

Innovation in bikes & MaaS

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STATEMENT 1

“In the city of the future the bike will be the means of transportation”

Agenda

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Trends

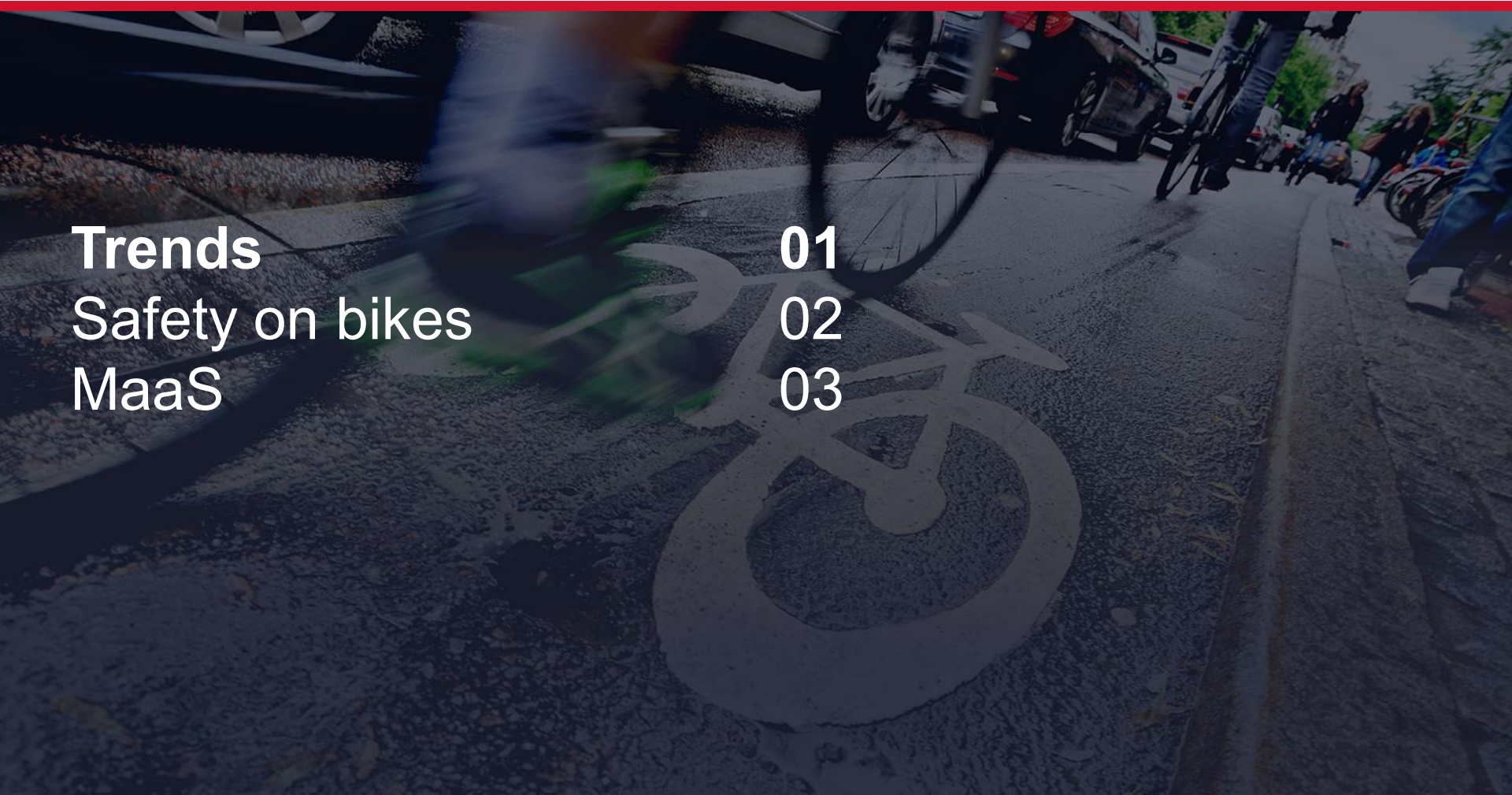
Safety on bikes

MaaS

01

02

03



Problems of modern cities

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Population growth



Increasing urbanization



Increased mobility



