

Mobility

ON TRACK.





Quelle: twitter.com/victomato



1

1894





22.073



HOCHBAHN

1925



HOCHBAHN



492.174



HOCHBAHN

1975



HOCHBAHN



1.787.408

771.573



today

 HOCHBAHN

 HOCHBAHN



shopping during
the ride

money saving

snacks & beverages

app for anything

entertainment

Internet access

more information

time saving

comfort enhancement

security gain

fallback procedure

Local news

smartphone charge base

Public Transport

Everyone is pushing
for the market

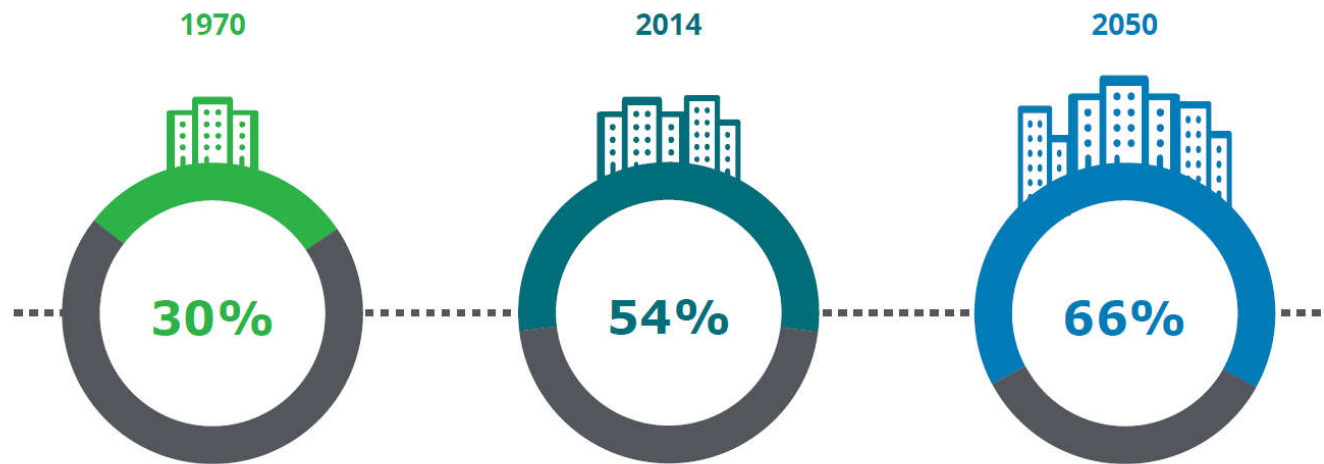


How did this trend come about?

A combination of different **megatrends** is the basis for the current development. It's about making our fast-growing **cities more liveable**, with a focus on **people**, not roads and cars.

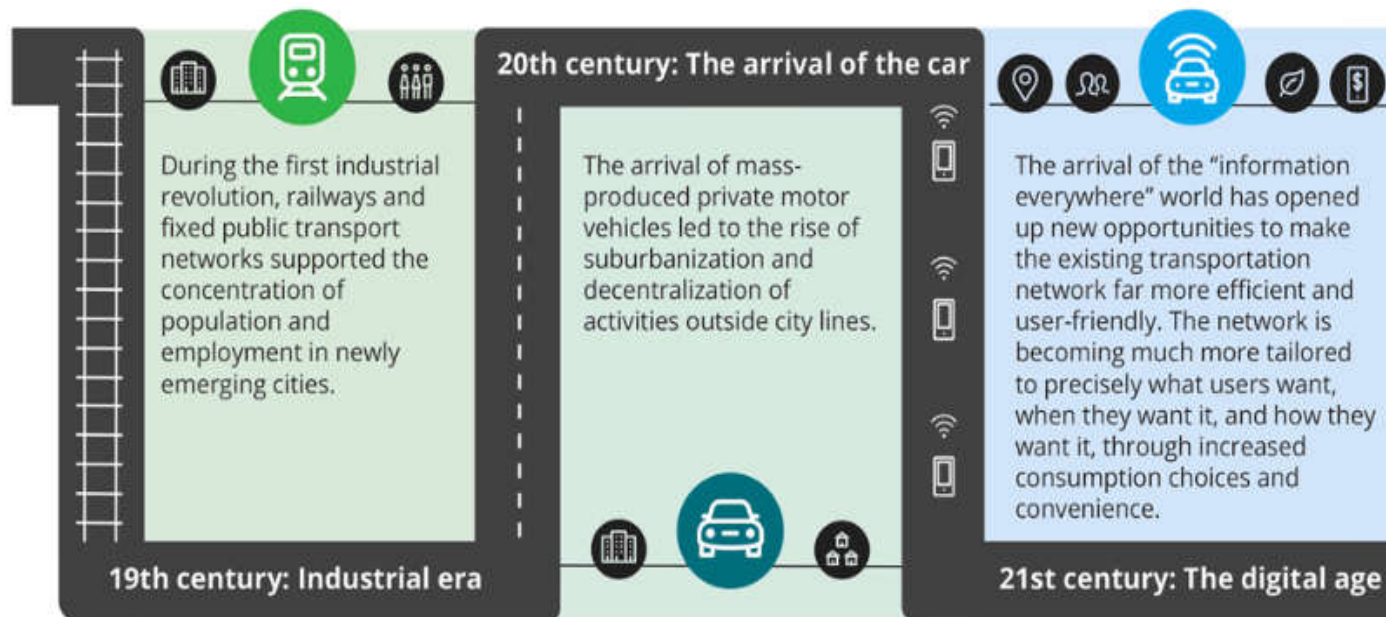
MaaS delivers the right mix of **environmental awareness, flexibility** and **affordability**.

Megatrend #1: Urbanisation



Quelle: United Nations, Department of Economic and Social Affairs, Population Division, *World urbanization prospects: The 2014 revision, highlights*, <https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Highlights.pdf>

Megatrend #2: Digitization



Si

Quelle: Deloitte

Megatrend #3: Individualization

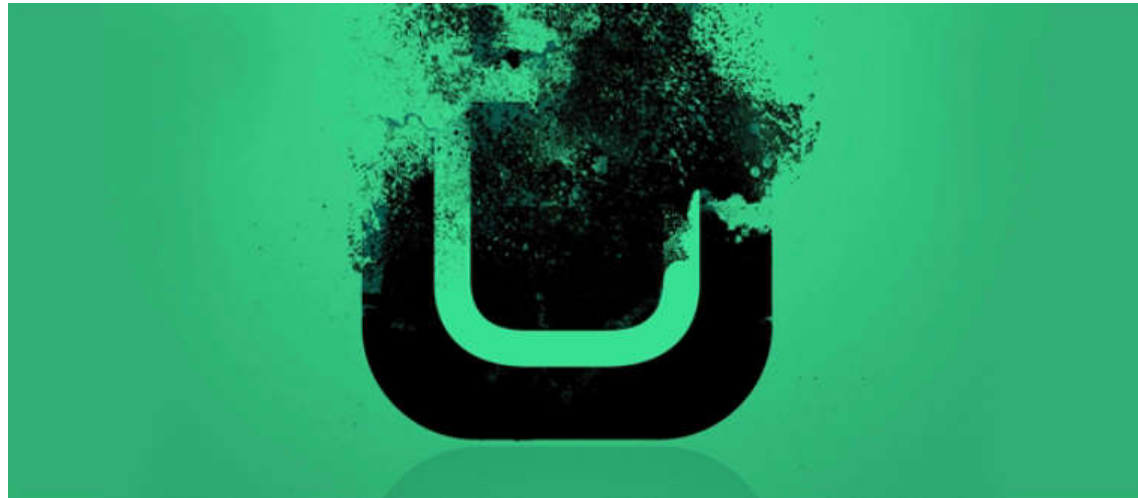
Wealth, education and mobility increase the choice. Standards are falling apart and demand is growing in order to be able to consume products and services in a tailor-made way.



