SUSTAINABLE PUBLIC MOBILITY INITIATIVES ACROSS EUROPE

HOW MOBILITY BUDGET AND TICKET INITIATIVES CAN SHAPE THE MOBILITY OF TOMORROW
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INTRODUCTION

The EU leads the world in pro-climate legislation, particularly with its decision to ban the sale of combustion vehicles by 2035. For transport, which accounts for a quarter of the EU’s total greenhouse gas emissions, achieving the climate neutrality objectives will require a 90% reduction of the sector’s emissions by 2050 compared to 1990 levels. Considering that the average life of a car in Europe is 12 years and that EVs account for less than 20% of new car sales today, it will take a very long time to see the environmental benefits and CO2 reduction from the switch to electric.

Unlike America, there is a move in Europe and the UK to reduce car ownership and single car driving. Thomas Ableman, Director of Strategy and Innovation for TFL, recently explained at Autonomy’s London Mobility Summit 2022 that the city of London wants 80% of modal share to go to walking, cycling, and public transport by 2040. All European cities have similar objectives of restricting cars to reduce pollution, congestion, and free up parking space to plant trees to cool cities.

Obviously, the quickest way to reduce transport CO2 emissions is to convert people from motorists to mobilists where they replace car ownership with appropriate public and private transport solutions. According to a recent paper by Greenpeace on transport, “If even 5% of car trips were shifted to public transport throughout the EU, oil demand could be reduced by around 7.9 million tons, equivalent to 25 million tons of CO2.” To do so, transportation networks must become more attractive and accessible. There are thus two main initiatives in Europe, which will be discussed in this paper, that will collectively speed up the shift. The first is the corporate mobility budget, where companies give employees a budget for mobility as opposed to a company car. The second are government initiatives to shift citizens to public transport, specifically rail, through single ticket systems and subsidized “Climate Tickets.”

These initiatives are still in their infancy right now and are somewhat limited due to a lack of political strategy. We observe “Climate Tickets” that actually add new trips while car trips remain unchanged. “Climate Tickets” require additional investment in rail infrastructure to enable frictionless ticketing and reliable trains, rather than only offering a reduced cost.

However, we believe that as these initiatives mature, and with the combination of both corporate mobility budgets and national public transport initiatives, they will have a large impact on Europe’s mobility mix. This paper thus intends to give guidelines and principles to scale these initiatives’ impact by focusing on convenience for the customer, simplifying bridges between systems and building strong ecosystems.

MOBILITY MATURITY IN EUROPE

Europe's commitment in the 2019 Green Pact to achieving carbon neutrality by 2050 was the first step towards more sustainable mobility, but the absence of a common European Union policy on daily transport explains the wide disparities in the implementation of mobility policies between its member countries. Other than banning the sale of combustion cars by 2035 – with the exception of biofuels negotiated by Germany – the EU has done little to set the course for its members to follow. Most initiatives have been focused on pivoting the car industry from combustion to electric, which is having the unintended consequence of increasing the sales of foreign EVs at the expense of local producers. If Europe is serious about its emission targets, more needs to be done to get people on trains with affordable and simple ticketing systems that work across borders. Two main initiatives are emerging in Europe: firstly, incentives through the mobility budget; and secondly, the development of single ticket systems and subsidized “Climate Tickets.”
Mobility budget

Since 2021, Belgium has been a leader in this area, offering the possibility of a mobility budget in exchange for – or in addition to – a company car. In fact, laws focusing on the use of public transport have been passed in Belgium to limit the use of company cars – something which used to be subsidized by the government – and have been steadily improved over the years, explaining the country’s current level of maturity. The country is also focusing on the holistic development of sustainable transport, as demonstrated by the recent “greener” bill to promote the use and accessibility of electric cars in companies.

France, also a leader in this area, has carried out active reforms to improve mobility policies, from the introduction of the LTECV (law on energy transition for green growth) in 2015 to the latest amendments to the 2022 finance law aimed at encouraging the use of public transport. However, policy adoption and awareness remain a challenge for the French government.