Pressure on the environment



Pressure on accessibility



Pressure on Safety

Solutions via mobility

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Digitization of mobility



Modal shift



Smart mobility



Electrification



Autonomous driving

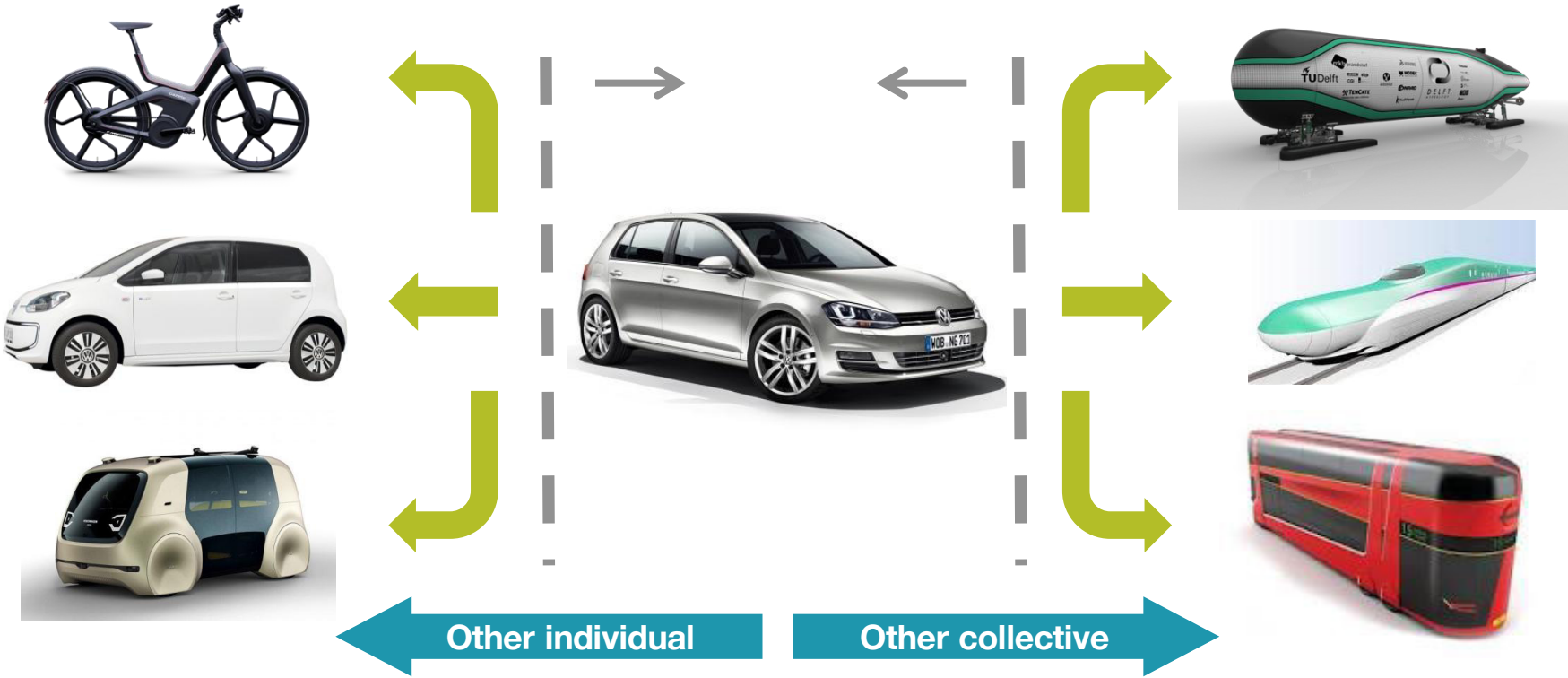


Use-based payment



Freedom of choice of consumers

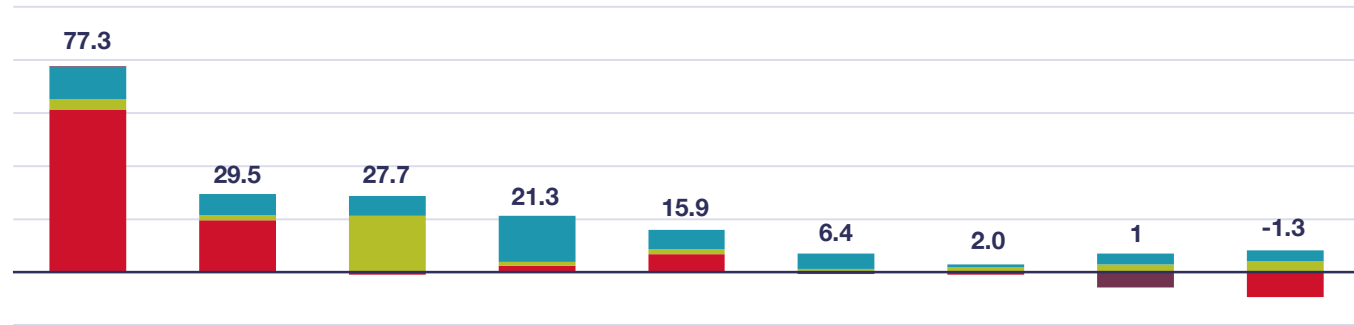
Citizens are choosing differently



Freedom of choice? How?



Based on costs?

