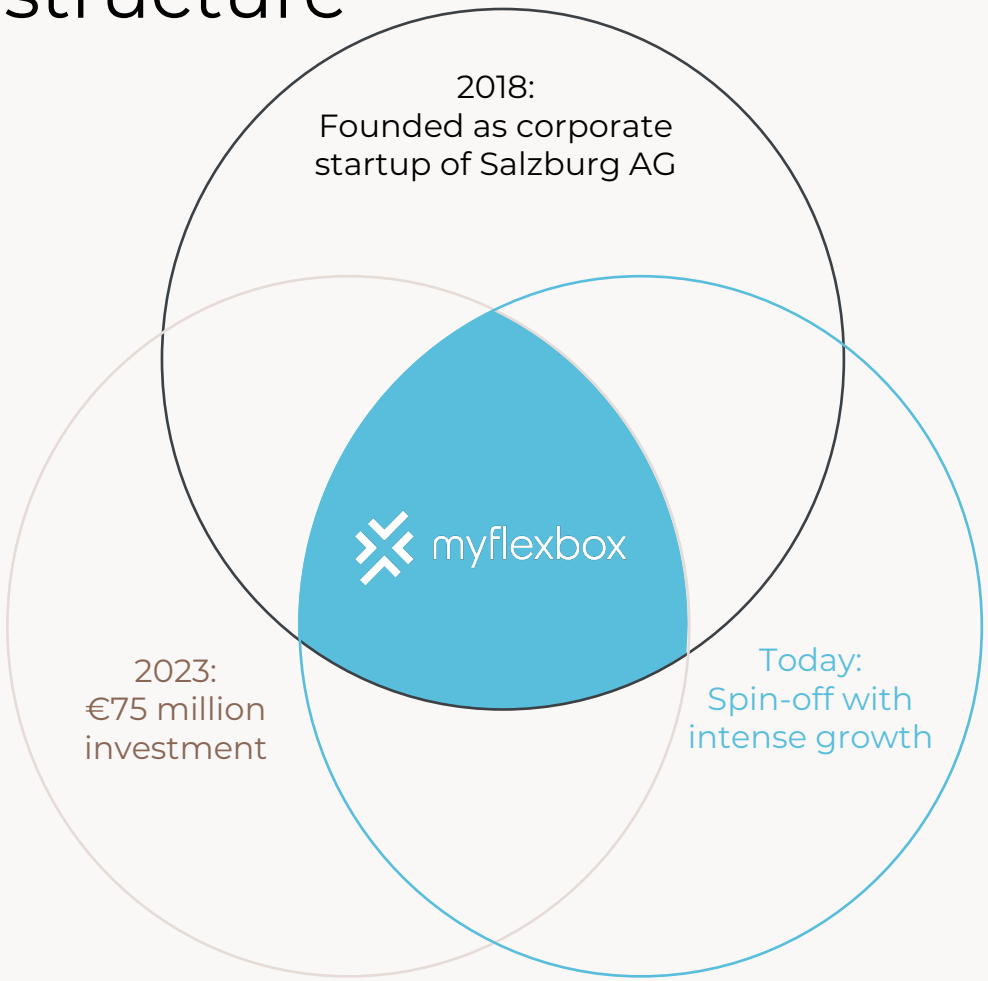
WIK myflexbox

20TH KÖNIGSWINTER POSTAL SEMINAR

The sustainability impact of an open smart locker network

About myflexbox
Customer friendly smart city infrastructure

- myflexbox is the largest open smart locker network in the German-speaking DACH region (560+ locations)
- Many 24/7 services from several parcel services, such as collection, returns or shipping, secure and contactless
- Rapidly growing network through technology leadership
- Vendor neutral: integration of Europe's leading parcel service providers



The open smart locker mission

- Strengthen CEP partners and solve the growing issue in the last mile together.
- Minimize CO_2 emissions and unnecessary trips in order to improve the quality of life.
- People save time and effort. They enjoy the greatest possible flexibility and a more liveable city. Digitized, climate-friendly, health-conscious.