The Netherlands has also introduced a monthly mobility budget, where employees deduct all costs for business mobility, and at the end of the month employees keep the remaining budget for themselves. This budget is therefore more of an incentive to travel less to earn the maximum of the remaining budget. Today, you can deduct the cost of any travel or vehicle (including a polluting car). The next step will be to create an incentive to boost the use of public transport. However, the government has opted for a pause in the development of these policies to assess their effectiveness.

In Germany, the situation is more mixed, as there is no specific national law on mobility. Nevertheless, the country has focused on improving the efficiency of public transport, particularly in Berlin. Eco-mobility initiatives, such as the national bicycle plan, are also being implemented to promote sustainable means of transport.

Spain, meanwhile, is in the early stages of drafting a law on sustainable mobility, which should be approved by Parliament in 2023. This draft law aims to address issues related to active mobility and decarbonization. It recognizes mobility as a social right, and seeks to digitize and decarbonize public transport.

![Mobility Budget Law – Position Matrix](image)

Figure 1 – European country maturity on the mobility budget
Single ticket

Government ticket initiatives fall into two categories:

- Single transport ticket systems: which enable all public transport services to be taken with a single ticket or debit card, and
- Subsidized “Climate Tickets”: which offer a single fare for access to public transport.

The Netherlands is the most advanced country in terms of a single national transport pass. The OV chip card can be recharged and used throughout the national network (tram/train/bus/metro). The pricing system is based on a fixed boarding cost and a variable cost based on the number of kilometers traveled. The system offers passengers even greater flexibility with “OV Pay,” which enables them to use a contactless credit card or smartphone to travel throughout the network. Launched in Amsterdam in 2022, the system is currently being rolled out across the whole country.

Germany has also successfully launched a pilot project with a single fare of €49 per month called the Deutschland Ticket which gives access to regional trains and local public transport throughout Germany, with the initial aim of supporting the purchasing power of German households and reducing transport emissions.

France is still in the development phase, but with the aim of a national transport ticket by 2025. The aim is to boost the adoption of public transport by facilitating its accessibility and removing irritants, especially to occasional travelers who don’t hold monthly or yearly travelcards. At the moment, although France looks into introducing solidarity pricing for young people at some point, France is not planning on combining this national ticket with a single fare yet, such as the Deutschland Ticket.

In Belgium, a single transport pass has been introduced in the capital, but broader efforts for a single pass at national level are still lacking.

On the other hand, Spain, like its mobility budget policy, is not yet mature in this area, preferring to focus on daily ticket options for tourists in major cities. Yet, in September 2022, Spain introduced a program that offers free train travel to commuters. The scheme is valid on all commuter trains (Cercanías and Rodalies) and mid-distance regional lines, covering journeys under 300 km run by the national rail operator Renfe.

Figure 2 – European country maturity on the single ticket
HOW BELGIUM SUCCEEDED IN BUILDING A STRONG MOBILITY BUDGET POLICY

Belgium has a high motorization rate (510 cars per 1,000 inhabitants in 2021\(^3\)), because of a historical "salary car" policy that democratizes the company car. This makes Belgium one of the countries with the highest modal shift challenge, as cars are an integral part of salary benefits and professional status.

BELGIUM DEVELOPED A SOLID FOUNDATION FOR ITS MOBILITY BUDGET

As early as 2018 Belgium enacted a mobility budget law, also known as "cash for car," allowing all employees who owned a company car for at least 12 months to give them up in exchange for a mobility budget. This mobility budget could be used at the discretion of the beneficiary to finance a car or more environmentally friendly modes of travel. Unfortunately, this program failed to achieve its objectives due to the low adoption rate and the fact that the mobility budget was mainly used to buy second-hand cars, which are less expensive and emit more greenhouse gas.

Following this trend, the Belgian government passed a new law on the mobility budget in 2019, replacing the 2018 law. First, the law broadened the beneficiaries of the mobility budget, so that all employees with at least three years' seniority within the same company, whatever their status, could claim the budget. This new mobility budget (from 3,000 euros to 16,000 euros per year) could be used in 3 ways:

- Purchase or lease a more environmentally friendly car that meets emission standards, with the aim of allowing only electric cars from 2026 on.