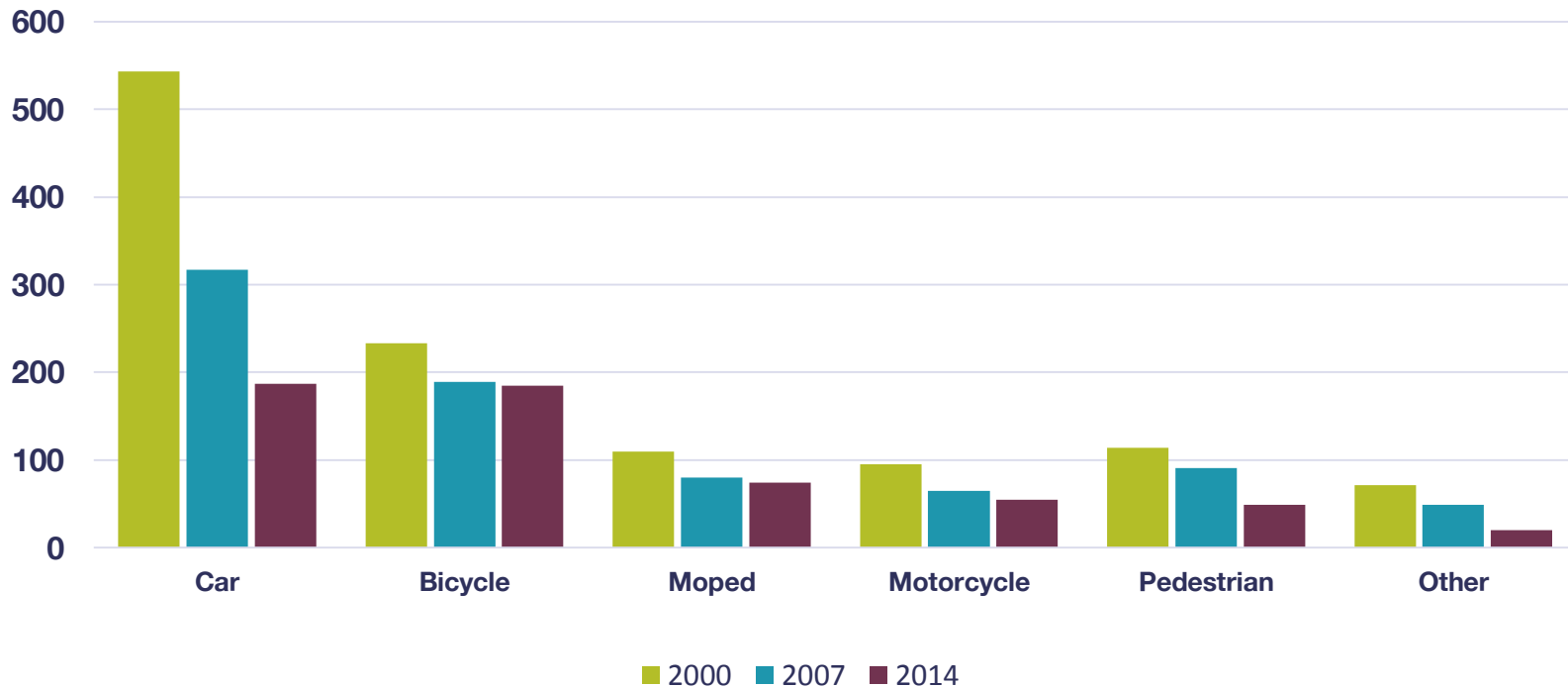


Euro cents per passenger kilometre	Bus	Tram	Moped	Train	Metro	Coach	Aeroplane	Bicycle	Car
■ Subsidies	61.2	19.6	-0.9	2.5	6.8	-0.7	-0.9	0.3	-9.5
■ External costs	3.8	1.8	21.1	1.3	1.8	1.1	1.9	2.6	4
■ Infrastructure costs	12.4	8.1	7.5	17.5	7.3	6	1	4	4.2
■ External revenue	-0.1	0	0	0	0	0	0	-5.9	0
Government costs in billions of euros	2.8	0.3	0.3	4.1	0.2	0.6		1.0	11.6
Government revenue in billions of euros	0.06	0	0	0.3	0	0.1		0.5	12.8

Source: TUE, VU

Concerns about safety

Fatalities per modality in the Netherlands, 2000, 2007 and 2014



A man wearing a hat and a woman are riding bicycles on a paved path. The man is in the foreground, looking back towards the woman. The woman is in the background, riding away. The scene is dimly lit, suggesting dusk or dawn. The background shows some trees and a street lamp.

STATEMENT 2

“Technological innovations will have a positive effect on cyclist safety”

