

Mobility-as-a-Service

From a city perspective and the experiences of a
service provider

16/05/2018 – Portis Meetup Antwerp



SaaS

About "Smart" & "as-a-Service"

MaaS

Mobility-as-a-Service

AMPaaS

Antwerp-Mobility-Platform-as-a-Service

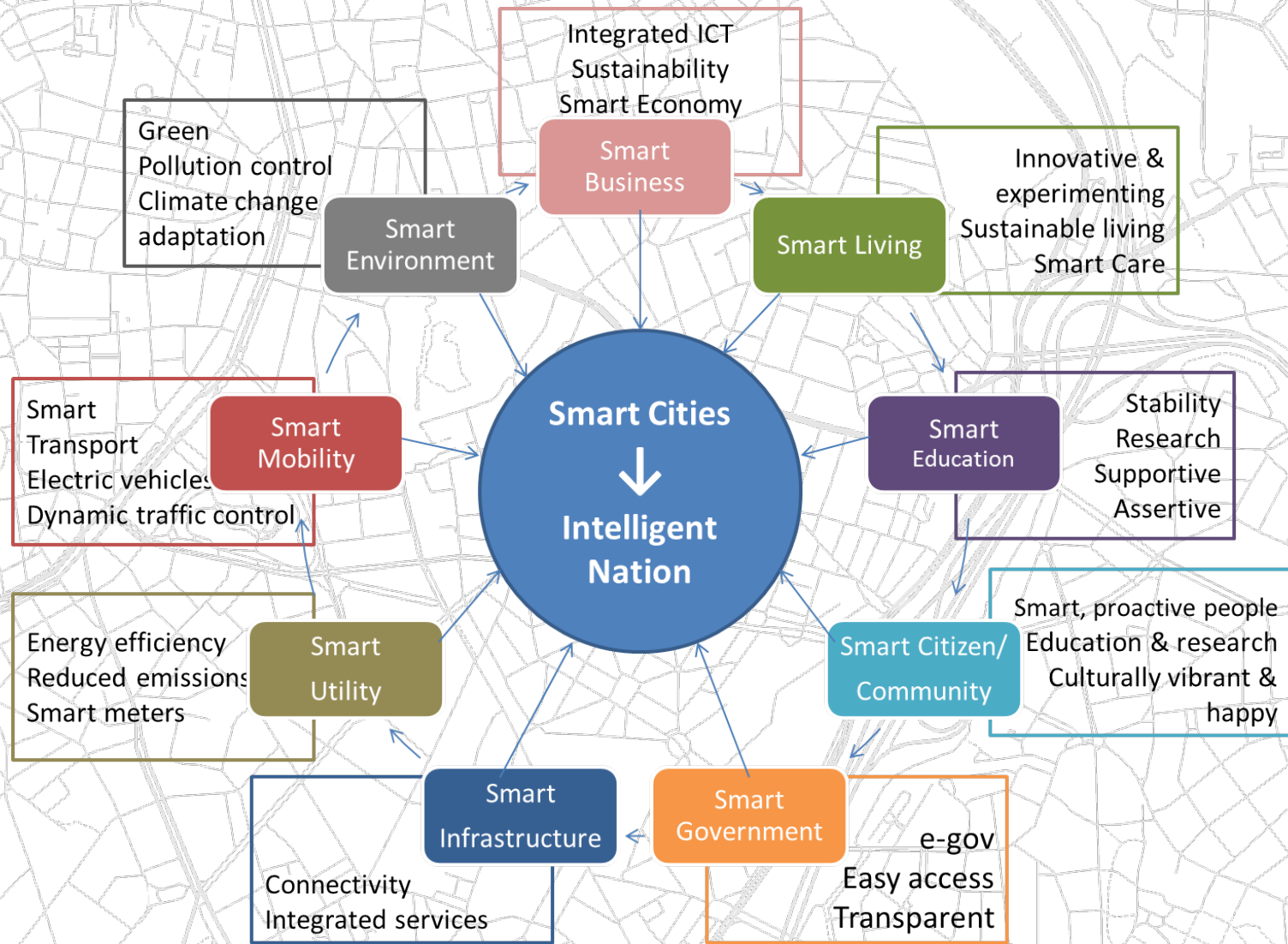
DaaS & RoC

Data-as-a-Challenge&Opportunity and the Role of the City

SaaS

About “Smart” & “-as-a-Service”

A quick note on some hyped terminology

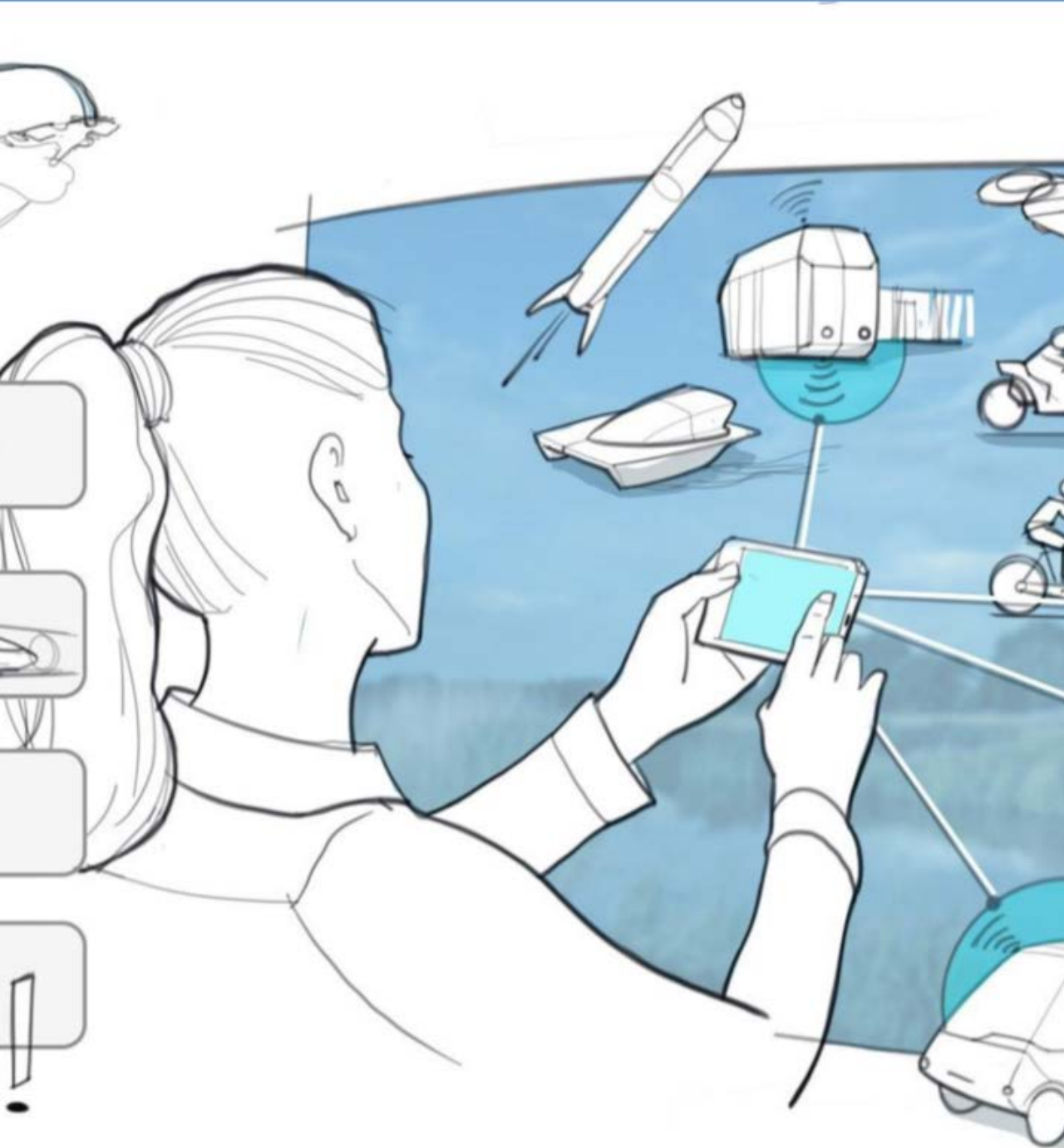


WATERM



“If you can achieve the same with a lowtech solution as with a high-tech solution, lowtech is the smarter way. The smartest city is a bicycle city.”

