

# Q-Park Student Award 2023

Muziekgieterij | November 2023



# Agenda

## Welcome



Frank De Moor

14:00 – 14:10hr

## Keynote speakers



Derk Loorbach  
Lucas van Schijndel

14:10 – 15:00hr

## Discussion & Break



Theo Thuis

15:00 – 16:00hr

## Students & Awards



Giuliano Mingardo  
Jolien Meulepas  
Govert van Loon  
Rik vd Bogaerdt  
16:00 – 17:00hr

## Networking



17:00 – 18:00hr



# Mobility transition – Wikipedia says ...

- Mobility transition is
  - A set of social, technological and political processes of converting traffic and mobility to sustainable transport with renewable energy resources.
  - Integration several different modes of private transport and local public transport.
  - Social change, redistribution of public spaces, and different ways of financing/spending in urban planning.
- Main motivation is
  - Reduction of damage that traffic causes to people and the environment.
  - To make (urban) society more liveable.
  - Solving various interconnected logistical, social, economic and energy issues.





# Mobility transition – Q-Park says ...



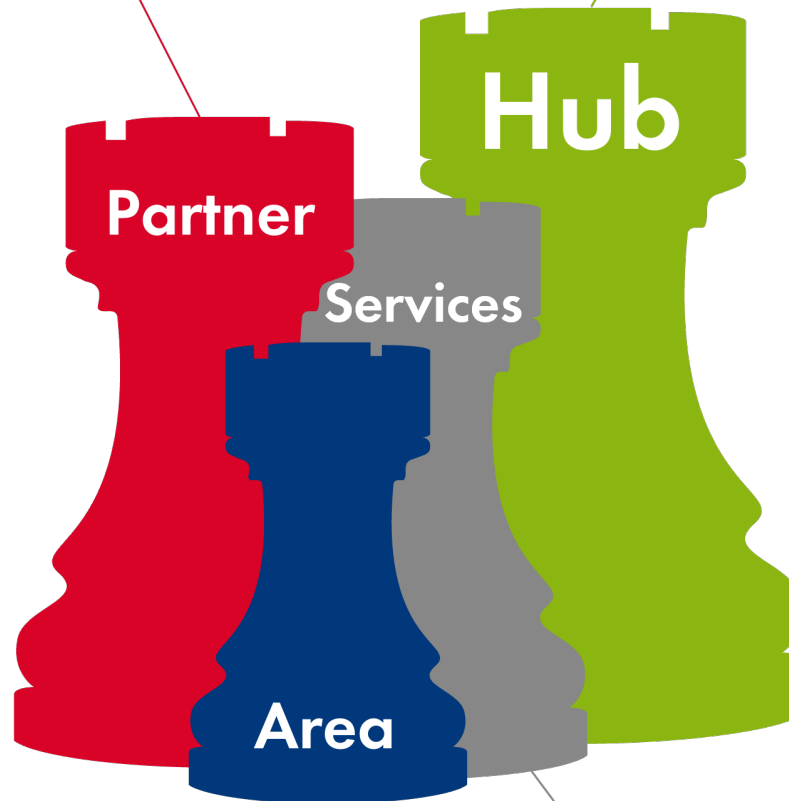
## Operator to Partner

Q-Park moves from traditional parking operator to sustainable **mobility partner**.



## Location to Area

Q-Park moves from parking facility perspective to **area perspective**.



## Facility to Hub

Q-Park moves from operating parking facilities to building **Mobility Hubs**.



## Space to Services

Q-Park moves from providing parking spaces to enabling **mobility services**.

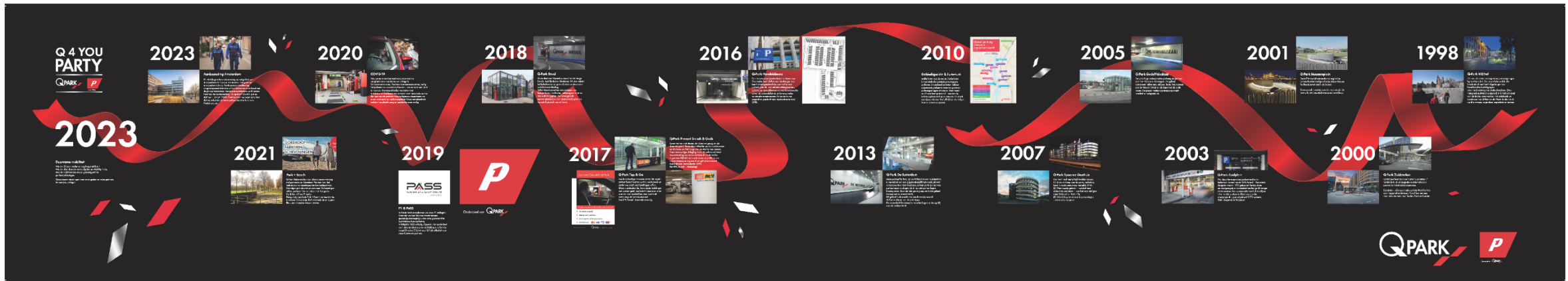
# Mobility transition – Q-Park says ...



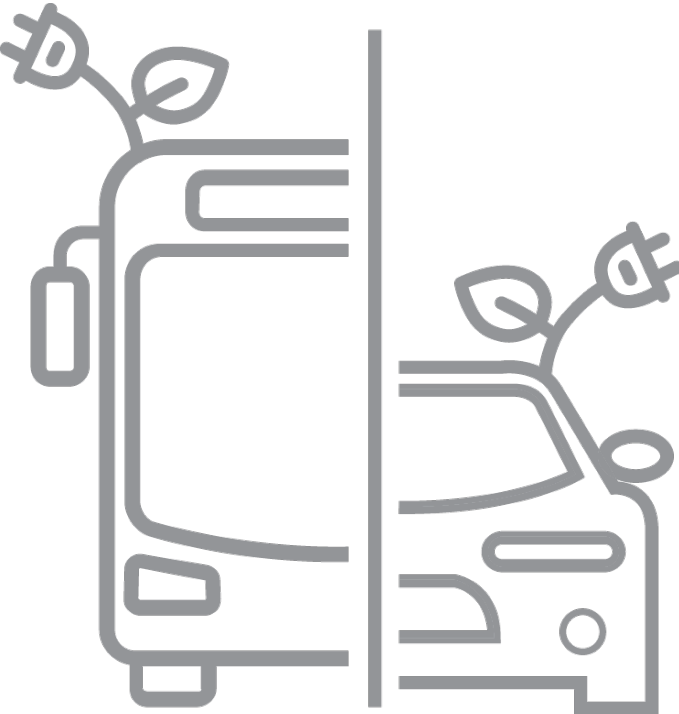
- > 150 mobility hubs in portfolio
- Q-Park Centrum (The Hague)
- Q-Park Frontenpark (Maastricht)
- Q-Park Astridplein (Antwerp)
- Q-Park Europarking (Amsterdam)
- Q-Park Mobility Hubs
  - Apps & Pre-booking (ANPR)
  - EV charging & Micro-mobility
  - 24/7 QCR & CCTV

# Mobility transition – 25 years & 10 years say ...

- Q-Park progressed over the last **25 years**
  - From owner/operator of parking spaces to Mobility Partner
  - From closed barriers to open ecosystems – working together on Urban Mobility In Transition
- Q-Park & Erasmus University Student Awards **10 years**
  - Focus on mobility and sharing academic knowledge
  - Build on mobility transition for enhanced liveability, today and tomorrow



# Mobility transition – Your ‘to go’ mug\* says ...



Public transport

Private cars



Off-street parking



E-bikes

E-scooters

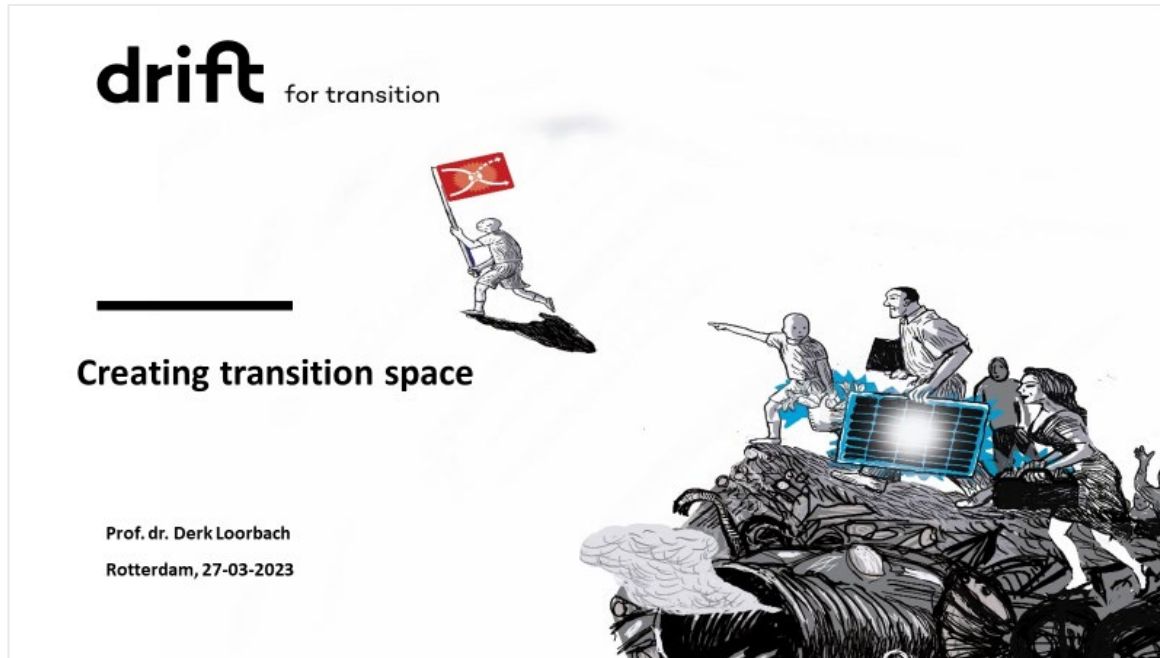


\* Made of 71% recycled stainless steel, helps reduce disposable cups, keeps coffee/tea hot 5h, keeps water/soda cold 15h.



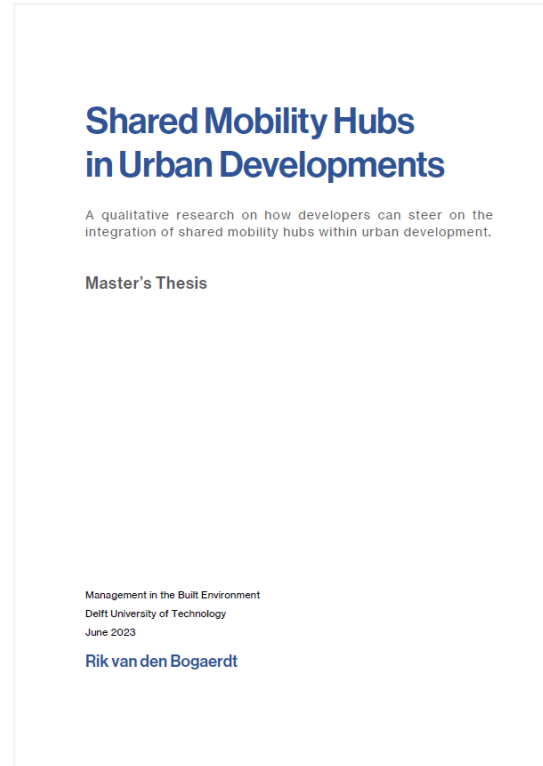
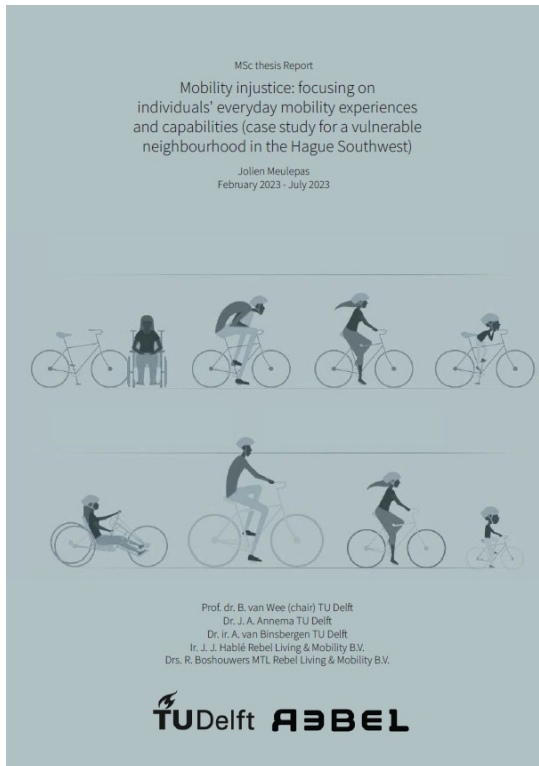
# Mobility transition – Keynote speakers say ...

- I Derk Loorbach Creating transition space
- I Lucas van Schijndel Build Your Dreams
- I Giuliano Mingardo Bridge the knowledge gap



# Mobility transition – Students say ...

- Jolien Meulepas      Mobility injustice, to plan for accessibility
- Rik van den Bogaerd      Shared mobility hubs in urban developments
- Govert van Loon      Built environment, travel behaviour and travel attitudes









# drift

for transition

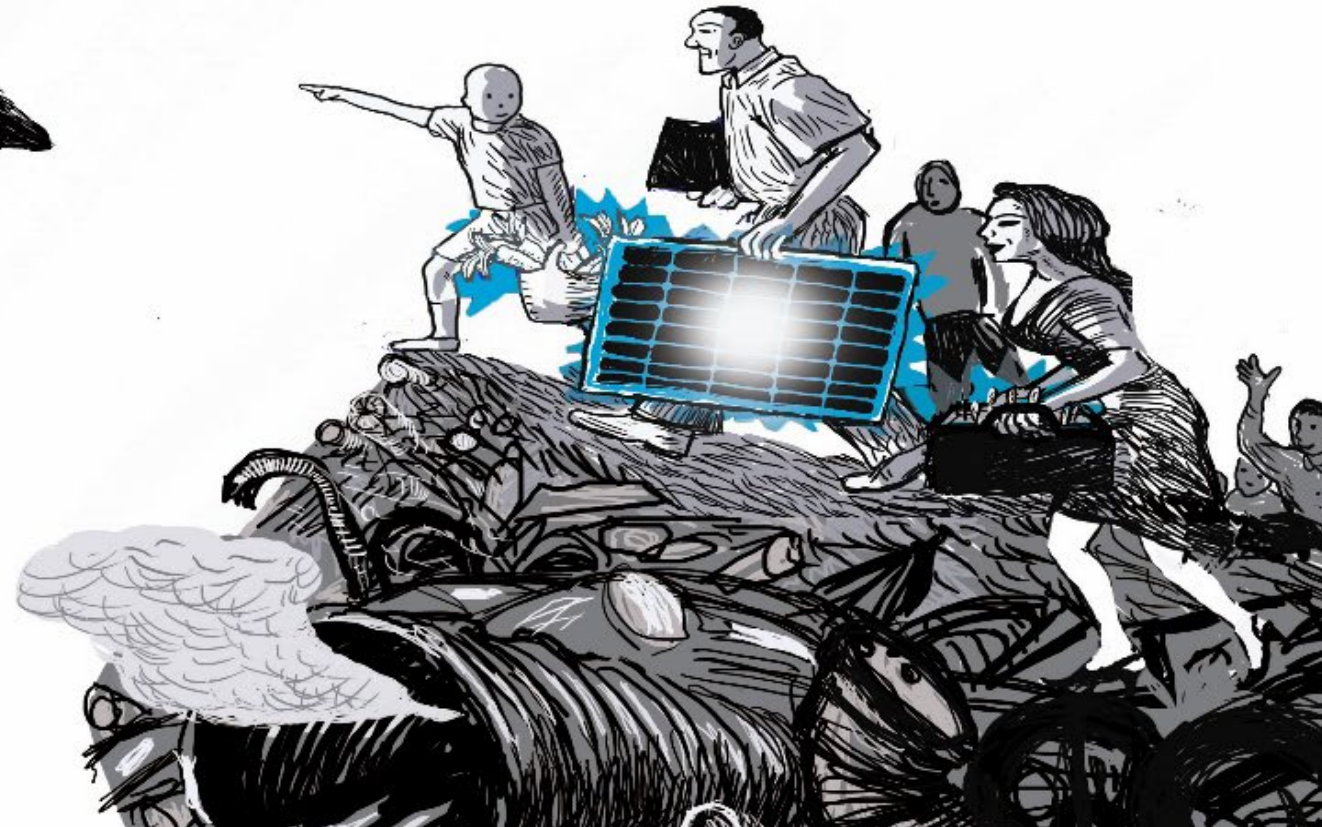


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## Creating transition space