Agenda

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Trends

01

Safety on bikes

02

MaaS

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Road to safe cycling

From vehicle perspective



Cyclist airbag

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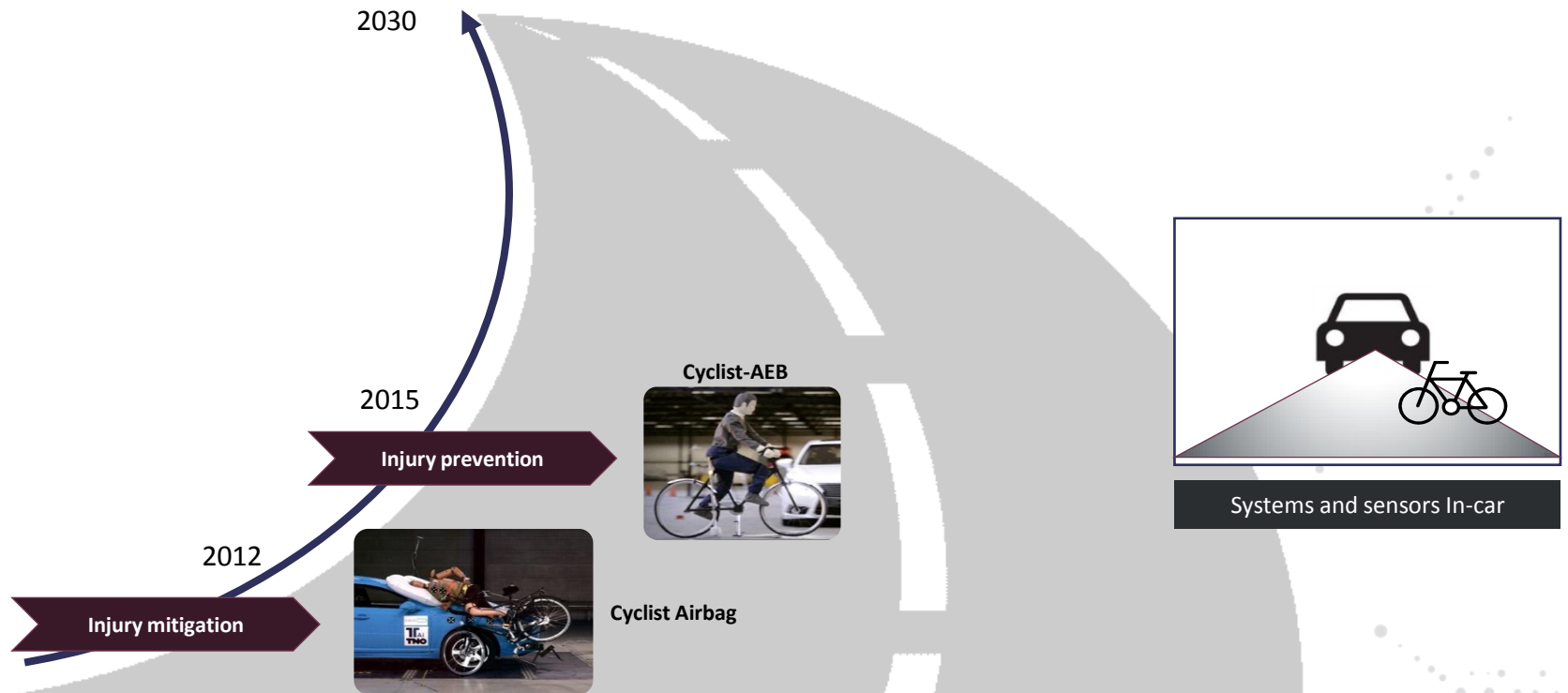


Cyclist airbag

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From vehicle perspective



Autonomous emergency braking (AEB)

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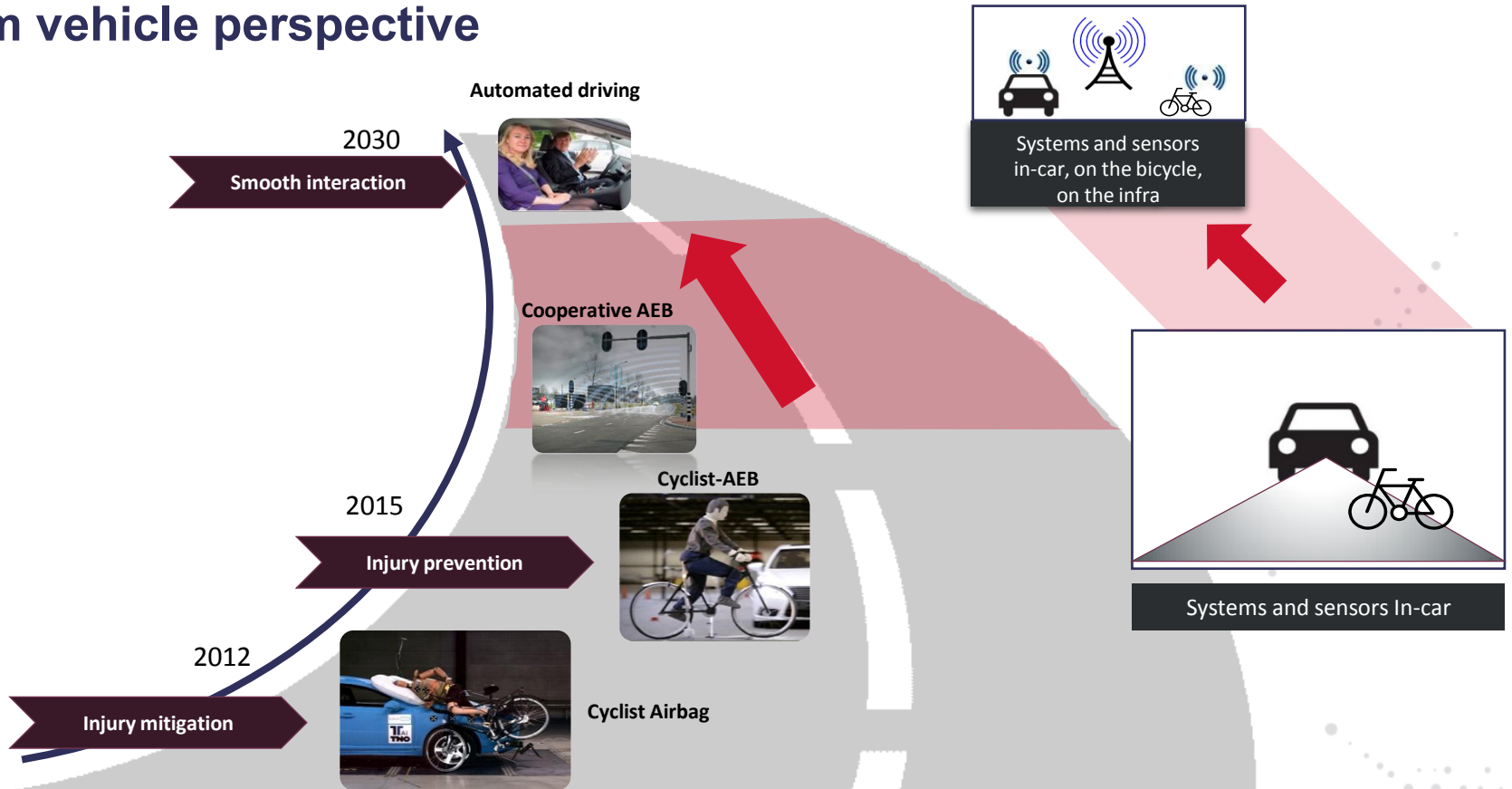
Autonomous emergency braking (AEB)