Fred Feddes, Parool, March 2th 2018

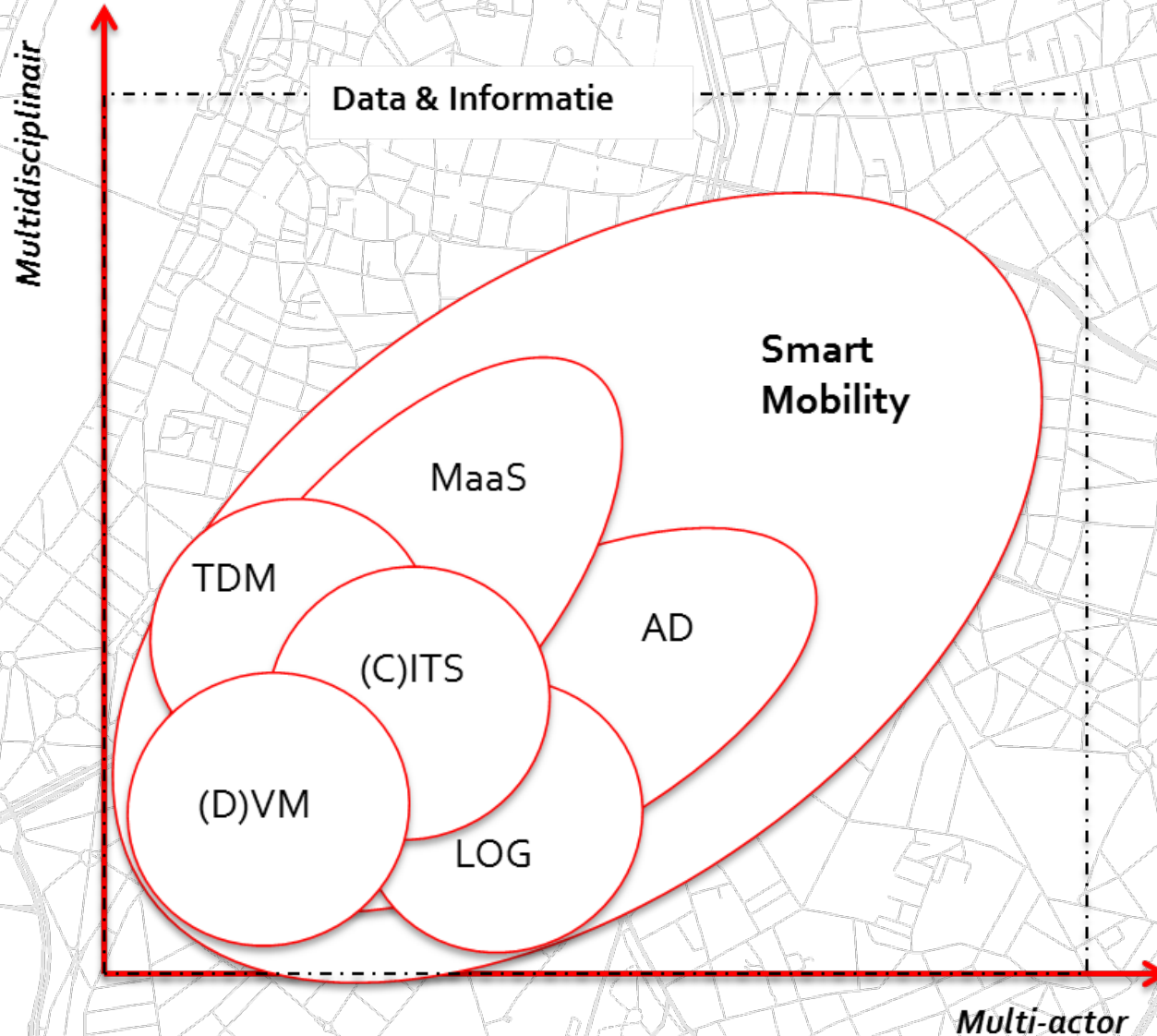


MaaS

Mobility-as-a-Service

Slim naar
Antwerpen

MaaS vs Smart Mobility



Smart Mobility

- **(D)VM** = (Dynamisch) verkeersmanagement
- **(C)ITS** = (Connected en Coöperatieve) Intelligent Transport Services
- **TDM** = Travel Demand Management
- **LOG** = (Smart) Logistics
- **MaaS** = Mobility as a Service
- **AD** = Automated Driving

MaaS Alliance Definition

Mobility as a Service (MaaS) is the **integration** of various forms of transport services into a single mobility service accessible on demand.

To meet a customer's request, a MaaS operator facilitates a **diverse menu of transport options**, be they public transport, ride-, car- or bike-sharing, taxi or car rental/lease, or a combination thereof.

For the user, MaaS can offer added value through use of a **single application to provide access to mobility**, with a **single payment channel** instead of multiple ticketing and payment operations.

For its users, MaaS should be the **best value proposition**, by helping them meet their mobility needs and solve the inconvenient parts of individual journeys as well as the entire system of mobility services.

A successful MaaS service also brings **new business models** and ways to organise and operate the various transport options, with **advantages for transport operators** including access to **improved user and demand information** and **new opportunities to serve unmet demand**. The aim of MaaS is to provide an **alternative to the use of the private car** that may be as **convenient, more sustainable, help to reduce congestion and constraints in transport capacity, and can be even cheaper**.