Challenges

Transformation of cities

Barcelona to tax logistics companies

(ecommercenews.eu, March 2023)

Will the parcel fee soon also apply to German cities?
(t3n.de, March 2023)

The 15-minute city: utopia or feasible?
To make cities more sustainable, healthier and fairer, we need to rethink them, say urban planners. One idea: 15-minute cities. But what is that actually? There are already exciting approaches from Paris to Shanghai.
(focus.de, April 2023)

Fewer cars, more greenery: Cities need to reinvent themselves in the climate crisis
In the 'slipper radius': Concepts such as the 15-minute city and the 'Supergrätzl' (transformed and traffic-calmed public spaces) are intended to combat traffic jams, noise and heat. Does it work?
(profil.at, May 2023)

Dortmund & Bochum: First major city in NRW forges ahead! Car ban in the Ruhr area soon?
Europe's major cities are pushing cars further and further out of the city. Now a major city in NRW is forging ahead. Will the Ruhr region also become car-free?
(derwesten.de, Jun2 2023)

Cities that want to ban cars soon

In more and more European cities, cars are to disappear from city centers in order to create more space for pedestrians and cyclists. How successful is this?
(derstandard.at, 2021)

'The ring road around the city center must be closed'

Manja Schreiner (CDU) explains what Berlin's new mobility policy looks like. She wants more subway trains, efficient main roads - and to review cycle path projects.
(Berliner Zeitung, June 2023)

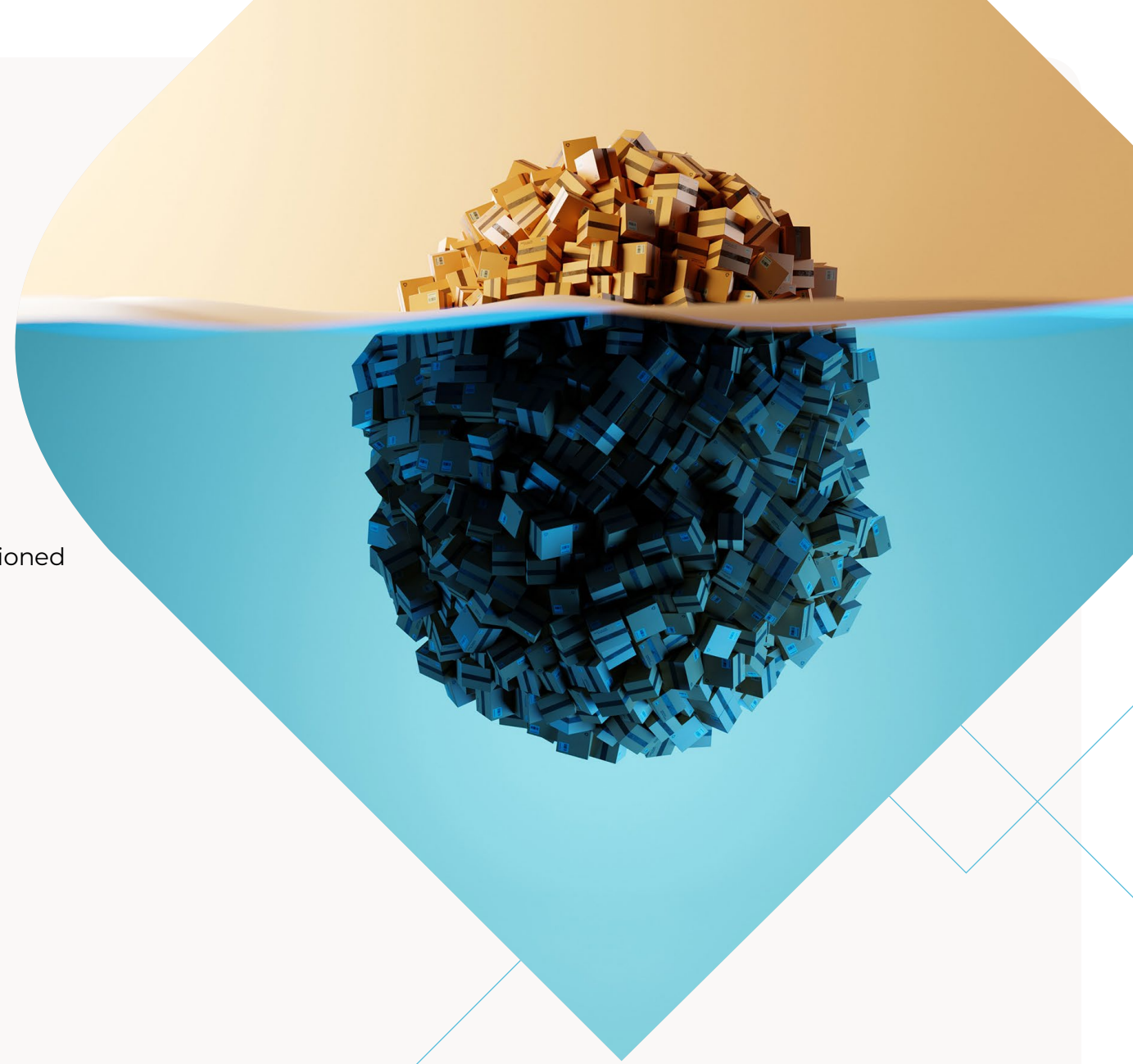
How Barcelona wants to drive parcel delivery vans out of the city center
Shipments with trips to the city center to be taxed.
(NZZ, March 2023)