Prof. dr. Derk Loorbach

Rotterdam, 27-03-2023





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## **Dutch Research Institute For Transitions**

Academic research, consulting,  
education, activism

Social enterprise

30+ employees

Founded in 2004

### **mission**

Accelerate and guide just  
sustainability transitions by  
developing knowledge in and with  
practice

## **Design Impact Transition platform**

Transdisciplinary and transformative  
research, education and engagement

Strategic university platform

Core team and academics with impact  
assignments

### **mission**

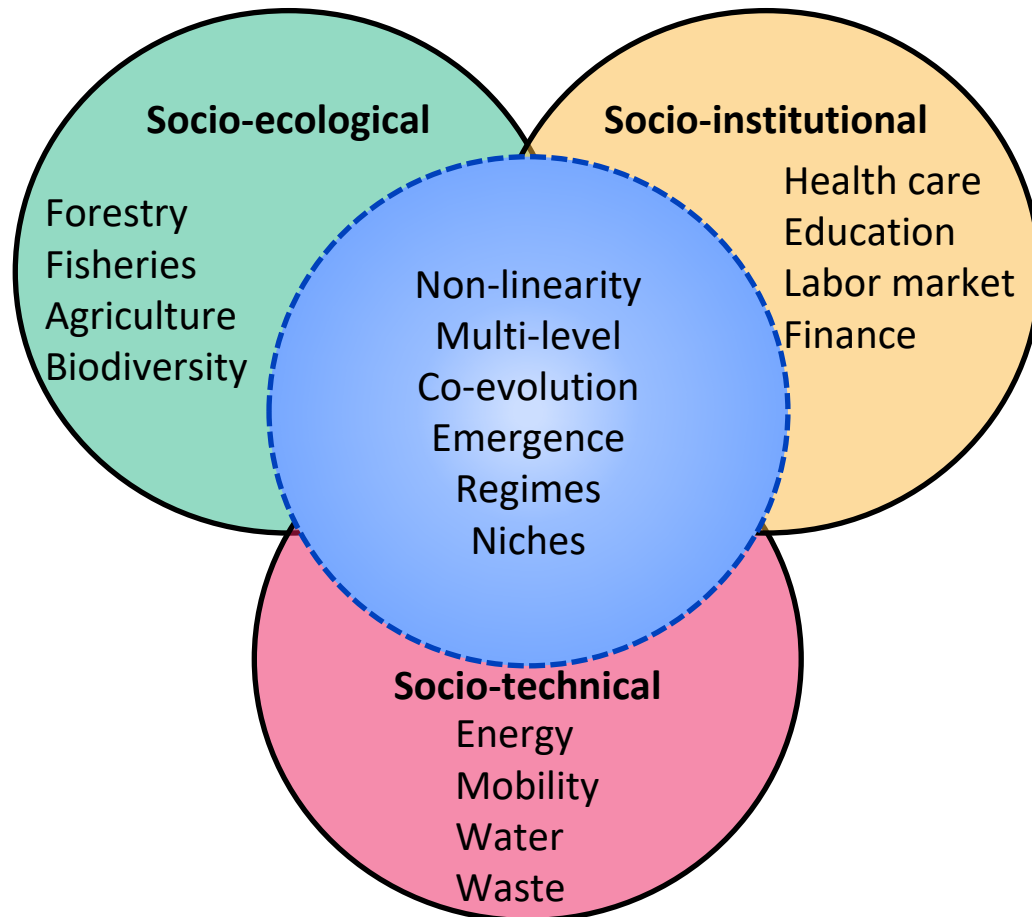
Establish and institutional space  
for transformative academic work  
at EUR



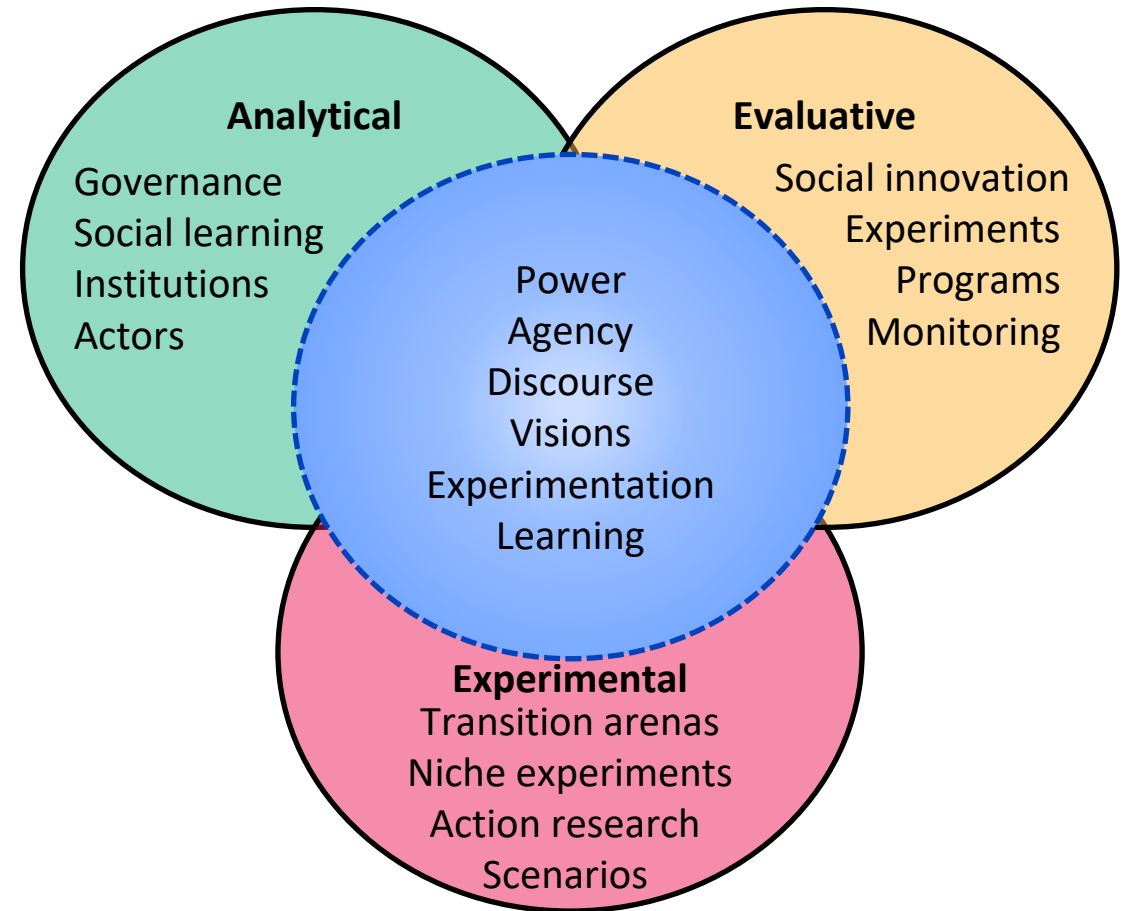




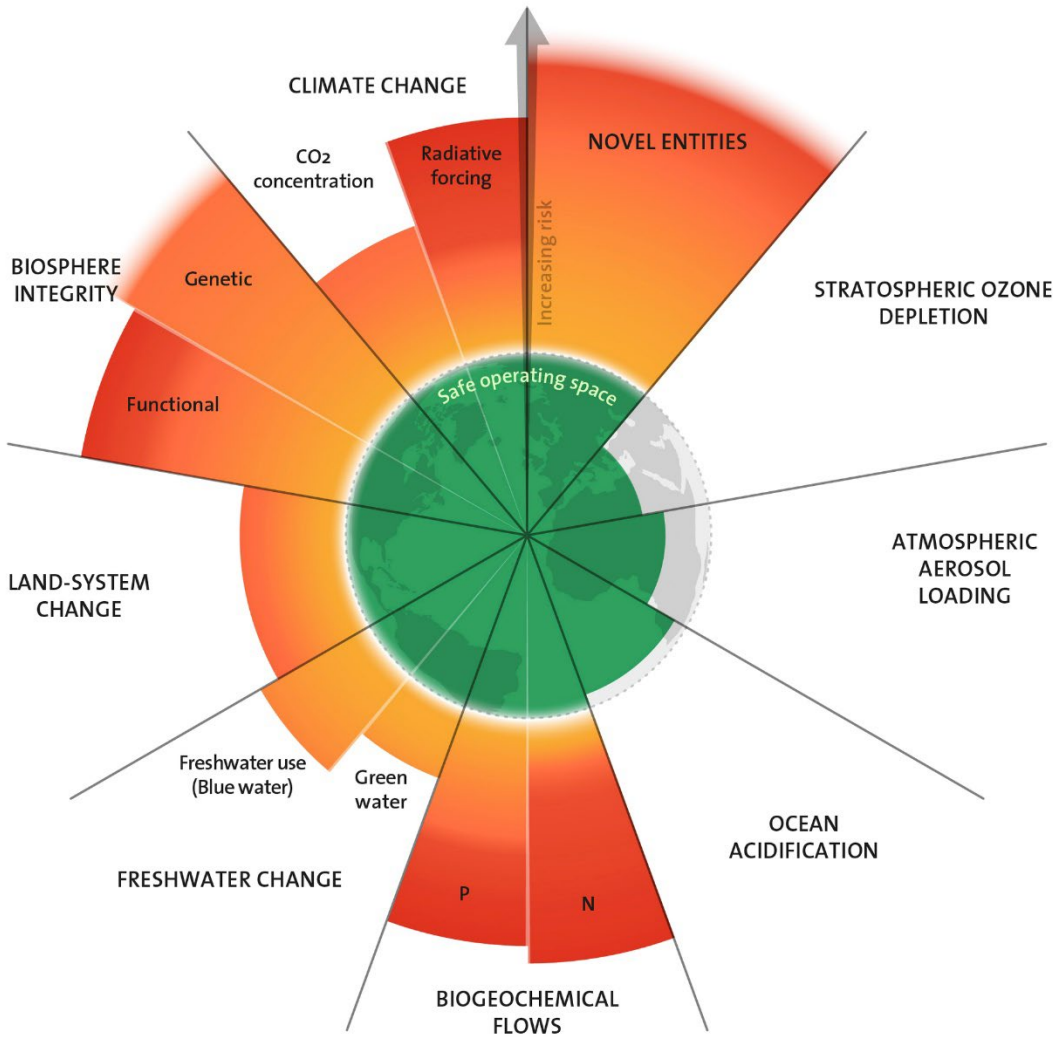
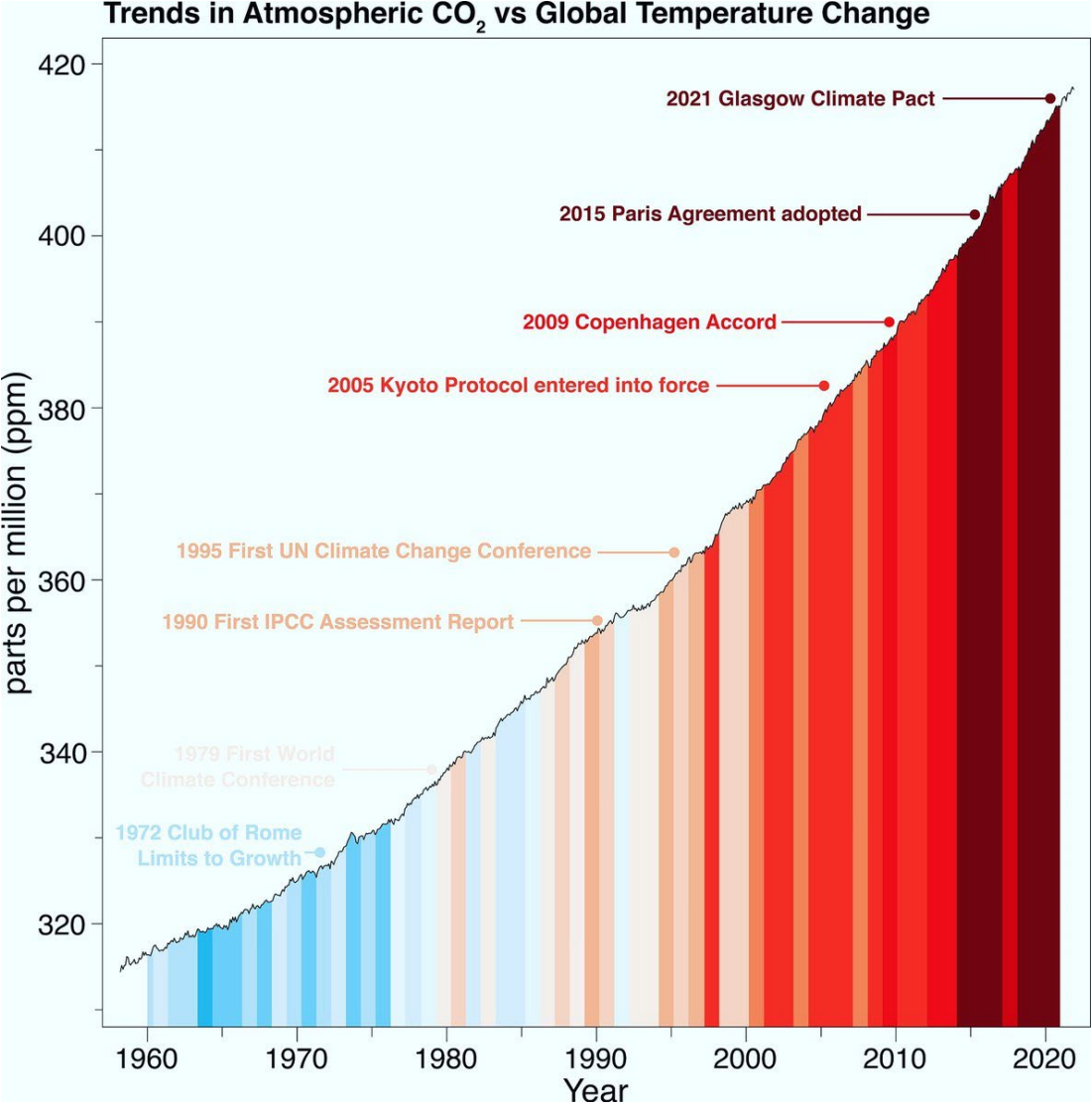
## Sustainability Transitions Research



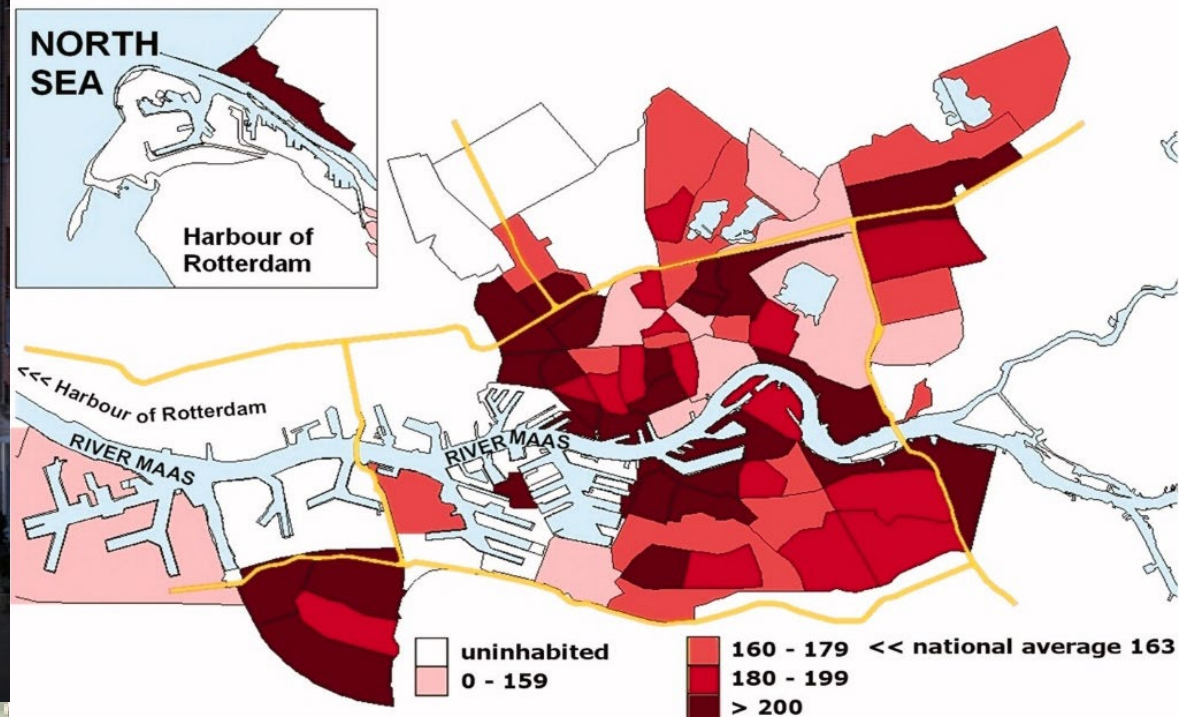
Research perspectives



Governance approaches







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# Regime

Dominant and shared ways of **thinking, organising and doing** in a societal (sub)system