Integration transport services

On demand

Diverse transport options

Access to mobility

Ticketing

Single payment

Best value proposition

New business models

Advantages for transport operators

User data

New opportunities unmet demand

Alternative private car

Convenient

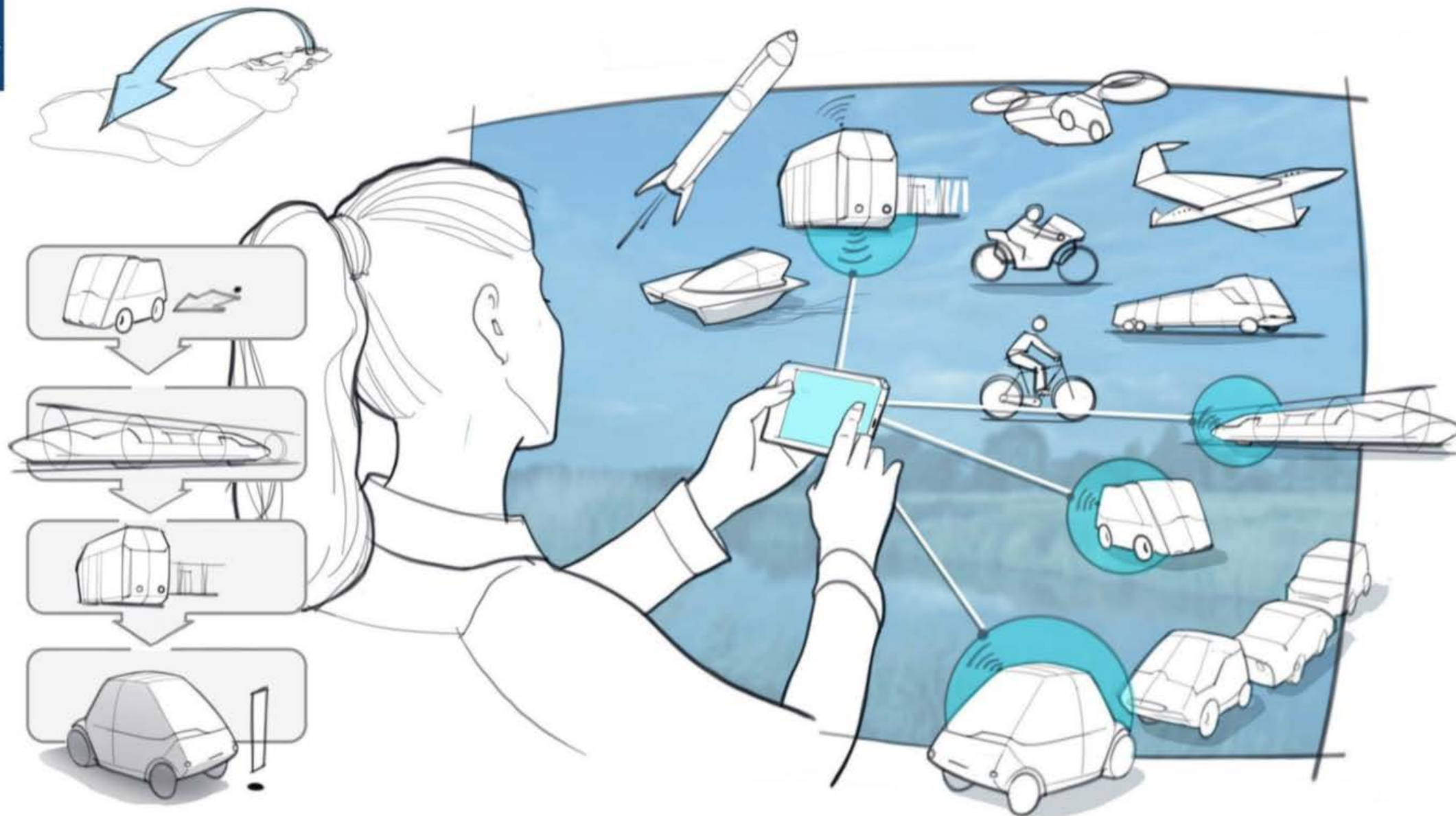
Sustainable

Reduce congestion

Reduce constraints in capacity

Be cheaper

Cure cancer?



Smart ways to Antwerp

Home

Route planner

Transport possibilities

Road works

Low emission zone

For employers

More

Zwemdoklei, Brasschaat, Bi

Lange Gasthuisstraat, Antw

Arrive at

09:00

17/05/18

29 min

2 min

Travel time

39min

Departure

08:21

Arrival

09:00

9 min

ST

8 min

Travel time

39min

Departure

08:08

Arrival

08:47

7 min

L

7 min

Travel time

42min

Departure

08:10

Arrival

08:52

8 min

ST

8 min

Travel time

42min

Departure

08:05

Arrival

08:47

7 min

L

9

6 min

Travel time

47min

Departure

08:10

Arrival

08:57

15 min

ST

9

6 min

Travel time

49min

Departure

08:08

Arrival

08:57

Slim naar Antwerpen

Multimodal

Commute

Bike to closes trainstation

buy ticket

Train to Antwerpen Centraal

Walk to Velo station

use pass/get code

Take Velo

Bike to Velo station

Drop-off bike

use pass

Walk

Enter building

Give wonderful presentation ☺

2020

CIVITAS

Greener and better transport in cities

Customer Journey Map

NEEDS & EXPECTATIONS



Planning

- Need to move from A to B
- Collect information

Pre-Trip

- Check
- Buy tickets

Trip

- Get on mode
- Transfer
- Wait

Arrived...

Solution Chosen

Check before departure

On the train

On Velo

Wait for transport

Transfer (Velo available)

Collect information

- Insecurity
- Access to info
- Multitude of options
- ...

Buy tickets

- Multitude providers
- Multiple apps
- Different payment methodes
- ...

- Insecurity
- Dodgy location?
- Weather
- ...

29 min >
 2 min

Travel time
39min

Departure
08:21

Arrival
→ 09:00

9 min >
 ST >
 8 min

Travel time
39min

Departure
08:08

Arrival
→ 08:47

7 min >
 L >
 7 min

Travel time
42min

Departure
08:10

Arrival
→ 08:52

08:10 Zwemdoklei, Brasschaat, Belgium
 08:17 Station Sint-Mariaburg
 08:24 Sint-Mariaburg
 08:39 Antwerpen-Centraal
 08:42 048- De Keyserlei 2
 08:49 084- Elzenveld
 08:49 084- Elzenveld
 08:52 Lange Gasthuisstraat, Antwerp, Belgium

8 min >
 ST >
 8 min

Travel time
42min

Departure
08:05

Arrival
→ 08:47

7 min >
 L >
 9 min >
 6 min

Travel time
47min

Departure
08:10

Arrival
→ 08:57

MaaS Building Blocks

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Antwerpen

Location data & Routing

Provided by the city so that it's inline with our own goals

Ticketing

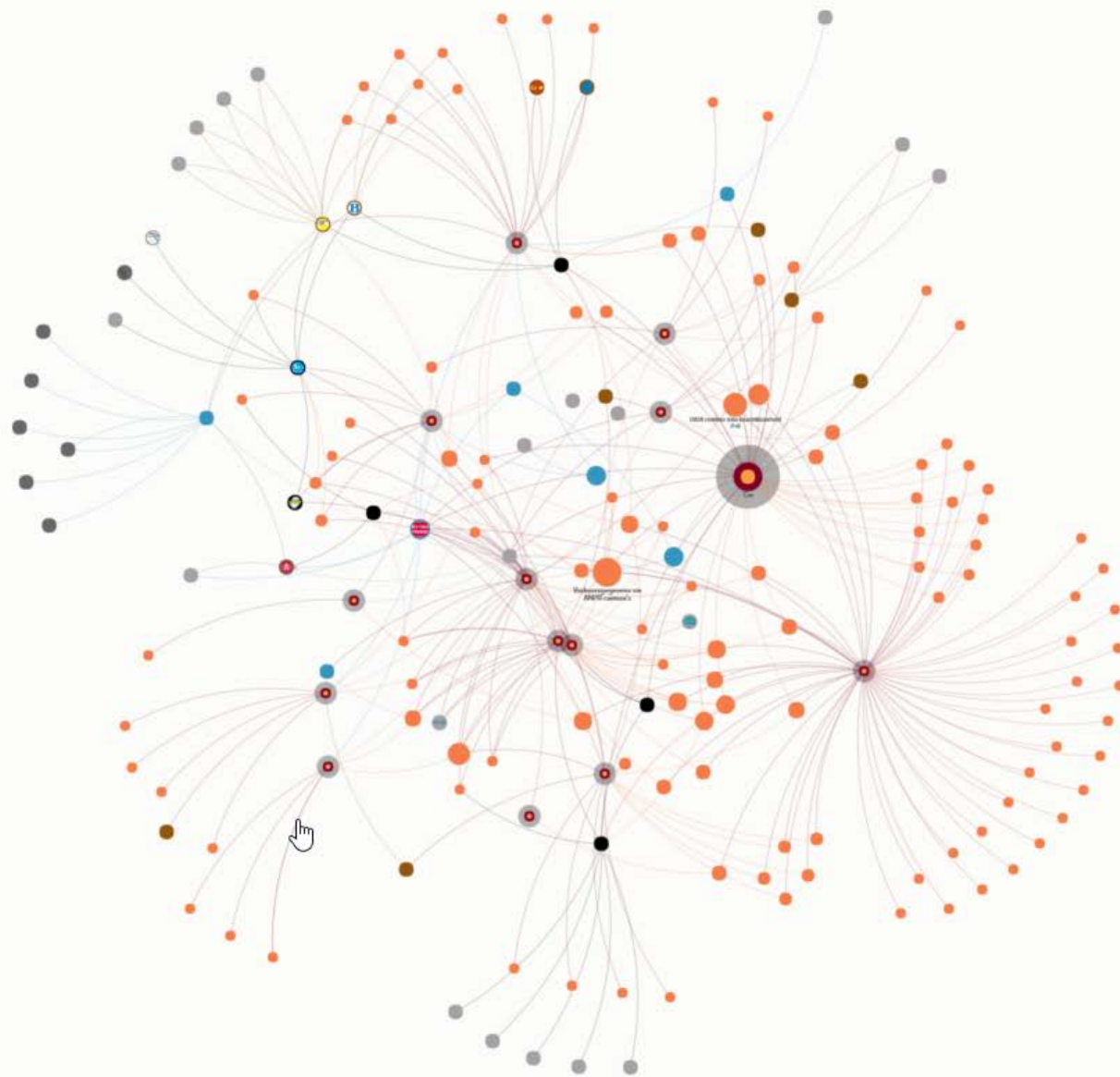
Push towards open ticketing through legislation