TNO innovation
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Road to safe cycling

From vehicle perspective



Bicycle 2x communication

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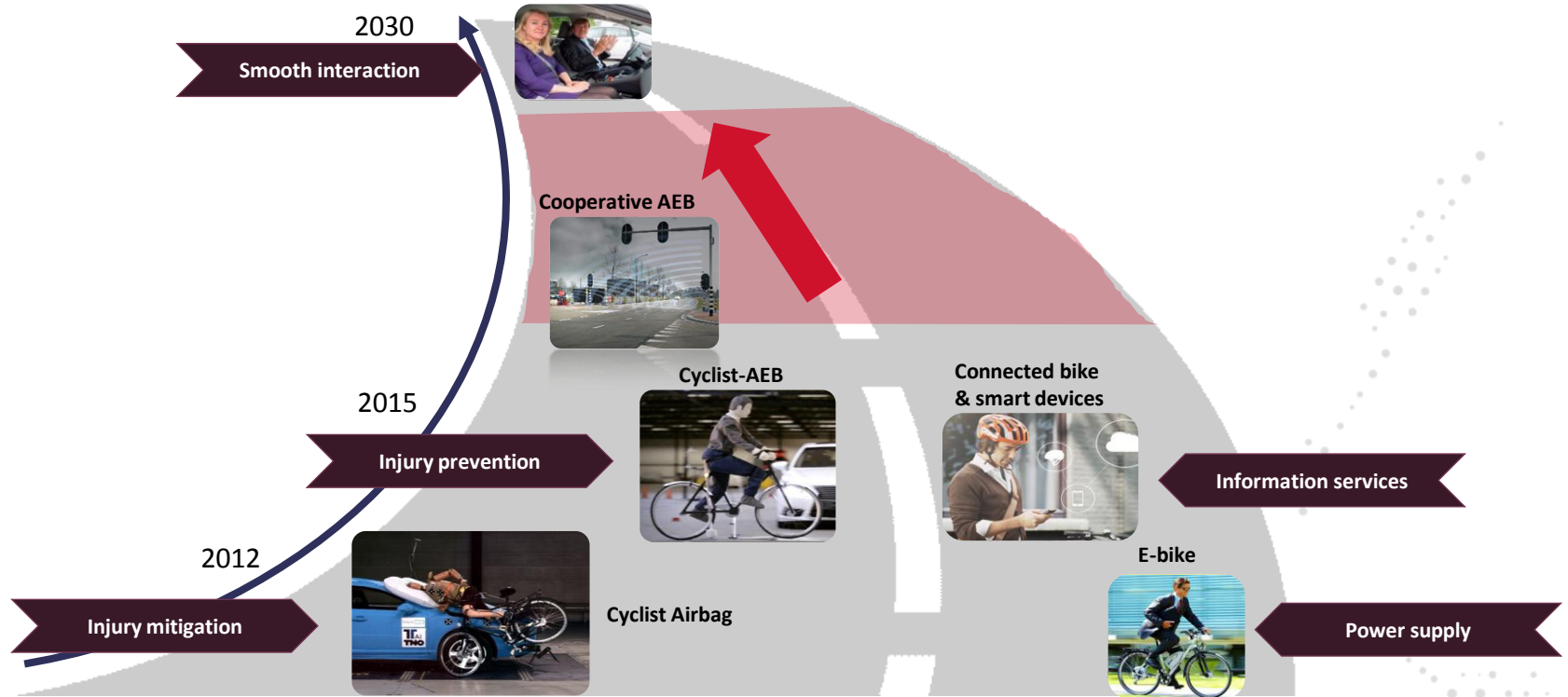
Bicycle 2x communication

