The Changing Partner Ecosystem Necessary to Build Modernised Hubs and Vital Navigational Tools for Cities

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How to Read Me

This is a resource for mobility hub implementers and partners to take bold visions and underutilised urban space and enable faster and more responsive mobility hub implementation.

Part 1 focuses on the state of play and how to accelerate mobility implementation. Part 2 is a Deep Dive on our foundational research that synthesises the state of the mobility hub implementation practice and the challenges that practitioners face as they build mobility hubs in their cities.

State of the Practice and New Directions for Mobility Hub Implementation

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Mobility Hubs Today.

Mobility hubs. Multimodal hubs. Mobility points. Never has there been a concept in transport and mobility circles that is so ubiquitous has been reinvented and rebranded time and time again. Mobility hubs have been a hot topic at mobility conferences and in sustainable city mobility plans for decades, and yet they have organically served communities as mobility access points for centuries.

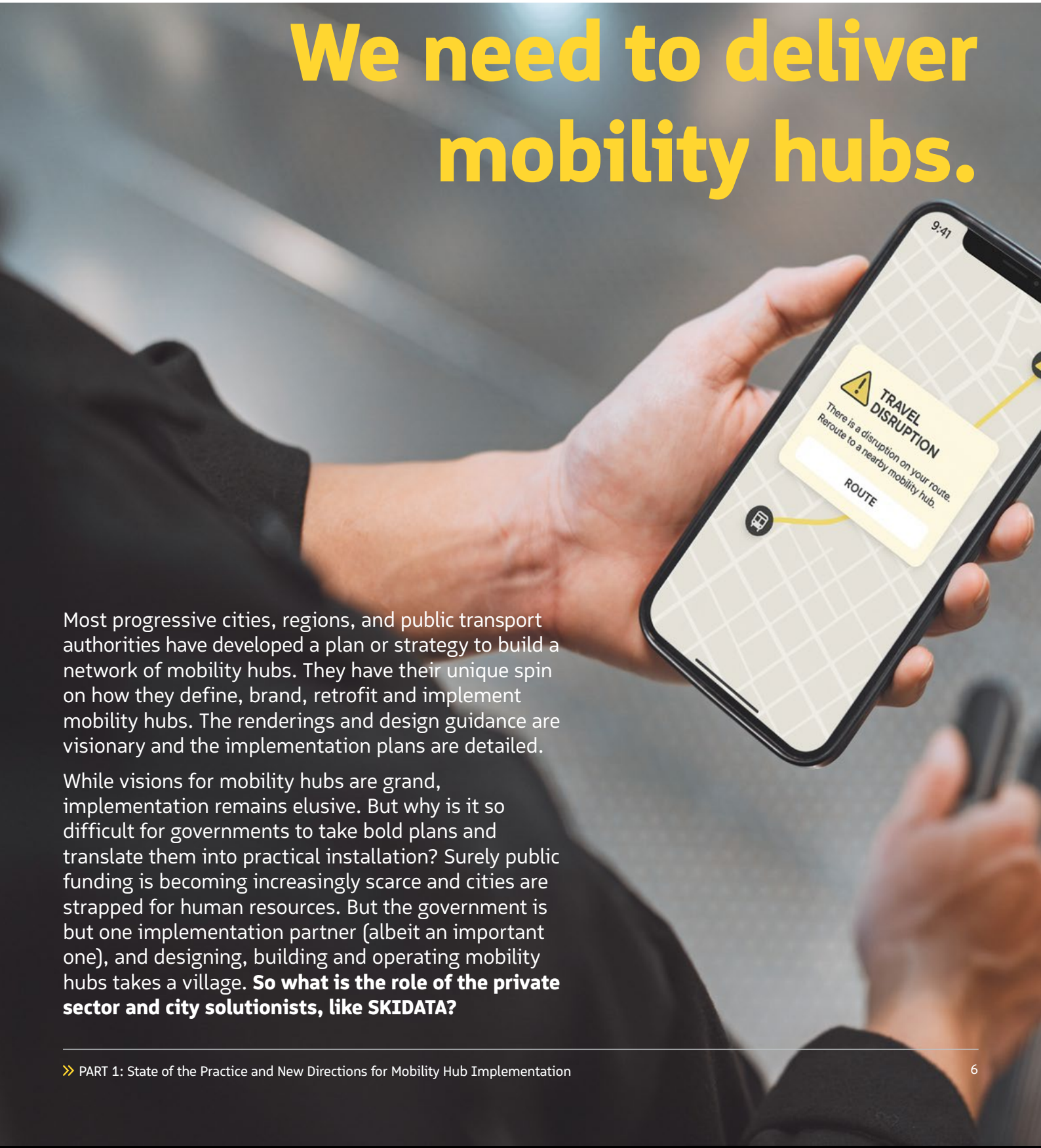
At the same time, cities see the need to holistically plan and support mobility hubs with amenities, placemaking features and critical information to meet the changing needs of their city-dwelling and technologically-savvy "customers".

As such, municipalities and their transport partners see mobility hubs as the solution to develop more sustainable mobility options. Mobility hubs are essential tools to navigate cities with or without a car.

Mobility hubs are distributed throughout cities today, waiting for investment, thoughtful amenities and technology support to unlock their potential as vibrant community places and access points to people's daily mobility demands.

Enough talk about mobility hubs.

We need to deliver mobility hubs.



Most progressive cities, regions, and public transport authorities have developed a plan or strategy to build a network of mobility hubs. They have their unique spin on how they define, brand, retrofit and implement mobility hubs. The renderings and design guidance are visionary and the implementation plans are detailed.

While visions for mobility hubs are grand, implementation remains elusive. But why is it so difficult for governments to take bold plans and translate them into practical installation? Surely public funding is becoming increasingly scarce and cities are strapped for human resources. But the government is but one implementation partner (albeit an important one), and designing, building and operating mobility hubs takes a village. **So what is the role of the private sector and city solutionists, like SKIDATA?**

What are city practitioners saying?