Mobility/Service Providers

Negotiate and bring together the various players in the field

Users

Provide test users and use communication channels to push MaaS-providers into the market



Legend

- App
- Company
- Public Institute
- Dataset
- Project
- Mode of Transportation



Location data & Routing

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GIS Data

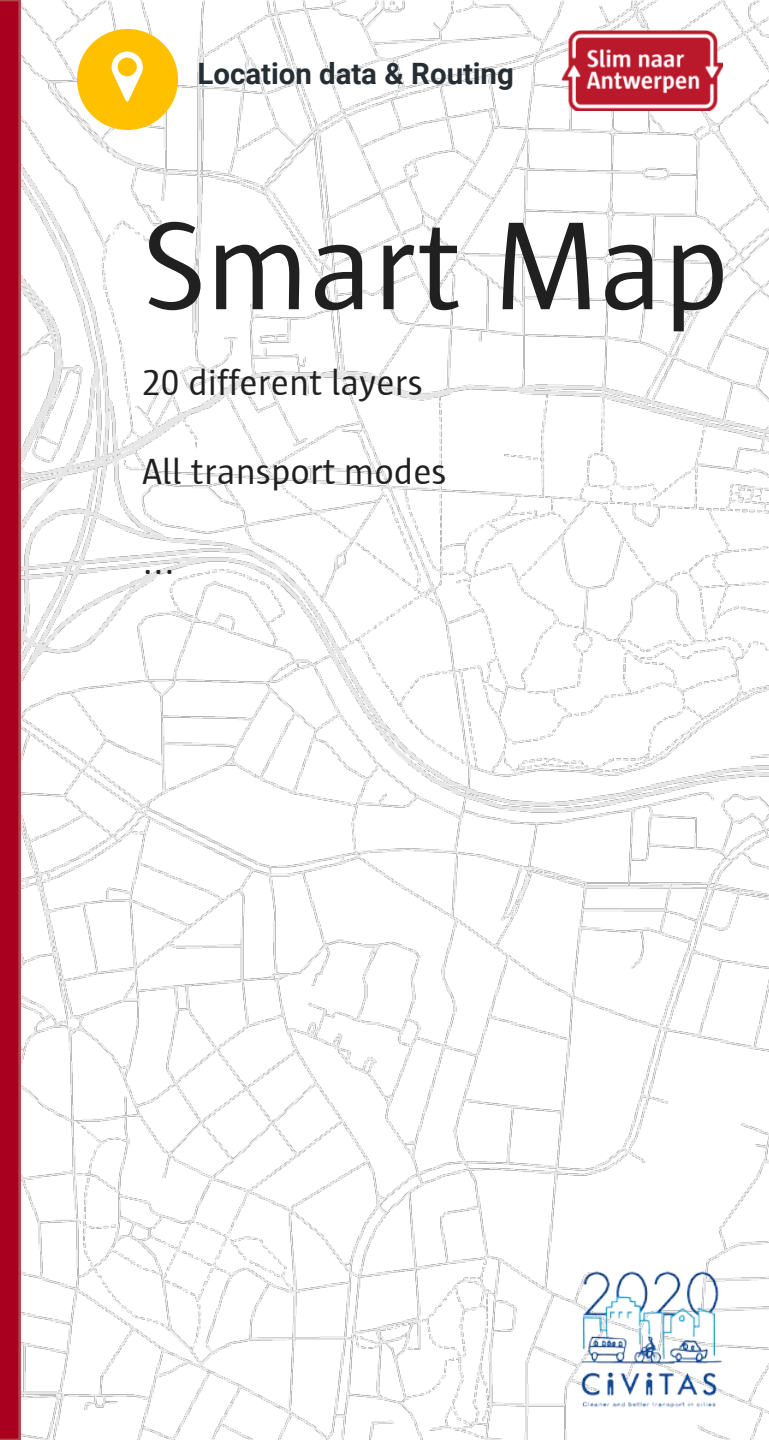
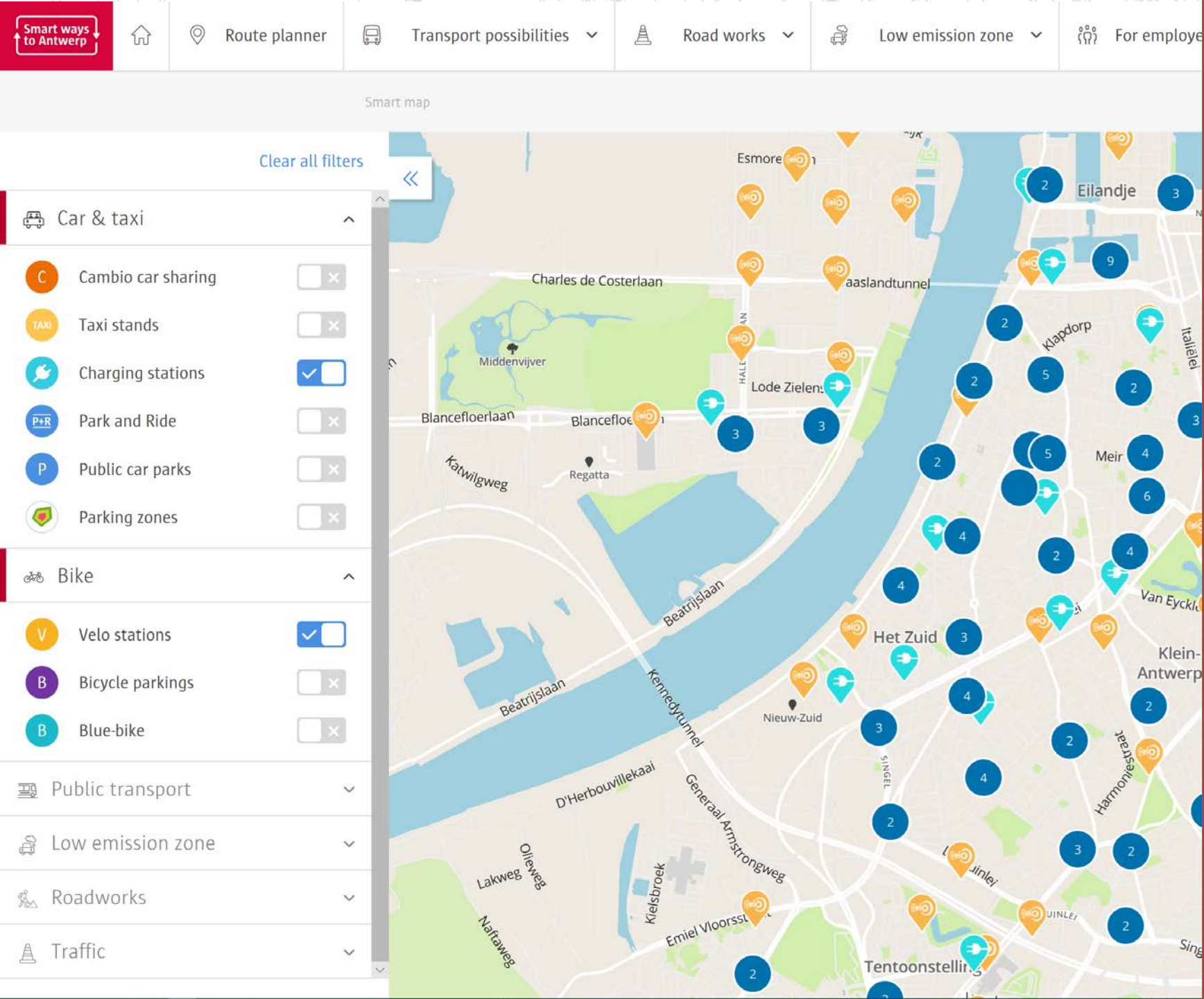
Geographic layer: streets, parking, LEZ, charging infrastructure,...