**cultures:** shared values, paradigms, worldviews, discourses

**structures:** institutions, economic structures, physical infrastructures

**practices:** routines, behavior, action, lifestyles



# The dominant paradigm in policy and management

Implementation illusion

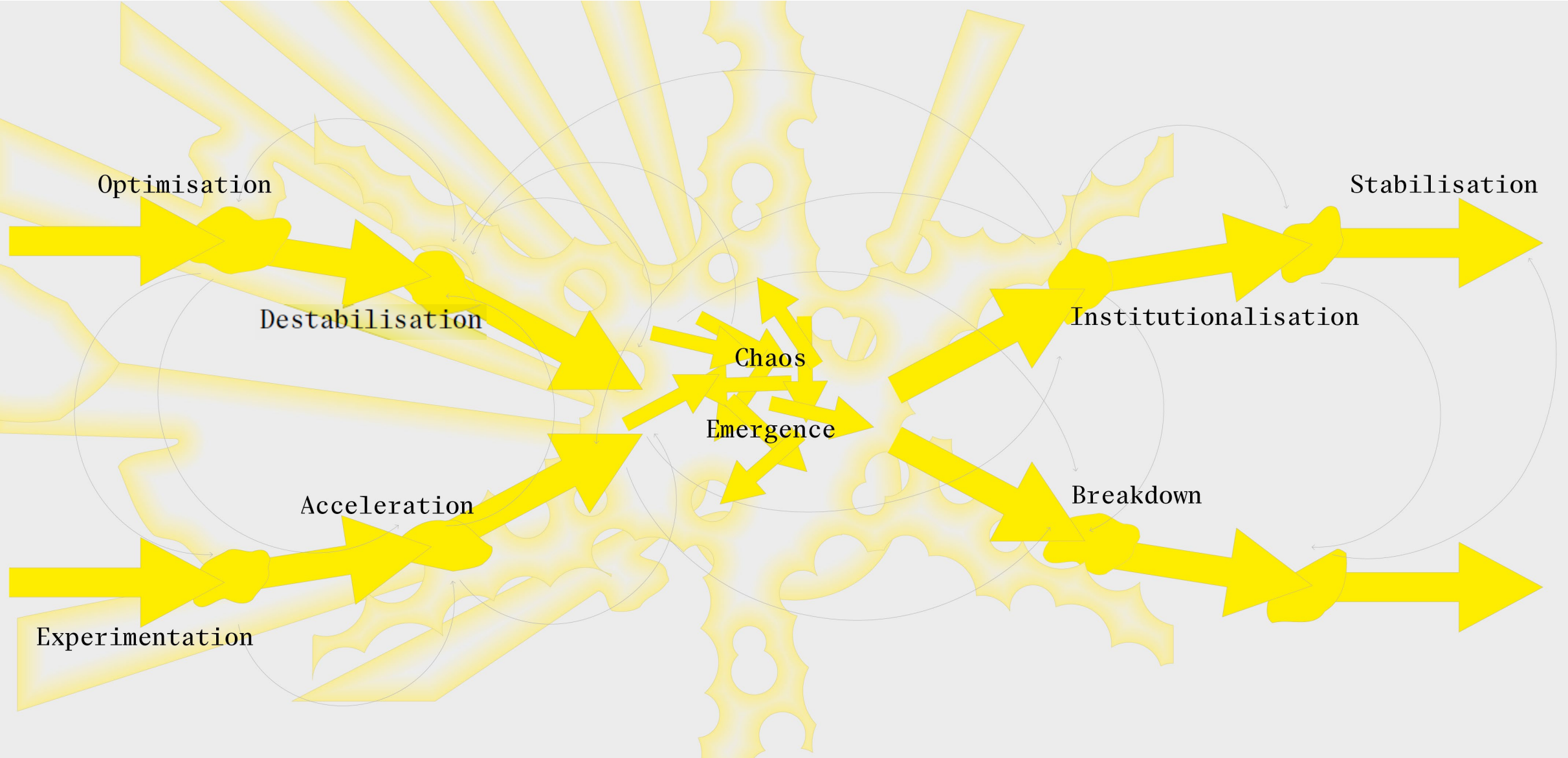
Risk paradox

Innovation trap

Imagination deficit









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# Transition governance

Systemic

Back-casting

Selective

Adaptive

Learning-by-doing

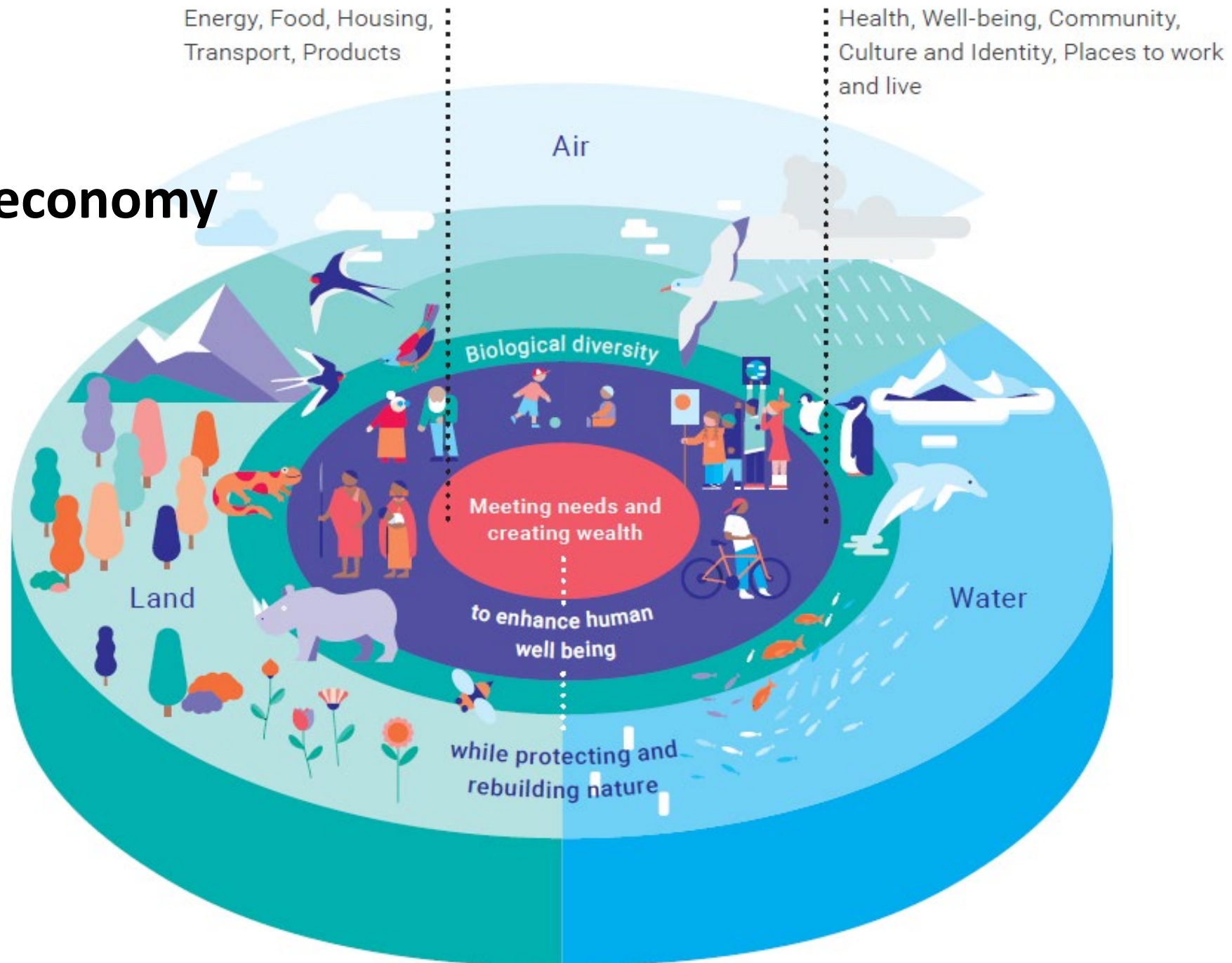




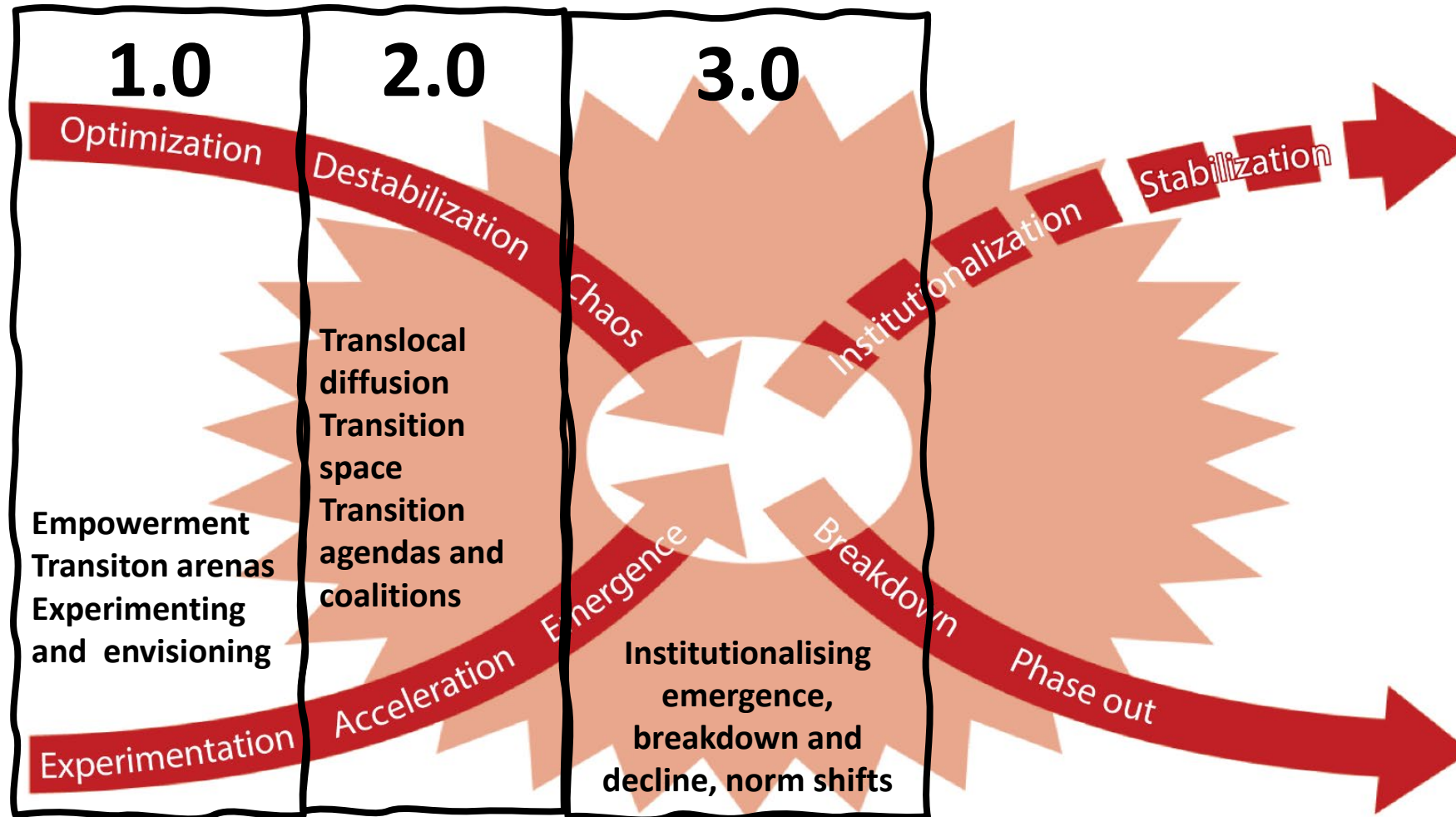
## Nature positive economy

**Minimise use of energy,  
materials and space**

**Maximize affordability,  
accessibility and  
ownership**



Catalyse radical transitions, develop socio-political momentum,  
accelerate breakdown

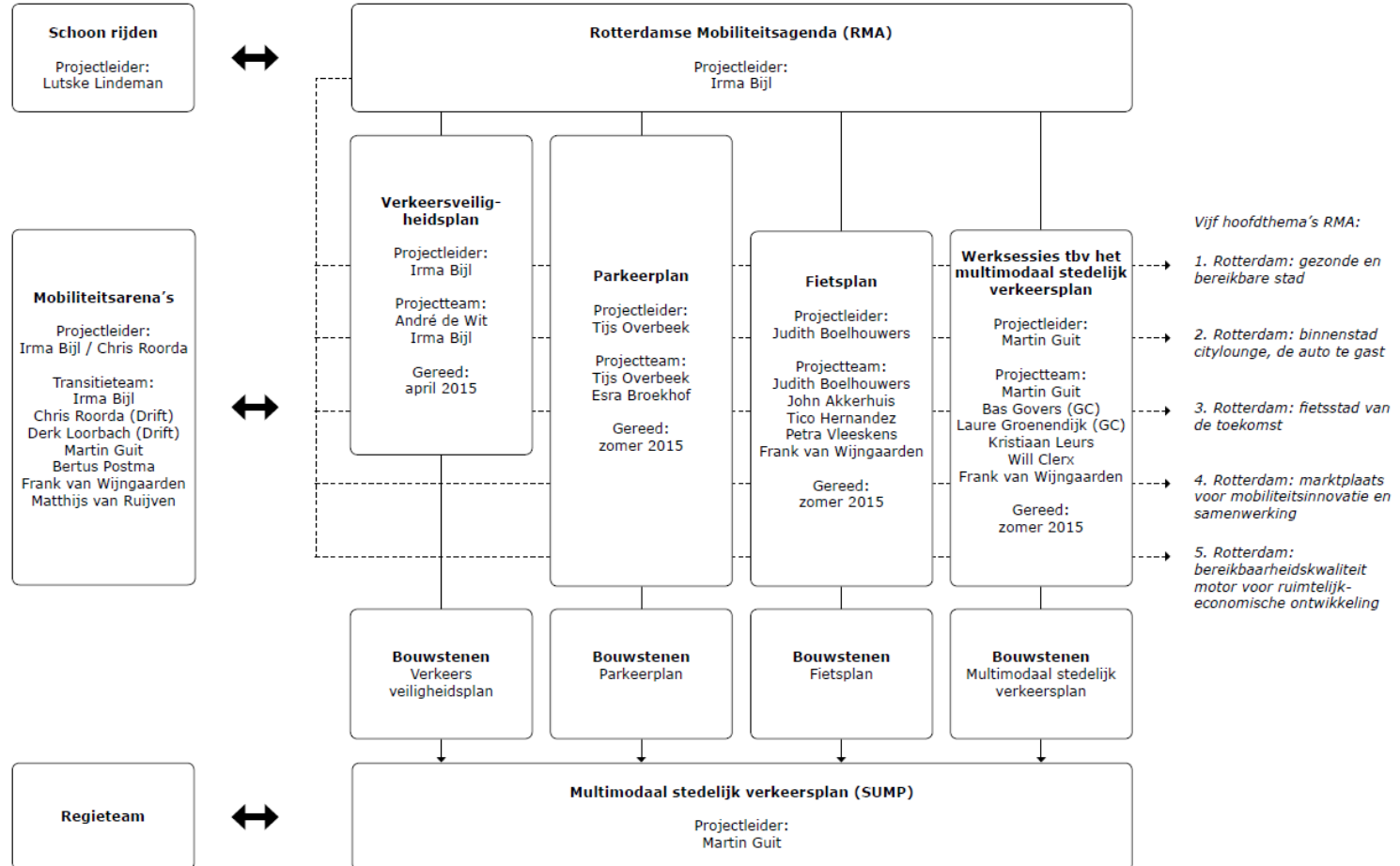


# Transition arena



## DEELNEMERS

Aldo Dorsman, Alicia Hobbe Have, Eelco Rietveld, Frank Mingardo, Jorn Wemmenho Radema, Martin Van der Do Quinten Passchier, Shurdon Somsen, Vincent Luyendijk, Derk Loorbach, Irma Bijl-Rodenburg, Martin Guit, Bertus Postma, Marjolein van Doorn en Melissa Groen in 't Wout





# Urban mobility transition

Pricing

'Omgevingsvisie'