- Finance other modes of transport, such as bicycle purchase or rental, public transport subscriptions, carpooling or shared mobility services. This option allows employees to combine different modes of transport according to their needs. It's even possible to reimburse rent or mortgage interest if the property is less than 5 km from the workplace.

At the end of the year, the remaining amount is either paid out in cash, subject to a 38.07% tax, or converted into specific benefits (supplementary pension contributions, etc.), the tax treatment of which may vary.

\(^3\) (Eurostat) - (https://ec.europa.eu/eurostat/databrowser/view/road_eqs_carhab/default/table?lang=en), 2021
BELGIUM IS NOW ACCELERATING WITH THE GREEN MOBILITY BILL BASED ON A 3-DIMENSIONAL APPROACH

In October 2021, Belgium introduced a major new law in favor of sustainable mobility: the Green Mobility Law. This law is based on three pillars:

New tax regime for the purchase or lease of company cars

The law acts on two levers. The first relates to the malus (car tax) applied to fossil fuel and hybrid cars, which will continue to increase to discourage the acquisition of these types of vehicles.

Corporate Tax Deduction for all Fossil fuel or hybrid cars acquired, leased, or rented

<table>
<thead>
<tr>
<th>Date car acquired, leased, or rented</th>
<th>Min-Max Tax Deduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 JULY 2023 to 31 DEC 2024</td>
<td>50% - 100%</td>
</tr>
<tr>
<td>1 JAN 2025</td>
<td>50% - 75%</td>
</tr>
<tr>
<td>1 JAN 2026</td>
<td>0% - 50%</td>
</tr>
<tr>
<td>1 JAN 2027</td>
<td>25%</td>
</tr>
<tr>
<td>1 JAN 2028</td>
<td>0%</td>
</tr>
</tbody>
</table>

* - 40% for vehicles with CO2 emission of 40% or more**

CO₂ solidarity contribution for fossil fuel and hybrid company cars that can also be used for private and/or commuting purposes and which are acquired, leased, or rented as of 1st July 2023 or Zero Emission Cars

<table>
<thead>
<tr>
<th>Date car acquired, leased, or rented</th>
<th>Multiplicator for fossil fuel and hybrid company cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 JULY 2023</td>
<td>X 2.25</td>
</tr>
<tr>
<td>1 JAN 2024</td>
<td>X 2.25</td>
</tr>
<tr>
<td>1 JAN 2025</td>
<td>X 2.75</td>
</tr>
<tr>
<td>1 JAN 2026</td>
<td>X 4.0</td>
</tr>
<tr>
<td>1 JAN 2027</td>
<td>X 5.5</td>
</tr>
<tr>
<td>1 JAN 2028</td>
<td>X 5.5</td>
</tr>
</tbody>
</table>

The second lever concerns the bonuses applied to zero-emission cars, which will be reduced over time to accelerate the adoption of zero-emission cars over the next few years and benefit from the maximum bonuses.

Tax Deductions

<table>
<thead>
<tr>
<th>Date zero-emission car acquired, leased, or rented</th>
<th>Percentage Tax Deductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEFORE 2027</td>
<td>100%</td>
</tr>
<tr>
<td>IN 2027</td>
<td>95%</td>
</tr>
<tr>
<td>IN 2028</td>
<td>90%</td>
</tr>
<tr>
<td>IN 2029</td>
<td>82.5%</td>
</tr>
<tr>
<td>IN 2030</td>
<td>75%</td>
</tr>
<tr>
<td>IN 2031</td>
<td>67.5%</td>
</tr>
</tbody>
</table>

Taxable Percentage of car cost

<table>
<thead>
<tr>
<th>Date zero-emission car acquired, leased, or rented</th>
<th>Taxable Percentage of car cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN 2027</td>
<td>5%</td>
</tr>
<tr>
<td>IN 2028</td>
<td>10%</td>
</tr>
<tr>
<td>IN 2029</td>
<td>17.5%</td>
</tr>
<tr>
<td>IN 2030</td>
<td>25%</td>
</tr>
<tr>
<td>IN 2031</td>
<td>32.5%</td>
</tr>
</tbody>
</table>
Development of electric charging stations

Two subsidies are being implemented. The first is for companies that install charging stations accessible to the public on an ongoing basis, with a tax deduction of up to 200% of the costs incurred. A second mechanism is for private individuals who install a recharging point at home, benefiting from an income tax deduction of up to 1,500 euros.