Dynamic Data

Schedules, historic traffic information, ...

Real Time data

Location of busses, floating car sharing, Velokes, taxi availability,...





Location data & Routing

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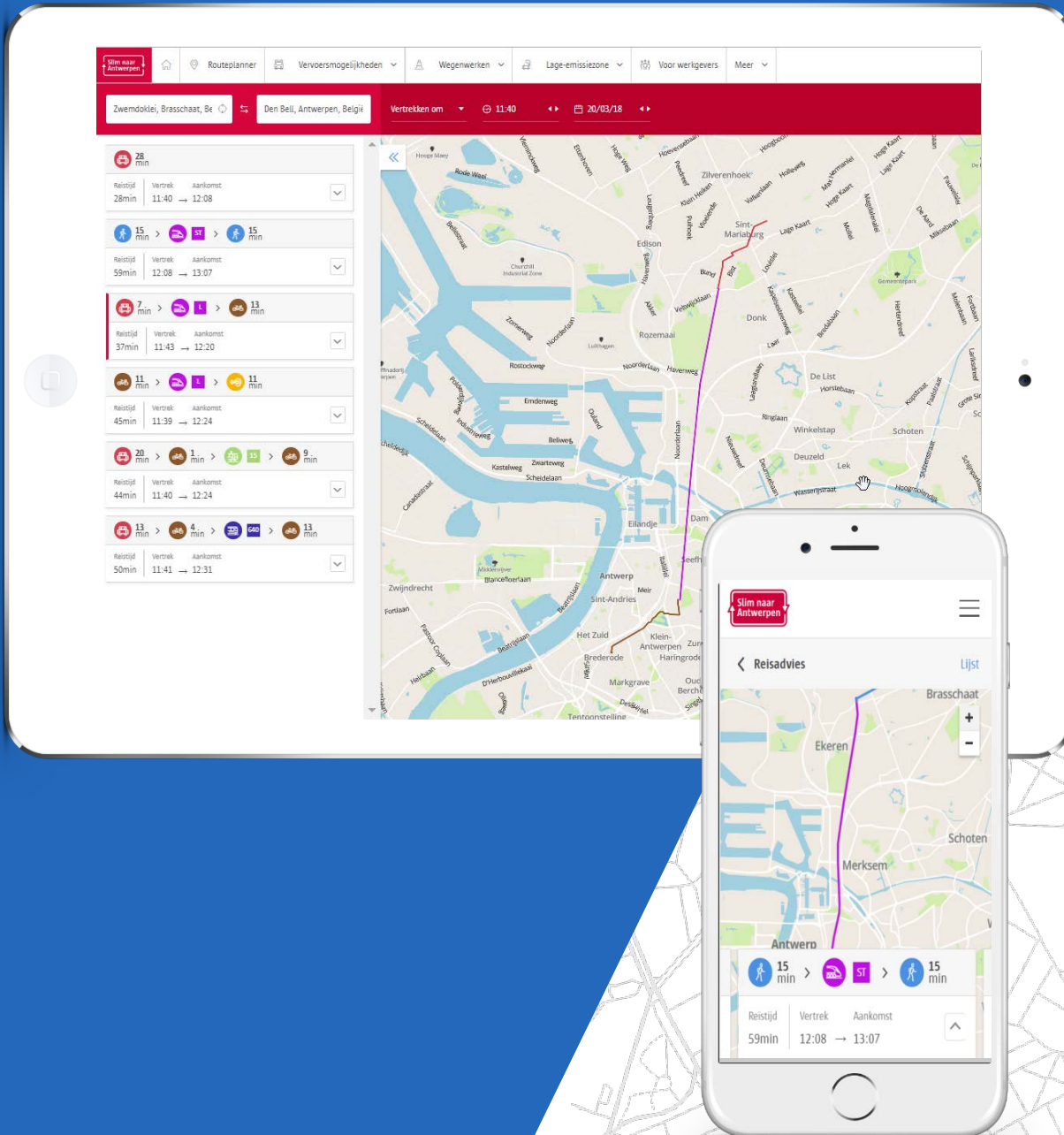
REAL MULTIMODAL ROUTEPLANNER

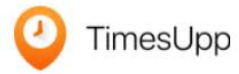
First of its kind

Only routeplanner that combines multiple modes in one trip

Mobile/App

Native iOS/Android app with extra possibilities (local storage, no need for online profiles)





Mobility/Service Providers

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Marketplace for Mobility

We've created a marketplace for mobility where companies can offer their services and get exposure in return.

Lessons Learned

My personal take, does not necessarily reflect policy

01

Communication is key!

All elements within the UX have to fit and work together to make it all work.

02

Public Transport is important...

Backbone of a good mobility policy is public transport. If frequency and reliability is good, no other services are needed.

03

... but hardest to move.

Difficult to obtain data because of management, old infrastructure,...

04

Cross borders

A lot of borders have to be broken down.

05

New players rock...

Willingness of new players to contribute and collaborate is high

06

... but need guidance

However, it is not always clear if they really provide added value to the city goals.

07

It's a AND AND AND Story...

All elements within the UX have to fit and work together to make it all work.

08

Car is part of the solution

Autonomous driving vehicles, car sharing, carpooling,... Sillo's car vs rest.