Quelle:
Zukunftsinstitut

Megatrend #4: The disappearance of the apps

Many apps that serve only one function will appear in platforms and broad offerings. In what situations do use people which offer and how can they be combined?



Quelle: Accenture

Megatrend #5: Environmental Awareness

Quality of life and environmental awareness go hand in hand. More and more concepts are emerging to improve air quality and use of public space.



Quelle: Abendblatt

Megatrend #6: Autonomous Driving

The technology of autonomous driving is the key to a profitable MaaS offer, especially from the perspective of sharing / hailing providers.



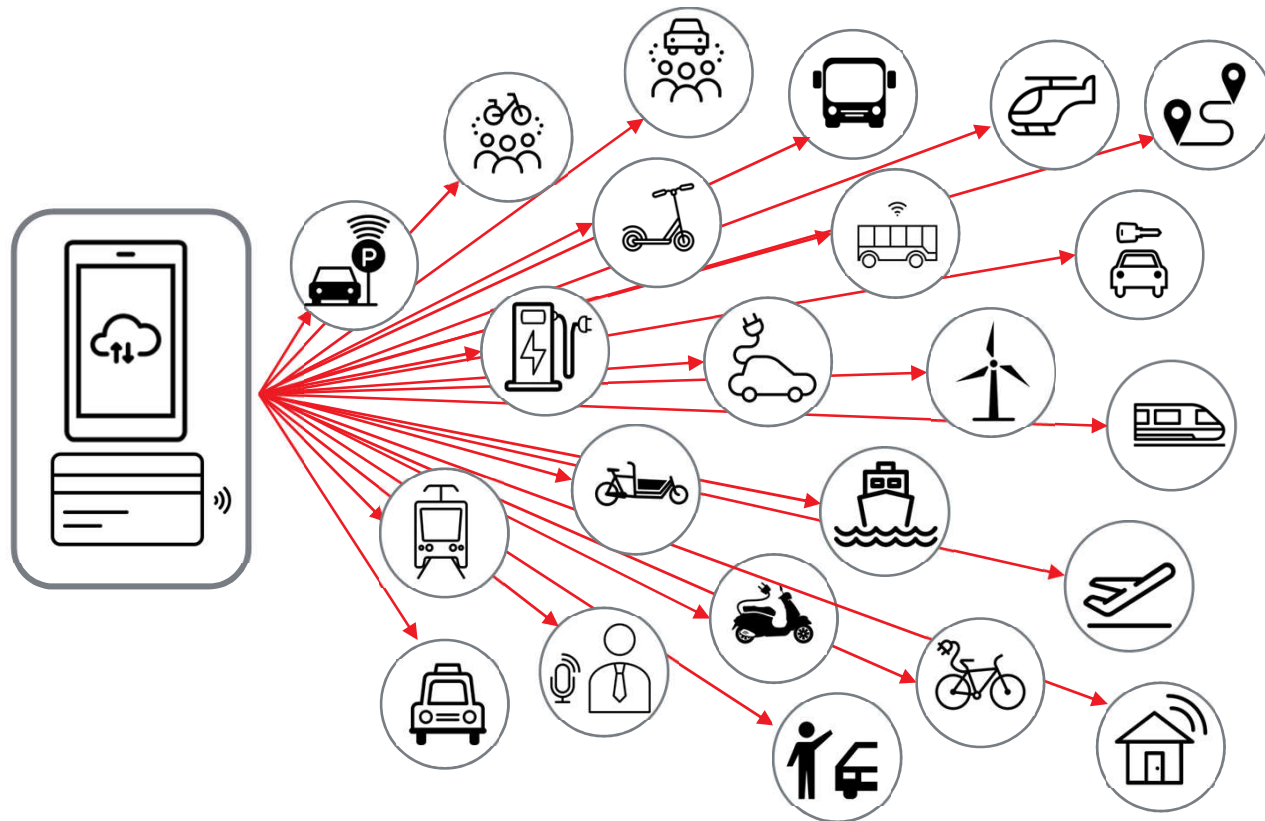
Quelle: FLVBW (Ralf Schütze)

What is *MaaS* about?

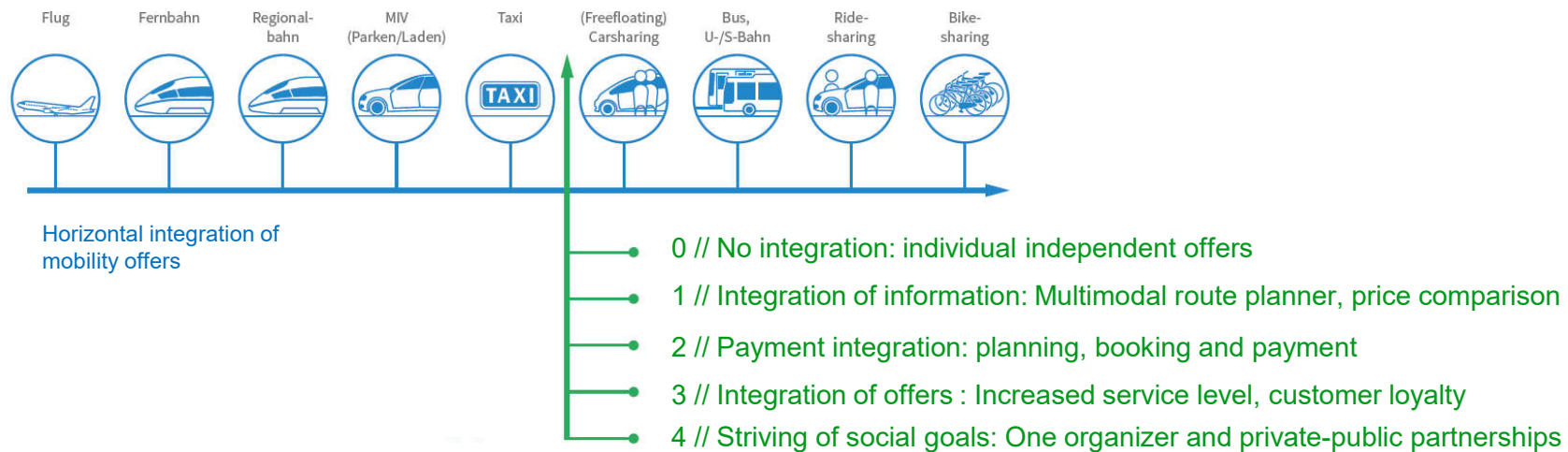
Mobility as a Service // MaaS is defined as the **integration** of different means of transport and products into a single **mobility** offer that can be used on-demand.