Improvements to the 2019 Mobility Budget Act

Many additions are made by the Act. To name just a few, employees eligible for a company car can now immediately opt for the mobility budget instead without waiting 12 months. Public transport subscriptions can also be taken out for members of the employee’s family living under the same roof. It is now possible to reimburse the capital of a home loan for a property located up to 10 km away (previously 5 km). Finally, reimbursement of kilometers actually walked between home and work is now possible, as is the case for the bicycle bonus.

THE BELGIUM MOBILITY BUDGET IS A STRONG AND EFFECTIVE SUSTAINABLE MOBILITY INITIATIVE WHICH MUST BE SUPPORTED

In just a few years, Belgium has been able to implement a solid policy regarding the mobility budget, with a real desire to make it easier to understand and use. The strength of the Belgian mobility budget lies in the great freedom it offers to its beneficiaries. Whether it is the purchase of an electric car, the financing of a property close to one’s place of work, the installation of recharging stations, or the subscription to public transport services for an entire household, Belgium has clearly understood the exhaustive range of possibilities when it comes to sustainable mobility. In this way, the country is giving itself every chance of enabling a real shift towards more environmentally-friendly transport practices and modes. Furthermore, setting a clear timetable for the bonuses and penalties in place, and making them evolve intelligently, should accelerate this shift. To be truly successful, however, this mobility budget ambition needs to be supported. In the shorter term, the challenge will be to make companies and employees aware of all the existing schemes. Indeed, an incentive policy can only be successful if the necessary resources are invested in communication. Awareness-raising campaigns via internal company information networks such as CSEs will be necessary. To learn more on this topic, last year’s point of view presents some impactful solutions that companies can deploy to foster sustainable corporate mobility, depending on their different constraints.

In addition, the Belgian government faces two major challenges. The first one, in the medium term, is to provide a charging station infrastructure compatible with such a transformation. Currently, many employees are unable to charge their cars at home, and the public charging station infrastructure is still inadequate.

The second, longer-term challenge is to enable transport infrastructures, especially public ones, to support the modal shift that the government is seeking to boost, whether in terms of price, capacity, or operational excellence.

As about 6% of global emissions come from commuting, the mobility budget is a promising public initiative to make transportation more sustainable, and the Belgian case shows other European countries the steps to take. However, complementary measures could also be considered by European countries, especially the various forms of ticket initiatives, to improve sustainable mobility.

* (POV Sustainable Corporate Mobility of Tomorrow) - (https://www.capgemini.com/fr-fr/perspectives/publications/mobilite-durable-de-demain-en-entreprise/), 2022
WILL THE CLIMATE TICKET REDUCE EMISSIONS?

Europe is fortunate to have strong public transport systems that offer sustainable alternatives to many car trips. What is needed to shift motorists across? Is it cheaper travel, simpler ticketing, or punctual trains?

DOES THE DEUTSCHLAND TRAVEL PASS ACHIEVE ITS OBJECTIVES?

Will the climate ticket have a positive effect on the climate or is it yet another example of Jevons paradox? (The Jevon effect was first described by economist William Stanley Jevons in 1865 when he observed that coal consumption soared instead of decreasing after the adoption of the more efficient Watt Steam Engines). Jevons paradox is used today by environmentalists to explain the unintended consequences of policy or efficiency gains that result in more pollution as lower prices create new demand.

