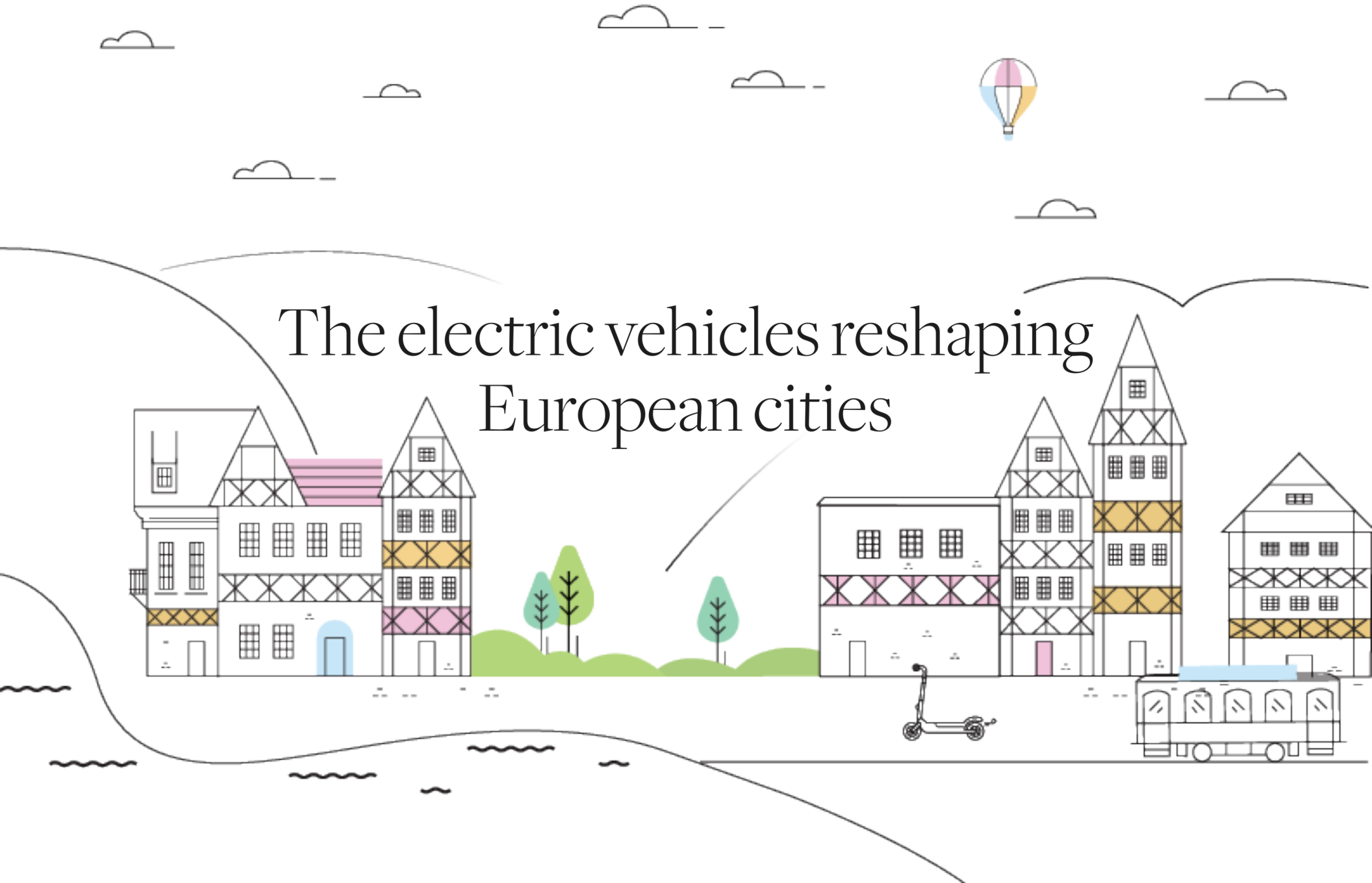


The electric vehicles reshaping European cities



A vibrant city square scene with people using various modes of transport like e-scooters, bicycles, and a wheelchair, set against a backdrop of trees and a building. The scene is bright and sunny, with a mix of modern and traditional architecture. In the foreground, a woman in a light blue dress pushes a stroller. To her right, a woman in a dark jacket stands next to a bicycle. Further back, several people are riding e-scooters. A person in a wheelchair is also visible. In the background, there's a large, multi-story building with many windows, and a bus stop shelter with the name "St. Hanshaugen" above it. The ground is paved with a mix of grey and reddish-brown tiles, and there are trees and a fountain in the distance.

For some cities, the e-scooter revolution
might have arrived too soon.

But Voi and Mobimeo show that the
right partnership can help to reduce
our reliance on private cars.