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Road to safe cycling

From vehicle perspective



Information service

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Source: volvo

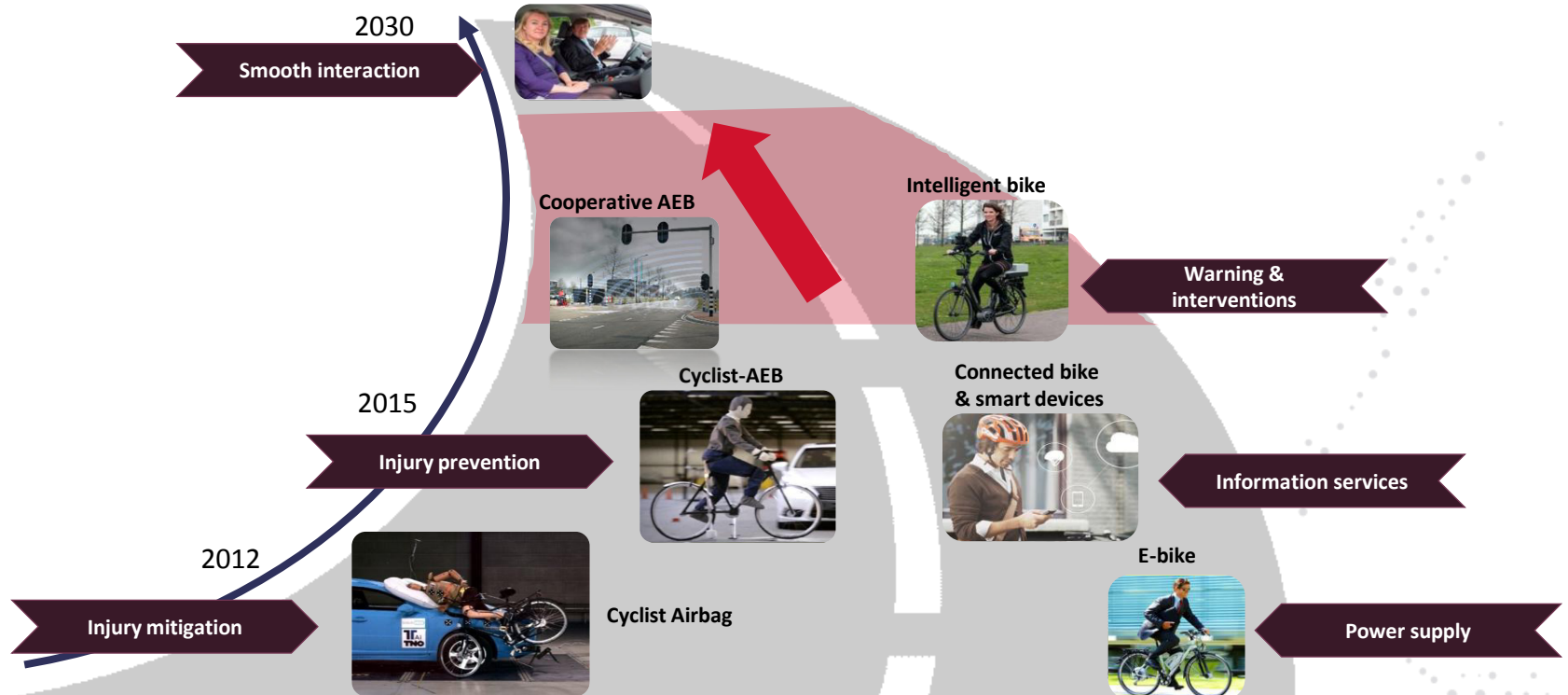


Source: SafeToBike |
Quinso • Interpolis • Frolic • SAP

Source: bike lane light

Road to safe cycling

From vehicle perspective



Self stabilizing bicycle

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Sofiets - Adjustable saddle height

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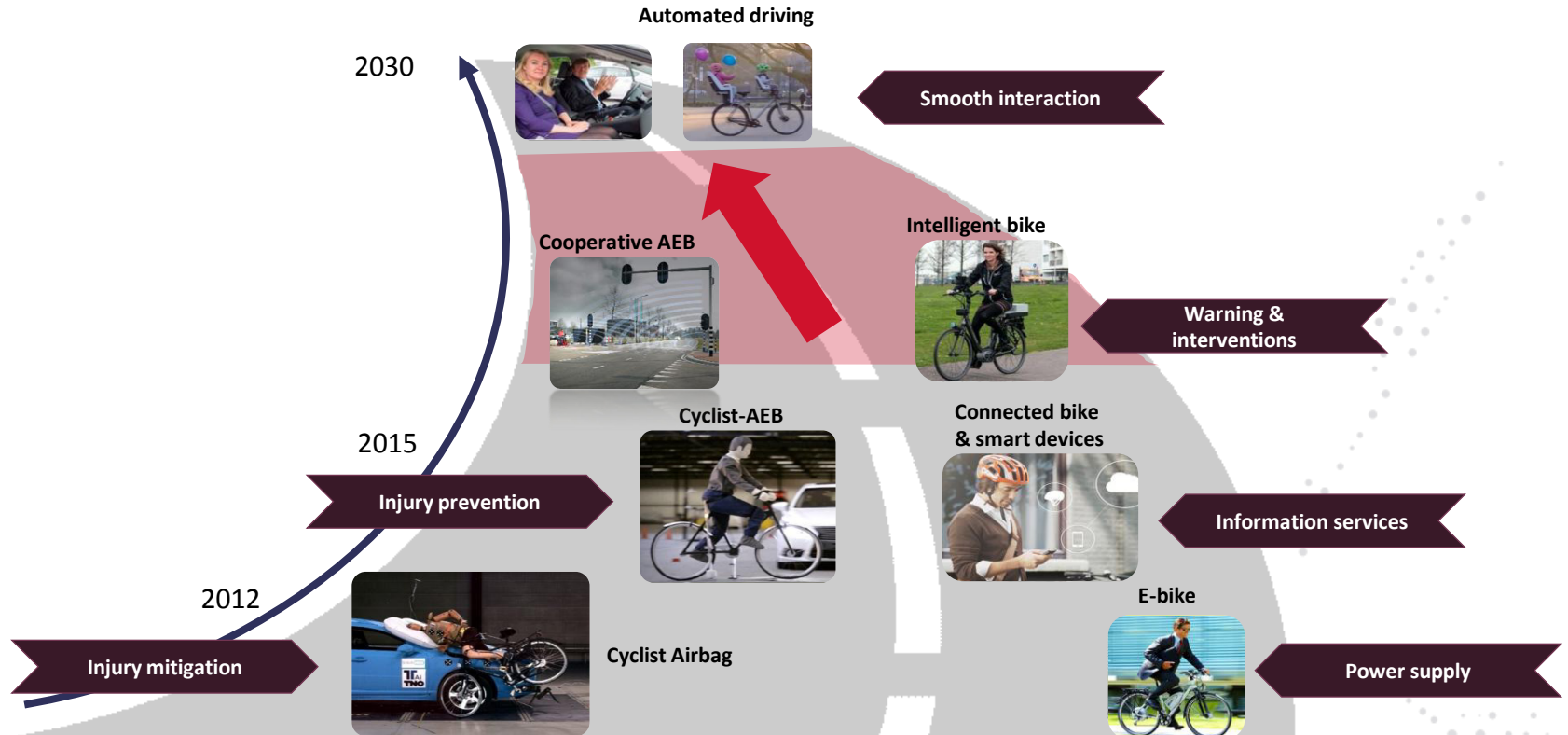
Source: Roessingh RD – sofiets

