

# **Integrating new mobility services in urban transport**

## **Executive summary**

New mobility services and business models are changing urban transport, affecting both the supply and demand sides of urban mobility market. App-based mobility services such as car and ride sharing and Mobility as a Service (MaaS) through single or integrated ticketing services, offer new possibilities to expand and complement existing mobility and can help to balance public and private transport in cities.

Evidence<sup>1</sup> shows that these developments can lead to a significant reduction of single occupancy private car use and an increase of public transport use, leading to a strong reduction in congestion, local air pollution, and CO2 emissions. These benefits will occur when more vehicles are shared and private car ownership is reduced. Under these conditions, new mobility can change the way people live in cities: an International Transport Forum study found that in Lisbon ridesharing services could make public transport more efficient and thus end congestion, reduce traffic emissions by one third, and decrease required parking space.<sup>2</sup> This illustrates the magnitude of the change and the important benefits resulting in moving towards an increasing use of shared mobility, public transport and integrated use of various mobility services.

Despite their long term potential, the growth and development of new mobility services are often hampered by existing market access restrictions (e.g. limits on number of new mobility services), operational requirements (e.g. excessive vehicle restrictions), and financial disincentives (e.g. pricing regulation). Companies attempting to offer mobility as a service or single ticketing systems also have to manage the expectations and different business models of transport operators that they want to include in the service. This paper outlines the key recommendations from 10 organisations engaged in promoting new mobility and calls for:

- Promoting regulatory best practices enabling new and traditional mobility services such as removing market access barriers (e.g. limits on licenses for new mobility services or barriers preventing the provision of integrated services), operational requirements (e.g. varying regulations in different boroughs in one city and between cities, or regulations that prevent the use of smaller less polluting cars), and pricing regulation (e.g. hindering dynamic pricing) that are not justified by public interest.
- Improving the integration of new shared mobility services with traditional public transport services, operators and public authorities (i.e. first-last-mile or in cases public transport operations are over-costly). Specifically enabling opportunities to be developed for experimentation using new business models and services.
- Facilitating access to open APIs than can enable and/ or improve mobility services. This will allow new mobility services to integrate with existing public/private mobility services to allow and improve multimodal trip planning and effective operation.

---

<sup>1</sup> [International Transport Forum \(ITF\), 2015](#)

<sup>2</sup> [ITF, 2017](#)

- Incentivising more efficient vehicle use in cities and trialling a dynamic road pricing model extended to all vehicles - with the possibility of charging less for shared and e-vehicles.
- Creating mobility budget tax incentive instead of company car tax incentive in order to reflect evolving mobility patterns and take account of the benefits linked to balancing the use of private individual cars and shared mobility.

## **Introduction**

The emergence of new mobility services over the past decade has changed the urban mobility landscape and offers a wider range of individual mobility solutions.

As shared mobility is gaining momentum, its environmental benefits become evident.<sup>3</sup> For cities, shared - and increasingly electric - transport means less congestion, less pollution and therefore better air quality and living conditions for citizens. At EU level, the transition to shared and electric mobility can lead to an overall decrease in CO2 emissions from passenger transport. Reduction in car ownership resulting from more vehicles being shared will make active modes of transport, such as walking and cycling, more attractive. These modes, because of their environmental and health benefits,<sup>4</sup> should be encouraged as part of a comprehensive shift to more sustainable urban mobility.

New mobility services range from shared mobility<sup>5</sup> such as car, bike and ride-sharing services to multimodal, door-to-door trip planning and mobility as a service. They complement city public transport services by providing mobility solutions for the first and last mile, reaching less dense or underserved areas and developing integrated ticketing or payment services, providing attractive and comprehensive mobility options also for those whose needs haven't been fulfilled by traditional public transit services and thus channelling some new demand and customers for public transportation system.

Evidence shows that shared mobility services lead to a decrease in congestion<sup>67</sup> and pollution levels in urban centres. Collaboration between shared mobility services, transport authorities and cities can foster existing complementarity with public transport, thus reducing traffic congestion while improving car use efficiency. Integrated multimodal journey planners with or without payment solutions facilitate the use of multiple mobility providers, maximizing transport modes' efficiency and enabling on-demand mobility in cities.