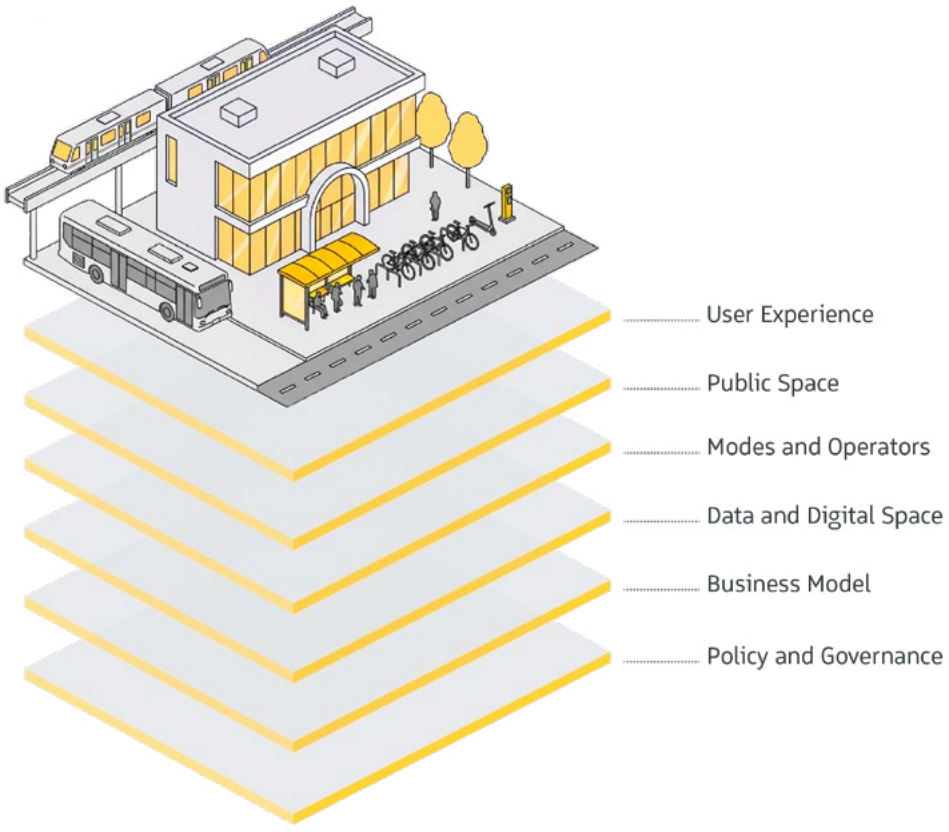
SKIDATA recently conducted a state of the practice study, interviewing 14 leading mobility hub implementers and experts to better understand the state of the practice as well as impediments to bringing ideas to life. While Part 2 of this report presents more detailed insights on the study, our synthesis is that city officials are expected to lead citywide mobility hub implementation even though the mobility hub ecosystem is often supported by a diversity of public and private mobility operators, land owners, integrators and solution providers.

Several city and industry interviewees say that practical guidance is difficult to find, and best practices are rare. Whether at a public transport station, a parking garage, a residential development, or on a street corner, city officials struggle how best to develop mobility hubs and integrate them into the fabric of cities–both physically and digitally. Questions range from appropriate locations, to which modalities and functionalities should be covered, to how best to manage and profitably operate a mobility hub, to the very practical challenges of physically transforming existing mobility hubs into multimodal hubs of the future.

The city challenge

Mobility hubs are built layer upon layer, each element connecting to the next to create seamless interconnectivity for users.

Achieving this vision requires cities to navigate complex coordination.

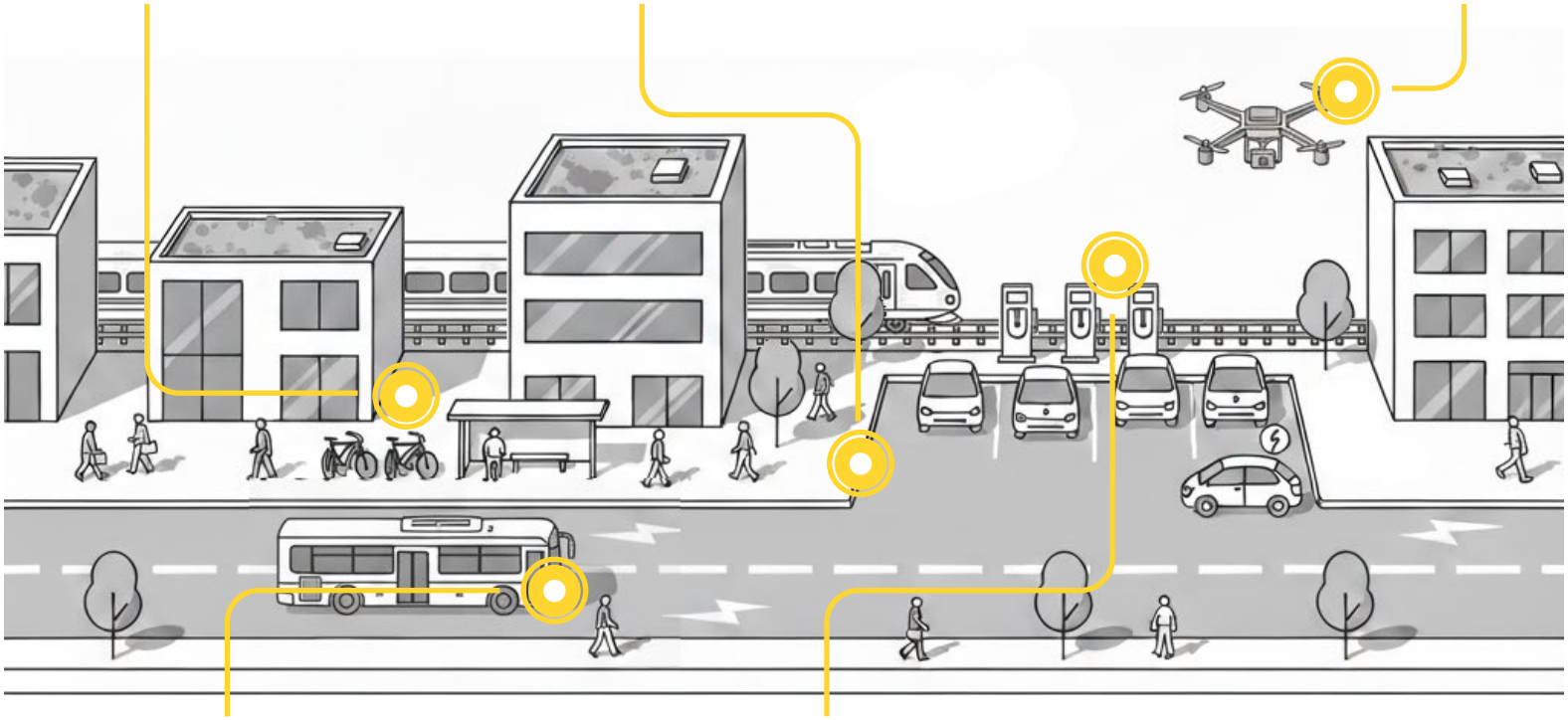


Looking a little further ahead, more questions arise:

What forms of micromobility are here to stay and need to be accommodated?

What role will cars play? Will they circulate cities autonomously? Will there even be cars?

What about drones?



What about the urban-rural divide, last-mile mobility and automated driving?

What does all this mean for the transformation of existing parking facilities into the mobility hubs of the future?

Public agencies are answering fundamental questions and solving deeply challenging problems. Cities and regions have a vital role to set the framework for mobility hub siting, public investments and the conditions and expectations for public-private partnership.

And yet, it is clear that private land owners, real estate developers, integrators, industry players, and even parking facility owners must realise their role and the value of building mobility hub features into their property and land assets.

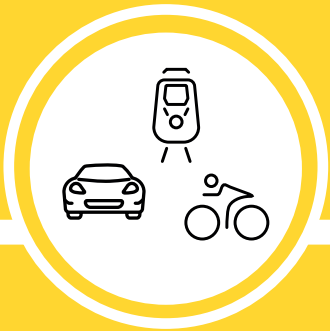
What is the next frontier of mobility hub build out?

The future of mobility hubs is at the intersection of city-led initiatives and industry innovation – taking bold visions and honing in on implementation support and optimising the customer journey experience.

SKIDATA is a globally recognised mobility and access company that is focused on elevating the journey experience, whether you are navigating to a mobility hub, accessing a sporting event or driving to a parking structure. SKIDATA leverages its portfolio of access control, behaviour change, interface design, financial exchange, and data solutions to enable seamless mobility and connectivity, effortless access, and enjoyable human experiences for city ecosystems – including municipalities, public transport authorities, parking and mobility hub operators, communities, and campus environments.