Shared Micromobility

Space in cities comes at a premium; by 2030, 60% of the global population will live in urban areas. But, half of the space in European cities, for example, is dedicated to cars in the form of parking spaces and roads. Cars also make cities less healthy places to live; one-fifth of Europeans live in areas where traffic noise pollution is harmful to their health, and they are a significant contributor to air pollution.

To reduce our reliance on cars, and make better use of some of the space they take up, motorists could be encouraged to swap their private wheels for public transport and shared mobility. The IPCC's 2022 **Mitigation of Climate Change** report named shared mobility as one way to reduce passenger demands and lower greenhouse gas emissions.

This could have broader environmental benefits, too. Private cars contribute **12% of the EU's total carbon emissions**, whereas local buses emit **half the emissions of private cars** over the same journey, according to UK figures. But, for many people, using public transport comes with challenges. Public transport does not provide the door-to-door convenience of cars. The further you go outside of the city centre, usually the less reliable and frequent the public transport is, explains Philipp Henzgen, senior project manager for mobility at Smart City Deutsche Bahn.

The first and the last mile of a journey on public transport can be the hardest and often is decisive for changing habits on a lasting basis. In a country like Germany, encouraging riders to make that switch will require moving hearts and minds. Germany is a car-loving country: in part because car production represents a significant part of the economy, and it is still linked to an individual feeling of freedom and comfort, explains Isabelle Linicus, head of business development and partner management at Mobimeo, a German mobility-as-a-service platform provider and developer of the Mobility Stuttgart App. Six million cars are produced in Germany each year, to encourage people not to use or even buy these cars will take some convincing. "We have to change the mobility behaviour of people to make cities greener again," she says.






Mobimeo partners with Voi and S-Bahn Stuttgart

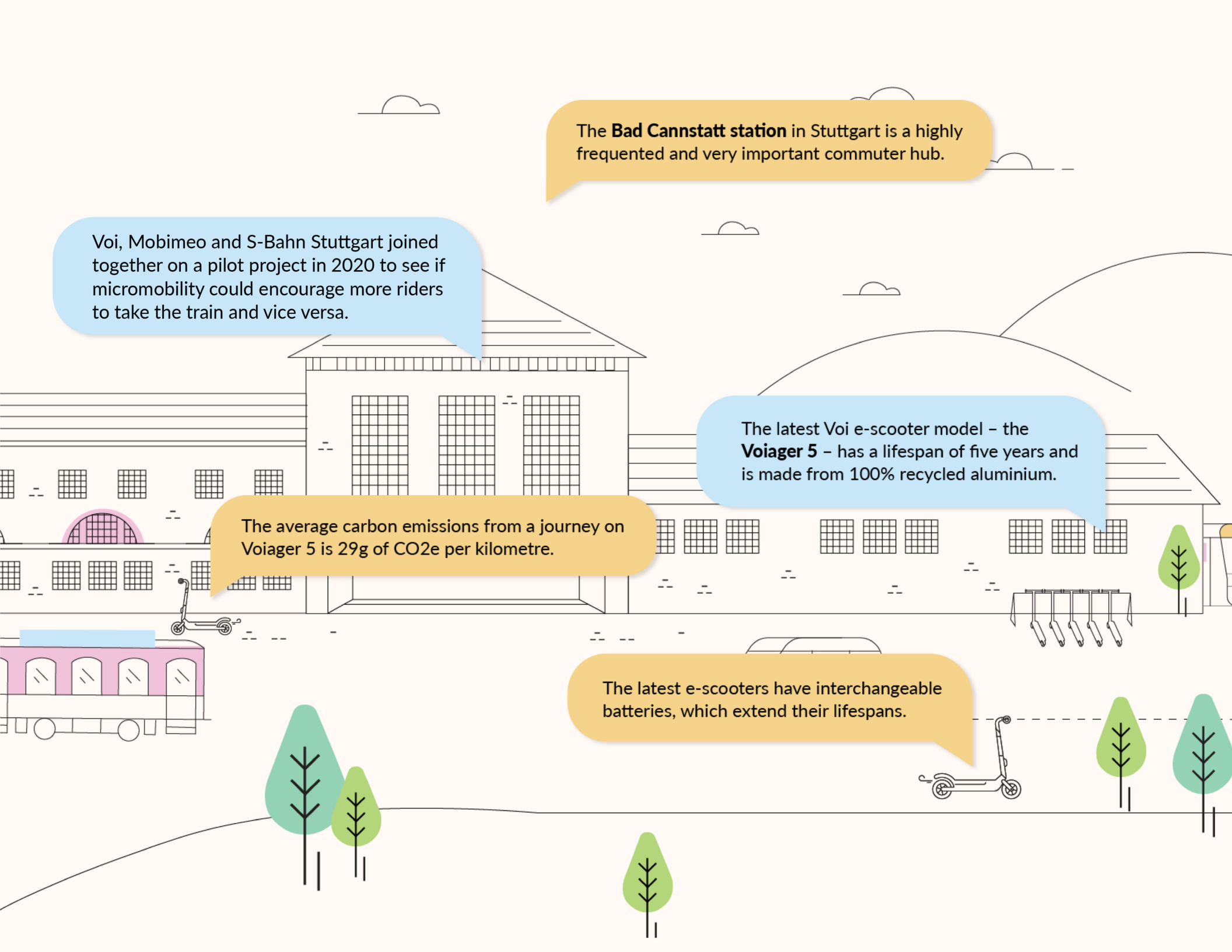
Mobimeo partnered with Voi, a shared micromobility company, and S-Bahn Stuttgart, one of Germany's public transport companies, on a project in Stuttgart to test how joining forces could make public and shared transport more convenient and joined-up.