Optimization

Zoning plans

Destabilization

Zero emission zone

Chaos

Circulation plans

Traffic rules



Stabilization

nalization

- 100% Emission free
- Affordable and fun for all
- 60% reduction of cars
- Slow has right of way
- Healthy living environment

Cooperative sharing

Standard street design

Fietsen op Zuid

Local green

Breakdown

Individual fossil car

E-logistics

City Lounge

Fossil subsidies

Phase out

Healthy schools

Parklets

Street parking

Free floating

Acceleration

Citizen infra

Experimentation

Happy Streets/  
Parking day

[illegible]

Commons  
based local

# Social shared mobility

Nature  
positive new



Ecological infrastructure



Regenerative  
nature



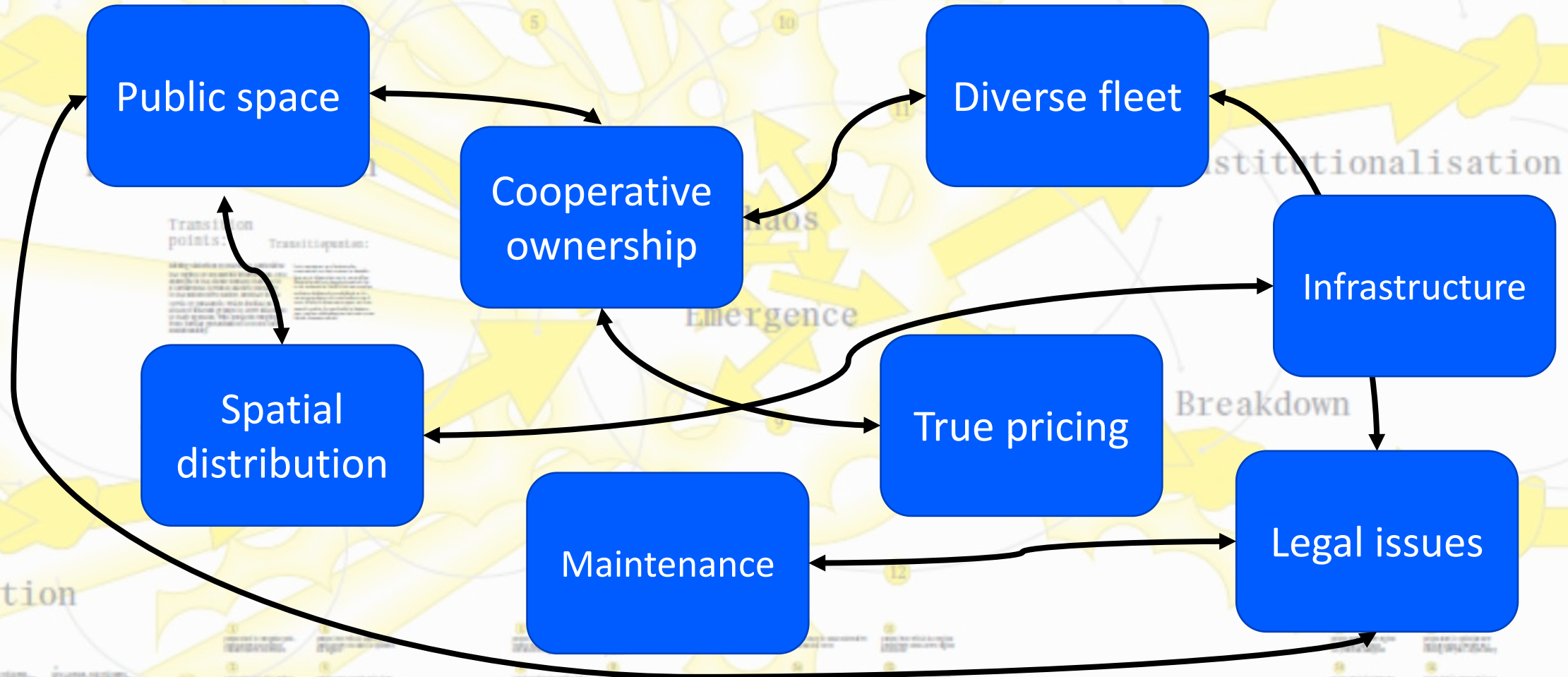
Institutionalisation

Diagram illustrating a process flow or breakdown. A yellow arrow points right, labeled "Breakdown". A blue oval containing the letter "e" is on the left.

## Has the

Pha

## Transition atelier: a city without private cars





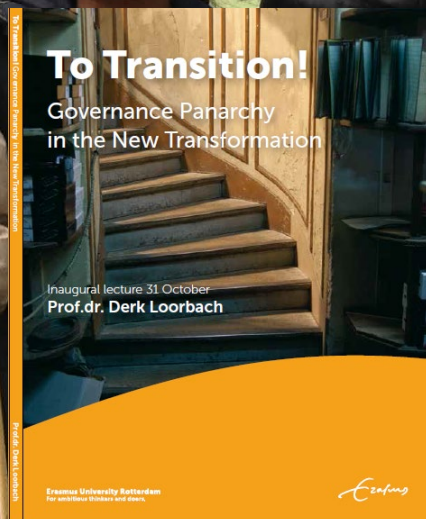
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## Transition space

- Especially in cities our target should be zero private cars (on the streets)
- All mobility should be electric and as efficient as possible (in terms of space/resource and energy use)
- Urban planning and landscape design should focus on creating healthy living environments
- Stop selling the dream of the private car and start building the reality of places for people and nature



drift for transition



For more information and publications:

[loorbach@drift.eur.nl](mailto:loorbach@drift.eur.nl)

[www.drift.eur.nl](http://www.drift.eur.nl)

[www.twitter.com/drck75](https://www.twitter.com/drck75)

Erasmus





Quality in parking



# Louwman BYD.

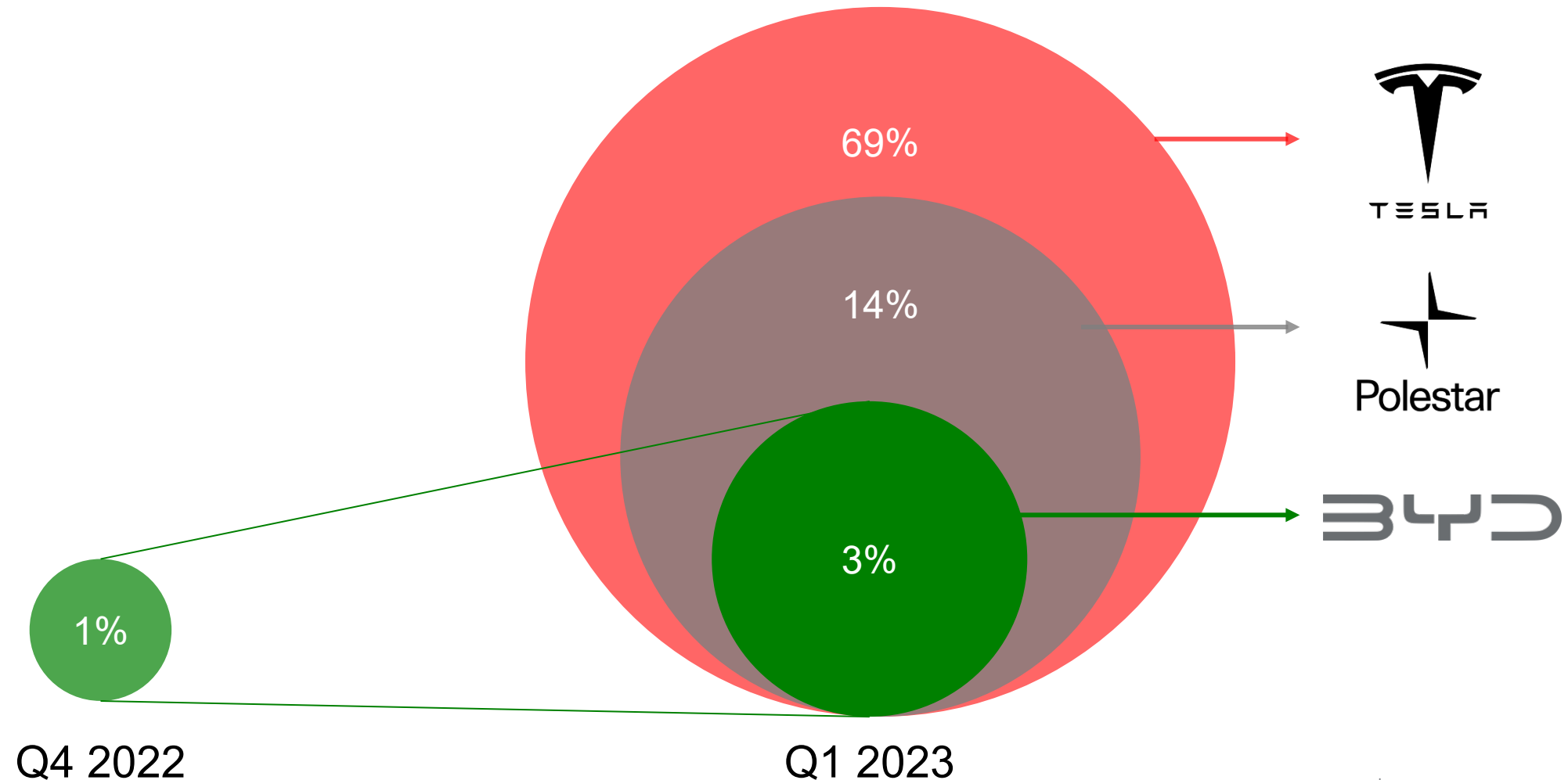
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Q-Park Student Award Event



BYD | LOUWMAN

# The biggest car company you've never heard of...











De ATTO 3  
100% elektrisch

€549 p/m

€2.950 subsidie

BYD

Bavaria ESCAPE

ESCAPE AMSTERDAM

De Telegraaf

Heineken Bier

US Brasserie & Grill

BRASSERIE & GRILL RESTAURANT

Cafe MONICO



Let others grow your story.

Wielrennen

## BEAT stapt als eerste wielerploeg ter wereld over op volledig elektrische volgauto's

Trouw



Beat is de eerste ploeg ter wereld die structureel met elektrische volgauto's rijdt. Beeld Stephan de Goede

Elektrische auto's in het wielerpeloton werden lang gezien als onmogelijk. De ploeg BEAT durft het als eerste ploeg ter wereld wel aan. 'We hebben geen back-upplan.'

## TEST: BYD SEAL – DE SNELSTE ZEEHOND TER WERELD

MAAKT INDRUK MET COMFORT EN INTERIEUR

Het Chinese BYD probeert tot nog toe vooral Europese kopers te lokken met de relatief betaalbare Atto 3, maar er zit meer in het vat. Een Tesla Model 3-achtige sportsedan, bijvoorbeeld, in de vorm van de BYD Seal. Hoe die bevalt, lees je in deze eerste test.

Auto Week

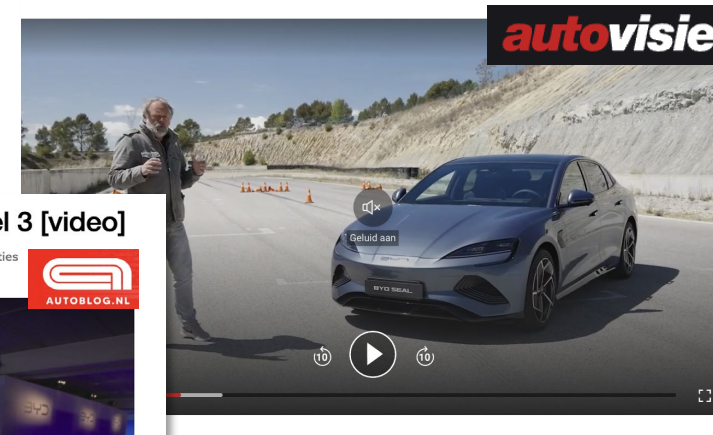
## Deze nieuwe auto maakt elektrisch rijden betaalbaarder: BYD Dolphin dit jaar te koop

Het Chinese bedrijf BYD zegt de aarde met 1 graad Celsius te willen afkoelen door de wereld op grote schaal van elektrisch vervoer te voorzien. In Nederland is BYD pas sinds eind vorig jaar te koop, maar al wordt het aantal beschikbare modellen uitgebreid van drie naar vijf.

Niek Schenk 21-04-23, 06:15 Laatste update: 24-04-23, 14:33



## Moet Tesla bang zijn voor deze BYD Seal?



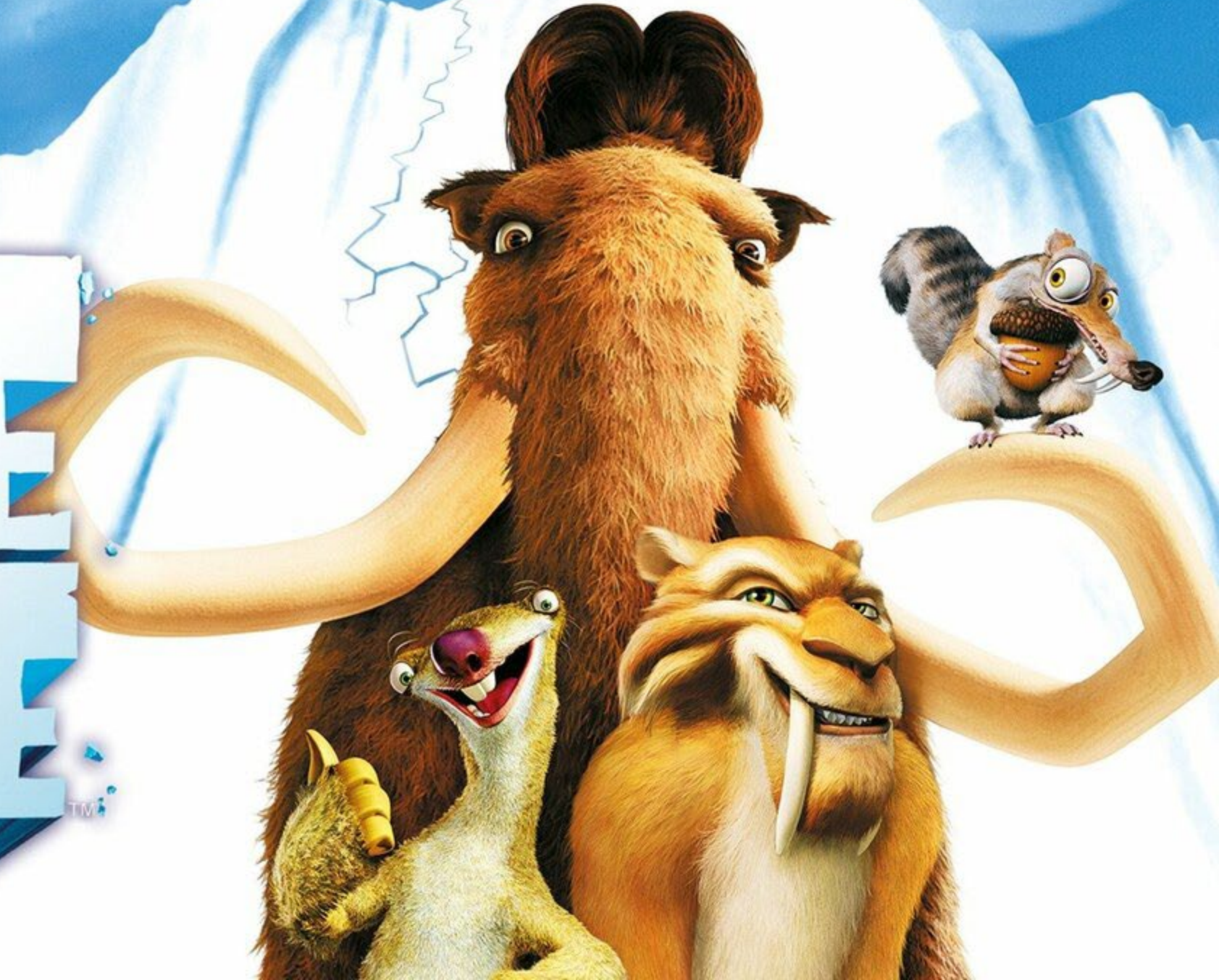
## BYD Seal: beter afgewerkt dan Model 3 [video]

Auteur: michaelras, gepost 14 april 2023 om 16:00 – 20 Reacties





# ICE AGE



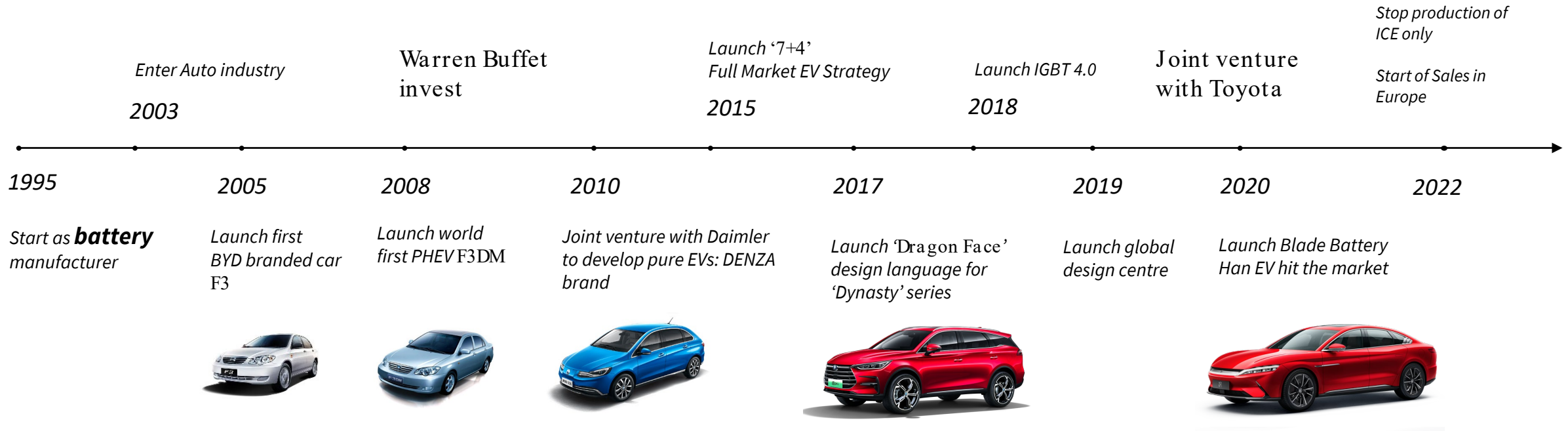


# Build Your Dreams: not your 'usual' car company.

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# BYD milestones as a car manufacturer.