The aim is to bring the customer as comfortable as possible **door-to-door**.

MaaS acts as the **alternative** to **car ownership**.



Integration level within a MaaS Network



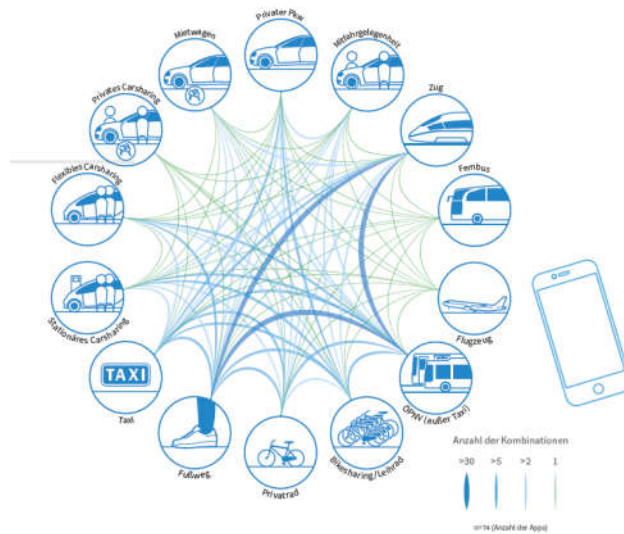
Quelle: Modifiziert von InnoZ

Multi-optional traffic behavior of users

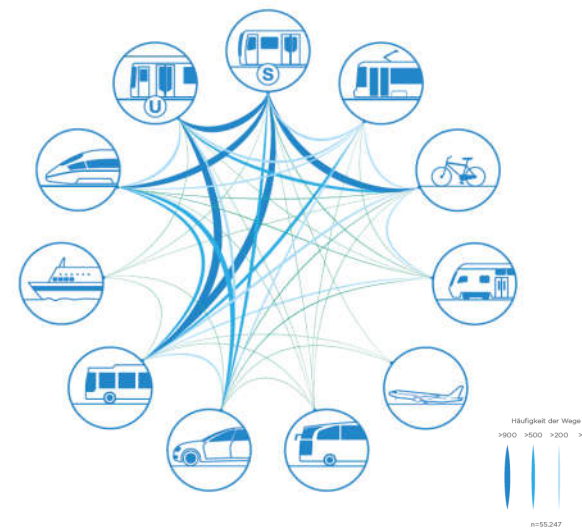
Number of displayed combinations in mobility apps

VS

Actually driven
combinations of real users

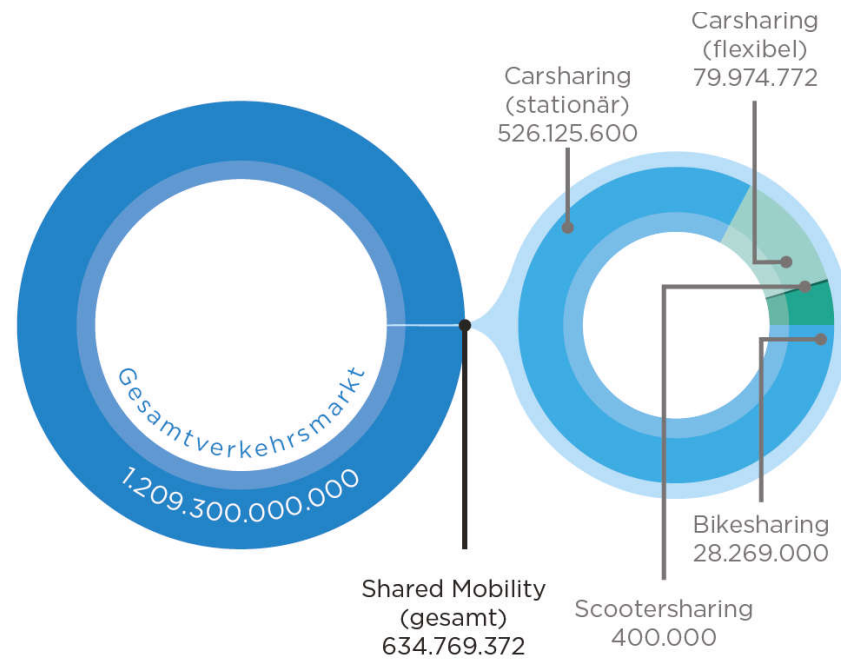


Quelle: InnoZ



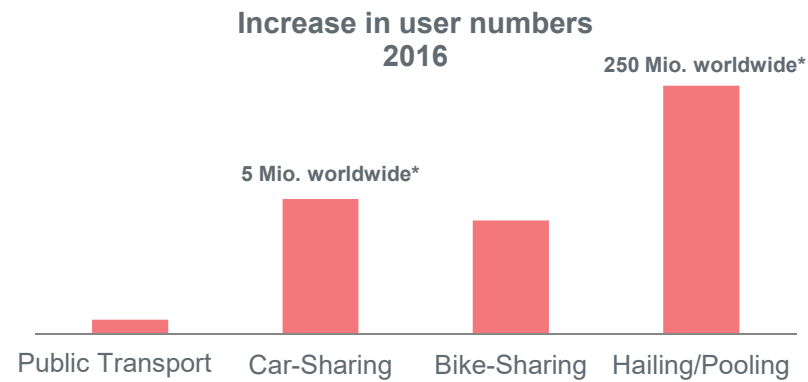
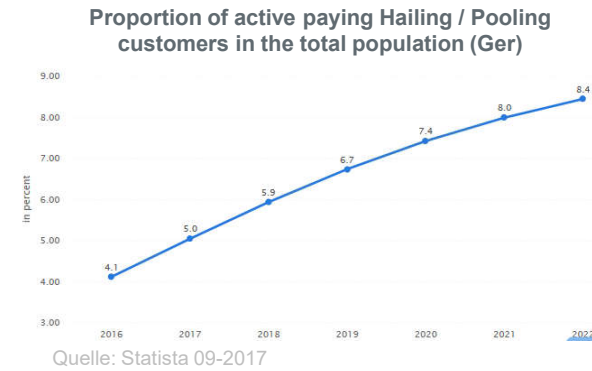
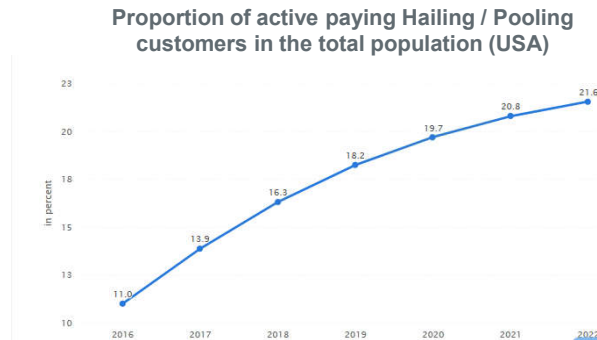
Status quo of sharing offers in Germany

In relation to the total market [km], sharing services **currently** make up a very **small proportion** ...