Growing parcel volume

Germany: Almost doubled in 10 years

- 2011: 2.4 billion (GER)
- 2022: 4.2 billion (GER)*

*CEP Study 2023 – Analysis of the market in Germany. A study commissioned by the Bundesverband Paket und Expresslogistik e. V. (BIEK)



Challenges for parcel services

- Traffic jams
- Unnecessary ways
- Multiple deliveries
- Second lane parking
- Rising delivery & staff costs
- Strict regulation of e-mobility

Changing customer needs

2 out of 3 customers have problems with home deliveries*: delays, lost or wrong packages, pickup slips...

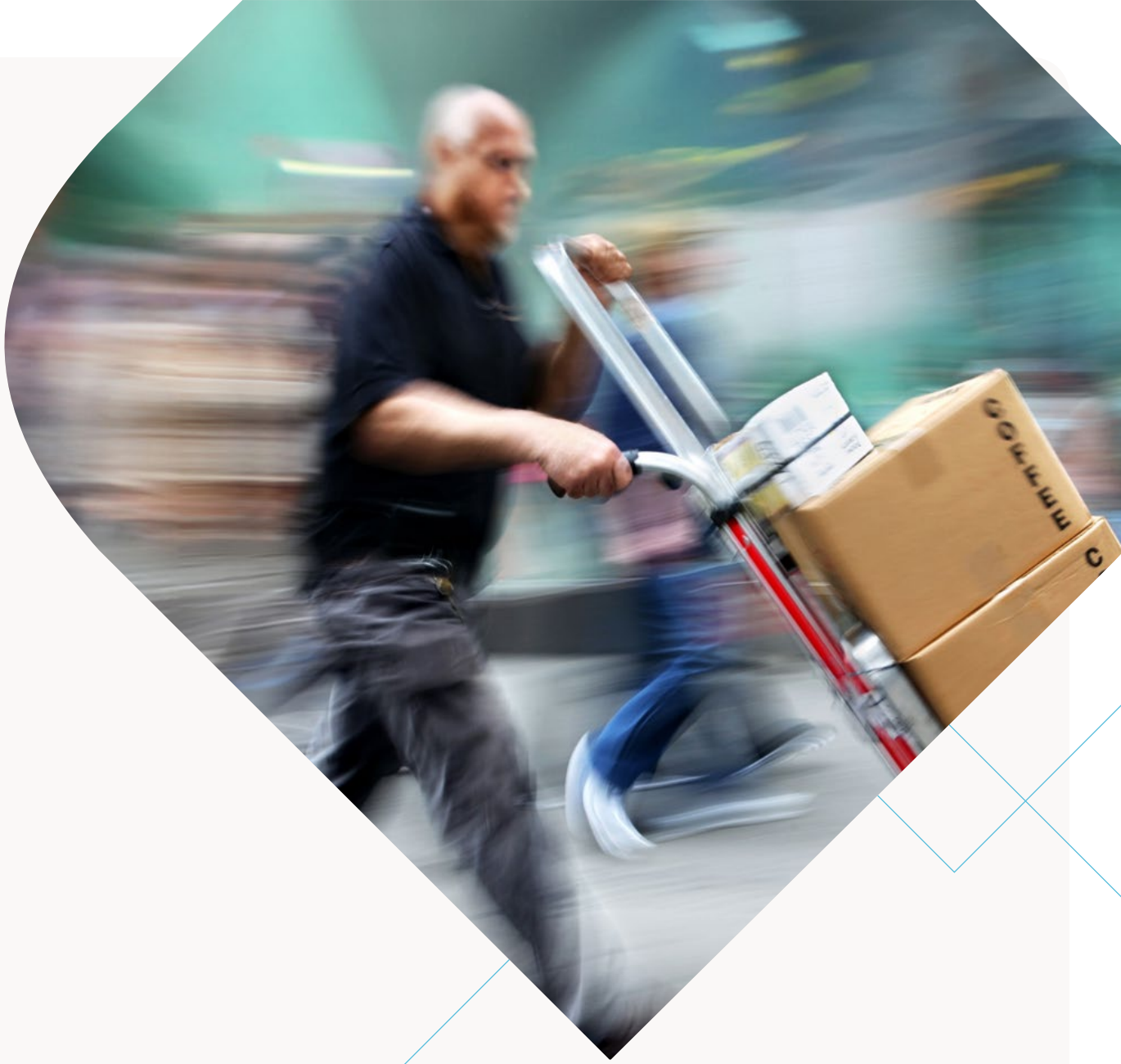
Parcel lockers can optimally reflect needs:

- Independence
- On demand
- Maximum flexibility
- Real-time information

* Descartes Home Delivery Consumer Sentiment Study 2023

Challenges for cities

- CO_2 emissions
- Parking problems
- Traffic jams
- Crowded streets
- Pollution
- Limited space in the cityscape



Challenges of sustainable city logistics

Parcel volume

- Almost doubled in 10 years
- 2022: 4,2 bn shipments (GER)

Volume continues to rise
2027: 5,3 bn shipments[1] (GER)

Cities

- CO_2 emissions
- Crowded streets
- Parking problems / little space

Megatrends

- Out-of-home delivery
- Flexibility & on demand

Customer needs
continue to rise

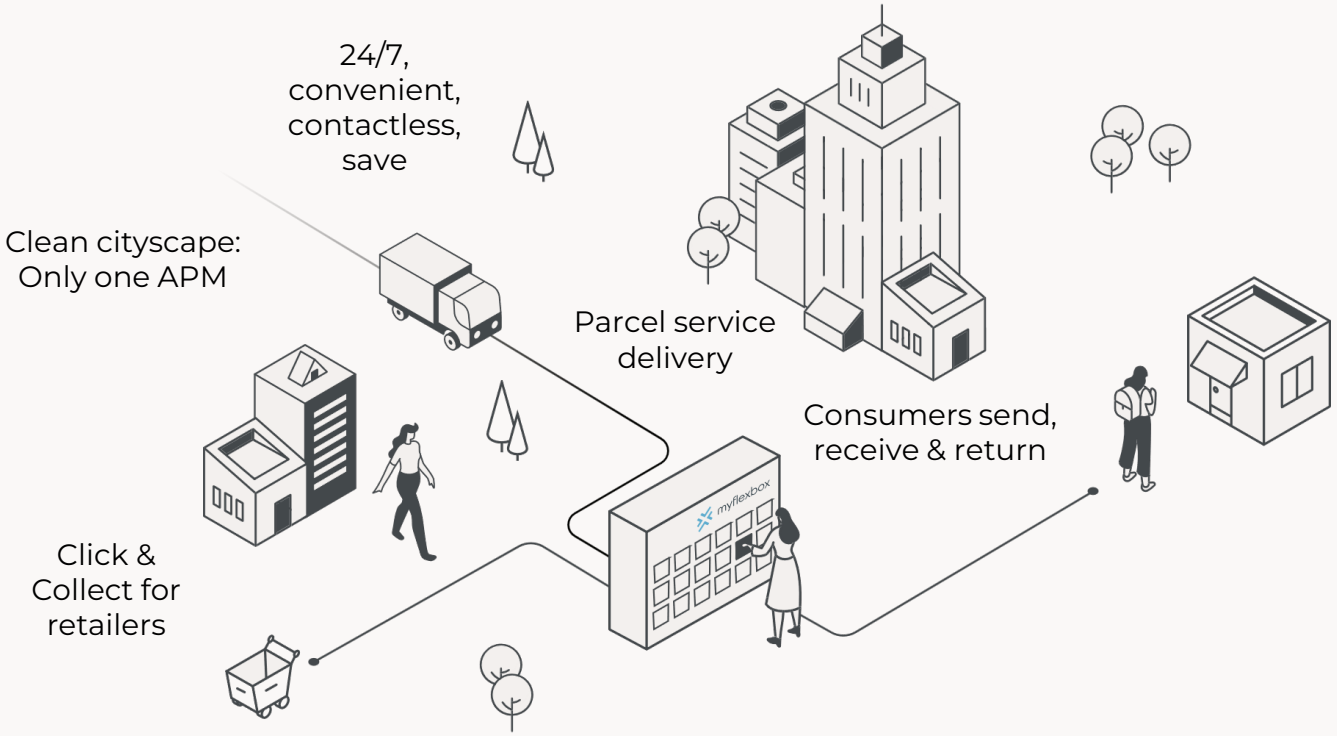
Parcel services

- Traffic jams & unnecessary trips
- Unsuccessful doorstep deliveries
- Rising delivery & personnel costs