---

<sup>3</sup> See at local level: [ITF, 2017](#); for global impact, see: [UCDavis, 2017](#)

<sup>4</sup> [WHO, 2018](#): "people who are insufficiently active have a 20% to 30% increased risk of death compared to people who are sufficiently active."

<sup>5</sup> [ITF, 2017 \(2\)](#): Shared mobility is defined by the International Transport Forum (ITF) as the shared use of a vehicle, bicycle, or other low-speed modes on an "as-needed" basis. It includes services such as car sharing, bike sharing, and ride sharing.

<sup>6</sup> [Orb international, 2017](#)

<sup>7</sup> [Transport for London, 2016](#): "Although there is evidence...of a substantial recent increase in PHVs...This has largely been in terms of a 'substitution' for other vehicles. Of themselves they are not therefore contributing directly to increased congestion, although congestion would be lower had this increase not taken place". (p.188 and 189)"

The EU has designated 2018 as the Year of Multimodality and this paper outlines recommendations on how new mobility services can be enabled to help deliver more efficient environmentally friendly transport by combining shared mobility services with existing public transport.

### **Enabling new mobility through eliminating market access and operational restrictions**

New mobility services that have emerged to complement existing public transport provide citizens with multimodal and on-demand mobility solutions. This is changing the way people commute in cities and between urban centres. Regulation needs to take into account and reflect these new mobility behaviours, in order to adapt to the new reality of urban transport. Existing market access and operational rules frequently hamper the uptake of new mobility services such as car or ride sharing and should be eliminated.

#### ***Car sharing***

Car sharing schemes can be divided into two main categories: A-to-B free-floating or A-to-A station based car sharing. In the first case, cars can be picked up and collected from on-street parking spaces within the limits of a city or at transport nodes such as airports and train stations (e.g. Car2go, DriveNow, Zipcar). In the other case, cars can be picked up from any dedicated parking station and have to be returned to the pick-up spot (e.g. Cambio, Ubeeqo).

Access to data is a key component of car sharing companies' business models, since it allows users to rent vehicles. Likewise, external data such as weather conditions and dates of events allow car sharing companies to improve their demand prediction and therefore to offer a better service to users. Today however, current regulation in some cases hamper the development of these business models, because of data access restrictions. **This is why access to non-personal public data should be facilitated**, as it would improve consumer experience and increase the efficiency of car sharing schemes.

Operational restrictions for car sharing companies are also commonplace. For example, in order to achieve their potential of reducing congestion and emissions in cities, car sharing companies need to ensure proximity to their users. However shared cars are not always available within walking distance. To remedy this, **parking policy should favour shared vehicles**, for instance by allocating more dedicated parking spaces to car sharing or to ridesharing services. Ideally, the dedicated parking spaces should also be allowed close to public transport hubs in order to encourage their use for first mile – last mile services.

In parallel, especially in cities with limited experience in shared mobility services, public authorities should **communicate about the benefits** of shared mobility services, as this could lead to an increase in car sharing and shared mobility in general.

On top of this, car sharing companies sometimes face many restrictions on operations that limit possible use cases – for example placing **unreasonable time caps on reservations** (24 hours).

This has detrimental effects in particular in the early life of the service, when people need to use it often to understand its benefits. Cities should therefore avoid placing too many restrictions on operations.

Similarly, cities should encourage **electric car sharing**, as this would stimulate the deployment of charging point networks in urban areas in addition to bringing benefits in terms of improved air quality and noise reduction.

Other hurdles free floating car sharing companies face include geographical restrictions in some parts of the cities they operate in. This leads to a fragmentation of their service and can deter the use of car sharing. **Consistency should be ensured at city level.**

### ***Ridesharing***

Ridesharing services share both a vehicle and a driver, as in the case of app-based short distance ride-sharing, such as offered by Uber. Various research shows that ridesharing services complement public transport<sup>8</sup> and reduce private car ownership<sup>9</sup>. Like car sharing, ridesharing faces several regulatory hurdles. In certain countries and cities, vehicles used for ridesharing must meet minimum requirements related to vehicle's age, size, engine power, or capacity that affect the price of the vehicle used for these services. Some of those requirements are justified for safety or environmental reasons, but others, especially those on length and engine power, **do not seem to** serve public interest and prevent the use of smaller, less polluting cars.