Quelle: InnoZ, Mobilitätsmonitor 04-2016

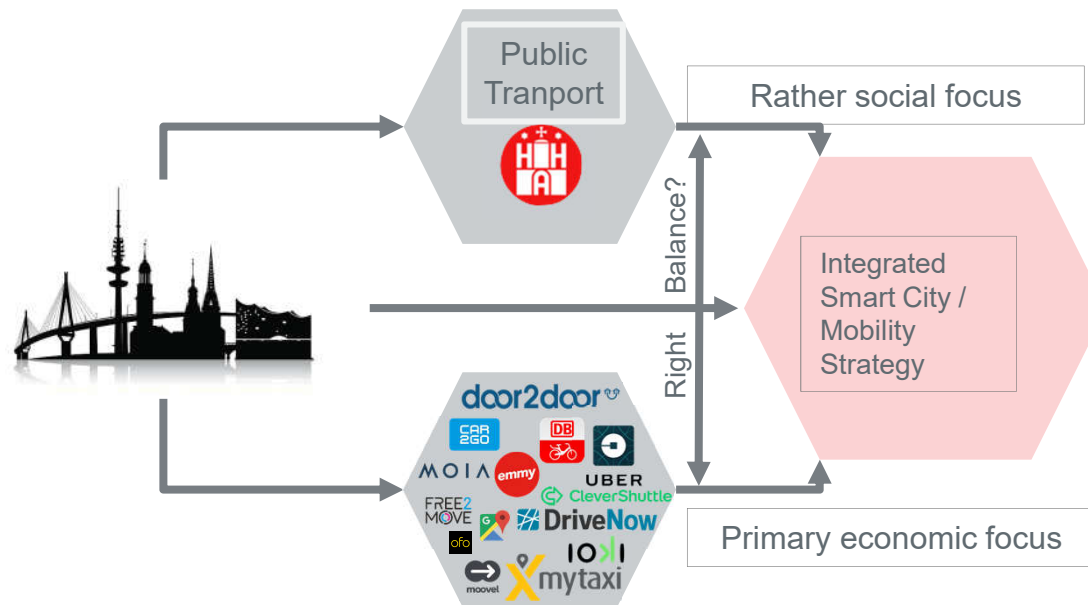
Market growth of various mobility offers



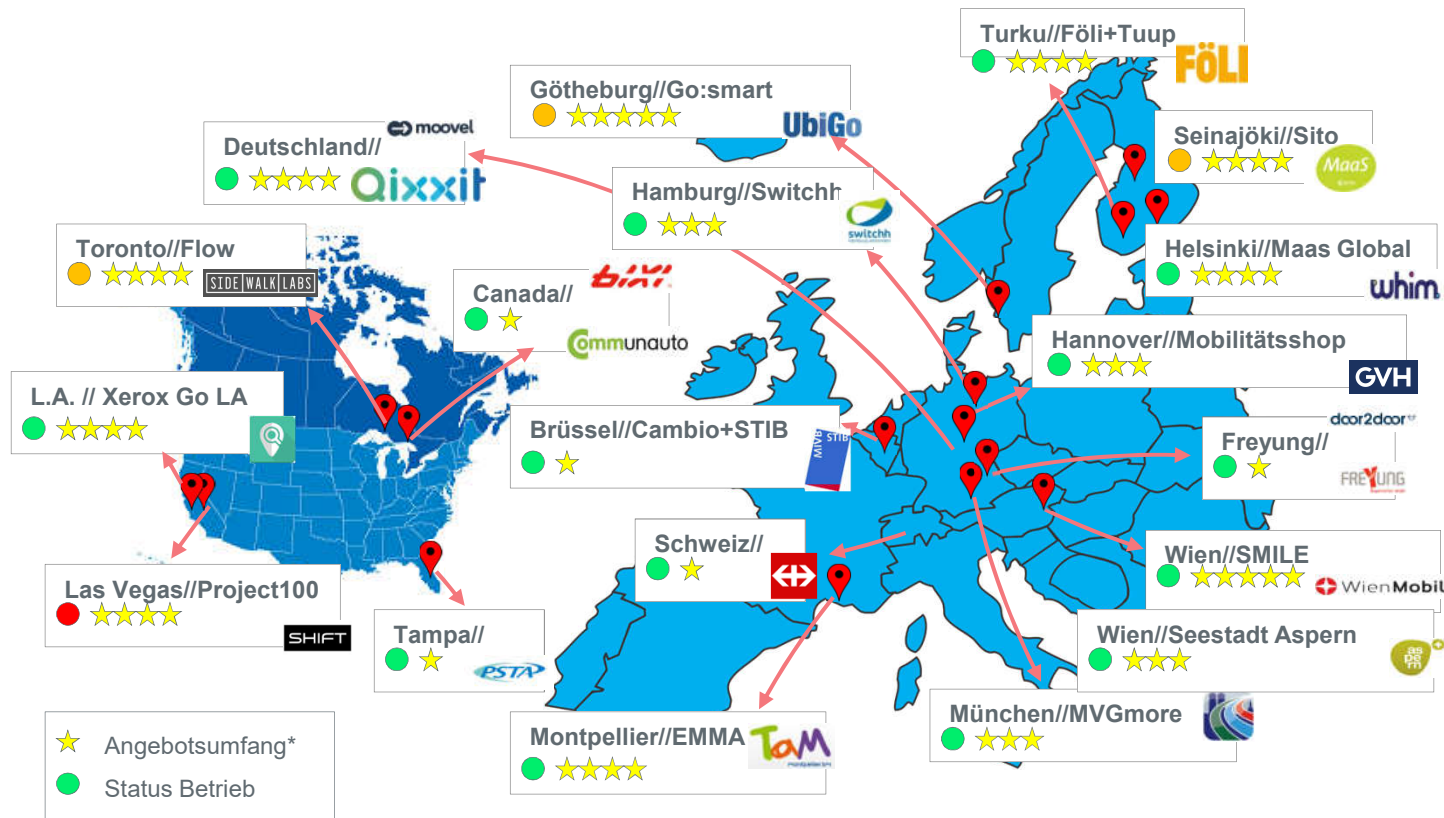
*Quelle: Clewlow, Mishra – Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States, ITS UC Davis

Balance

In addition to the role of the **transport provider**, the role of the **city** is of crucial importance in influencing the **balance** between the **social** and **economic** focus of the various players in the **multimodal mobility market**.