[1] Forecast, source: KEP-Studie 2023 (BIEK)

Solution & best practices

The solution
Open smart locker network



- The key is an open platform with a smart, independent and flexible software solution
- Establishing an open standard excludes nobody and allows everyone to participate at every location
- It enables resource-conserving and low-emission urban spaces with the highest quality of life

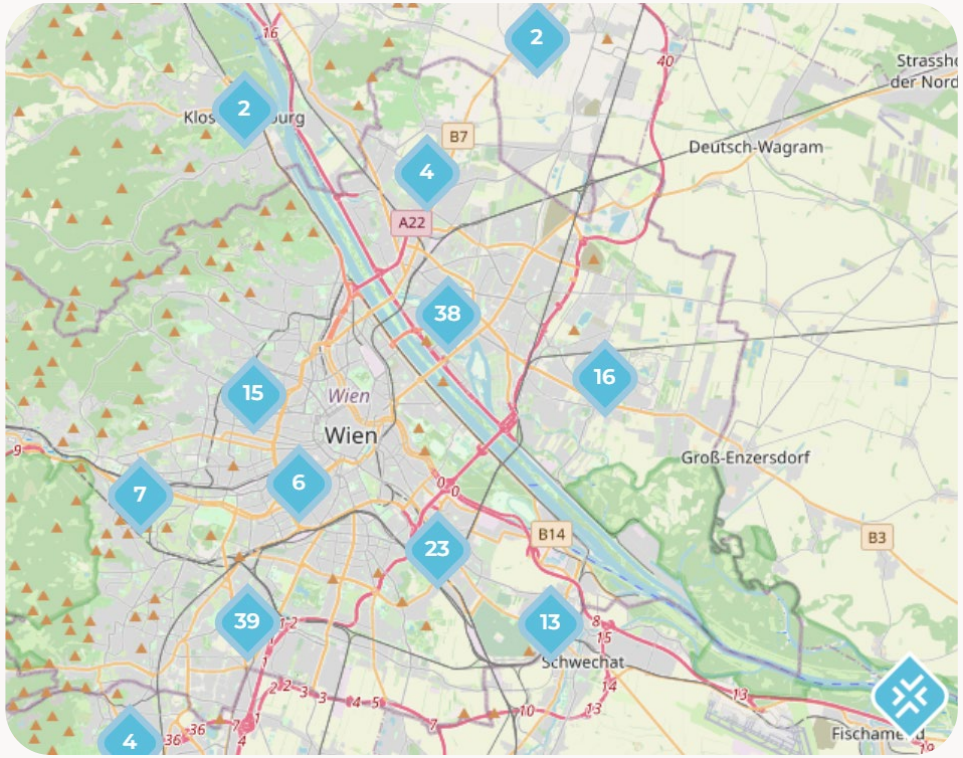
Saves per year up to
2,2t CO_2

Saves per parcel up to
75% CO_2

Delivers per trip up to
13x more parcels

Cf. Report from TOR ZDG (2020) based on the Polish market / InPost data. Study carried out on behalf of InPost. Results also published in the 'Green Last Mile Europe Report 2022' / Last Mile Experts (April 2022)

Smart city logistics case Vienna
More convenience & space, less traffic & emissions



155 parcel lockers save up to
341 tons of CO_2 per year

Locker density / network coverage:
Ø 12.300 inhabitants per myflexbox

Best practice Klagenfurt Multimodal mobility hubs

- 14 open parcel lockers, 7 of which are placed at strategic transport locations as part of the cooperation with the city
- Multimodal mobility hubs: Combination of smart parcel services with e-charging stations, rental bikes and bus stops
- Improving the carbon footprint of entire habitats by getting people to move in a CO_2 neutral way

Best practices Brunswick & Munich

Brunswick:
’Alsterplatz’ location: a residential quarter with 215 apartments. One of 13 smart lockers that connect social projects, a mobility hub, a residential care community and a café.