# Battery expertise X Innovative DNA.

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World's **largest**  
manufacturer of LFP battery



**100%** vertical supply  
chain integration



**27 years** R&D and  
production experience

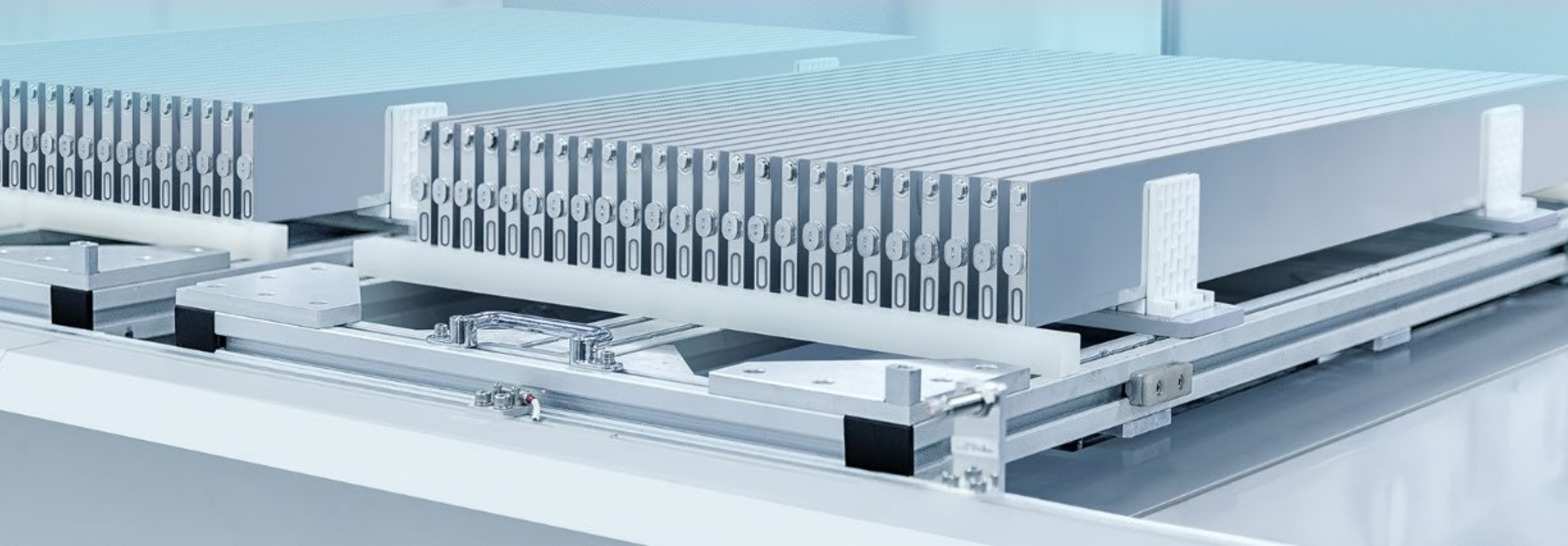


Proven technology for **10 years'**  
reliable application



# Revolutionary 'Blade Battery'.

Ultra safe | Longer lifecycle | Improved space utilization



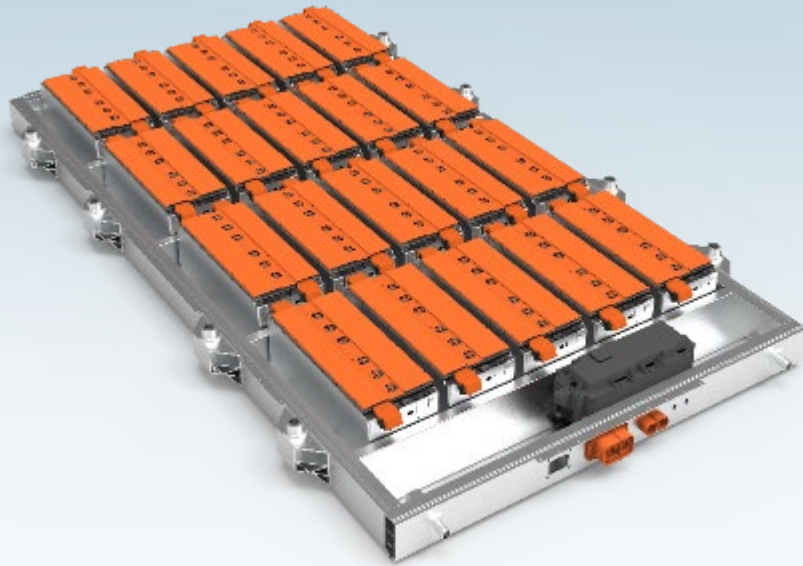


# Blade Battery vs. 'traditional' car battery pack.

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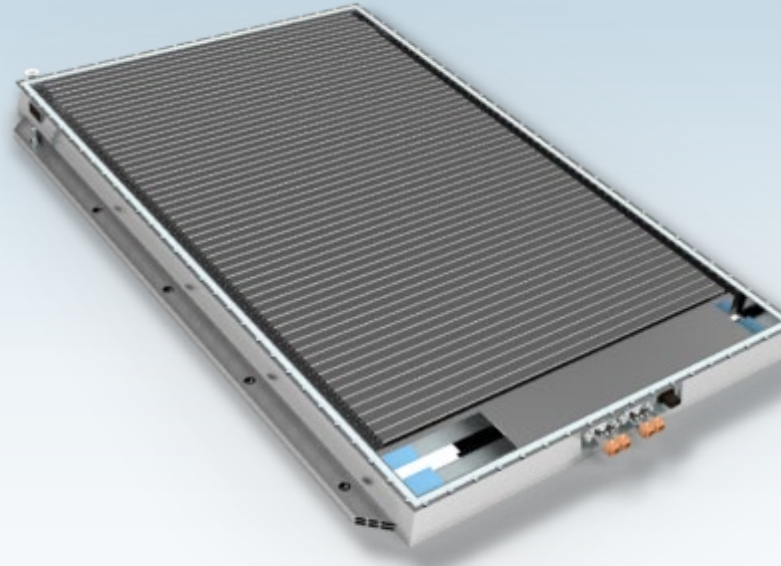
## Traditional LFP

cells — modules — pack



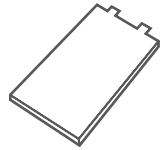
## Blade Battery

cells — pack



# Vertical Integration: controlling quality and supply chain.

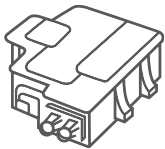
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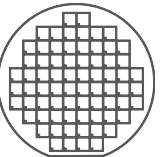
Power Battery



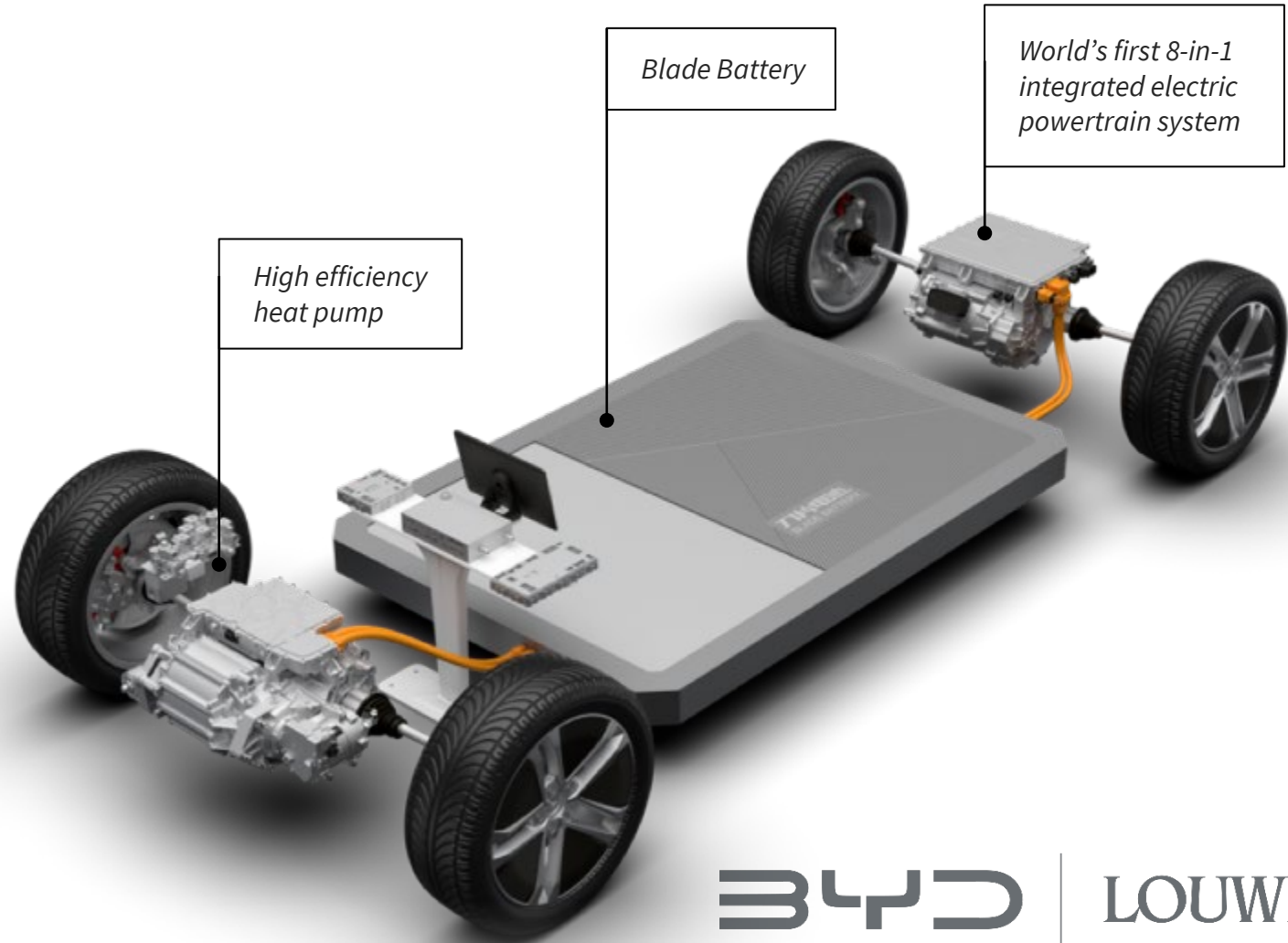
Electric Motor



Electronic Control



Power Semiconductor



BYD

LOUWMAN







# Royal Louwman Group: a family-owned mobility company.

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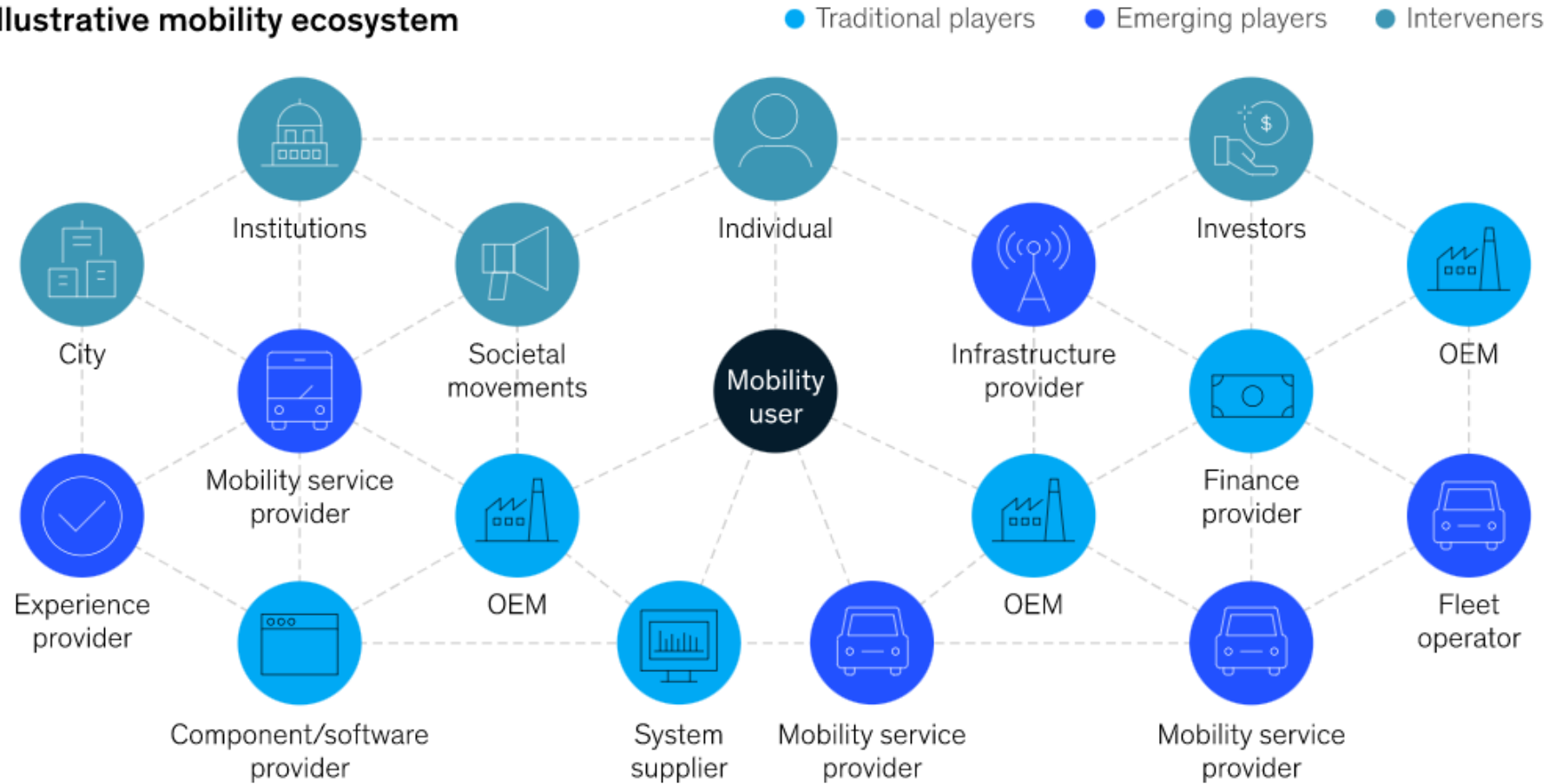