Selected MaaS Projects & Platforms



Selected Examples: UbiGo

Projectinfos

- + Projectname: go:smart
- + Pilot in 2013 for 6 months in Gothenburg
- + 70 households with about 200 people
- + Relaunch planned for 2017 in Stockholm as part of Civitas Eccentric of the EU

Inclusions

- + Registration, intermodal routing, booking, a single billing
- + Access via app
- + Public transport, taxi, car sharing, bike sharing, car rental
- + Deep ICT integration, opening the car sharing cars in-app possible
- + Tracks, modes of transport, modes, scope of use can be customized
- + Monthly Flatrate for about 130 €

UbiGo



USP

- + Very deep ICT integration until the opening / closing of vehicles
- + Highly customizable offer

Findings

- + 50% of users have changed behavior and have had difficulties with old mobility behavior
- + By curiosity come the customers, for convenience they stay

Selected Examples: Whim

Projectinfos

- + Projectname: MaaS global
- + Start in 2015, live since 2016
- + Flatrate system based on points
- 55-149 € per month

Inclusions

- + Registration, intermodal routing, booking, a single billing
- + Access via app
- + Public transport, taxi, Whim Cars 24h, car rental



USP

- + Whim points that are free to use
- + Highly customizable offer
- + Choice between different subscriptions
- + Deep ICT integration
- + Monthly subscription & pay-as-you-go
- + AI integrated as assistant

Findings

- + Standard mobility packages are not required by the customer.
- + Customizing (flatrate & pay-as-you-go) is important

Selected Examples: WienMobil

Projectinfos

- + Projectname: SMILE
- + Three-year research project with the aim of creating an integrated platform
- + Public transport + Wiener Linien + 13 partners
- + Start in 2013

Inclusions

- + Registration, intermodal routing, booking, in-app reservation by Car2Go, DriveNow and CitiBike Vienna, a single billing
- + Access via app
- + Public transport, taxi, Whim Cars 24h, car rental



USP

- + Tiefe IKT Integration
- + CO2-Emissionen werden angezeigt

Findings

- + 26% combined public transport and cars more often
- + 20% combined public transport and bike more often
- + 68% combined public transport and bike sharing more often
- + More frequent use: 26% public transport, 10% BS, 15% CS
- The main reason was the proposed, faster connection

Alliances: MaaS Alliance and others

General Information

- + Foundation 2015 at the ITS World Congress in Bordeaux
- + Private-public partnership
- + ERTICO platform
- + Community of interests to speed up the necessary conditions (EU policy-making, marketing in companies and administration, market analysis, moderator / mediator for joint talks, MaaS ambassadors)



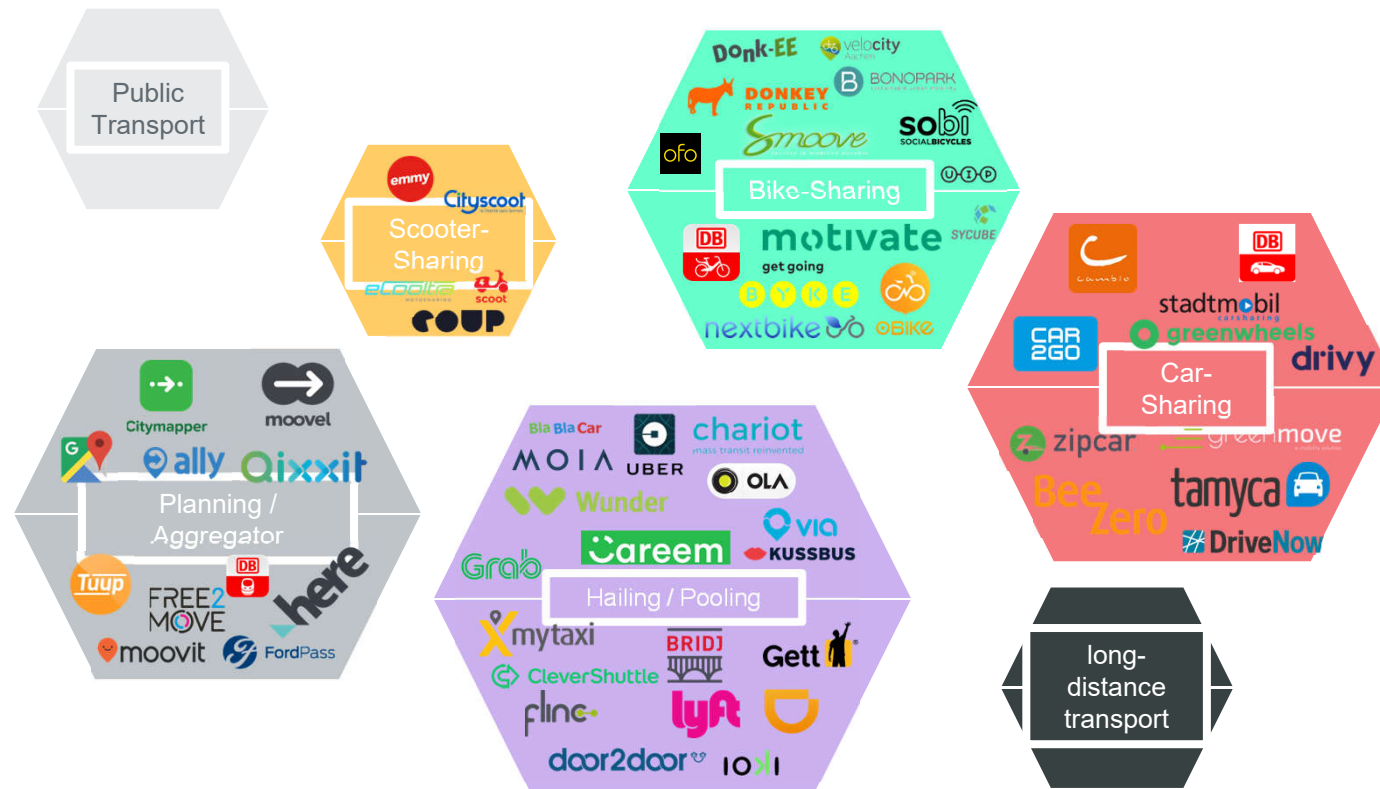
Members

- + Mobility provider
- + MaaS platform provider
- + Software company
- + Cities, municipalities and state governments
- + Transport companies
- + End customers