We often think about how to enhance mobility, taking visionary ideas and co-developed solutions that are interconnected, seamless, cost-effective, and reliable for customers. And in response to our research and conversations with mobility hub practitioners.

Here are three fresh perspectives on what will lead to the next wave of mobility hub installations and best practices:

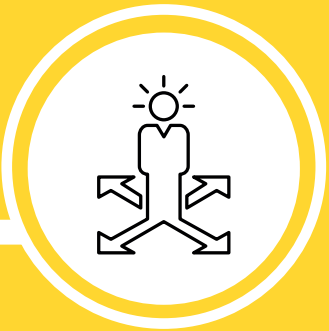


Parking As Mobility Hubs

Expand access by integrating parking into mobility hubs

Digital Experience

Design seamless and effortless experiences



Foundations for Behaviour Change

Increase adoption by improving user experience

Simply put, SKIDATA makes the mobility experience more seamless, human-centered and enjoyable.

PARKING AS MOBILITY HUBS

Transform parking and private property into anchor mobility hubs and integrate them into the broader citywide network.

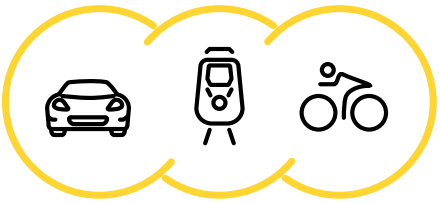
Cities like Rotterdam, Berlin, and Minneapolis have leaned into building small-scale neighbourhood mobility hubs that give communities immediate access to shared micromobility, carshare, and secure bike parking. But these mobility hubs serve a narrow market and meet the needs of only a portion of a city's trip profile.

Cities cannot, and should not, build out mobility hub networks alone. City administrations lack capacity, resources and the real estate necessary to get to widespread implementation. It's time to leverage private property owners, parking facilities, and residential /commercial developments as part of citywide mobility hub networks. If co-designed and co-developed with public agencies, mobility hubs on private land can serve city and public transport authority objectives and nestle into the fabric of the city's broader mobility hub network.

How might cities look to underutilised properties to build out anchor mobility hubs that can support more mobility options, amenities and technology to support the journey experience?

Like public transport, parking structures and surface lots are critical catalysts for mobility hub development.

They are also one of the most under-appreciated and under-programmed assets in a city's mobility ecosystem and they are strategically located where people need to start and end their trips. In partnership with parking operators, SKIDATA is helping to offer the underlying technology, access amenities, and payment solutions to ensure parking facilities are de facto mobility hubs. The name of the game is to rebrand and retrofit parking into mobility hubs that seamlessly integrate into the broader network of hubs across a city or region.



DIGITAL EXPERIENCE

Move beyond physical integration toward an enhanced digital experience.

When you listen to city mobility leaders and mobility hub practitioners, you'll often understand that mobility hubs have gone through multiple evolutions. Mobility Hubs 1.0 focused on co-location and creating enhanced public transport connections at major bus exchanges and rail stations. Mobility Hubs 2.0 evolved into integrating more mobility options, services and clear wayfinding and real-time mobility information.

In response to increasingly connected and digitally-enabled travelers, we are now faced with a third era of mobility hub retrofitting.

Mobility Hubs 3.0 focuses on digital connectivity and customer experience at, approaching, and departing the mobility hub.

SKIDATA is helping cities envision a future where mobility hub access, payments and information is seamless and frictionless. Less barriers, less clicks, and less steps to secure your mobility. Picking up and dropping off your ride, whatever mode that might be, is effortless, reserved and enabled by stress-free payment experience. This is not only the vision for a better mobility hub, it is the future of urban mobility.

FOUNDATIONS FOR BEHAVIOUR CHANGE

Curate the underlying digital experience, connections and partnerships that drive behaviour at mobility hubs.

The picture perfect hub displaying many options neatly arranged together is not sufficient to meet the needs of customers, nor will it change people's transport behaviour.

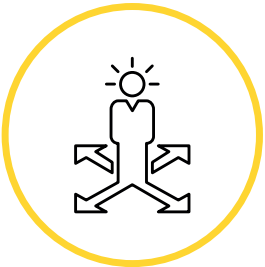
Mobility hubs should not operate as static infrastructure, when customers demand dynamic amenities responsive to their unique travel needs. Without digital connectivity and nudges, cities will not achieve their lofty goals for citywide mobility and societal outcomes.

Likewise, parking facilities that have been reimagined as mobility hubs are in a unique position to both:

- Facilitate mode shift and behaviour change for drivers; and
- Efficiently shift people driving and parking to their last-mile mobility options.

SKIDATA believes that the digital experience at and while approaching a mobility hub is as important as the hub's physical design.

It can trigger new daily user habits and maximise the use of the mobility hub. As such, SKIDATA offers the digital connectivity and B2B platform that can incentivise mobility behaviours and individual decision-making that contribute to more vibrant streets and less congested cities.



The Deep Dive on Mobility Hubs: Insights from SKIDATA's State of the Practice Study

2

In a recent qualitative market insight study, SKIDATA spoke to 14 experts from cities, universities and industry in 8 European countries: Austria, Germany, Ireland, Italy, Netherlands, Norway, Spain, and Switzerland. For privacy reasons, we are not publishing any names but are using quotes from the study.

The study's objective was to find answers to the above questions and to identify the factors that influence the development of mobility hubs. We attempted to categorize the different types of mobility hubs, and identified the main challenges in mobility hub development, including the impact on the parking business.

In doing so, SKIDATA hopes to contribute to the development of mobility hubs in a real and practical way.

Mobility Hubs: A Concept with Historical Roots

When we talk about mobility hubs as a solution for places where the demand for mobility exceeds the capacity of existing structures, we can look back to Amsterdam in the 1600s, one of our interviewees points out: Carriages could not enter the city center, the structural capacity was limited. They had to be parked outside, and only by changing modalities could people and goods reach their destination.

Why Are Mobility Hubs a Hot Topic Today?

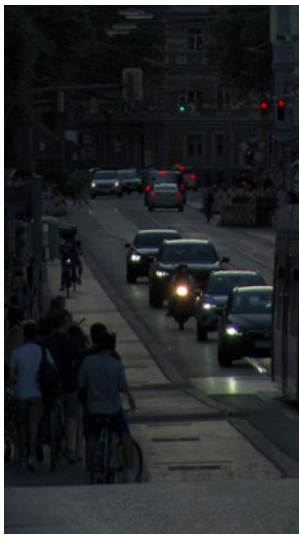
Cities and countries are under pressure to manage the growing demand for mobility,[1] as well as enabling social equality and keeping their citizens healthy.

Today, the basic idea of mobility hubs is the same: They are physical places, nodes, that connect place A with place B and allow different modes of transportation to reach B as quickly as possible. But mobility hubs can serve more use cases than just providing the fastest route from A to B. They can be destinations in themselves, they can act as bridges between rural and urban areas, and in urban planning they are part of livable, healthy cities.

Considering the long timespan from planning to implementation of urban mobility projects, 2050 is not so far away and today's decisions will affect the quality of life in 25 years. Respondents agree: Concepts developed today must be sustainable, adaptable, and enable social stability.