# Mobility is transforming into an ecosystem.

## Illustrative mobility ecosystem

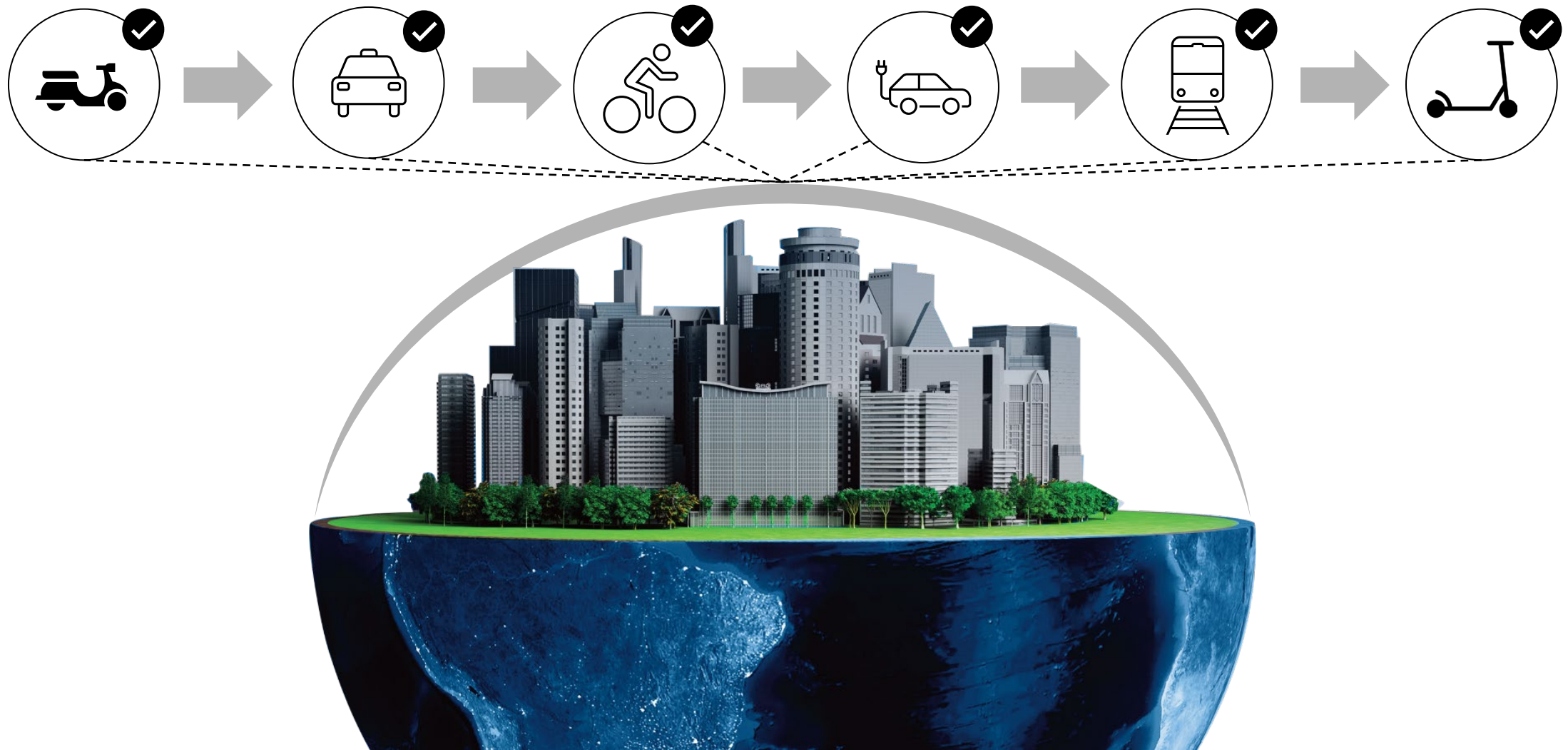


Source: McKinsey Center for Future Mobility



# MaaS challenges private mobility through integration.

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# Louwman Group: preparing for the next 100 years.





# The Mobility space defined by access:

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**Private access**



**Closed Community**



**Friends**



**Neighbours**

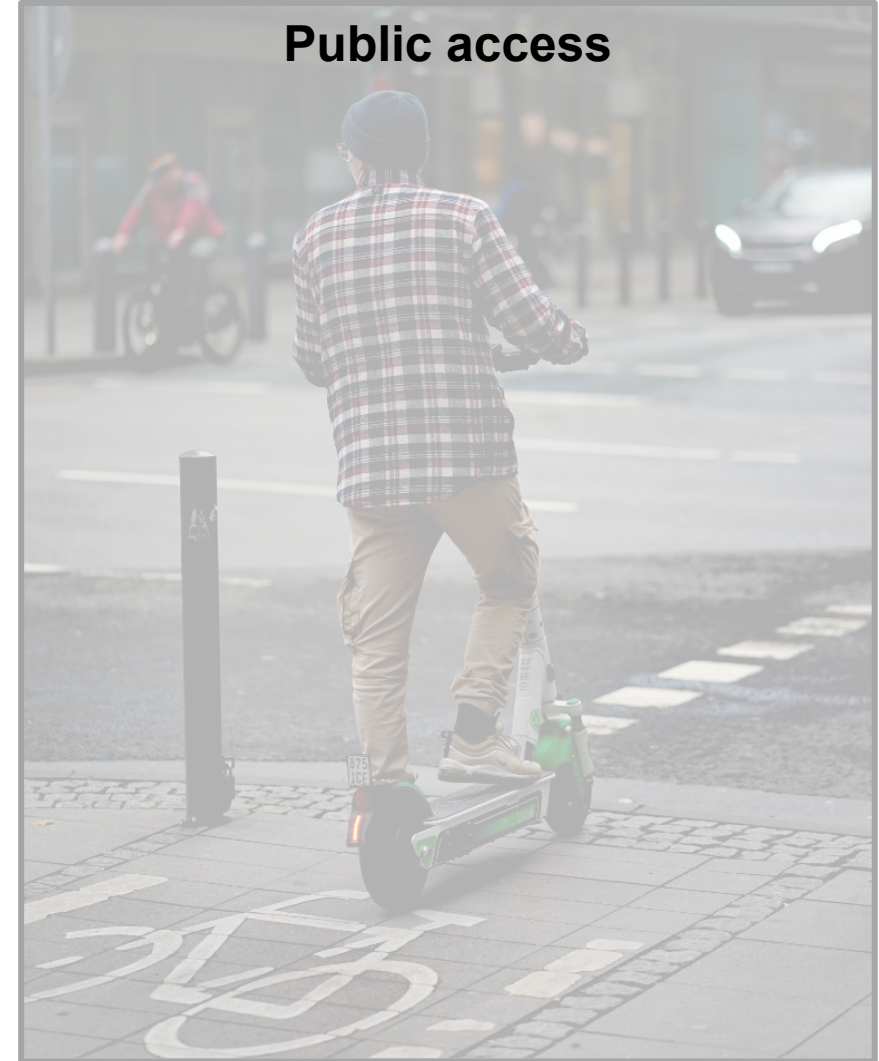


**Residents**



**Co workers**

**Public access**





# Mobility X Energy transition.





# Thank you.

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Lucas van Schijndel  
General Manager  
Louwman BYD



BYD | LOUWMAN



Quality in parking





**LET'S  
DISCUSS**

# Q-Park Student Award 2023

Dr. Giuliano Mingardo





# Q-Park Student Award

- It's an important step to bridge the knowledge gap in parking and mobility;
- It's a joint project of Q-Park and Erasmus University Rotterdam
- For the best student projects on parking and mobility
- It's open to all European Universities in Europe
- Started in 2014
- More than 75 theses submitted

## STUDENT AWARDS



**QPARK** Quality in parking

Dedicated website – combining all winning theses since 2014.

<https://student-awards.q-park.com/>



# Themes

The students' projects have covered a vast variety of topics, such as:

- Parking Demand and Behaviour
- Parking and Electric Vehicles
- Car ownership
- Bicycle parking
- MaaS / Hubs /...
- Logistics
- Transport injustice/poverty
- ...

# Q-Park Student Award 2023

- 11 thesis from 9 different universities in Europe (NL, BE and UK)
- High scientific standards
- Topics:
  - Business Case of Mobility Hubs
  - Driver's compliance with in-vehicle smart parking system advice
  - Unlocking Car Parking Discourses
  - Curbing city logistics
  - Mobility injustice
  - Residential self-selection and travel behaviour
  - Shared Mobility Hubs
  - E-bike ownership in the Netherlands
  - Bezoekersparkeren in Antwerpen
  - Disabled pedestrians' perception towards the walking environment
  - De toekomst van deelmobiliteit



# Q-Park Student Award 2023

The winners:

- ▶ Jolien Meulepas – *Mobility Injustice: focusing on individuals' everyday mobility experiences and capabilities*
- ▶ Govert van Loon – *Residential self-selection and changes in travel behaviour and travel attitudes caused by relocation*
- ▶ Rik van den Bogaerdt – *Shared Mobility Hubs in Urban Development*





Quality in parking

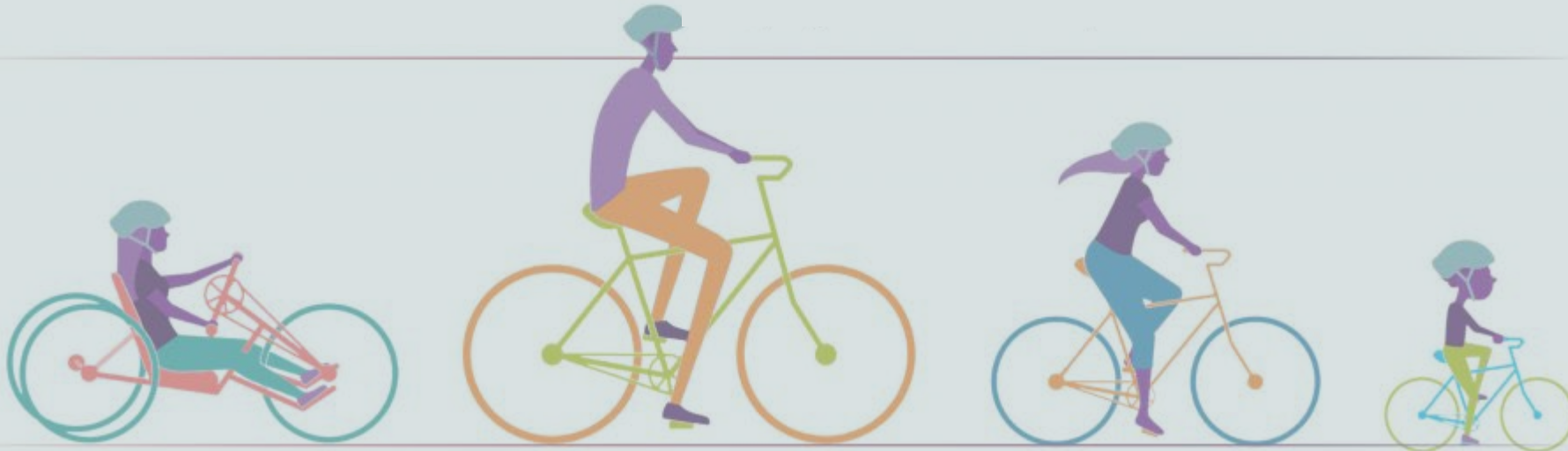


# Mobility injustice: focusing on individuals' capabilities and everyday mobility experiences (case study for a vulnerable neighbourhood in the Hague Southwest)



MSc thesis in Transport, Infrastructure & Logistics  
Q-Park Student Award 2023

Jolien Meulepas



‘To plan for accessibility (...) is to focus on the ends rather than the means and to focus on the traveller rather than the system: do people have access to the activities that they need or want to participate in?’

Handy (2002)



# Today's agenda

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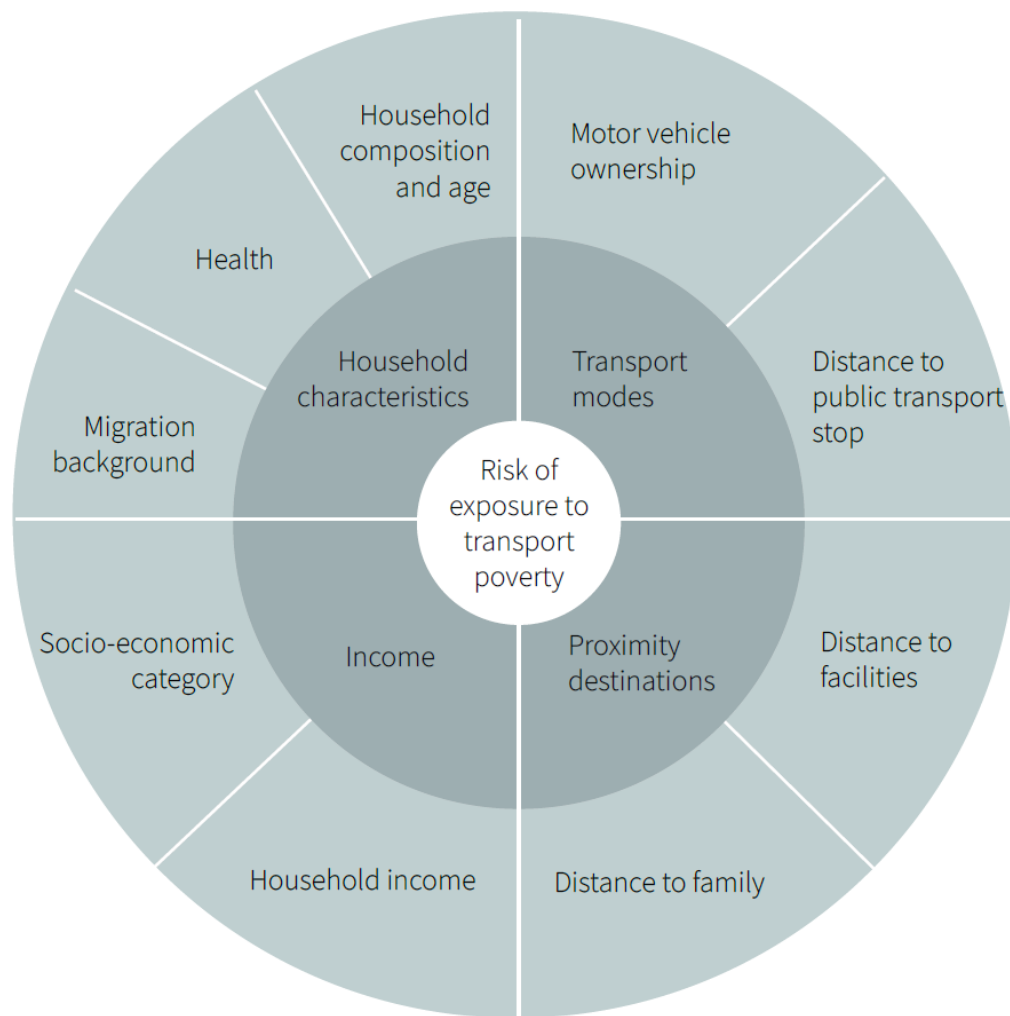
- 1 Problem definition
- 2 Knowledge gap
- 3 Research aim
- 4 Methodology
- 5 Case study
- 6 Results
- 7 Discussion
- 8 Conclusion



Robert Wood Johnson Foundation (2017)

# Problem definition

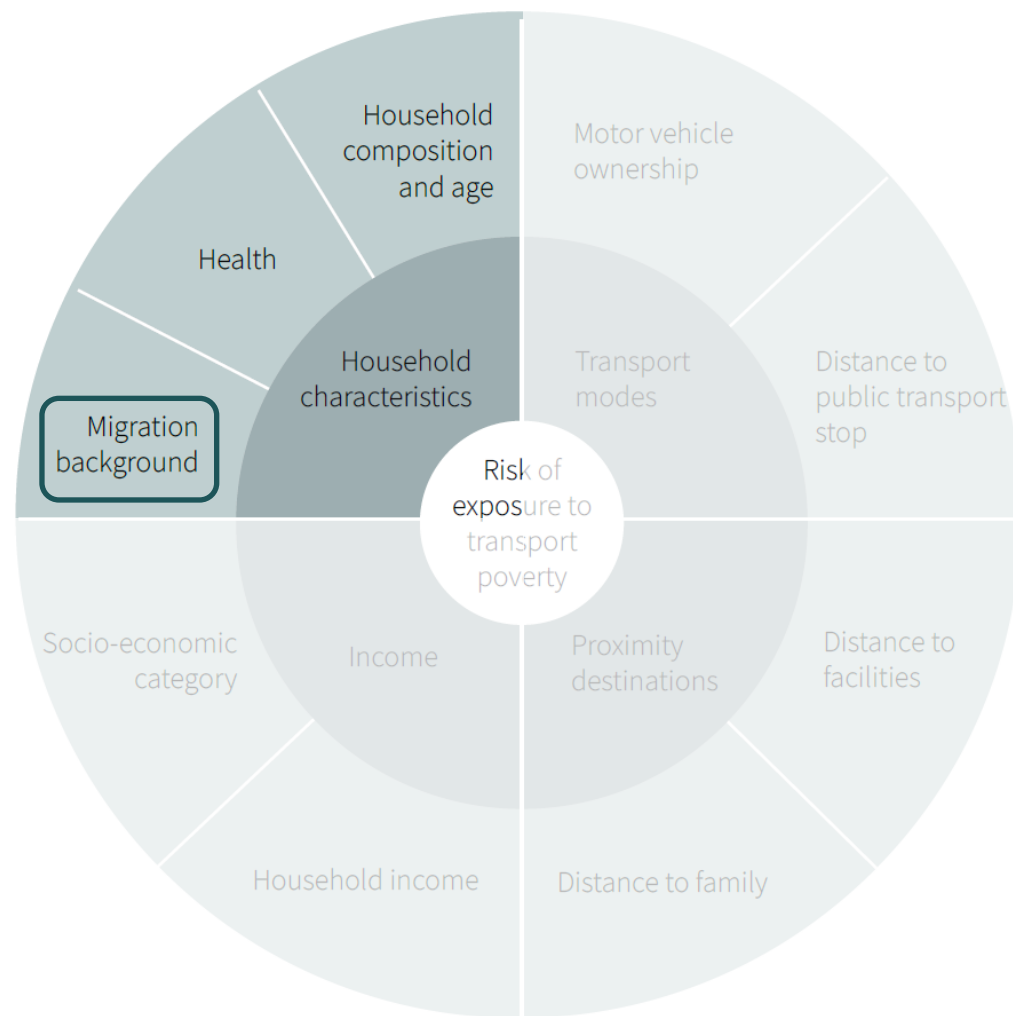
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Kampert et al. (2019)



# Problem definition



Kampert et al. (2019)

# Knowledge gap

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- 1 Large scale **accessibility** studies → focus on systems and **assumptions**, not on individuals.
- 2 Barriers/ **consequences** at-risk groups' perspective → hinder **society participation**?