Shared micromobility – e-scooters and e-bikes – **increases accessibility with traditional public transport** by making the first and last mile more flexible, says Jasmin Rimmele, senior manager of public transport partnerships at Voi and a combined mobility expert. It allows riders to get closer to their destination, and might make public transport more appealing than driving a private car. “It doesn’t have to be one or the other,” she adds. “We can link e-scooters, bikes, public transport together and all grow, and in doing so reduce the reliance on cars.”

There is a lot of potential in public transport that is not yet being used, says Rimmele. Shared micromobility can be one way to improve this. By placing e-scooters and e-bikes or other shared vehicles on the street near train stations, and integrating them with public transport, more people might be encouraged to reduce their car use. The aim for Voi and Mobimeo is that people will bike or scoot if streets are designed for it and it links up seamlessly with trains and buses.



Voi traffic data shows the need to connect micromobility with Stuttgart's S-Bahn lines, buses and U-Bahn lines.



The **Bad Cannstatt station** in Stuttgart is a highly frequented and very important commuter hub.

Voi, Mobimeo and S-Bahn Stuttgart joined together on a pilot project in 2020 to see if micromobility could encourage more riders to take the train and vice versa.

The latest Voi e-scooter model – the **Voiaeger 5** – has a lifespan of five years and is made from 100% recycled aluminium.

The average carbon emissions from a journey on Voiaeger 5 is 29g of CO₂e per kilometre.

The latest e-scooters have interchangeable batteries, which extend their lifespans.

The Pilot Project

Steffen Sondermann, project lead for new mobility at S-Bahn Stuttgart, describes the S-Bahn network as the “backbone” to public transport in the city and the “most effective” way to get large numbers of people in and out of the city centre. He agrees that a partnership with micromobility providers could help to expand the S-Bahn’s network.

“We share a common goal,” he says of the pilot with Mobimeo and Voi, “to increase the share of public transport and to convince car drivers to leave the car at home.” But he adds that e-scooters are just one part of this overall goal – and there is space for other partnerships.

“Because we have users [who] are hard to convince, we have to make a really good offer in the beginning to convince them,” says Sondermann. “And I think with the pilot project in Bad Cannstatt we have managed [that] quite well”.

This was done in three ways; physical, digital and commercial integrations. A scooter rack was installed outside the

station to make finding a scooter easier and to encourage riders to leave them tidily after their ride.

The scooters were flagged in the Mobility Stuttgart app by S-Bahn Stuttgart so that riders could factor a scooter into their planned route, thanks to Mobimeo’s digital integration. And riders were encouraged to buy combined S-Bahn and Voi tickets with financial incentives.



47% of Voi users typically combine e-scooters journeys with public transport



Campaign Results for Bad Cannstatt

The two-month campaign saw a **35% uptick in the number of S-Bahn Stuttgart tickets purchased for Bad Cannstatt station**, compared to the rest of the city. Ticket sales increased at all stations during the trial, but nowhere more than at Bad Cannstatt. All ticket sales returned to their pre-trial levels after the pilot.

The number of last-mile trips on Voi scooters to and from Bad Cannstatt also increased by more than 250%, compared to an average of around 30% for the rest of Stuttgart. Voi rides also increased in length. Rimmele says they have seen a behavioural change, and people are getting used to adding e-scooters to their public transport journey. According to a Voi survey, 47% of riders combined their e-scooter journey with public transport, compared to 17% who combined e-scooter trips with private cars.

The results of the pilot project were particularly impressive, adds Linicus, because Stuttgart is so proudly car-driving; two large automotive companies are based outside the city. But residents' reliance on cars has also created one of the main reasons new modes of transport are needed. The geography of Stuttgart – a city surrounded by mountains – means that air pollution hangs over the centre, and on some days cars are restricted to alleviate this.