Munich:
At four locations, myflexbox shows how climate protection can work in everyday life and in a smart city context. Further locations are being planned.

Frequency | Click & Collect | OOH delivery
Sustainability for retailers

- Increase of one-stop-shop effects through many additional 24/7 services
- Sustainable and cost-neutral upgrading of location infrastructure (indoor and/or outdoor)
- More convenience and less CO_2 through automated processes and 100% delivery rate
  - One-stop-shop
  - Click & Collect
  - Out-of-home delivery
  - Next-day / overnight / on-demand delivery
  - Extended delivery options

Integrated open system for a better cityscape: Imagine an ATM where you can withdraw money from just one bank

Krakow (Poland)

Tallinn (Estland)

Studies on parcel lockers and sustainability

Parcel lockers have a huge potential for sustainability

- ‘Drivers deliver up to 13 times more parcels to a parcel locker per day with half as many kilometers as with doorstep deliveries‘
- In figures, this means that they can deliver up to 1,000 parcels within 8 hours. For home deliveries, it is only 65-75‘
- ‘Parcel lockers save up to 75% CO_2 (350g CO_2 per parcel), so each locker saves up to 2.2 tons of CO_2 per year compared to doorstep deliveries‘

Report from TOR ZDG (2020) based on the Polish market / InPost data. Study carried out on behalf of InPost. Results also published in the ‘Green Last Mile Europe Report 2022‘ / Last Mile Experts (April 2022)

Trip chains drive efficiency
Role Model NL

- ‘The chosen transportation mode is strongly related to the distance to pickup point.‘
- ‘From the respondents taking the car, 60 % was part of a trip chain.‘

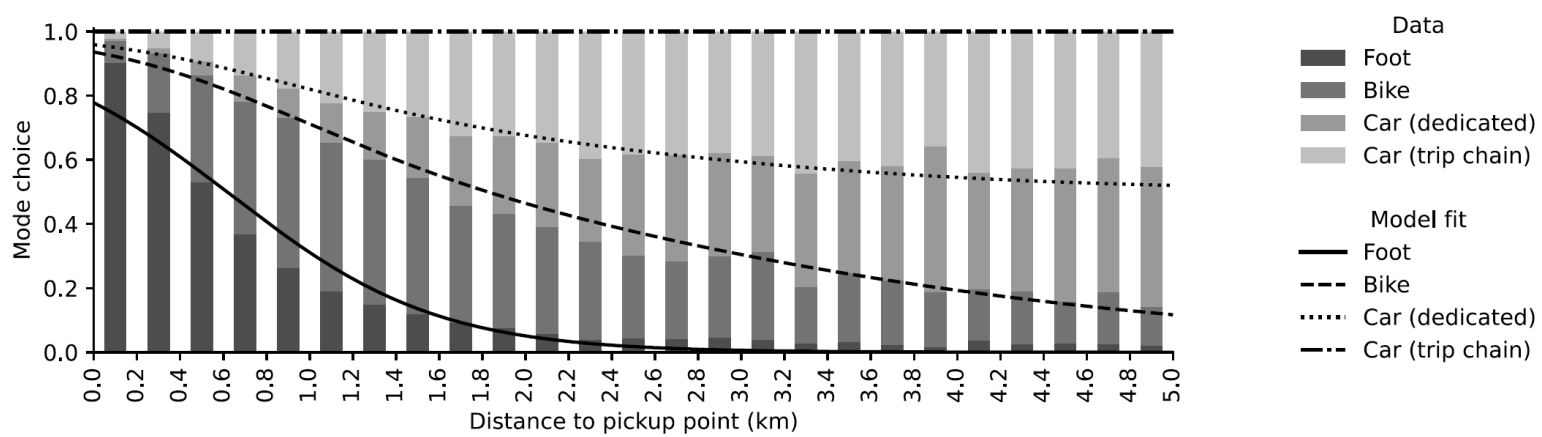


Fig. 3. Multinomial logit regression model fit of total dataset.