Objectives

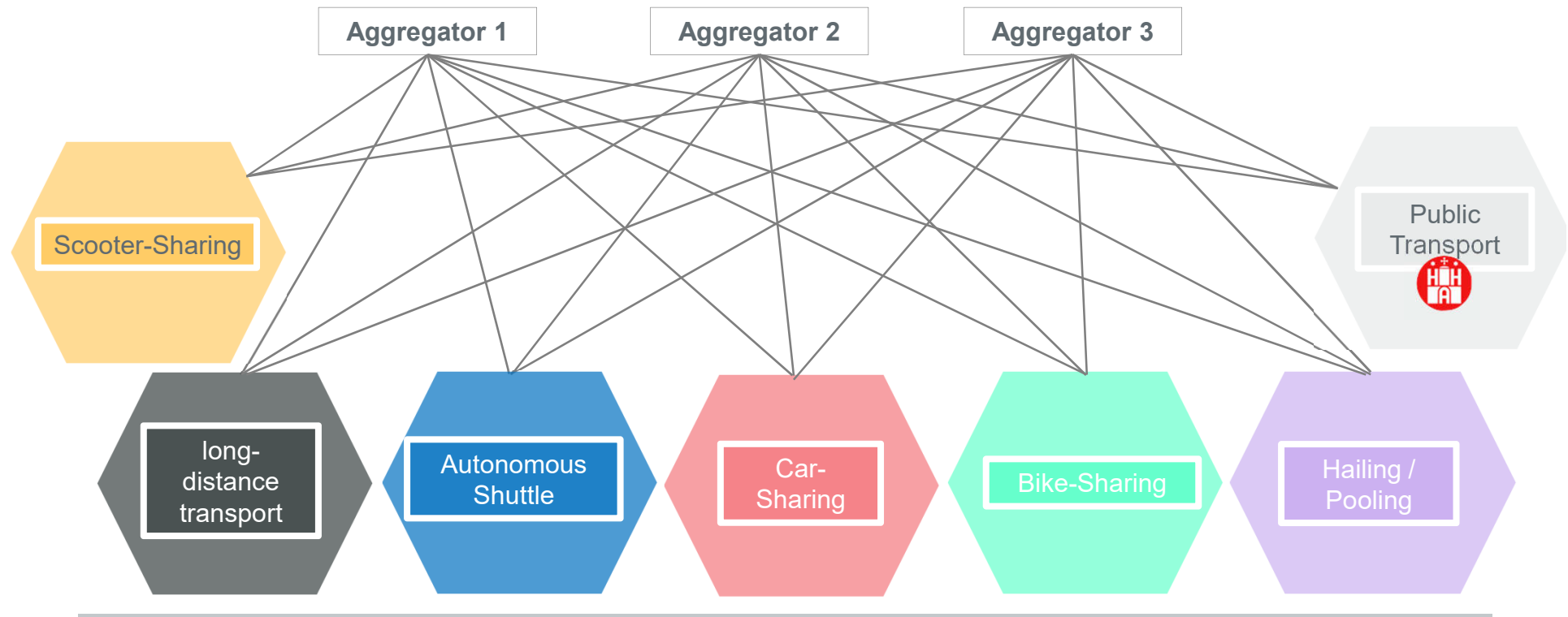
- + Development of a common basis for the development of Maas platforms in Europe
- + Benefit from synergies and economies of scale
- + Networking and buy-in of partners through individual working groups