AMPaaS

Antwerp Mobility Platform as a Service

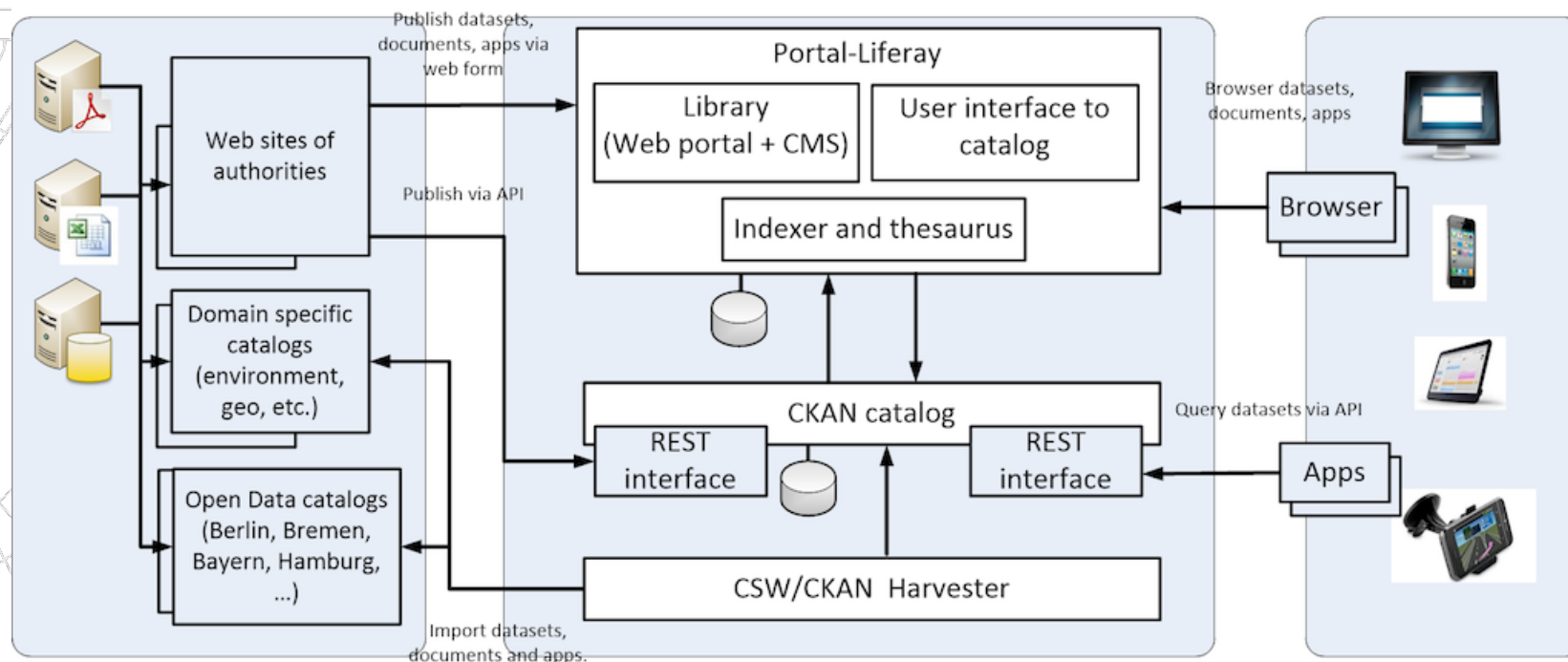
AMPaaS

Antwerp Mobility Platforms-as-a-Service

Administration and domain
specific catalogs

Open Government Platform
for Germany

End users and app
developers



Platform architecture still to be
further defined.

GIS Data

Geographic layer: streets, parking, LEZ, charging infrastructure, ...

Dynamic Data

Schedules, historic traffic information, ...

Real Time data

Location of busses, floating car sharing, Velokes, taxi availability, ...

Internal City Data

External Data

User Data

Policy Data

Regulatory Data

Rights Management

open data

Data Driven Policy

Reporting and analytics of measurements based on real data.

Research Purpose

Usable for research purposes and innovation

End Users

Civilians, organisations, ... can consult all data en build their own application.