Evidence demonstrates that vehicle size does not impact safety. In fact, the European car assessment program Euro NCAP<sup>10</sup>, which evaluate vehicle's safety on a scale from 1 to 5 shows that smaller cars can be as safe as bigger one (reaching the maximum rating of 5 stars). In addition to bringing the same safety standards than bigger vehicles, average CO2 emissions of smaller cars are generally lower than for bigger vehicles. This is because they tend to be lighter and less powerful, hence requiring less energy to move resulting in less CO2 emissions. For instance, both A segment vehicles such as the Volkswagen Up! and E segment vehicles like the Mercedes E-class can reach the maximum 5 star Euro NCAP rating but score drastically different in terms of greenhouse gas emissions: A segment vehicles emit in average 105.3 gCO2/km, whereas E segment vehicles emit in average 126.3 gCO2/km<sup>11</sup>.

Regulatory hurdles also exist in the form of **caps or maximum numbers of PHV licences** per city/ region/ country. In Italy for example, city administrations set arbitrary limits for the number of PHV licenses which is one of the main hurdles for the development of ridesharing services in the country. In Rome, the last licenses were issued in the early 90s, in Milan this even dates back to the 70s. This system restricts access to market for PHVs reducing supply which can result in

---

<sup>8</sup> See [European Parliament Research Service, 2017](#); [Uber under the hood, 2016](#); [UITP, 2016](#)

<sup>9</sup> See [APTA, 2016](#); [CityAM, 2016](#); [Orb international, 2017](#); [ADEME, 2016](#)

<sup>10</sup> See EuroNcap [website](#)

<sup>11</sup> [International Council for Clean Transportation, 2017](#)

higher prices, lower availability and longer wait times for consumers. Regulation should support innovation, user protection and choice.

There is also a need to adapt to the innovative and flexible pricing models that new services can provide<sup>12</sup>. Whilst strict set fares may have been necessary for price transparency in older models, new mobility services, through apps, provide transparent and reliable fare estimates. Price flexibility models such as dynamic pricing, subscriptions, or discounts can potentially reduce average fares over time, particularly as more people start using services. Strict fare setting rules can prevent the possibility of innovation in pricing models. In this regard, it would be advisable to ensure (with regulatory measures, if needed) that the customer has a reliable indication about the price before the journey but the decision on pricing itself should be left to the market.

Another common market access restriction for PHV drivers are excessively burdensome and outdated licensing tests that hinder access to the profession. Some licensing tests are organised very rarely; only for a limited amount of people; or they have an artificially high failure rate. For example, in Ile-de-France in 2017, nearly two thirds of candidates failed the theoretical exam to become a professional driver<sup>13</sup>. This is mirrored in Germany where approximately 70% of candidates fail a compulsory complex business management state exam<sup>14</sup> (IHK Betriebswirtschaftsprüfung). In many countries written (foreign) language skills and local city knowledge are required. With the advents of technology such as quality control through driver ratings and the deployment of navigation systems, **these requirements are becoming obsolete and do not reflect the public interest.**

On top of these obligations, PHV drivers regularly have to comply with **high minimum financial capacity requirements** (in the form of e.g. capital requirements, bank guarantee, or proof of tax compliance), that unduly restricts the offer of shared rides at city level.

Operational restrictions on new mobility service providers can also create a disproportionate burden, and even lead to more congestion and air pollution in cities. In the case of Austria, Germany, France and Italy for instance, PHVs have to abide by operational restrictions such as the **“return to garage” obligation**, by which PHVs have to return to their base once they have dropped off a client.

In addition to this requirement, PHVs are limited by the geographical area they are allowed to operate in, and so can hardly adapt to fluctuating demand in urban areas (e.g. demand for car or ridesharing may drop in cities during the Summer time). Additional operational restrictions directed at PHV drivers also concern the **minimum duration or price** for the service provided to clients, as well as the **mandatory in-car equipment** (e.g. taximeters, seat sensors, etc.) When not justified by safety criteria, these restrictions should be removed. Regulatory authorities should also take a technology neutral approach, and accept technological solutions that could deliver on the same objectives through cheaper solutions, like mobile application for example.