Intelligent bicycle



Road to safe cycling

From vehicle perspective



Smooth interactions

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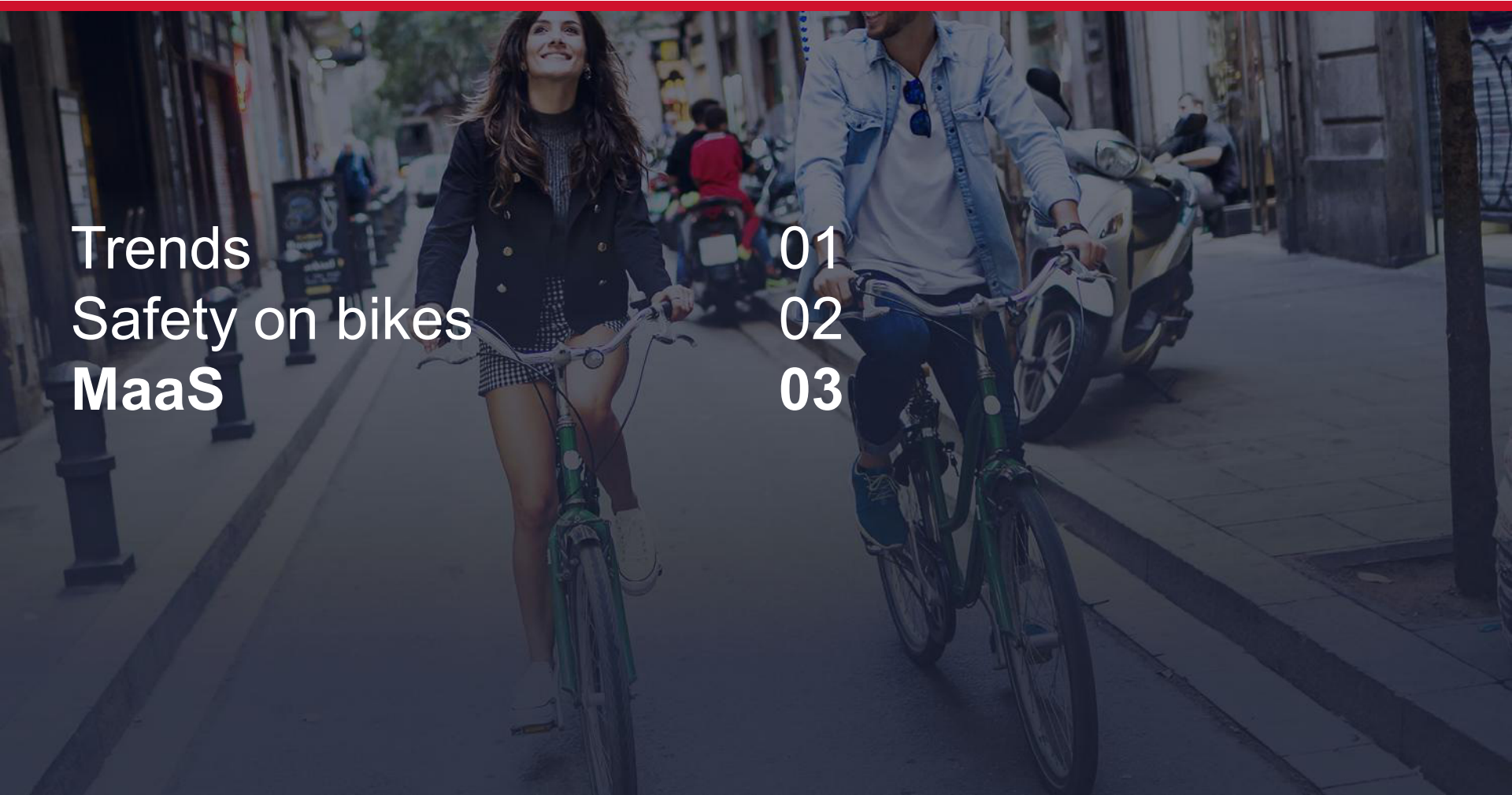
Source: TNO

A young man and woman are riding bicycles on a city street. The woman is in the foreground, wearing a black jacket and shorts, smiling. The man is behind her, wearing a light blue denim jacket and a white t-shirt, also smiling. They are riding on a paved street with buildings and other people in the background. The image has a dark blue overlay.