R. Niemeijer, P. Buijs: A greener last mile: Analyzing the carbon emission impact of pickup points in last-mile parcel delivery. Based on survey data from 54,397 trips in the Netherlands. Original research article published in 'Renewable and Sustainable Energy Reviews' Volume 186, October 2023

Saving trips and emissions Role model PL & NL

- Trip chains: 62 % of users pick up their parcels on routes they would have taken anyway, e.g. when commuting, shopping or going for a walk. This reduces emissions by up to 83 %

- Only 18 % make a special trip to the locker

Report from TOR ZDG (2020) based on the Polish market / InPost data. Study carried out on behalf of InPost. Results also published in the ‘Green Last Mile Europe Report 2022‘ / Last Mile Experts (April 2022)

- Only 8.6 % use passenger cars for the trips in urban areas*, regardless of the distance required

R. Niemeijer, P. Buijs: A greener last mile: Analyzing the carbon emission impact of pickup points in last-mile parcel delivery. Based on survey data from 54,397 trips in the Netherlands. Original research article published in 'Renewable and Sustainable Energy Reviews’ Volume 186, October 2023.

*In contrast, respondents in rural areas used passenger cars for 43.7% of the trips.

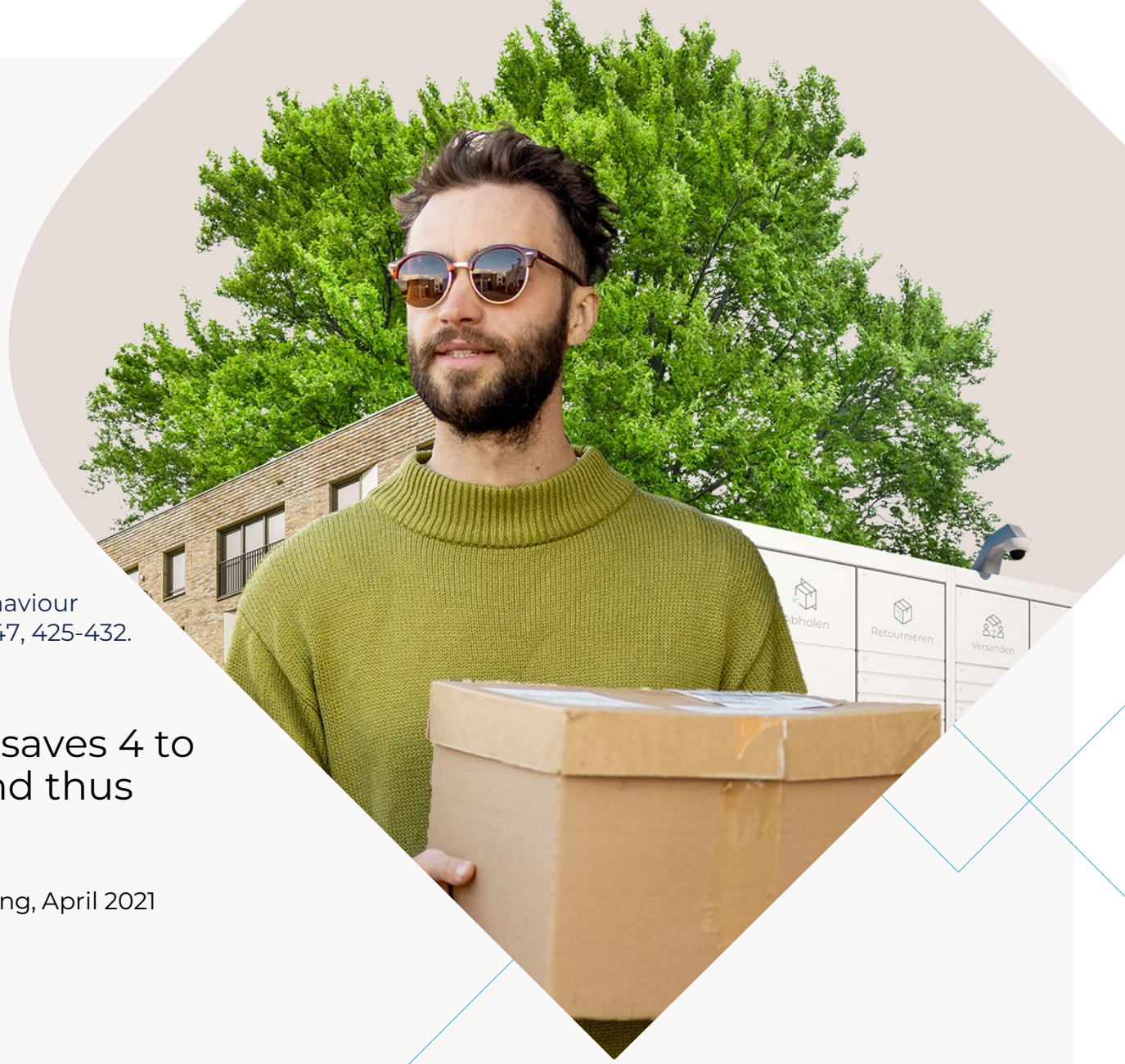
Saving trips and emissions

- ’Every 4th doorstep delivery is unsuccessful’
- ’Every 2nd doorstep delivery to working people is unsuccessful’