# Research aim

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Understanding mechanisms underlying accessibility issues:

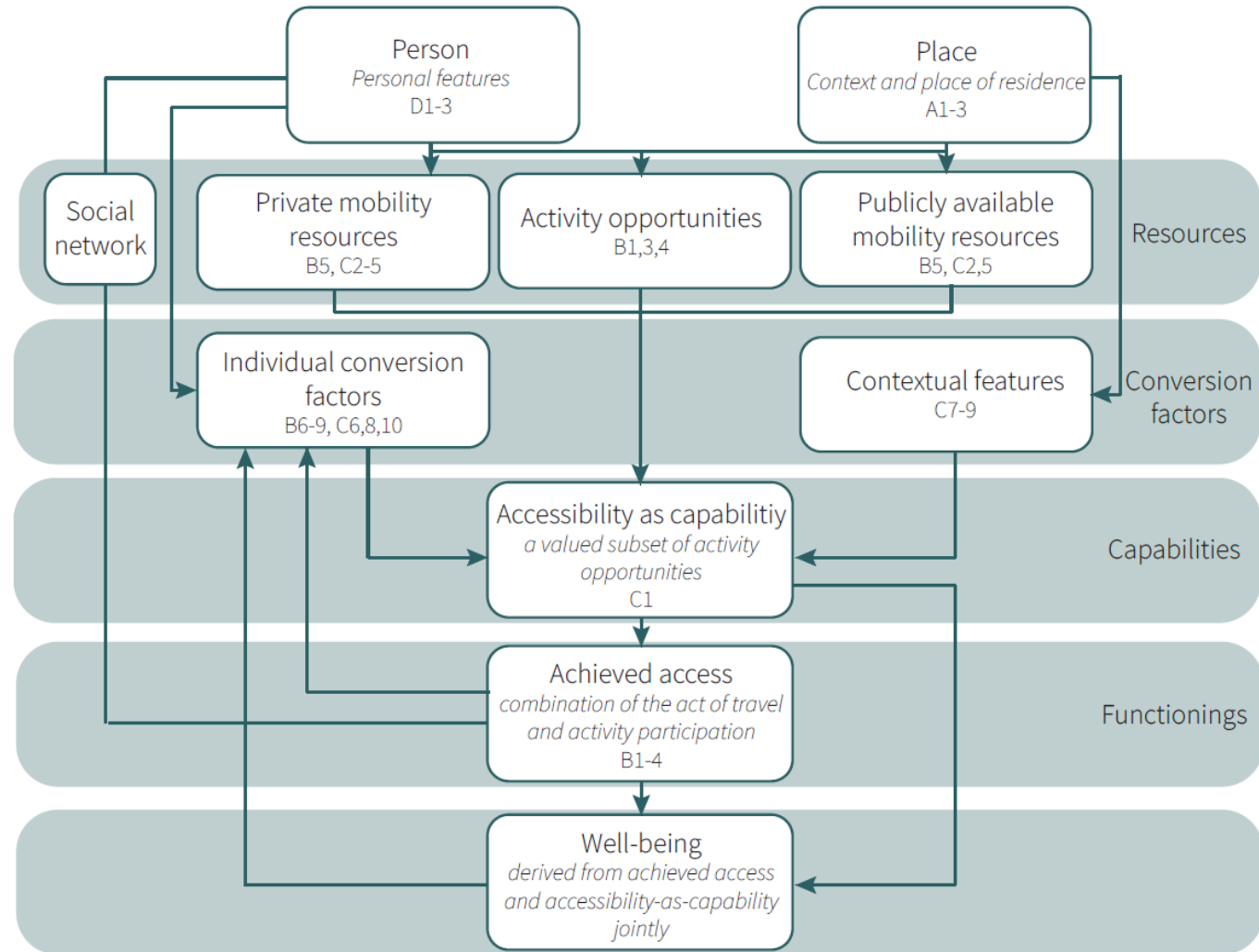
1. The **causes & role of mobility.**
2. The **consequences.**



Lead to more effective interventions to address mobility injustice.

How can municipalities and private parties reduce mobility injustice in the context of vulnerable neighbourhoods?

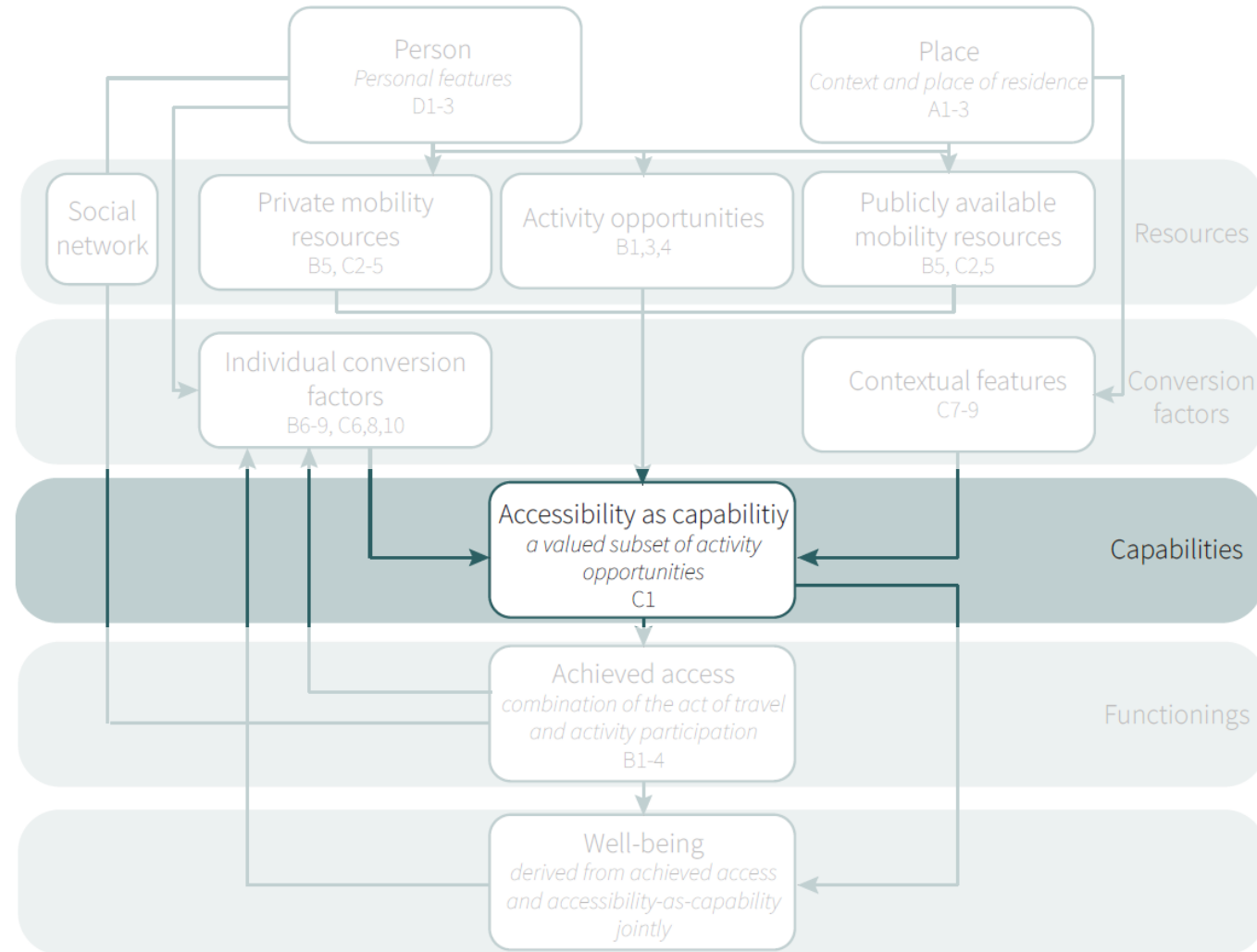
# Capabilities Approach



Own work, based on Vecchio and Martens (2021) and Vecchio (2020)



# Capabilities Approach



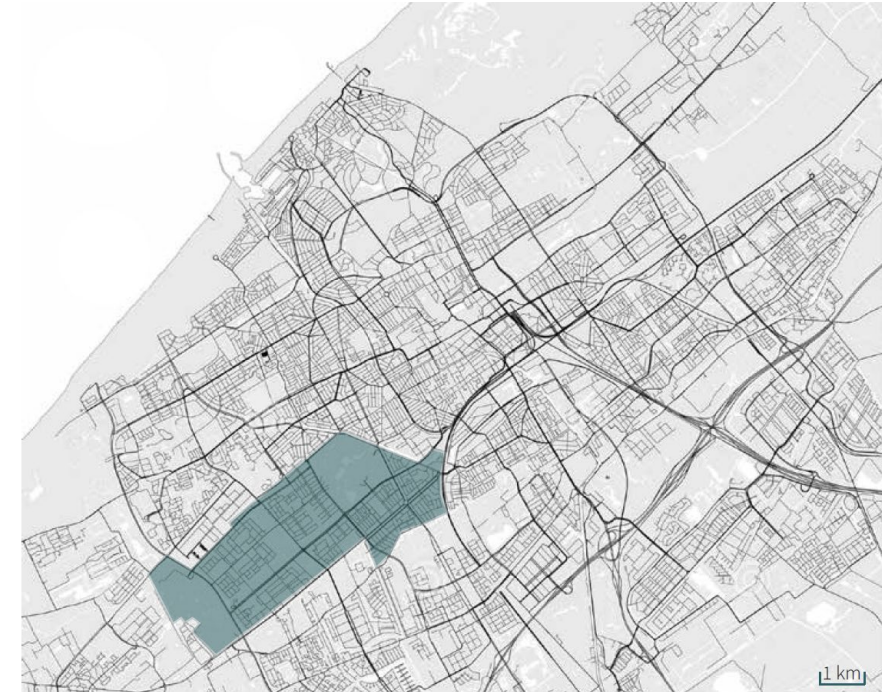
Own work, based on Vecchio and Martens (2021) and Vecchio (2020)

# Case Study

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## The Hague Southwest – Bouwlust & Vrederust

- Relevant jobs high-income earners (> €37,700/ year) **three times more accessible** than low-income earners (< €18,800/year).
- Public transport insufficient quality: o.a. **high travel times** and **absence of lines** in **east-west direction**.
- Car minor role providing access, **hardly affordable** (car ownership rate 0.6).



Anteagroup (2021)



## Results | causes

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- 1 Importance of **social network**.
- 2 **Mental** barriers.
- 3 Proportion **cost** compared to **income**, not **travel time**.

*'My man brings me to my sisters once every week. But no men are allowed, he brings me and after a while comes to pick me up again'.*

(adult woman)

*'For you and me it is easy to plan ahead when you have to get to an appointment, but when you have debts and other worries on your mind you do not have the ability to oversee it all'.*

(Worker community center Zijden, Steden & Zichten)

## Results | consequences

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- 1 Accessibility **outside** vs **inside** the neighbourhood.
- 2 Discrepancy **objective** and **perceived** accessibility levels.
- 3 **Other** consequences (extra effort).

*‘There is no need to take the tram or train as all is accessible in the neighbourhood on foot’.*

(adult man)

*‘I will use up the money available on my card to go there, and will go back walking. I will have to rest on my rollator and I will be completely exhausted when I get back’.*

(senior woman)



Who should be responsible to set accessibility standards?

## Discussion | causes (accessibility barriers)

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### Interpretations

- **Customs, habits and individual circumstances** can result into different mobility needs.
- Observed barriers **outside of mobility & infrastructure sector**.



### Recommendations

- Involve the community to find out their needs (e.g. provide feasible alternatives when designing **car free streets**).
- **Include other sectors** (social/education).



# Discussion | consequences

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## Interpretations

- **Different** levels of **perceived accessibility** than expected.
- Observed other **consequences** (e.g. additional efforts to reach valued activities).



## Recommendations

- Consider different communities might have different **desired levels** of activity participation → involve the community.
- **Top-down approach** to guarantee a **minimum level** of accessibility to basic needs → accessibility standards (travel distance, time and expenses).

# Conclusion

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- 1 **Top-down** approach minimum level of accessibility to **basic needs** → identify **sub-groups** needing **priority**.
- 2 **Bottom-up** approach **individual circumstances** (barriers, desired levels of activity participation, customs & habits).
- 3 **Interdisciplinary approach** (other sectors & community experts).

‘To plan for accessibility (...) is to focus on the ends rather than the means and to focus on the traveller rather than the system: do people have access to the activities that they need or want to participate in?’

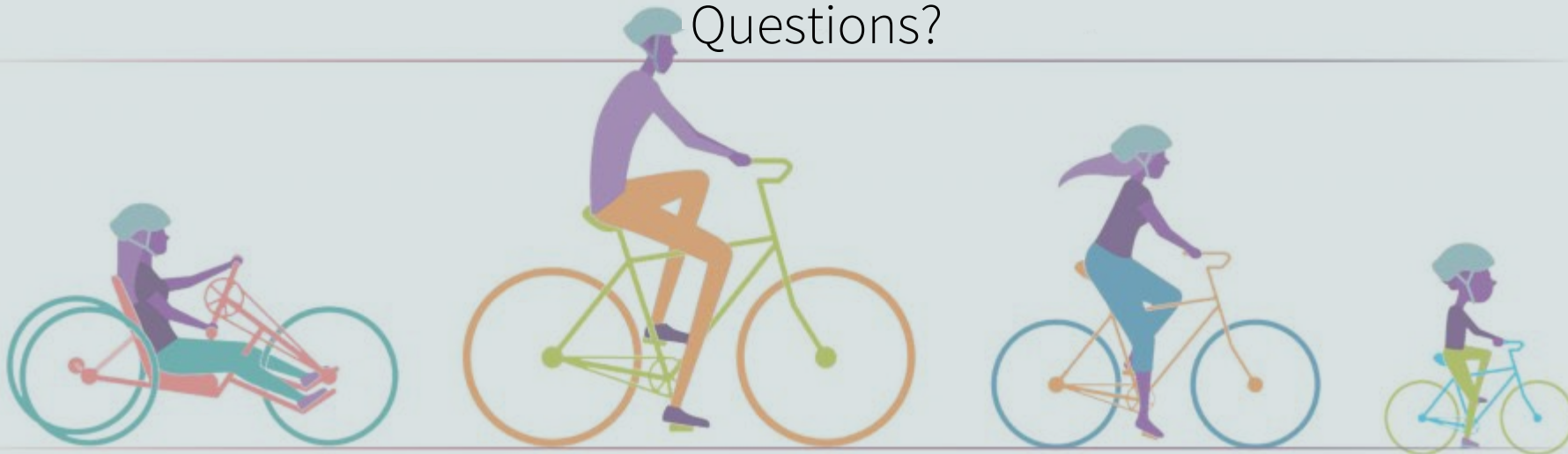
Handy (2002)