1. Van de Weijer, C., Kruithof, A., 2018

Trends in Urban Mobility Planning



The goal: Creating ‘livable cities’ through new space allocation, including new ways of being mobile.

Two main topics drive mobility planning in the cities: emissions reduction and scarcity of space. These lead mainly to the above-mentioned measures, and, from a broader perspective, to thinking the inner cities anew. Of course, there are more than only car- focused measures.

We came across many concepts and projects on urban mobility, including mobility hubs:

Cities such as Paris are committed to the concept of the ‘15-minute city’, where all essential infrastructure should be accessible within a 15-minute walk or in combination with public transport.

Stockholm is intensifying the development of hubs in the coming years.

Munich plans to create 200 micromobility hubs throughout the city and installed a new bicycle highway with more to come.

The parcel delivery sector is installing mini-hubs to do the last mile with e-cargo bikes. These are just some of the examples we have come across, there are many more.

The Canton of Zurich is planning bicycle highways for employees and locals.

After all, “cities are different in geography and legislation, but they all have the same challenges” a city interviewee says. “[They] watch each other and copy what went well” adds a university interviewee. This was also our impression: **There is a strong desire to learn from each other and find relevant data.**

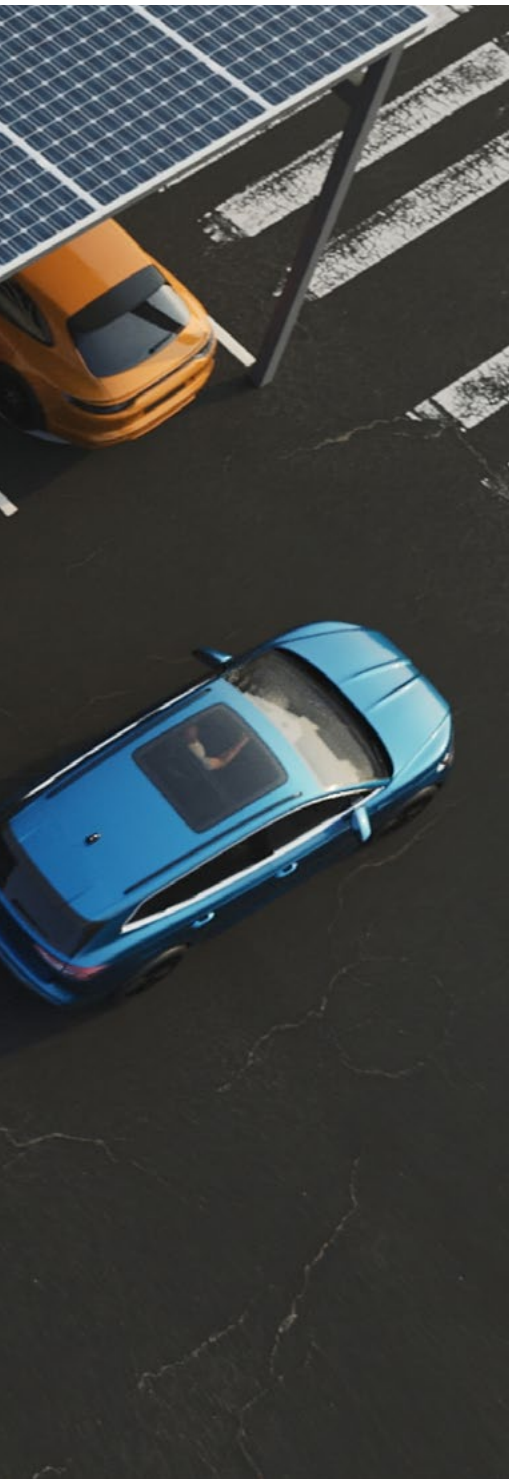
The Role of Policy and Political Will

To get a grip of the complexity of mobility hubs beyond 'enabling connections from A to B ', we looked at existing data, asked our interviewees for their opinions on technological developments and their impact on urban and rural development, on human behaviour and policy making, and finally, how geographical, cultural and legal differences come into play.

"Political will is the first thing" states a city interviewee.

Mobility has been and will continue to be shaped primarily by political decisions and policies. It is an essential aspect of urban planning and an enabler of social equality. And it is highly complex.
Much of the current policymaking at city level is focused on restricting the access of cars to the inner cities: Increasing parking fees and reducing on-street parking, limiting the number of registered cars in the city center, or increasing registration fees for a second or third car, etc.

Milan, London, Oslo, Stockholm and Gothenburg have successfully implemented congestion charges. Other cities are openly discussing it or are hesitant because they also generate critical revenue from parking fees, says an industry interviewee. Overall, "[...] spatial planning is focused on the car. This is what needs to change" a university interviewee states.



The Market Transformation Towards Sustainable Mobility

Despite many initiatives, projects and policies, cities and their partners are in an experimental phase, and best practice examples and actionable data are rare.

Today, we are at the end of fossil fuel-driven mobility, and at the emergence of sustainable mobility.

This phase of one cycle ending and the new one beginning is characterized by an ever-increasing urgency of the problem, concerning mobility this is mainly climate change and the emissions in cities. A second characteristic of the experimental phase is fragmented projects and experiments addressing the problem (see above), and there are no standardized methods yet (based on Simons, L., Nijhof, A., 2021).

The Importance of Collaboration and Knowledge Sharing

Furthermore, we observed a very high willingness to share in our interviews and participants were generous with their time. “My model is sharing, sharing, sharing, always, this is why I am doing this interview. If we share, we make best use of what there is. [...] I care about what kind of future we will build together” a city interviewee states, and we have found this conviction in other interviewees, too.

At this point, we would like to give a huge thanks to all of the participants, and acknowledge their encouragement to help each other, to collaborate and share more, all across cities, companies and knowledge institutes.

The future is so complex that we can only do it together.

The Current Reality of Multi-Modal Mobility

Until here, we spoke mainly of today's scattered examples and restrictive measures on individual, car-based traffic. What is missing, and this is the most crucial factor in the success of mobility hubs – is human needs and human behavior. Humans are not being mobile without a reason – in other words, without a 'use case'. Every solution must be developed from a use case perspective, to deliver something that caters human needs and behaviors.

"Think with the mindset of a car driver. The car is always there. You can store it everywhere and it is your home" two interviewees from industry and university suggest**. Multimodality should be as simple as taking your own car.**

Challenges in Multi-Modal Travel

Currently, multimodal travel is difficult to organize across many apps, and, if in a new place, knowledge is needed on which ones to use, as well as very practical aspects of planning: "If you travel with a family of 5, you also need 5 bikes and pay for 5 people on public transport" an industry interviewee says. Today, travelling multimodally is far away from seamlessness and an ease-of-use. "You cannot do Berlin-Marseille with 3 clicks" observes a university interviewee.

Another aspect mentioned stood out: "It is such a big penalty to shift modalities during a trip for our reptilian brain, because you make yourself dependent on a system. If you wanna go, you go" discerns a university interviewee. So as promising and necessary as the discussion around multimodality is, there is a long way to go until it is as simple as taking the car.