Germany launched the “9 for 90” ticket in the summer of 2022. For €9 the ticket holder had a 90-day pass to travel anywhere in the country. The motivation was largely driven by wanting to reduce the inflationary effects of high energy prices due to the end of cheap Russian gas. For this reason, it got sufficient political support to foot the €2.5 billion subsidy by the federal and local governments. The program was a massive success with 52 million tickets sold, but according to a study by the German Transport Association, VDV5 interviewed 1,000 participants around Munich and found that only 3% used their car less. Cheap rail passes increased the use of rail travel, but had little effect on reducing car travel as people traveled more rather than switch from one mode to another.

THE DUTCH LEAD WITH THE OV PASS

In the Netherlands, even though cycling has a modal share of 27%, public transport accounts for only 5% of daily mobility compared to 47% for cars. With half of all passenger car trips shorter than 7.5 km and population growing, there is room for a significant modal shift in favor of public transport, in combination with cycling. This is why the Netherlands focused on making access to public transport as easy as possible.

Launched in 2023, the OV Pass is the successor to the OV Chipkaart which is a contactless card first introduced in 2005. Unlike the Chipkaart, the pass largely exists as a digital transport card, and payments are made by tapping in and out with a credit/debit card, phone, or smartwatch. No ticket is issued, and the conductor scans the debit card to check that payment has been made. Travelers are able to upload their subscriptions to the pass and access their travel history in an app. For now, it is limited to generic fares and is not accessible to reduced fares – which matters less for infrequent users and visitors – and doesn’t offer daily or monthly cap limits yet like in London for instance.

There is little doubt that other European countries will follow the lead of the Netherlands and install similar systems that radically reduce the friction of ticketing.

5 (Railtech) - (https://www.railtech.com/all/2022/08/09/germanys-9-euro-ticket-did-not-take-enough-cars-off-the-road/), 2022
6 (Dutch Ministry of Infrastructure and Water Management) - (https://www.government.nl/documents/reports/2018/04/01/cycling-facts-2018), 2018
AUSTRIA – THE WINNING COMBINATION FOR CLIMATE AND CONSUMER

Austria’s Klimaticket introduced in October 2021 is another success story. The annual ticket costs €1,095 and gives the user access to all public transport in the country with a single card. The country aims to reduce private car use by 16% by 2040, and encourages a transition from car-dependent individual transport systems to climate-friendly alternatives. From October 2021 to June 2022, some 170,000 passengers purchased the climate ticket. About two-thirds of customers indicated that they started using public transport more frequently, and 85% have already replaced car journeys with public transport. It is interesting to note that Austria’s Klimaticket has been more effective in replacing car trips than Germany’s despite being twice the price. To replace cars, rail ticketing needs to be simple, and trains need to run on schedule. With an aging rail infrastructure, Germany faces train delays which often cause travelers to miss their connecting departure.

FRANCE TO FOLLOW WITH A SINGLE TICKET

France has one of the most extensive rail infrastructures in the world, and, thanks to nuclear energy, some of the lowest CO2 emissions per km traveled, but ticketing remains a barrier.

Minister of Transport, Clement Beaune recently stated in an interview:

"The single ticket is a measure that can be deployed throughout the country, and that will facilitate all travel. Ambitious and concrete measures: this is how we will reduce greenhouse gasses in the transport sector and make life easier for all French people."

According to the French Ministry of Ecological Transition, the single ticket for public transport, which is expected to be fully functional by 2025, will make the daily lives of the users easier and will encourage more people to use public transport instead of personal vehicles.

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7 (OECD) - (https://www.oecd.org/climate-action/ipac/practices/austria-s-klimaticket-to-promote-low-carbon-mobility-408c8de9/)
8 (20 Minutes) - (https://www.20minutes.fr/societe/4022409-20230208-deux-ans-peut-developper-titre-unique-transport-toute-france-annonce-clement-beaune), 2023

To learn more about sustainable mobility initiatives in France, we asked Claire Baritaud at the French innovation agency for transport to share her insight.

Where does France stand in Europe today in terms of initiatives to reduce mobility-related emissions?

One year ago, on July 7, 2022, France created the Secrétariat Général à la Planification Ecologique. We are very proud of the ambitious trajectory we have succeeded in building, and to which France has committed itself through its France Nation Verte program. In the "Better mobility" vertical, concerning personal mobility, we have set the ambitious target of reducing emissions by a quarter between 2021 and 2030.

