transport (e.g. sharing the cost of travel) and the need for easy access to a transport (service) at a given moment. Shared mobility and on-demand mobility can also reduce congestion and space by private vehicles in cities. Shared mobility can be defined as usage of shared resources, in this case vehicles, which are made available to registered users at various locations in the city. On-demand mobility, on the other hand, is service provided 'on-demand', when requested by the customer, and not based on a fixed schedule. Examples of disruptive innovations in this category include carpooling, bike sharing, e-scooter sharing/micromobility, ride hailing and transportation network companies (TNCs), and on-demand ride sharing.

^[6] [Intelligent Transport Systems, Traffic Management](#)

^[7] [The Maas Dictionary](#)

The consortium of GECKO consists of 10 partners with multidisciplinary and complementary competencies. This includes leading universities, networks and industry sector specialists.



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