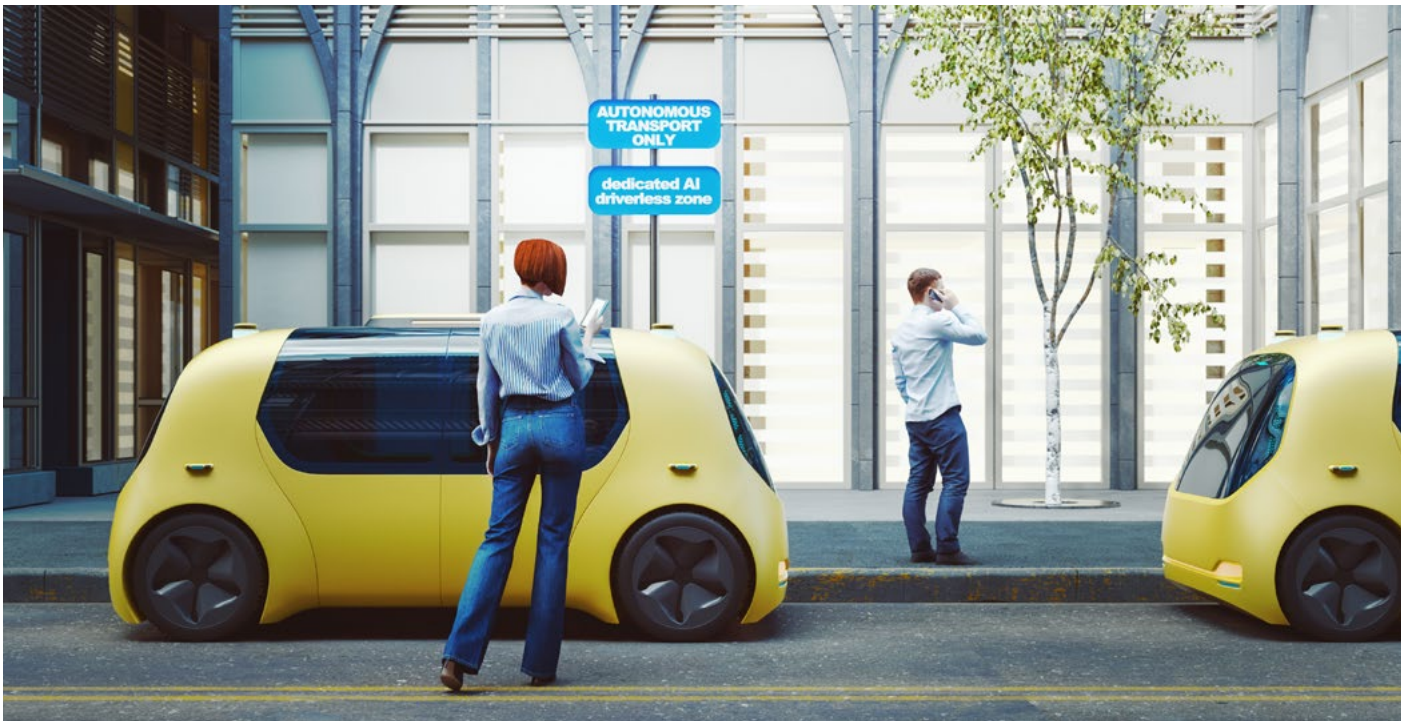
The Role of Automation and Shared Mobility

On the other hand, there is a sheer multitude of singular projects and start-ups around shared mobility, seamless mobility, robo cabs, autonomous buses, etc. Most of them fall into the category of “experimentation” and are far from market maturity.

Plus, all projects that we have heard of have failed to switch owned-vehicle trips to public transport and shared mobility – except for congestion charges. Looking at the population in total, car ownership remains the favorite means of mobility. The current ‘normal’ is a car owned.

Automated Mini Cabs: A Distant Future?

Based on all of the above, it is our educated guess that the scenario for automated mini cabs on the countryside replacing public transport and making owned mobility unnecessary, is rather a long way away. First, automated driving is still very far away from a market readiness across the board , and second, an intelligence organizing all the self-driving cabs, calculating your route into the route of the others, while minimizing waiting time, is also not there yet.



How might the parking industry transform parking facilities into mobility hubs of the future?

Practical Implications for Mobility Hubs and Parking

Larger European cities usually have an established and well-functioning public transport system – with some exceptions, e.g. Dublin, as we heard from a local interviewee – whereas in the countryside public transport is not as dense, if available at all, and does not meet the actual mobility needs of modern life.

Even within a city, the requirements for a mobility hub differ from location to location. A central station in the city center has a different physical structure and different use cases than a local commuter train station outside the city center.

Infrastructure Challenges in Mobility Hub Development

Mobility hubs and parking are tied to physical infrastructure, and changing it takes a long time, much longer than the whole life of some projects, like scooters in Paris and Madrid, where they were banned. At the same time, technology is changing rapidly and has a major impact on developments, just think of the possibilities of autonomous driving, seamlessness, mobility-as-a-service, and so on.

One thing is clear, as an industry expert states: "There is no one-size-fits-all solution."

And we are all still learning from each other. So, from here, considering everything we learned, we tried to start with a first step and extract what mobility hubs actually are.

Another challenge lies in the limiting physical infrastructure when re-purposing or re-designing existing sites, an operator says: "In practice, the challenges are on-site construction issues.

A cyclist cannot enter via the car ramp because of the danger of being hit on the head. Or ramps that are too steep for cargo bikes. Or fire safety requirements when it comes to the storage of things". Just to name a few examples.

Understanding the Core Functions of Mobility Hubs

Mobility means getting from point A to point B. There are three main categories of places: Home, work, and 'third places' where people gather or spend time, such as coffee shops, restaurants and bars, gyms, doctors' offices, churches, parks, etc. These 3 categories are a large portion of trip origins and destinations. Modeling mobility around them brings us to the concept of the 15-minute city – and to the development of mobility hubs that not only enable transfers, parking and charging, but also community and health.

But it is not about point A or B per se, but why a person wants or needs to get from A to B – the use cases. Mobility hub technology and amenities are enablers, but not an end in itself: **"Smart transportation means people-centered, problem-driven, technology-enabled solutions in mobility management that make the movement of people and goods across all modes more convenient, resource-efficient, safe, secure, and equitable."** (Haggett, E., Irshad, M., 2024)

The movement of goods is something that doesn't seem to be at the forefront of public discussions, yet it is essential, and mobility hubs are an infrastructure that also enables this.

A New Definition of the Term ‘Mobility Hub’

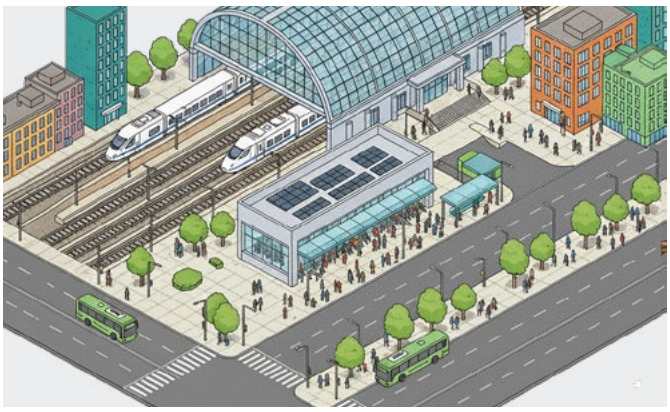
Current definitions of mobility hubs that we have found in most places don't include the whole social dimension of hubs. “A hub is a place where you can charge, where you can access mobility, and interact socially."

A mobility hub is a physical location that enables the mobility of people and goods and may serve social purposes (third places). The location and purposes determine its properties.