I would like to mention three major levers:

• **Fleet electrification** – 11 Mt eqCO2 reduction
  Cars account for 8 out of every 10 journeys made in France today, and they will continue to be an important mode of transport. For those who still need one to get around, the challenge is to accelerate electrification, giving priority to light vehicles.

• **The development of carpooling** - 3 Mt eqCO2 reduction
  Although we are the world leader in this field, car use still accounts for 97% of all journeys made.

• **Modal shift towards public transportation** - 5 Mt eqCO2 reduction
  Rail’s modal share of daily transport is already 10% in France, but the use of public transport needs to be further encouraged.

**Last February, Minister Clément Beaune announced the introduction of a single ticket throughout France. Can you specify the ambition of the project? What are the opportunities and challenges?**

In 2019, the Loi des Orientations de la Mobilité (LOM) set out the creation of Autorités Organisatrices de la Mobilité (AOM), with the aim of developing alternative services to individual vehicle mobility for the majority of the French population. Aiming at providing maximum support for the most vulnerable sections of the population, the government aims to:

1 - Introduce social pricing for young people,

2 - Simplify the passenger experience by enabling door-to-door travel with a universal ticket that adapts to all networks.

This universal support will enable access not only to rail services, but to all mobility services (e.g., car-sharing, self-service bicycles).

**For travelers, it will be an immediate simplification shock, with a host of positive externalities.**

I also wish to point out that we have a modal shift objective associated with the deployment of this universal support.

Finally, the transport sector is in the digital age, and the French government is expected to lead the consultation process to establish standards that will enable each manager to implement his or her own local and fare policy. There is no better time to introduce this single support, as the necessary technologies are mature.

As coordinator of AIT, whose mission is to promote innovation in the transport sector, what solutions do you see as the most promising for decarbonizing mobility? To what extent do you think public/private partnerships could be beneficial to the transport and mobility sector?

**Today, sustainability is a key issue that innovation must address. At AIT, we promote all types of innovation. We are convinced that innovations in use and service are key, supported by technological innovations.**

The Propulse program, whose third call for projects was published at the beginning of July, demonstrates the mutual interest and value of public/private partnerships. Whether the winner is a start-up, an SMB, a major corporation, an association, or a local authority, he or she benefits from a highly structured acceleration program and support in dealing with the regulations relating to their project. Thanks to this support, we are also able to review and develop legal and regulatory frameworks in line with the development of new uses.
THE MOBILITY OF TOMORROW

A quick analysis of European public mobility policy shows that there are still obstacles to boosting the overall use of public transport by citizens and ultimately reducing transport-related emissions. Facilitating the passenger’s journey, from information to ticket purchase and use, is therefore the key challenge. This is why open payment technology is probably a necessary, user-friendly step to achieve this objective. However, open payment will only be able to support a single fare rather than distance-related fares right from the start. This is why, in the meantime, interoperable digital tools need to be developed to remove barriers between regions and transportation networks to keep facilitating access. Mobility strategy thus needs to be built at a global level, coming with strong financing to support this change.

CUSTOMER EXPERIENCE STILL NEEDS TO BE SIMPLIFIED AND OPEN PAYMENT MIGHT BE THE SOLUTION FOR THE COMING YEARS

Transportation networks are often organized in silos, offering different ways of traveling depending on the mode of transport. Buses and tramways generally have low barriers to entry, relying on passengers’ spontaneous validation and a single fare. On the other hand, rail or underground may be equipped with validators with barriers, and have a complete fare grid adapted to the length of the journey.

Additionally, several different technologies exist within transportation networks. While the first ticketing systems, known as “card-centric,” were based on transport cards whose information was encoded directly on the card itself, new systems, known as “server-centric,” are now becoming increasingly common, enabling data to be stored on servers. Validators now simply query the server when the card is validated by the user. The introduction of a single transport ticket therefore requires the interoperability of these different ticketing systems. Although technically feasible, this approach, if deployed throughout the whole country, would be costly and time-consuming.