---

<sup>12</sup> ICOM, 2017: [The impact of digitalization on business-to-consumer relationship](#)

<sup>13</sup> APCMA, 2017: [Press Release](#)

<sup>14</sup> EU law ([Regulation \(EC\) No 1071/2009](#)) requires EU such a state exam only for transportation of more than 9 passengers.

## ***Bike sharing***

Bike sharing operators offer bicycles or electric bicycles, typically for short trips from A-B. For many trips bike sharing offers the most affordable way of moving within a city apart from walking. Bike sharing services have seen a tremendous uptake across Europe (and beyond it) in the last 18 months. This is mainly due to the innovations the sector has gone through: smart locks and geo-localisation technologies now allow for free-floating fleets of shared bicycles to be deployed without any hard infrastructure requirement to be fully operational, saving public money and providing a very versatile service to the users.

As a zero-emission mode of transport cycling is ideal for first mile / last mile trips within an urban environment. Moreover, according to a UK Department for Transport report every new cyclist attracts a health benefit of £370 annually.<sup>15</sup>

Recently, the market started to differentiate between station-based and non-station-based (“dockless”) programs. Station-based bike sharing has been a predominantly public sector led initiative, where cities or public transport authorities have issued formal procurement processes. Well-known examples are the Velib project in Paris, the Bicing project in Barcelona or the Santander Cycles project in London. With city authorities taking the lead on the procurement process, technical, legal and operational requirements varied significantly from city to city. As a result, operators, being predominantly start-ups and SMEs had to face enormous challenges managing these different contracts and adjusting their technology on a project byproject basis.

As mobile technology progresses, new start-ups are currently disrupting the market with dockless systems, sometimes without formal permission to start the business. As more **bicycle sharing services come to the market, city level regulation is still developing. Technology and smart regulation can help to avoid situations** where cities are facing the challenge of tens of thousands new bikes being deployed within short time. For example, incentive and sanction based smart parking regulation for bike sharing services should be carried out in a well-planned manner that works for cities and citizens.

Where legislation for car sharing already started to harmonise standards on national level this kind of **harmonised legislation is currently missing for bike sharing**.<sup>16</sup> As a response to this, the European bike sharing industry, represented by 25 manufacturers and operators, have established the Platform for European Bike Sharing and Systems (PEBSS) under the umbrella of the European Cyclists’ Federation (ECF) in 2017.<sup>17</sup> The mission of this platform is to share best practice bike sharing and propose policy frameworks for quality service and channelizing ideas from the industry how to interact with other forms of transport. Current projects include **harmonisation of bike sharing data standards, operational KPI etc.**

---

<sup>15</sup> DfT 2010, quoted from [carplusbikeplus.org](http://carplusbikeplus.org)

<sup>16</sup> German BMVI issued a [Carsharing law](#) on 01.09.2017, which will be adopted soon by German STVO,

<sup>17</sup> See [Platform for European Bicycle Sharing and Systems](#)

Bike sharing industry currently **thrives towards closing regulatory gaps regulation in order to create a level playing field**. It has to be ensured for example that bicycles being deployed on European streets are following relevant and widely accepted **EU safety standards for bicycles and electric bicycles such as ISO 4120 and EN 15194**. Also, new operators should be able to demonstrate how they are providing best service to **avoid cluttering of bikes on public realm**. A harmonised legislation has to be established which will help creating a competitive environment while the public interest is secured.

It is also crucial that these new services are deeply integrated in the wider city's mobility portfolio, both physically and digitally. Bike sharing services can be extremely efficient in solving the first- and last-mile issue, but in order to do so they must be linked to public transport and included in MaaS offers.

### ***MaaS - Integrating new mobility services into the urban transport landscape***

Mobility as a Service (MaaS) is the integration of various forms of transport services into a single mobility service accessible on demand.

For the user, MaaS offers added value through the use of a single application to provide access to mobility, with the option of a single payment channel instead of multiple ticketing and payment operations. To meet a customer's request, a MaaS operator facilitates a diverse menu of transport options, be they public transport, ride-, car- or bike-sharing, taxi, car rental or lease, or a combination thereof. A successful MaaS service also brings new business models and ways to organise and operate the various transport options, with advantages including access to improved user and demand information and new opportunities to serve unmet demand for transport operators. The aim of MaaS is to be the best value proposition for its users, providing an alternative to the private use of the car that may be as convenient, more sustainable, and even cheaper.