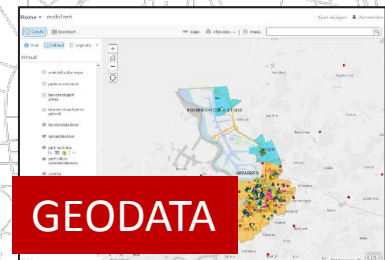
AMPaaS

Already available data

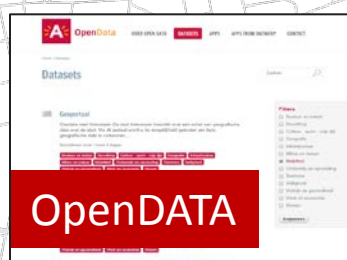
ANTWERP



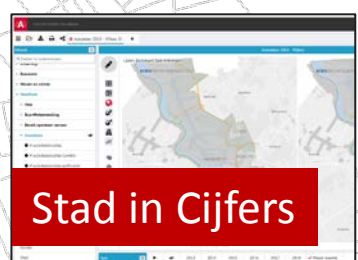
OpenGEODATA



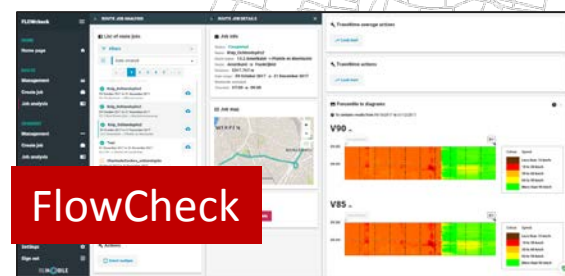
GEODATA



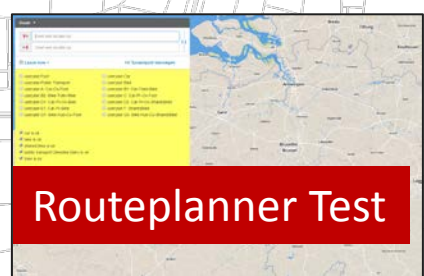
OpenDATA



Stad in Cijfers



FlowCheck

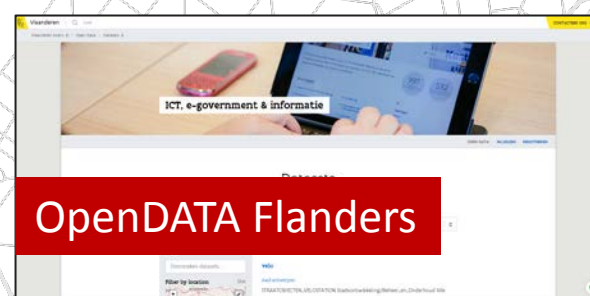


Routeplanner Test

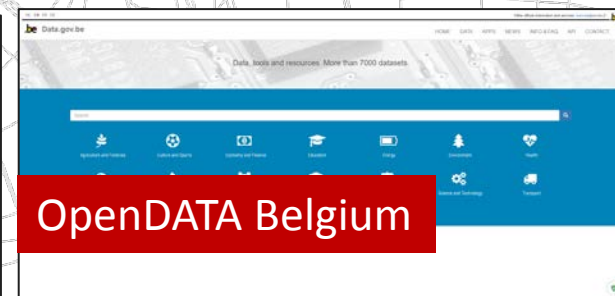


Traffic Events Editor

OTHERS



OpenDATA Flanders



OpenDATA Belgium



OD BXL



OD WL

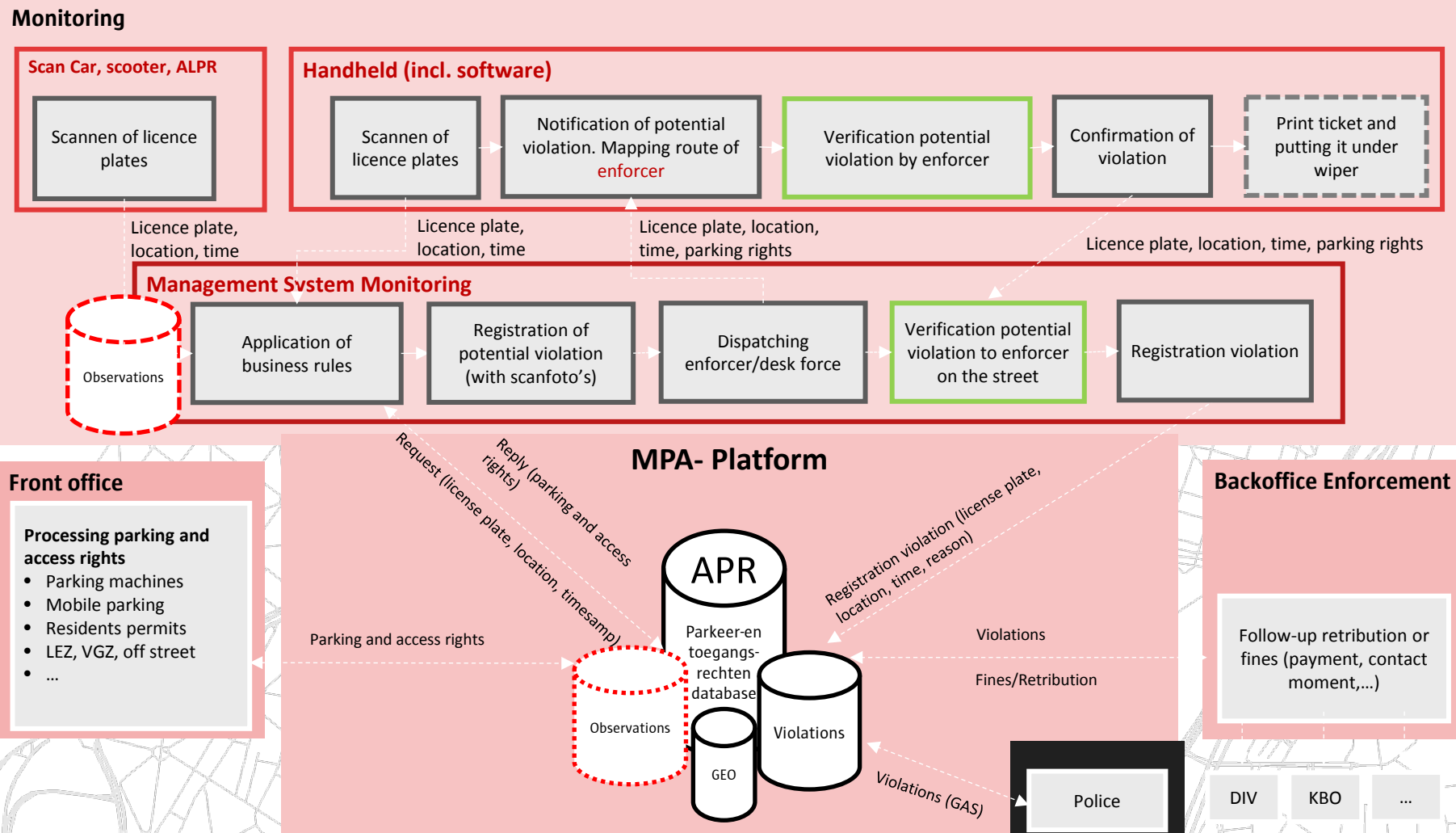


OD BXL2

AND MANY MORE!!!!

APTR

Antwerps Parkeer en ToegangsRegister



Antwerp Parking and Access Registry.

DaaCO & RoC

Data-as-a-Challenge&Opportunity + Role of
City

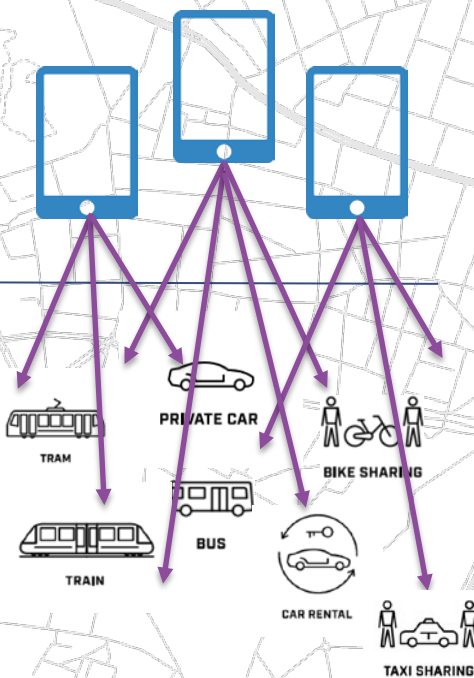
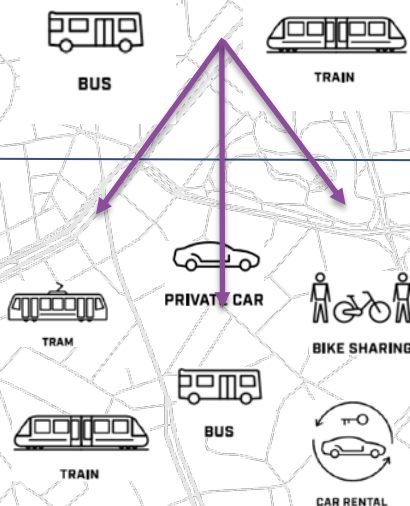
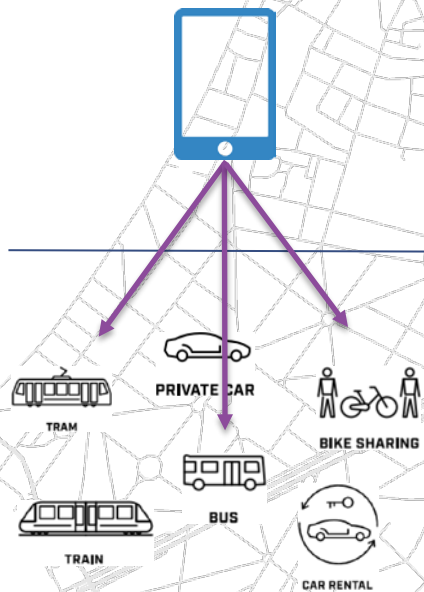
Some personal ideas and notes

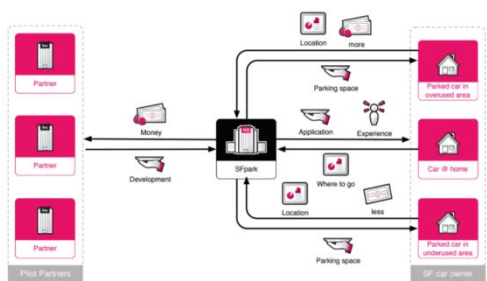
Winner takes it all

Public transportation takes it all

Roaming ecosystem

ABOUT THEIR BUSINESS





Business Model

How do they make money?

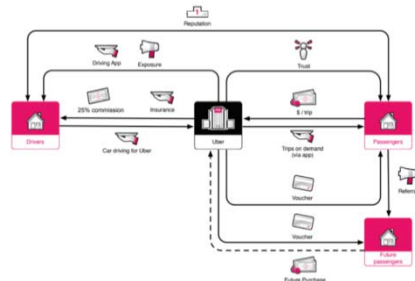
SFpark makes money by providing parking spaces in San Francisco city area. Parking prices are incrementally raised or lowered in 15 park areas based on demand.

Other companies with similar business model.

- www.moonlightapp.com
- www.bicimg.ca
- www.mobi.com

Business model characteristics.

- Open Data
- Dynamic Pricing Model
- Public Service
- Match Demand/Supply



Business Model

How do they make money?