The three factors of people, goods and social purpose can be extended by the permanence or seasonality of a hub, e.g. for events.

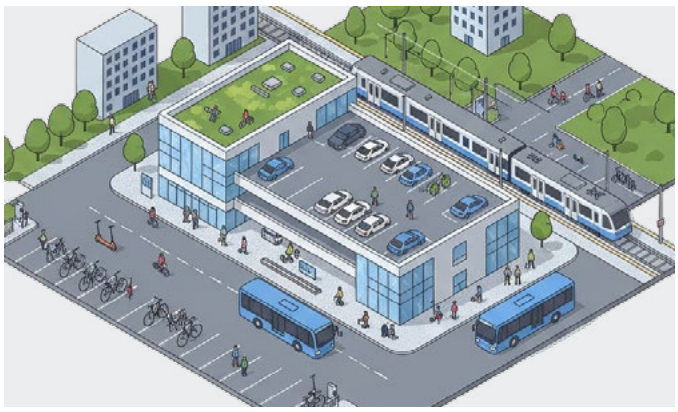
With these dimensions in mind, mobility hubs can be categorized into 5 types. We have tried to orient ourselves by what we heard in interviews and what we found during desktop research.

5 Types of Mobility Hubs:



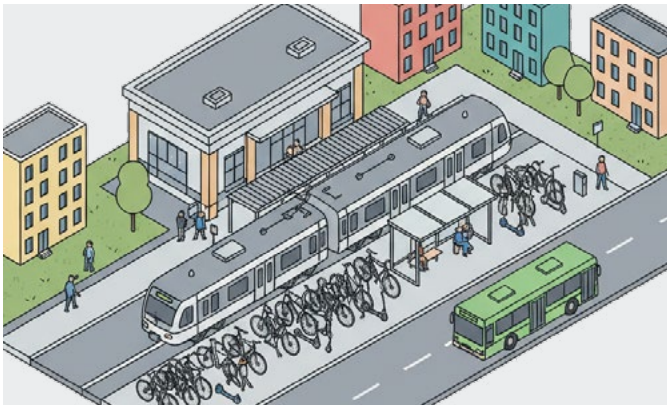
Main hubs

High-capacity, intermodal hubs (major stations, airports, primary terminals). Serve citywide and regional flows. (e.g., NMBS Belgium)



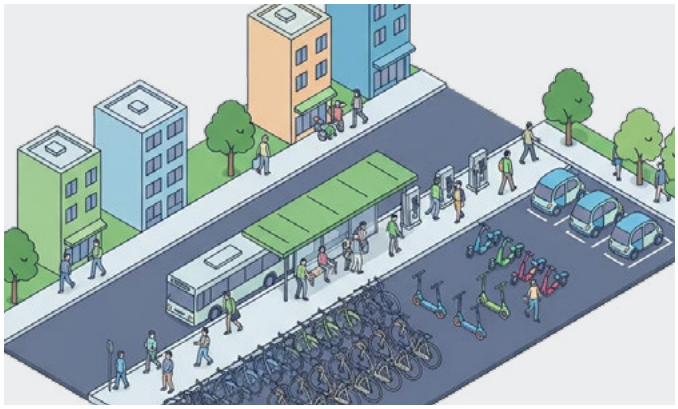
Regional hubs

High/medium capacity, multimodal hubs that function as urban-rural gateways. Strong commuter focus.



Neighborhood hubs

Medium capacity, first/last-mile oriented, within a 5-minute walk of homes. Mix of local bus/ metro, and micromobility; fewer modes than regional hubs.



Countryside hubs

Medium-low capacity with fewer modes. Park-and-ride or "owned-mobility-to-transit" connectors (primarily car access with links to regional/public transport).

Event & tourism hubs

Flexible/seasonal capacity near venues or attractions. Operate with pop-up or experimental services to handle peaks and special events.

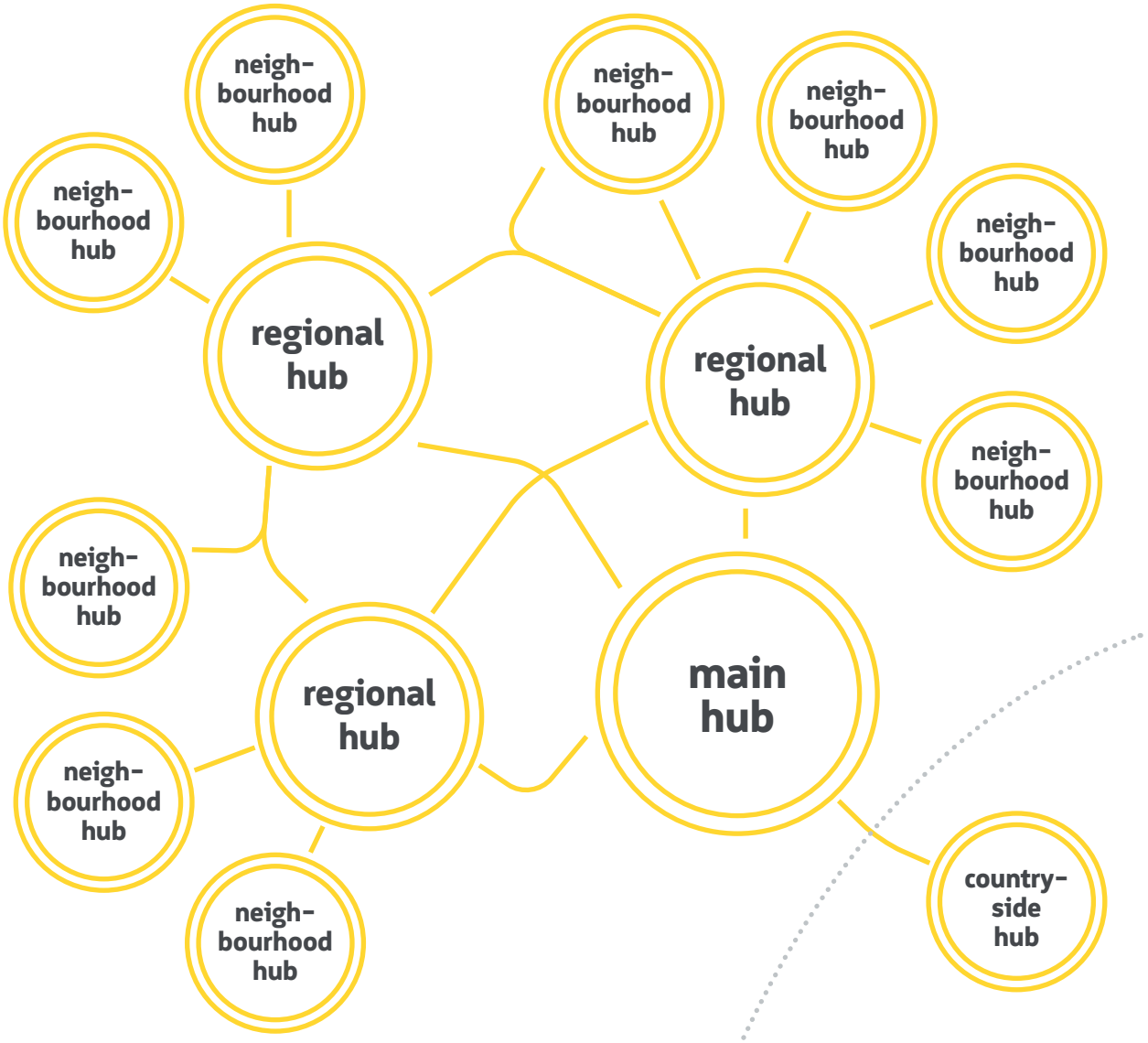
5 Types of Mobility Hubs:

	 Move People	 Move Goods	 Connect People	 Premanence
1. MAIN HUB	National & international travel, mainly by train and airplane	Not available (the main buzz is around humans, yet shops and restaurants need to be supplied)	Supply & sleep for travelers, may be a destination for locals (e.g. Zurich Airport)	Permanent
2. REGIONAL HUB	Bridge the urban-rural divide; Facilitate inner city travel from and to the surroundings; Switch from owned to shared mobility	Essential, from big trucks to sustainable last mile cargo bike.	Work and third places (bars, restaurants, gym, health infrastructure, etc.), could be suitable as an event location	Permanent
3. NEIGHBOR-HOOD HUB	In short walking distance from home, within an urban area, for the residents.	Depending on infrastructure: Pick-Up place AND storage of owned goods, like sport equipment, etc. (Smaller) supermarkets with everyday supplies.	Not so important but depending on location this can be an option.	Permanent
4. COUNTRY-SIDE HUB	The hub as a destination. Focus: Owned mobility, mainly cars. Including connection to public transport.	Pick-up place, supermarket supplies	The social dimension is the main function of the hub: A meeting place, doctors, etc.	Permanent
5. EVENT / TOURISTIC HUB	Travel to an event venue, a festival or a seasonal destination – parking and/or last mile facilitation through event planner or regions	Often not a focus	Security as a main focus.	Events: Permanent or temporal Touristic: Permanent or seasonal

Privately shared mobility, as well as privately offered parking and charging spaces, are aspects we did come across (e.g.,see Geneva), e.g. supermarkets or offices opening their parking to a different user group during off-hours. For simplicity's sake, we will focus on public hubs for the time being.

We are also aware that the categorization is only an attempt at structure; the deeper the discussion, the more fluid the boundaries between types become.

Looking at a city as a whole, it becomes clear that a mobility hub is not a stand-alone solution, but always part of a broader mobility network and strategy.



The social aspect of mobility development is particularly striking in the case of countryside hubs: "Country hubs solve mostly other problems than commuting. One problem is the ageing population. Doctors, dentists, cafes have been removed. [Data shows that with the creation of a country hub] people became healthier, and they drove less kilometers in their cars!" an industry expert says.

The Role of Data in Decision-Making

This is also where the need for actionable data and best practice examples comes in, so that discussions are not based on opinions and assumptions, but on facts. An industry interviewee explains: “Data is an aspect which is enabling politicians to understand”.

Traditionally, the cities’ departments for mobility, urban development or energy have worked in silos, and collaboration is often new. In addition, there are other stakeholders involved in the implementation of a mobility hub project, such as political decision-makers with a view to re-election, city councils with a social mission, investors, shareholders and private companies, lobbyists, the administration, and many more.

Stakeholder Management in Mobility Hub Development

This brings us to the biggest challenge in mobility hub development that we came across: Creating aligned action despite diverse goals of the many stakeholders. And the sheer number of stakeholders needed to make such complex projects happen.

Viable Business Models for Mobility Hubs

So far, we see three revenue streams:

Transaction fees

Collecting user fees from parking, EV charging, and shared mobility services.

Square footage fees

Renting space for shops, services, and offices.

Data monetization

Monetizing anonymized operational or mobility data.

The challenge is to find a business model that generates enough revenue from these streams, which is appropriate to the investment costs.

And once established, a mobility hub needs to be managed efficiently . An industry expert explains: “The management of mobility nodes will be a huge possibility for the parking industry. They have been used to manage simple mobility nodes. Nowadays we already have more complex operations. Plug in the data. Optimize the use process”.

An example, where SKIDATA has delivered a substantial part of the solution to a more seamless and forward facing experience, is the collaboration the National Company of Belgian Railways. SKIDATA created a so-called “mobility pass”, including services like access to parking, charging and public transport at the same time, and this across 23’000 parking sites and 54 park & ride sides, across the whole country.

Conclusion

The total number of registered cars in urban places is increasing, parking is shifting more and more off-street.

While technology is evolving quite rapidly, parking will play an important role in urban planning and traffic flow management in both urban and rural areas in the near-and medium-term.

Mobility hubs are not only an essential part of keeping individual traffic and emissions out of city centers, but if planned and executed from a truly human-centered perspective, they can become an integral part of our everyday social life. “A hub is successful if there is a lot of buzz around” a university expert says. There are huge possibilities to improve the lives of people in the cities and in the countryside.

A HUGE Opportunity for the Parking Industry

Parking facilities are an essential site host for mobility hub amenities and functions. They can give people access to mobility options that can take them to their end destination. As such, mobility hubs are a huge opportunity for the parking industry, as an industry expert state: “The value of parking will increase”.

As owned mobility will persist in the near and mid-term future, a successful mobility hub first addresses the different use cases and then, depending on the location and purpose, caters to owned and shared mobility, to cars and e-bikes alike, including a human-centred approach to the social dimension.

The biggest challenges in establishing mobility hubs are stakeholder management and transforming existing locations to accommodate other forms of last-mile mobility than cars.

If operators want to stay relevant, traditional parking facilities need to think not only about multimodal and seamless options, but most of all, understand their potential role in the day of their customers.

SKIDATA's approach:

Partner

We value our partnerships. Our customers and the best companies around the globe, together we create state-of-the-art solutions

Advisor

Our approach is consultative, customer focussed & human centered. We aim to be THE trusted reference for the segments we are active in.

End customer focus

Although we are passionate engineers, we believe the true driver of innovation lies in the endusers and their needs.

If you want to learn more about what SKIDATA is already doing within the field of mobility hub development, please don't hesitate to contact us. We are looking forward to exploring the possibilities and co-creating the future of mobility together with you!

Annex.

Facts and Figures

When we talk about mobility hubs and multimodality, a question arises: What do we need to consider today when planning the physical infrastructure of the future? What modalities will be around in 15 or even 25 years? Scooters? Self-driving cars? More owned or more shared mobility? Helicopters and drones? Covid and the war in Ukraine have of course affected the statistics, but our participants mostly share the opinion that the pre-Covid trends will continue.

Privately owned car

The private car is the most dominant means of mobility today. A university expert estimates: “If you look at the transport of goods and humans, the car still amounts to 75-80% of mobility.” An interviewee from the industry says: “The roads are crowded with privately owned cars. Mobility is not sustainable today.” Yet another industry expert adds: “90% of the value of mobility is currently car-based”.

Our interviewees agreed that “private cars are increasing by numbers”, as an industry interviewee states. This is also based on the assumption that EVs will become cheaper and thus more accessible to more people overall. However, current statistics show a decline in new registrations in the EU.