In parallel, enabling the transition towards mobility as a service (**MaaS**) in cities will require a better integration of mobility services for users, as well as access to real time public transport data. MaaS services typically let users plan and/ or book door-to-door trips using a single smartphone application. Those services enable users to undertake multimodal city trips, and should therefore **integrate the whole mobility offer available** in a specific urban area.

Because of their innovative business model, MaaS providers – like shared mobility companies - face a fragmented regulatory landscape at city level, which hamper their development and may slow down users' uptake. This is why **local best practices for MaaS and shared mobility services integration should be promoted**, taking into account different possible levels of MaaS integration. This will enable those services to scale up their activities across the EU; only then will new mobility companies be actually delivering daily multimodality in European cities.

### ***Promoting best practices***

**Finland and Estonia both** constitute examples of good regulation, accommodating the needs of taxis, ridesharing and the users' free choice likewise. In Finland licensing caps and pricing regulation have been removed and the model also allows taxis to operate as private hire drivers in downtime giving drivers more flexibility in providing their services. Consistency in national level regulation - with common criteria on the regulation of shared mobility services – as well as minimum guidance for cities will help integrate car, ride, and bike sharing in the urban mobility landscape. An important aspect of the Act is that essential data on transport services will be made open. The Act also lays down provisions for the interoperability of ticket and payment systems, promoting strongly the access to data and ticketing for third parties. In Estonia, ridesharing is regulated as taxi rides mediated by electronic platforms. This is another example of how regulation can support innovation, user protection and choice.

**Croatia** recently presented a proposal for legal reform aimed at modernizing and partially opening up the taxi market. The reform would allow the use of mobile apps instead of taximeters, which will strengthen both consumer choice and protection. The plan is also to remove license and price caps in order to establish a unified taxi market.

With its innovative approach to open-data policy and openness to innovative business models, the **city of Vilnius** attracts new mobility services and MaaS operators alike. For example, using the “Trafi”<sup>18</sup> mobile application, public transport, bike sharing, car-sharing and ridesharing can be integrated into one journey. Smart regulations support the establishment of ridesharing and car-sharing services, for example, by applying lenient and swift procedures to start providing ridesharing services, granting parking incentives for car-sharing, and developing charging infrastructure for electric vehicles in cooperation with business.

**Amsterdam** is a world leader in modal share of bicycles. Smart policies in terms of reallocating parking space for cars to biking lanes, biking parking stations and shared bike stations favour the rise of active modes and new mobility services in general<sup>19</sup>. In addition, cycling, bike sharing and other new mobility services constitute a complement to public transports for door to door trips, possibly in combination with Park and Ride sites. In its endeavour to facilitate bike sharing, the city of Amsterdam identified three key enablers: **1. Intuitiveness.** Bike sharing must be easy to use for everybody (including locking and unlocking operations) **2. Visibility.** Shared-bikes and bicycle-sharing zones should be clearly and physically recognisable, to encourage users uptake. **3. Digital.** Users should be able to access relevant information such as availability, pick up and drop off locations, and usage rules on their smartphones.

As a first step towards a **better inclusion of new mobility services**, tenders for public transport in urban areas should take into account new service models and innovations, e.g. first and last miles and on-demand services, having a great potential of efficient and flexible mobility solutions to citizens. Innovative mobility offers should therefore be integrated in cities' mobility and urban planning, not only through tendering procedures but also via Sustainable Urban Mobility Plans (SUMPs). Those should be updated to include integrated mobility services and shared mobility,

---

<sup>18</sup> See [Trafi app](#)

<sup>19</sup> The city of Amsterdam estimates that one car parking space can be used for 10 shared bikes.

and reflect the efficiency gains that those new services can bring to the operation of public transport authorities.

The ongoing review of the **Clean Vehicles Directive** represents an opportunity to update future procurement requirements for cities, for instance by favouring the use of shared (more efficient use) and electric vehicles (cleaner use), as well as bikes in carrying out public transport operations. Having such requirements in the Directive will also give more visibility to new mobility services and encourage further dialogue between public authorities and shared mobility companies. Likewise, increasing the public awareness of the possible benefits of shared mobility in cities, for instance through evidence on the positive health impact of increased transport efficiency, will **help integrate shared mobility in urban and transport planning**.