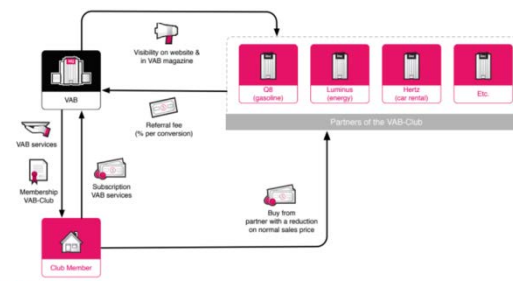
User charges a 25% commission on all the rides made through its service. All rides are booked through the app and the majority is paid via credit card.

Other companies with similar business model.

- https://www.lyft.com/
- https://www.rideeez.com/
- https://intcityrides.com/

Business model characteristics.

- Platform based
- Crowd based



Business Model

How do they make money?

VAB receives referral fees when Club members pay something to partners and the club creates value for its members giving VAB a competitive advantage.

Other companies with similar business model.

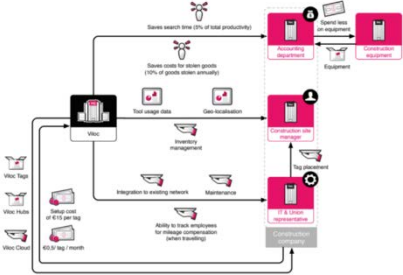
- www.carnistand.com

Business model characteristics.

- Online community
- Subscription Service
- B2B2C
- Broker Model

Slim naar Antwerpen

- Economical buyer
- User buyer
- Technical/Legal buyer



Business Model

How do they make money?

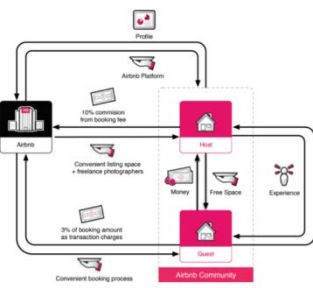
- As a setup cost, construction companies pay €15 per tag.
- The service provided by VILOC (cloud, data aggregation, integration on Google Maps, WebApp) is priced at €0.5 per tag per month.

Other companies with similar business model.

- What is the % stolen or lost tools per year?
- Free budget of €300,000 for implementation
- Feasibility of ROI (takes approximately 15 months)

Business model characteristics.

- Product-Service combination
- Subscription based



Business Model

How do they make money?

Providing the platform for "free", Airbnb takes a flat 10% commission on the booking amount and charges 3% transaction costs to guests for every booking they make.

Other companies with similar business model.

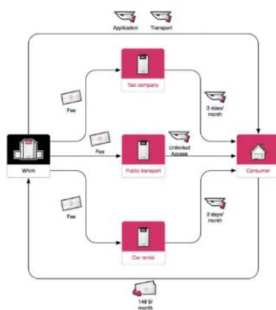
- www.getyourguide.com
- www.outback.com
- www.apartotels.com
- www.thestayfront.com

Business model characteristics.

- Personal Reviews
- P2P model
- Online community
- Broker model

ABOUT BUSINESS

Which business models will prevail?



Business Model

How do they make money?

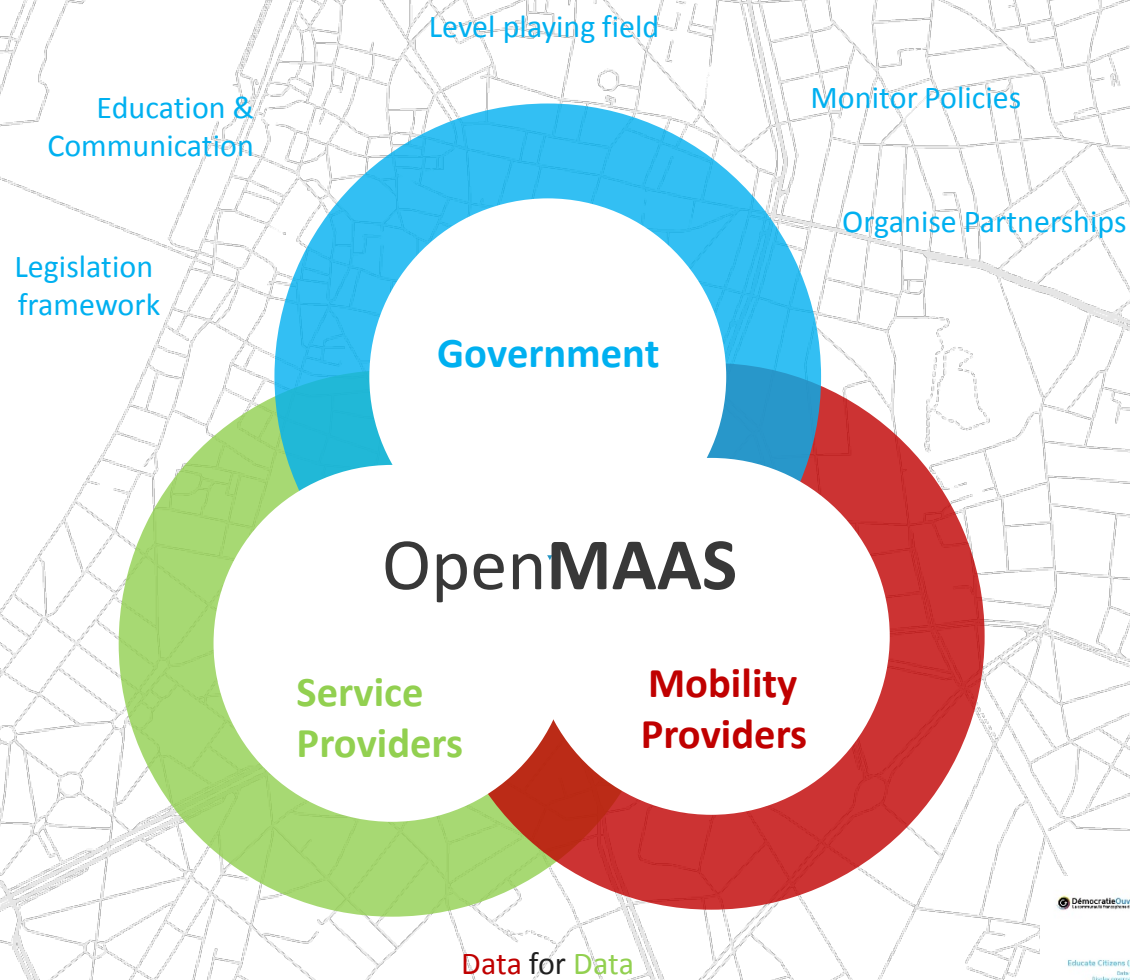
Whim buys bundles of tickets from public transport companies, and usage rights of car sharing and bike sharing both at discounted price. It then sells them to customers in monthly packages.

Other companies with similar business model.

- Netflix

Business model characteristics.

- P2P (peer-to-peer) Business Model
- Broker Model



ABOUT OUR BUSINESS

What will be the role of governments?



City DNA

Mobility String

Infrastructure
String

...



Energy String

...

City (M)DNA

(Mobility DNA not $C_{11}H_{15}NO_2$)

Define parameters based on the goals you want to achieve which can then be used for route planning etc.

Eg.
Minimal driving distance
Accepted biking distance
Mobility magnets
Preferred mode of transport
Parking regulations

Digital Law

Law in a format that is readable and
understandable for AI, Autonomous Driving
Vehicles,...

SELF PROMOTION

STIJN VERNAILLEN

City of Antwerp

Product Development/*Design*

Sustainable mobility/Sustainable cities

City planning

Maker - DIY

Cyclist (trekking bike... don't get me started)

Dad

Dreamer



Mobility Expert

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