A new technology, not specific to the transportation sector, is being developed that improves the user experience of public transport – open payment. Replacing the "single transport card" with an open payment credit card, as in the Netherlands, integrates very well with the mobility budget concept and enables commuters to use the budget allocated by their company to use more sustainable modes of transport.

More and more transportation networks, like Lyon’s, are installing payment terminals in place of validators, enabling passengers to pay directly for their tickets by credit card or telephone. Open payment can therefore be easily integrated into buses and streetcars, removing the need for ticketing interoperability.

However, conventional ticket validators will have to be retrofitted to integrate this new system. Furthermore, while open payment is well-suited for single-fare modes of transport, this technology becomes less adaptable to distance-based fares.

Open payment is therefore emerging as a highly promising technology to increase citizens’ use of public transport and to reduce adoption barriers. However, the current infrastructure and configuration of transport networks, in terms of ticketing and fares, prevents a network-wide deployment.
SEAMLESS MOBILITY BETWEEN VARIOUS PLATFORMS

While it may not be possible to implement open payment nationwide in the short term, it remains imperative to facilitate passenger mobility, especially in the first stages of the journey. Even if major urban/regional transport networks such as Île-de-France Mobilités in Greater Paris have worked to extend their network’s interoperability as far as possible, the customer journey remains complicated for the occasional traveler: downloading an app, creating an account, purchasing a new ticket, etc.

Mobility as a Service (MaaS) is therefore a concept that has emerged with the ambition of bringing together all mobility services in a single app. However, the integration of these different services into a single app remains complex, and its development is also linked to the need for PTAs to have visibility and control over the mobility data chain within their territory.

Deploying a single MaaS app is complex to implement, but its founding principles remain valid. While a single mobility platform may not emerge, the different geographical scope principles, local, regional, and national, should enable all travelers to easily switch networks and anticipate their journeys. Indeed, data exchange between systems must be facilitated and will follow the different levels of integration below, before reaching an integrally interoperable system.

Finally, mobility services data exchange standards are increasingly being created to facilitate these interfaces. Internationally, the GTFS standard for public transport, developed by Google, is the most widespread and widely used. In France, the Fabrique des Mobilités has launched an initiative to standardize these data exchanges through working groups, focusing on the different modes of transport and bricks of the traveler’s journey (traveler information, reservation, use, consumption, billing). Capgemini Invent has contributed to these working groups as part of the Mon Compte Mobilité program, demonstrating the benefits of public-private partnerships.

Figure 5 – Mobility platforms integration levels framework
PUBLIC / PRIVATE PARTNERSHIPS COULD BE MULTIPLIED TO BENEFIT SOCIETY

Inherently, the public service’s role is to keep the society running, and by that to create and develop adequate citizen services. On the other hand, the private sector has the ability to develop innovative solutions, and, especially in the transport sector, ones that will accelerate the transition towards sustainable mobility. While public administrations can provide the framework for instilling new behaviors, private companies can thus contribute by putting their innovation at the service of citizens.

An example of this is the Mon Compte Mobilité program, a CEE scheme run by Capgemini and the Fabrique des Mobilités until March 2023. More than 400 sustainable mobility subsidies are offered in France but are not known by the general public; the MCM platform’s aim is to facilitate access to mobility subsidies to encourage modal shift.

Similarly, in January, the government announced the launch of a €100 car-sharing bonus to accelerate its use. Ride-sharing operators such as Mobicoop, La Roue Verte and Coopgo have relied on the Mon Compte Mobilité single account solution to enable traveler identity to be checked.

Therefore, decisive solutions and services for the sector could flourish from public-private partnerships. Thus, the complementary public service role is to push for the wise partnerships to leverage all existing innovation.
CONCLUSION

To achieve its CO2 emission targets, Europe needs to boost public transportation usage, reduce the use of motor cars, and transition to EVs powered by renewable or nuclear energy. European Public Transport Authorities see the green agenda as a massive opportunity to increase passenger numbers, which dropped during Covid and have not come back to 2019 levels because of flexible work from home. Transportation networks have to become easily accessible and attractive.