STATEMENT 3
**“Technology will solve all
future cities problems”**

Trends
Safety on bikes
MaaS

01
02
03

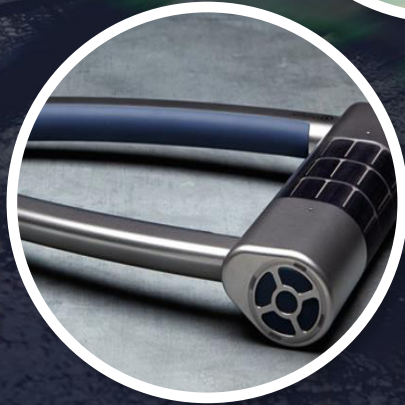
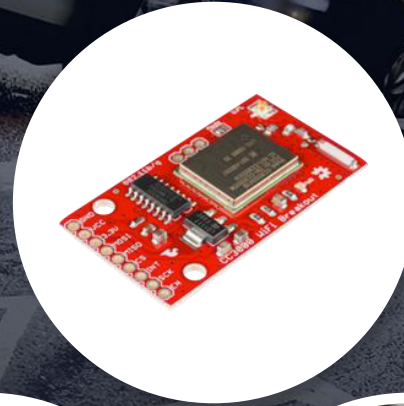


Huge amount of innovative bike technologies available....

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...but how to make them work for the city of tomorrow?



But technology can go too fast

Example : speed pedelec



Need for an integrated system



Vehicles

- Efficient drive system
- Electromobility
- CO₂-neutral mobility
- Driver assistance
- Connected vehicles

Connected Mobility concepts

- Innovative mobility concepts
- Short-distance mobility
- Seamless connections
- Micro mobility for the last mile
- Long-distance mobility

Infrastructure

- Traffic management
- Up-to-date traffic information
- Freely available parking
- Car to X
- Bike to X

Connectivity will help to make it work

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The development of the Internet blurs the boundaries between online and offline

Mobility as a Service (MaaS)

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Inform



Book



Motivate



Pay



Plan



Use



Intelligize

An aerial night view of a city skyline, featuring a prominent cable-stayed bridge with a tall, dark pylon. The city lights are visible in the background, and a dotted white path graphic is overlaid on the sky, starting from the bridge and extending upwards and outwards. The text 'next urban mobility' is centered in the upper half of the image.

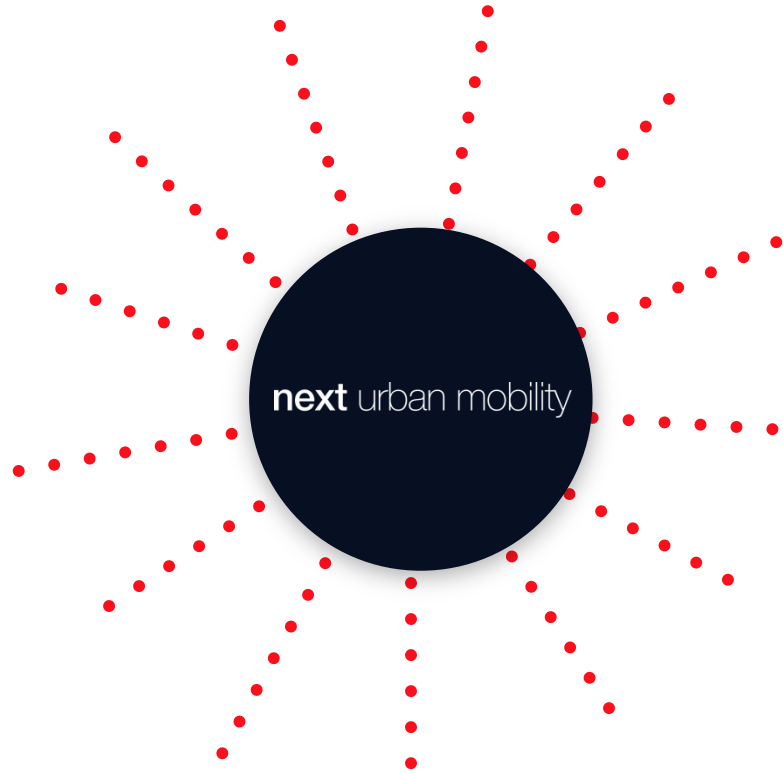
next urban mobility

A start-up with more than 40 years of experience that develops & implements smart mobility solutions for the city of tomorrow

Principles of Next

1. Change the heart of the city
through the minds of the people
2. Innovations work,
If we work together
3. Sustainable systems
that operate long term,
independent of short term policies





next urban mobility

Concrete case: Rijn-Waalpath 2020?



Concrete case: Rijn-Waalpath



COMMUTERS

- Driving behaviour and driving style score
- Peer2peer comparison and competition
- **Tax incentives based on actual vehicle and route choice**
- **Geofenced speed limiting**



NEXT Urban Mobility

- Driving style score
- Malfunctions
- Aggregated insight into sustainability and travel behaviour



AUTHORITIES

- Overview of use and mode of transport (duration, time, etc.)
- Data complies with legal requirements
- **Quantitative listing of trips and location for tax incentives**
- **Geofenced speed limiting in city**



GPS, Route, Location, Time, Other

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next urban mobility

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So, what's next?