The number of riders that planned a route with an e-scooter in the Mobility Stuttgart app increased threefold. They noticed that the number of searches to and from Bad Cannstatt also increased considerably during the campaign, the number of searches to Bad Cannstatt increased by almost 90% in September, while the number of searches from Bad Cannstatt increased by more than 110% in October.





E-scooter Statistics

Early research suggests that some riders are ready to make the switch permanently. In Oslo, Norway, 2% of shared e-scooter users said that they got rid of their cars to swap to scooting, and another 8% were considering doing the same. Meanwhile, in a survey of US e-scooter users, 72% made trips for regular travel like going to work or socialising (while most of the rest used the scooters just for fun).

The first e-scooters were criticised for having questionable environmental credentials, considering the costs of producing their batteries and raw materials. An assessment made in 2020 found personal e-scooters and e-bikes emit less CO₂ than the transport modes they replace – largely because they encourage riders to leave the car behind for short trips. In the same assessment, shared e-scooters scored higher for CO₂ emissions.

But Voi says the performance of e-scooters across the board has improved significantly. While only a few years ago the lifespan of an average e-scooter ranged from 0.5 to 2 years, the latest Voyager 5 model has an estimated lifespan of 5 years, thanks to swappable batteries and other recent improvements.

They are also now used more frequently, bringing down their emissions per journey. The total impact of an e-scooter is now significantly less than it was only a few years ago.

Future Developments

Now, the plan for Voi is to expand to more European cities. Voi has already trialed their e-bikes in the UK and Germany. Mobimeo is further developing their mobility-as-a-service platform and the apps built on it to add even more and easier digital integrations. During the pilot, riders could search for scooters in the Mobility Stuttgart app, but had to leave to book a scooter. Work has begun so that in the future they wouldn't need to do so.

Henzgen, who set up an iterated and architectural expanded mobility hub in Stuttgart-Vaihingen is now looking for more locations in Germany. The success of the pilot in Bad Cannstatt and Vaihingen has shown how useful it is to have hubs by busy transport intersections, and in the future “we will probably incentivise with benefits at certain stations if you leave these vehicles at the mobility hubs,” he says.

The pilot study also helped to answer some questions about shared mobility, like how to prevent nuisance parking that could cause obstacles for people with visual impairments. By providing

incentives for Voi users to leave their e-scooters at the parking racks at the S-Bahn station, they are removing some of the reasons some people might be opposed. However, while a car user parked in the wrong place is fined, how do you penalise someone who leaves their scooter in the wrong place, asks Henzgen.

Sondermann concludes that this pilot is just the beginning of more partnerships of this kind. S-Bahn Stuttgart is continuously testing innovations with the goal of increasing the share of people using public transport.

“I'm looking forward very optimistically,” agrees Henzgen, alluding to new features that will be coming soon. For Stuttgart this is just the beginning, and more cities might soon follow.

Meanwhile, Voi has initiated public transport partnerships in other countries across Europe, nudging more cities to try out the Stuttgart model. “An open mindset from the public sector, trusting the private sector to innovate has been vital to make this happen,” says Rimmele.



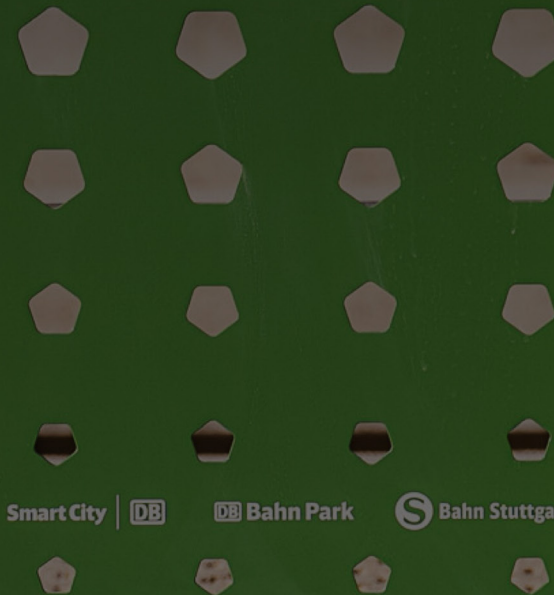
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
voi.


Verkehrsmodi Fahrrad, E-Scooter, E-Moped und Carsharing umgestiegen werden.


Buche jetzt deine nächste intermodale Reise über die Mobility Stuttgart App. Die Mobility Stuttgart App verbindet den öffentlichen Nahverkehr mit Sharing-Angeboten in Stuttgart und der Region. Dabei findet die App die schnellste Verbindung von A nach B und begleitet dich während der gesamten Fahrt von Tür zu Tür. Ob Bus, Stadtbahn, S-Bahn oder Sharing-Angebot, Mobility Stuttgart zeigt die besten Routen durch die Stadt und die Region – immer aktuell auf Basis von Echtzeit-Daten.

Infos zur App: db.de/257ca7



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