The players of the multimodal mobility market

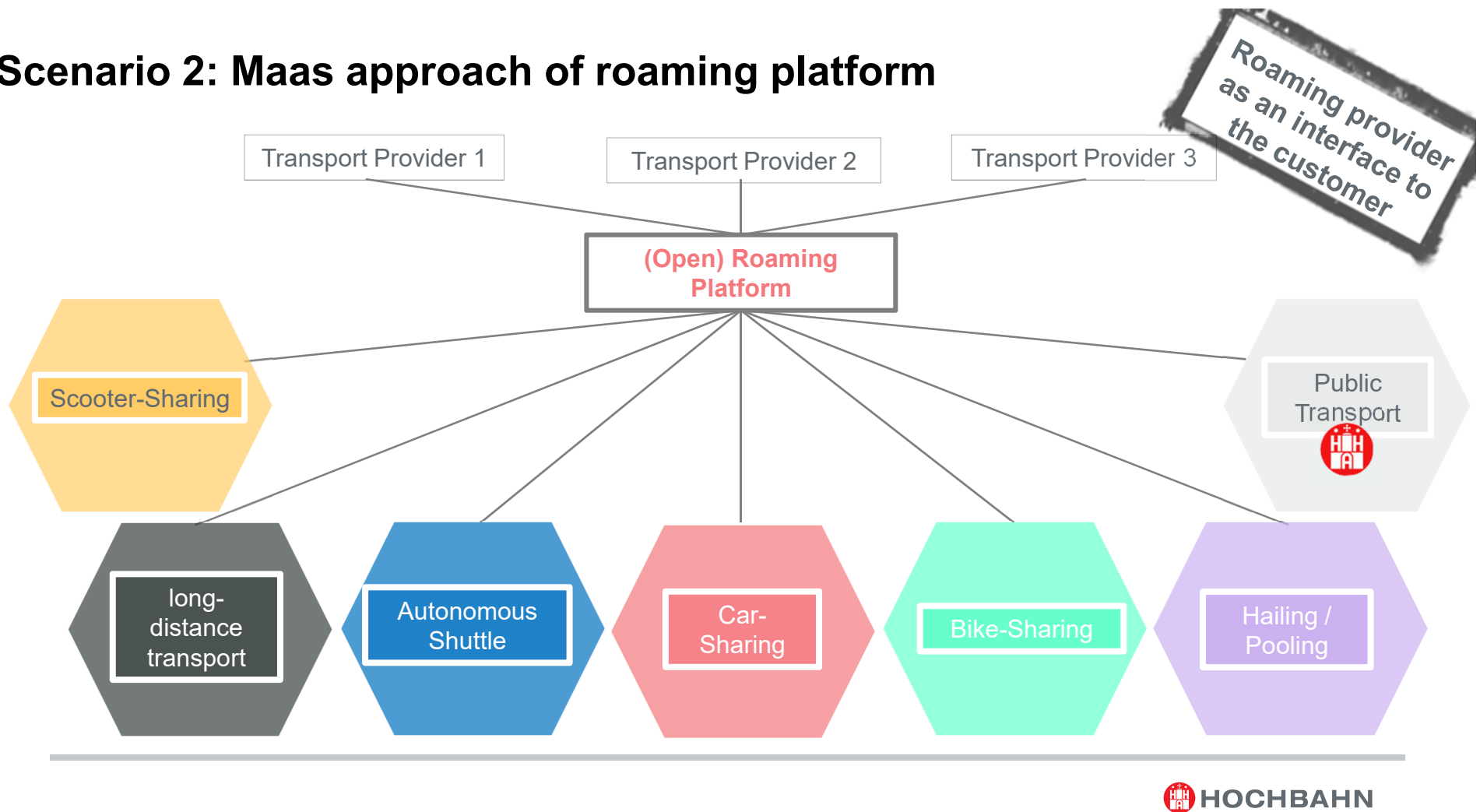


Scenario 1: Current mobility market

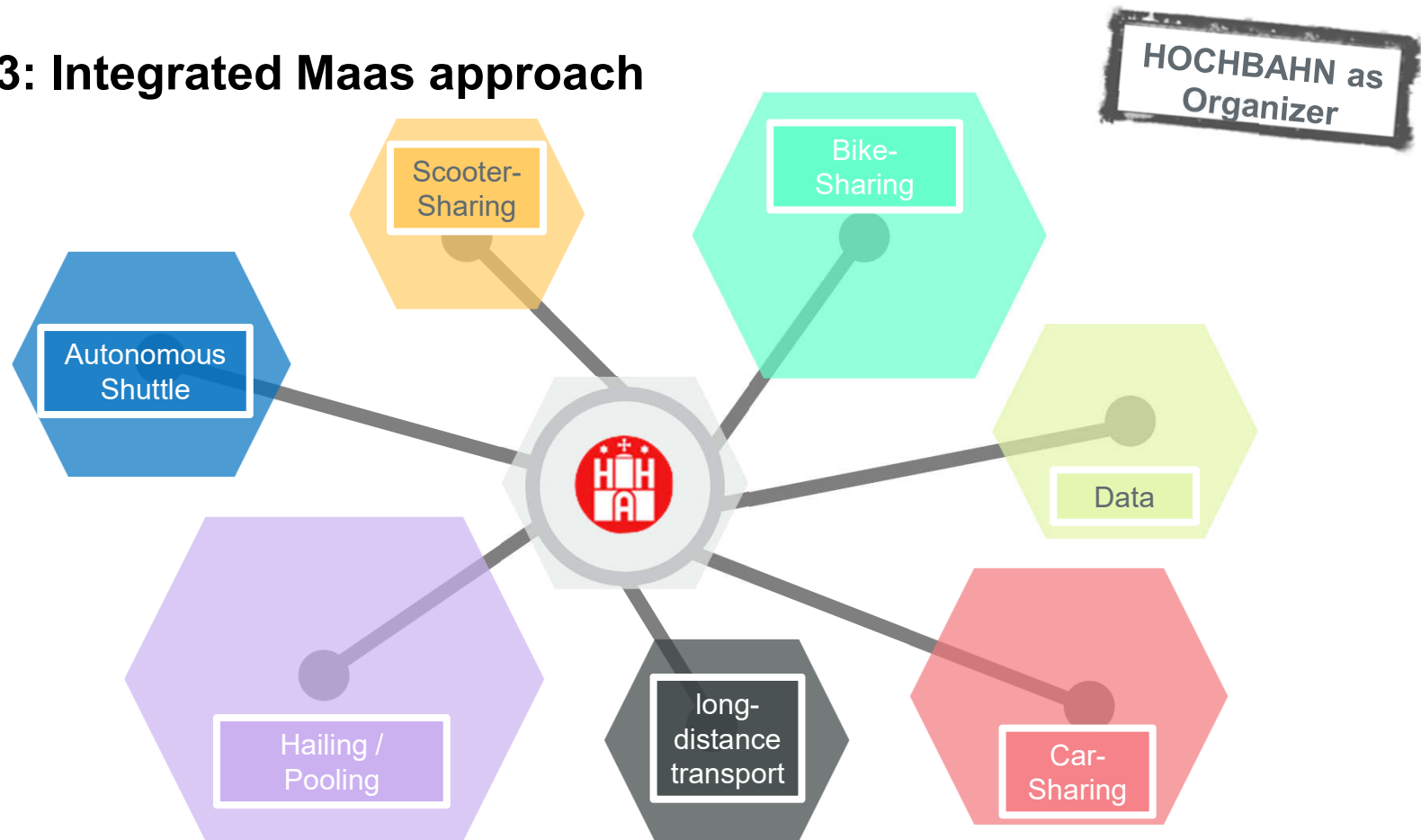
**Free
competition**



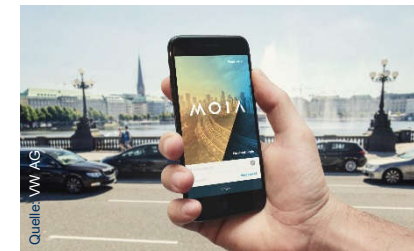
Scenario 2: Maas approach of roaming platform



Scenario 3: Integrated Maas approach



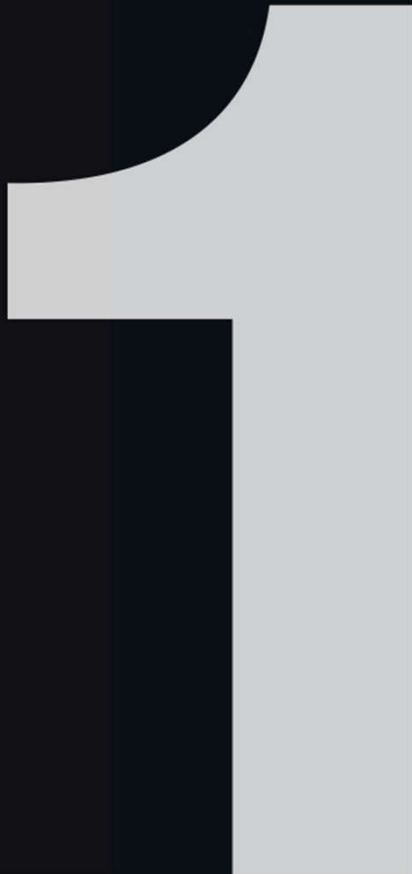
Example Hamburg: **switchh** - integrated and clean mobility



switchh

-  — Car-Sharing / Ride-Pooling
-  — Emission-free buses
-  — Fully automates subway (U5)
-  — Weather-Alternatives
-  — Last Mile
-  — Autonomous vehicles

Partners: HVV, CAR 2GO, STADTRAD HAMBURG, DriveNow, emmy, CleverShuttle, mytaxi, MOIA