Hofer et al.(2020): Estimation of Changes in Customer’s Mobility Behaviour by the Use of Parcel Lockers. In: Transportation Research Procedia, 47, 425-432.

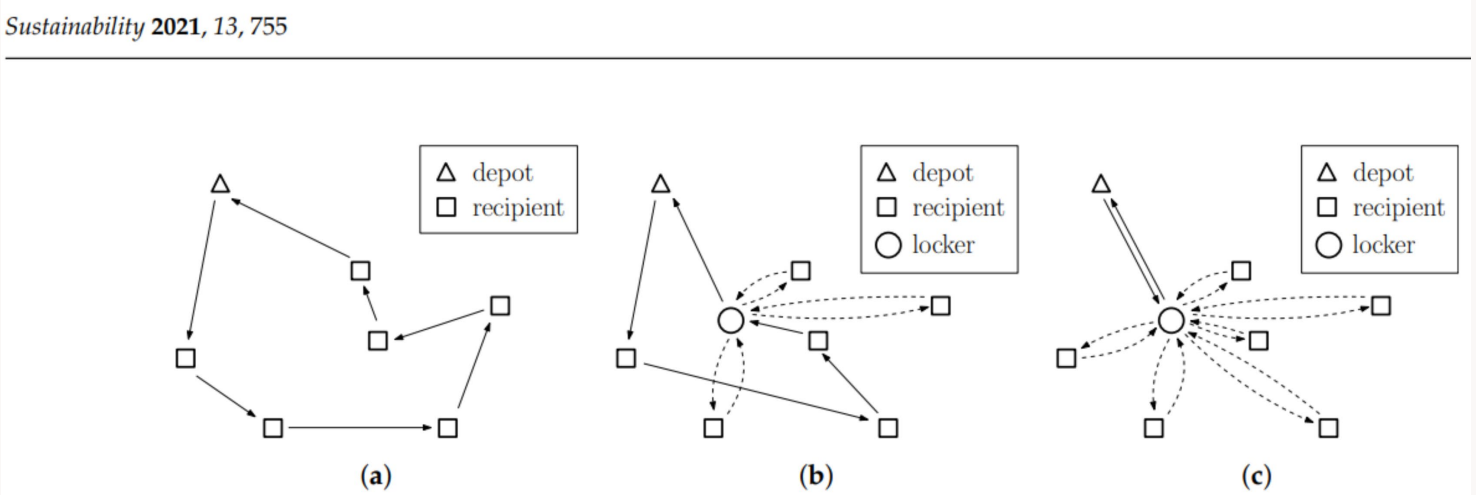
- ’Bundled delivery traffic in parcel delivery saves 4 to 9 times the amount of individual traffic and thus relieves the burden on city centers’

Oliver Wyman: E-Commerce mit CO2-Effizienz durch Lieferbündelung, April 2021



Avoiding unnecessary trips
Different delivery scenarios

- (a) causes many unsuccessful doorstep deliveries, mainly during daily working hours
- (b) avoids some second delivery attempts by delivering not received parcels to a locker
- (c) has 100 % delivery success with only one CEP trip, recipients collect them… mostly emission-free



Matthias Prandtstetter et al.: On the Impact of Open Parcel Lockers on Traffic (2021). Article published in 'Sustainability', an international, peer-reviewed, open-access journal by MDPI on environmental, cultural, economic, and social sustainability of human beings.

The most efficient form of last mile delivery

- ‘Automated delivery is the most efficient form of last mile delivery supported by public authorities in many European countries‘
- ‘Parcel stations are seen as the solution of the future on the way to an environmentally friendly economy’

Report from TOR ZDG (2020) based on the Polish market / InPost data. Study carried out on behalf of InPost. Results also published in the ‘Green Last Mile Europe Report 2022‘ / Last Mile Experts (April 2022)