For the reasons mentioned above, national governments and local public authorities should allow **pilot projects**, which are limited in time or geographical area, to give the opportunity to new mobility companies to experiment using business models and to collaborate with public authorities. Such pilot projects could make up for the lack of familiarity and clarity about innovative business models. This way, cities and new mobility services can increase their knowledge of each other and take more informed decisions on how to regulate shared mobility.

In this regard, promoting **national and local best practices in the EU** can facilitate cooperation between public authorities and new mobility service providers, for instance by spreading regulatory and operational best practices.

### **Adapting financial and behavioural incentives to new mobility patterns**

Current financial incentives constitute additional barriers to the uptake of shared mobility in cities. Taxation represents one of the most important levers to accelerate the integration of shared mobility by supporting users' uptake. However, **current fiscal treatment disproportionately advantages private car use**. For example, shared mobility providers such as car-, ride- or bike-sharing companies do not benefit from the same tax incentives as company cars - which are estimated in Belgium to account for approximately EUR 3.75 billion of revenue foregone (0.9% of GDP in 2016) annually.<sup>20</sup> In addition, new mobility services should be subject to the same preferential VAT treatment as traditional mobility actors (taxi & public transport).

Complementary solutions to overcome this difference are to shift away from company cars towards a mobility budget, or to reduce other taxes (e.g. labour taxes).

The mobility budget would allow an employee of an organisation to use the transport solutions they want and that best fit their needs, within the budget proposed by the employer. Future national taxation reforms should take account of the evolving mobility patterns, while at the same time acknowledging the benefits personal mobility budgets lead to in terms of reduced congestion and

---

<sup>20</sup> European Commission, 2016: [Taxation of Company Cars in Belgium](#)

pollution. In the case of the ITF studies on Lisbon and Helsinki, full use of shared mobility can lead to a reduction in CO2 emissions from cars of 62% and 28% respectively.<sup>21</sup>

New mobility services can in some cases be hampered by disincentives in the regulation, especially when it comes to peer-to-peer vehicle sharing: despite its benefits related to increased vehicle use efficiency, vehicle owners who engage in P2P vehicle sharing are currently **not allowed to be compensated above their usage costs**.

Vehicle efficiency benefits resulting from shared mobility should also be reflected in city-level regulation by dynamic road pricing models, whereby price would increase during peak hours and adapt to the vehicle level of utilisation and emissions. This way, shared, low carbon vehicles would be charged less and their use would be incentivised. The ongoing revision of the **Eurovignette directive** constitutes a political opportunity to adapt road pricing to the increasing use of shared vehicles, and therefore **should include dynamic pricing and foresee discounts for vehicles used efficiently**.

In addition to those measures, cities should consider urban planning as a tool to incentivise the use of shared bikes and vehicles. This is why **access to city infrastructure – priority lanes, privileged parking, and docking stations for shared bikes - should be prioritised for those users who are willing and able to adapt, be it with emission-free drivetrains or shared services**.

Likewise, projections of decreasing number of vehicles on cities' roads should lead to a new repartition of street space (and allocation of respective public funding), with more place for active modes of transportation (walking or cycling), public transport, and shared vehicles. Similarly, next to the promotion of active transport modes and public transport which should be a priority, parking policy in cities should foster behavioural change by **providing more parking spaces dedicated to car sharing, ride hailing services and emission-free vehicles in general**.

The 10 signatories of this paper call for structured cooperation between public and private mobility actors. While positive regulatory developments can be observed in some EU Member States and cities, regulatory hurdles often hinder the uptake of new mobility services. That is why the exchange of regulatory best-practices should be facilitated at the EU-level to promote national and local regulation that enables new mobility services. This will ensure shared mobility services are integrated in urban transport and can reduce the number of private cars thus providing real benefits to the issue of congestion and emissions.

---

<sup>21</sup> [ITF, 2017 \(3\)](#)

**BMW  
GROUP**



**MOBILITY  
NATION**



**SIEMENS**