Service

Registration

Account

Billing

fair pricing model

Point of contact

App



STADT**RAD** HAMBURG



MOIA
NEW MOBILITY MODES

The change to a more livable Hamburg



BMW Group

The change to a more livable Hamburg



Vision

BMW Group

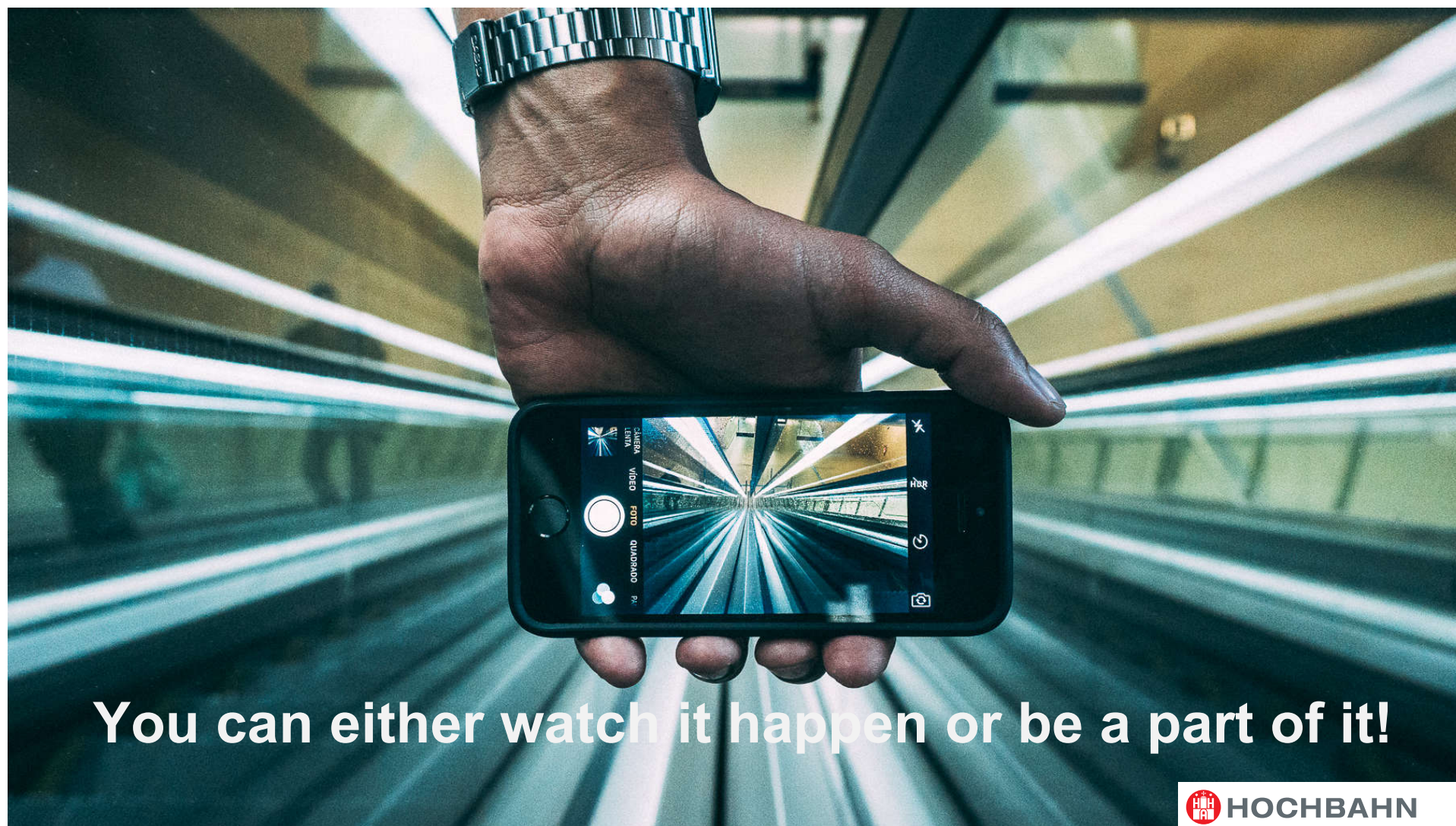
Essentials from Hamburg

- in the first phase important experiences were gained, especially with regard to customer requirements
- Control of the mobility of tomorrow:
 - services of general interest
 - solving traffic problems
 - attractive and cost-effective for customers
- Open to all providers, consolidated under one umbrella
- sustainable offers of public transport
- 800,000 active users of the HVV app, existing customer base
- Key components: physical infrastructure and a digital backbone

Success Factors

- urban driver (public authority)
- Willingness to cooperate with competitors
- good trustworthy relationship with all partners / suppliers
- neutral supplier is needed
- be fast
- Physical infrastructure is essential:
 - Parking spaces for the vehicles of the providers (ridesharing / carsharing)
 - infrastructure for e-mobility
- Customer confidence





You can either watch it happen or be a part of it!

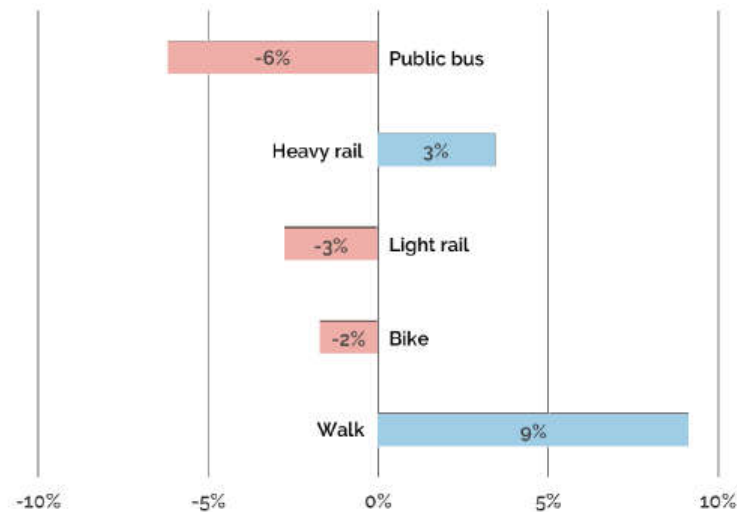




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Der Effekt von Uber&Co auf den ÖPNV

Abhängig von der **Qualität** des ÖPNV in einer Stadt ist der **Effekt** durch Hailing/Pooling Dienste unterschiedlich **stark ausgeprägt**, geht aber vor allem zu **Lasten** von **Bus&Tram**. Da der **Fahrtzweck** i.d.R noch überwiegend **Freizeitfahrten** sind, kommt es zu einer **Verstärkung** von **Schnellbahnen** für Pendler aufgrund von z.T **Abschaffung** eigener **Autos**. Eine **Reduktion** des **Preises** durch **Autonomes Fahren** wiederum könnte einen deutlich massiveren **Einfluss** haben. Diese Erkenntnisse aus den USA sind nicht direkt übertragbar auf Deutschland.



Survey question: "Since you started using on-demand mobility services such as Uber and Lyft, do you find that you use the following transportation options more or less?"

*Quelle: Clewlow, Mishra – Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States, ITS UC Davis

Ausgewählte Beispiele: FÖLI+TUUP

Projektinfos

- + Projektname: Smart Mobility
- + Offenes Ökosystem mit vielen verschiedenen Anbietern
- + Im Rahmen von Civitas Eccentric der EU

Angebotsumfang

- + Registrierung, Intermodales Routing, Buchung, Zahlung, eine einzelne Abrechnung
- + Zugang per App
- + ÖPNV, Taxi, Fernverkehr, Bikesharing, Carsharing, Ride-Hailing, Mietwagen



USP

- + Verschiedene Zahloptionen
- + Eine App als all-in-one Zugang zu einer Vielzahl von Anbietern
- + Ausschließlich e-Ticket
- + Ökosystem mit z.T konkurrierenden Anbietern

Erkenntnisse

- + Nicht bekannt

Ausgewählte Beispiele: Seestadt Aspern (Wien)

Projektinfos

- + Modellprojekt zur Entwicklung eines neuen Stadtteils mit integriertem Mobilitätskonzept
- + 6.000 Bewohner, 2/3 Fertigstellung insg.
- + Projektentwickler ist die Wien 3420 AG (Tochter der Stadtwerke)
- + Keine MaaS Plattform im eigtl Sinne

Angebotsumfang

- + Registrierung, Intermodales Routing, Buchung, in-app Reservierung von Car2Go, DriveNow und CitiBike Wien, eine einzelne Abrechnung
- + Zugang per RFID Karte
- + ÖPNV gut angebunden, Bikeshaaring, Cargobike-Sharing, Carsharing, Einkaufstrolley



USP

- + Mobilität für/mit Bewohnern entwickelt
- + Mobilitätsfonds zur Förderung alternativer Angebote
- + Cargobike-Sharing
- + MIV nicht erlaubt im Quartier, Parkhäuser am Rand

Erkenntnisse

- + Einbindung der Bewohner sehr wichtig. Haben ein „living lab“ zur Erforschung und offenen Präsentation der Erkenntnisse
- + 50% geben an, sie bräuchten kein eigenes Auto im Quartier mehr. Davon haben wiederum 50% tatsächlich keines.

Alliances : Travelspirit

General Information

- + Founded 2016 in Manchester, UK as a community project to create an open software framework that makes mobility services universally usable and accessible
- + Based on open-source software, blockchain technology and meshed society



Members

- + Mobility provider
- + MaaS platform provider
- + Software company
- + Cities, municipalities and state governments
- + Universities
- + Startups, accelerators, hubs

Objectives

- + Global community of software infrastructure, code and network experts
- + Development of the Internet of Mobility