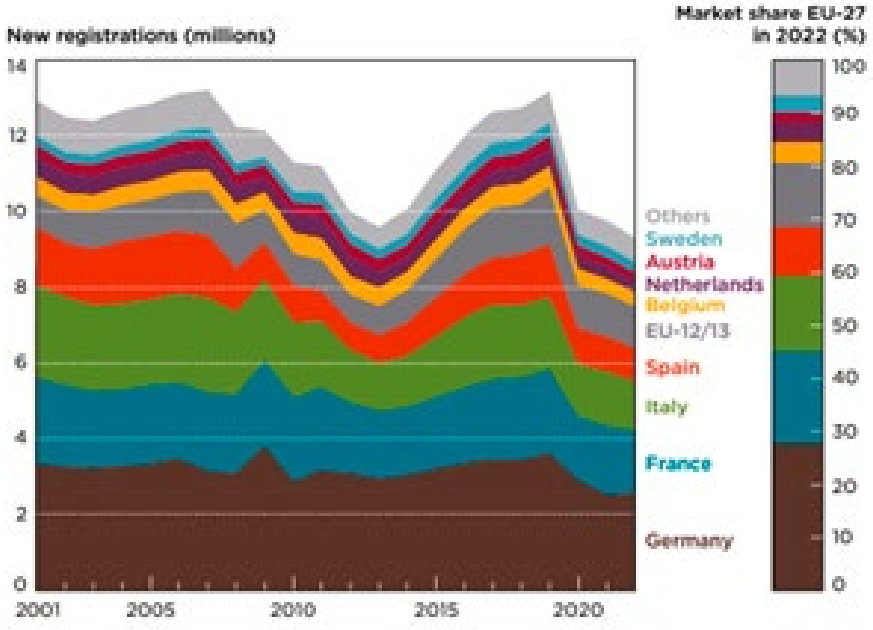


Fig. 2-1

Passenger cars: New registrations by country

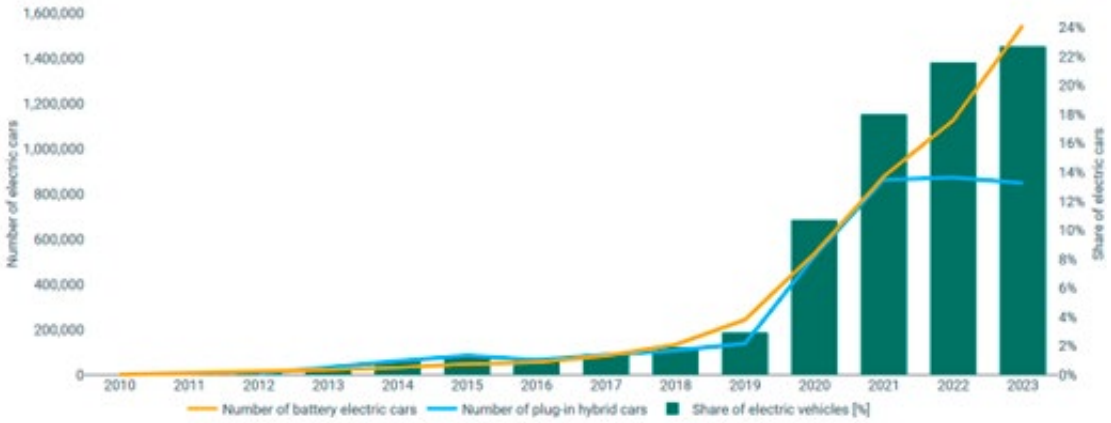
chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://theicct.org/wp-content/uploads/2024/01/Pocketbook_202324_Web.pdf (European vehicle market statistics 23/24)

More data here: https://www.acea.auto/pc-registrations/new-car-registrations-18-3-in-august-2024-bev-market-share-down-by-almost-one-third/

This is not a contradiction: They refer to different points in time, and the statistics of the past can never confirm or refute a prediction of the future.

Electric vehicles (EVs)

The percentage of EVs registered in the EU is steadily increasing. By 2035, the EU will even ban the sale of fossil-fuel vehicles. At the same time, EV owners are driving more miles overall because it is cheaper, an industry expert explains.



Percentage of EVs registered in the EU within the last 14 years
https://www.eea.europa.eu/en/analysis/indicators/new-registrations-of-electric-vehicles

Shared mobility

Today, shared, car-based mobility services are not an established alternative, neither from a personal, nor from a general perspective. A university expert explains: “Sharing makes you poor. It is currently too expensive”. Overall, shared mobility has not led to less traffic (Carstens, S., 2023).

Commuting and corporate mobility

Congestion time while commuting is taking up many hours per person per year: On average 40 hours per person per year in Germany, 71 hours in Berlin, and 74 hours in Munich. In addition to the health effects of pollution, this has a serious impact on quality of life (Carsten, S., 2023).

The trend toward home office and more flexible working hours is predicted to continue. In Germany, around 50% of the working population was working partly or fully from home or mobile in 2022, and 90% will want to work at least partly from home in the future (Carsten, S., 2023). Although we found differences in the exact percentage, which may be due to the country or countries of reference, experts agree on the overall trend: “Studies show that 70% of people will continue to work flexibly. 60-70% of all employment contracts will be flexible” a university interviewee specifies.

Furthermore, through the EU Corporate Sustainability Reporting Directive, companies must focus more and more on sustainable mobility and transparency. This is forcing companies to focus more and more on sustainable mobility and transparency. This paves the way for company programs such as "mobility budgets" instead of individual company cars (Carsten, S., 2023). As one Swiss participant from the industry predicts: “The change will be driven by the private sector and big employers”.

Autonomous driving

Automated driving is taking its first steps, such as self-driving buses in Stavanger, Norway, which, after a successful experiment with automated cars and then self-driving but assisted buses, will move to unassisted operation in 2025. The first cities are allowing robo cabs. “Autonomous driving is already there. It will be part of our future” a city interviewee states. However, autonomous shared mobility is still a long way off, and we are a long way from widespread market readiness.

E-bikes

E-bikes are on the rise. Munich and Zurich are just 2 examples of cities that are installing bike highways. Of course, geographic and climatic conditions vary greatly from city to city, but there seems to be one thing everyone agrees on: E-bikes are and will be an essential part of multimodal mobility. Charging, storage, protection from vandalism and even bike repair shops in larger mobility hubs are aspects mentioned.

E-cargo bikes

E-cargo bikes are on the rise (Carsten, S., 2023) and will be an essential aspect of mobility hubs, depending on their location and purpose. Parcel delivery companies have already installed the first "last mile delivery hubs" and an industry expert estimates that this development will continue.

E-scooters

We found conflicting data and opinions on e-scooters. Some cities have installed dedicated parking areas, others have banned them altogether, and the Micromobility Report says they are here to stay (Carsten, S., 2023). A university interviewee points to data showing that they are mainly used by tourists, at least concerning Munich, while the Mobility Report says that they are used by tourists and residents alike. It is clear that e-scooters are mainly part of the inner-city picture, where alternative public transport is widely available, whereas they are hardly, if at all, to be found on the outskirts and in urban areas.

Small e-motorbikes

Small e-motorcycles (up to 45 km/h) were mentioned as part of the mobility mix in Spain but weren't brought up by interviewees in other countries. The Mobility Report mentions them as an important part of the mix and points out the blurred distinction between the new generations of e-bikes, e-scooters and small e-motorcycles.

Drones

When it comes to drones and vertical mobility, our interviewees and other sources agree: “They are already there as well. We should limit their use for public transportation and goods, only in emergencies. They need lots and lots of energy, make noise and use public space” a city interviewee states. So, for the near future, drones won’t be part of our everyday ‘normal’.

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