Ticketing solutions and initiatives, such as single transport tickets, MaaS apps, and open payments will improve public transport for Europeans and the hundreds of millions of foreign tourists who arrive each year. Berlin is having success with their Jelbi MaaS app that combines public and private mobility offerings on one app with a single payment. Transport for London has an open payment system as does the Netherlands with OV Pay, where you can tap in and out with a credit card, phone, or smartwatch. This is particularly easy for tourists.

Climate tickets are a first step in testing the waters. The big limitation with the €49 Deutschland Pass ticket is that it only includes regional trains and not the high-speed intercity trains that are faster than car journeys. To have a positive impact on the environment, climate tickets need to replace car trips one for one, and not add new trips while car trips remain unchanged. There is very little data to suggest that the 9-Euro or the more recent €49 Deutschland Pass have had any impact on reducing emissions, and seem to be a case rather of Jevons paradox as they encouraged people to travel who otherwise would have stayed put. However, there is strong anecdotal evidence of the societal benefits of the initiative, as poorer families were able to travel and small towns received new domestic tourism spend. But, for a climate ticket to work for the environment, it will need to be much bolder in its ambition and not only have a reduced cost, but perhaps, more importantly, frictionless ticketing and reliable trains, which means additional investment in rail infrastructure.

According to the Sustainable Travel International website, tourism is responsible for roughly 8% of the world’s CO2 emissions with half coming from transport. Considering that Europe is the world’s largest recipient of tourists, with cities like Paris having nearly 20 million visitors per year, Europe has a massive opportunity to move tourists by public transport and regain ticket revenue lost due to Covid and work from home.

The combination of national public transport initiatives and corporate mobility budgets may have a significant impact on car ownership when it becomes cheaper and easier to be a mobilist than a motorist. National, corporate, and city mobility policies in Europe are aligned in pushing for less car ownership and single driving. European cities continue to make it more expensive and difficult for motorists with various policies. The piece that is missing is convenience. Car ownership is an extremely reliable door-to-door solution and motorists are fearful of swapping their car keys for a smartphone with a bunch of mobility apps and car-renting options. While public transport is great for fixed routes, it often does not focus on the first and last mile. This is changing. Deutsche Bahn’s head of Shared Mobility, Cornelius Kiermasch runs a fleet of shared bikes and cars. In addition, he works to integrate private mobility operators into the DB ticketing system to assist users’ door-to-door journey.

The big trend in the coming years will be ecosystem-building between public and private mobility operators who need to partner to offer motorists a better alternative to car ownership. Not surprisingly,

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10 (Nature Climate Change: The carbon footprint of global tourism) - [https://www.nature.com/articles/s41558-018-0141-x](https://www.nature.com/articles/s41558-018-0141-x), 2018
PTAs are open to these partnerships as they feed their services with passengers. In France, the Mon Compte Mobilité CEE Program is an example of a successful public-private partnership. The Fabrique des Mobilités and Capgemini worked together to build a unique mobility account to be integrated in other mobility platforms.

Finally, one of the challenges with reducing car ownership is the impact on European jobs. The European auto industry accounts for 7% of all jobs in Europe, and as a result national policy has traditionally favored motor cars. Ford CEO, Jim Farley warned that EVs require 40% less labor than their combustion counterparts. The EU hoped that the banning of combustion engines would push the European auto industry into electrification overdrive. Unfortunately, European automakers have massive legacy systems and have difficulties to make EVs at the same price point as Tesla and a number of Chinese brands.

Europe leads in multimodal mobility, and the challenge is that multimodality requires a mature ecosystem that enables the mobilist to move from one mode to another within the same app, ticket, or open payment. Unlike vehicles, which are easy to export, ecosystems are not. Can Europe kick-start the trend and show the world the power of a sustainable, convenient, and popular mobility industry?

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12 (ACEA) - [https://www.acea.auto/figure/employment-in-eu-automotive-sector/], 2022
13 (FINANCIAL TIMES) - [https://www.ft.com/content/8df00b42-4e3f-4a45-b665-2726720105e0], 2022
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