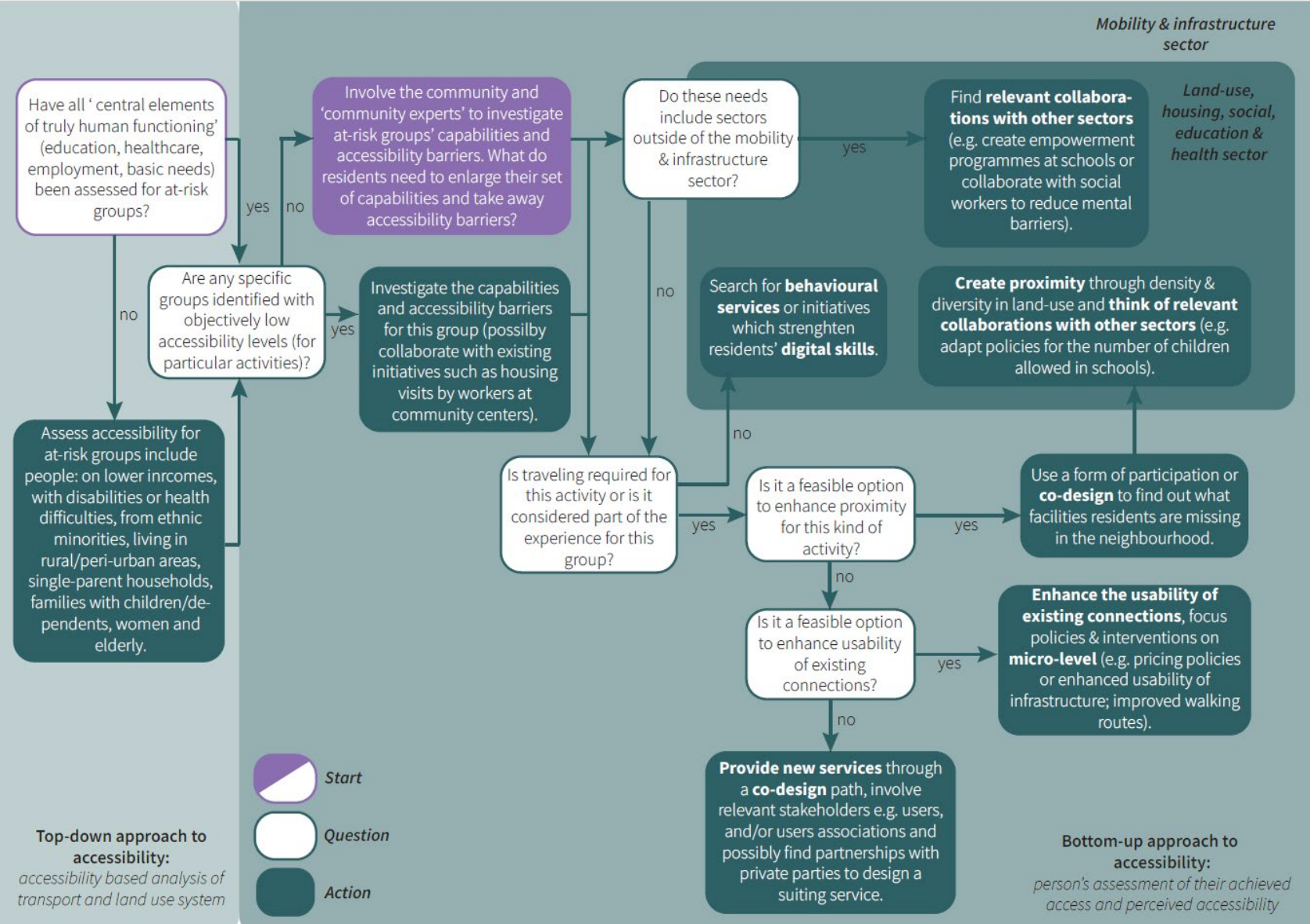
Thank you for you attention!



Questions?



# General Approach to address mobility injustice





Quality in parking



# Residential self-selection and changes in travel behaviour and travel attitudes caused by relocation: a three-wave random intercept cross-lagged panel analysis in the Netherlands

*Govert van Loon – November 9, 2023*

# How to plan cities for more sustainable travel behaviour?

Introduction

Methodology

Results

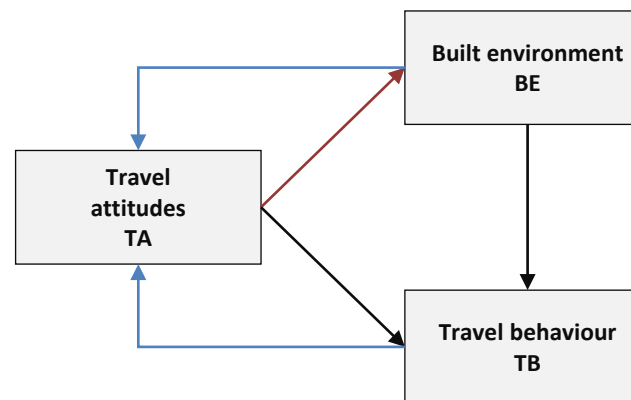
Conclusion

Discussion

- Transition to a more sustainable transport system
  - Car-free neighbourhoods
  - Realising within or outside existing city borders
- Effect on sustainable travel behaviour
  - And on people's views on sustainable travel modes?
  - Does this also work the other way around?

## Research context: causality

- Urban planning and design can influence how people travel
  - Dense, mixed-use neighbourhoods: more active modes, public transport (e.g. Ewing & Cervero, 2010)
- But do people travel the way they do solely because of the BE?
  - Or do people choose to live at locations that allow them to practice their preferred TB?
    - Residential self-selection (**RSS**) (e.g. Mokhtarian & Cao, 2008)
- But travel attitudes could also be influenced in return
  - Living in a neighbourhood with good PT connections might enhance your opinion on PT
  - Or it might increase your PT use, which enhances your opinion on it
    - Reverse causality (**RC**) (Kroesen et al., 2017; Van de Coevering et al., 2018)



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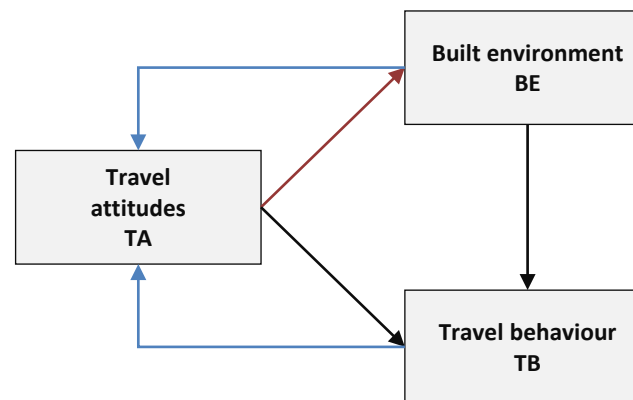
Conclusion

Discussion



## Research context: Methodology

- Most studies limited to cross-sectional or retrospective approaches
- Over time, more longitudinal (panel) data became available
  - Which follows the same respondents over time
  - And better allows to reveal causal order between variables (e.g. De Vos et al., 2019)
- Looking at movers can reveal the effects of an actual change in the BE
  - And movers might be more receptive to change (Lanzendorf, 2003; Verplanken et al., 2008)
  - They might show **RSS** when moving, and undergo **RC** after having moved



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## Research questions

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What are the relationships between the built environment,  
travel behaviour and travel attitudes for movers?

1. To what extent do travel attitudes before moving affect the built environment and travel behaviour after moving? (**RSS**)
2. To what extent do the built environment and travel behaviour after moving affect travel attitudes over time? (**RC**)

## Conceptualization

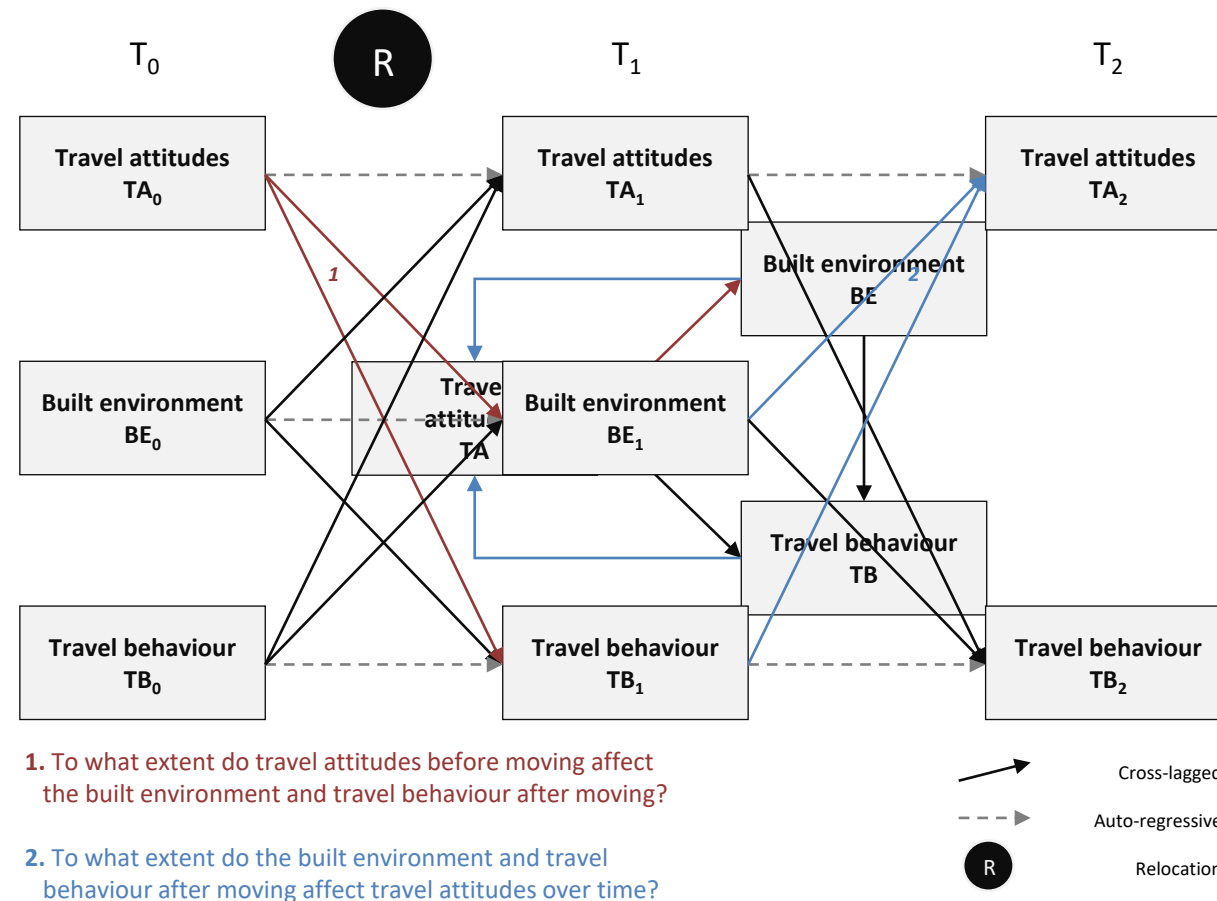
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## Data: The Netherlands Mobility Panel (MPN)

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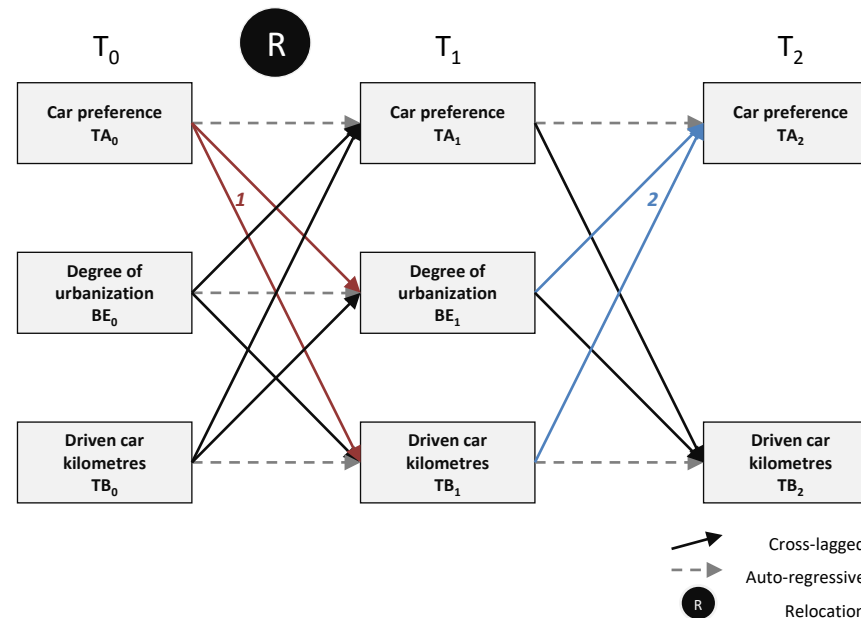
Discussion

- Panel consisting of 2000 household every year (Hoogendoorn-Lanser et al., 2015)
  - Four surveys and a three-day travel diary
  - Currently, eight waves of data available (2013 – 2020)
- Sample made from waves 2014 – 2019 based on four conditions
  - People participated for three waves
  - People have no missing data
  - People moved between wave 1 and 2
  - People did not move again between wave 2 and 3
- Resulted in a sample of 347 respondents
- Movers identified through change in six-digit postal code

	2014	2015	2016	2017	2018	2019		T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	
A	x	x	x				→	A	x	x	x
B		x	x	x				B	x	x	x
C			x	x	x			C	x	x	x
D				x	x	x		D	x	x	x

## Data: operationalisation of the variables

- Built environment based on urbanization indicator provided by CBS
  - Derived from the reported six-digit postal code
- Travel attitudes based on questions on mode preference for eight travel purposes
  - The number of times car is answered is then divided by eight
- Travel behaviour based on driven car kilometres as reported in diary
  - Translated into a categorical variable with five categories



# The cross-lagged panel model (CLPM)

Introduction

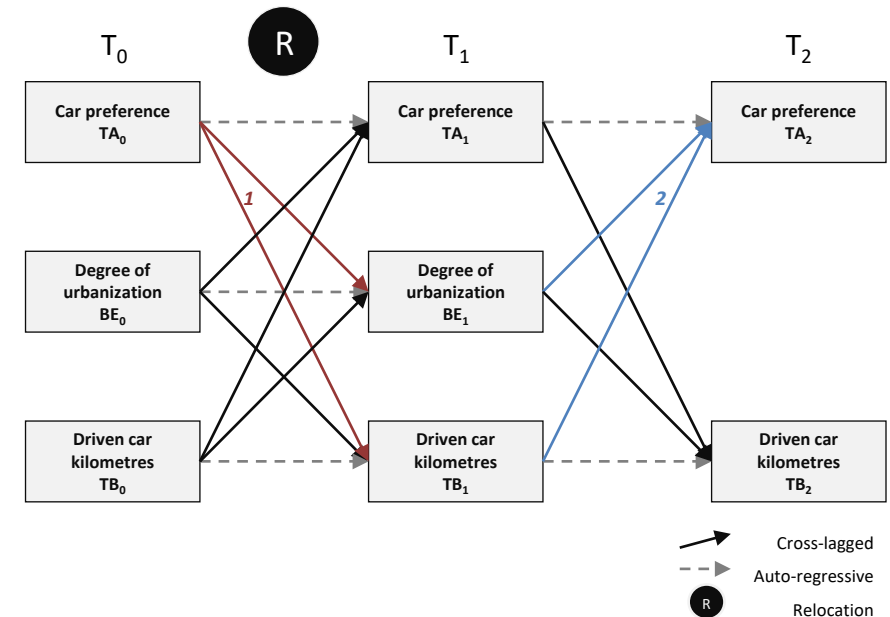
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- Method to uncover relationships between longitudinally observed variables (Bentler & Speckart, 1981)
- Structural equation model: system of linear regressions
- Auto-regressive parameters
  - Stability in the rank order of individuals for the variables between waves
  - Extent to which e.g.  $BE_1$  can be explained by  $BE_0$
- Cross-lagged parameters
  - Effect the variables have on each other between waves
  - Extent to which e.g.  $BE_1$  can be explained by  $TA_0$
- Critique
  - Cannot account for different levels of stability (Rogosa, 1980; Selig & Little, 2012)
- Random intercept cross-lagged panel model (Hamaker et al., 2015)
  - Can account for different levels of stability
  - Through inclusion of random intercepts





## The within- vs. between-person level

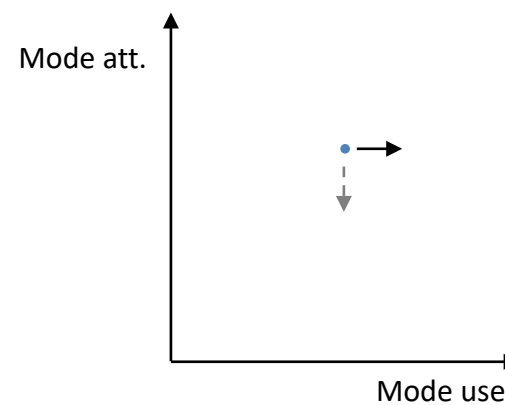
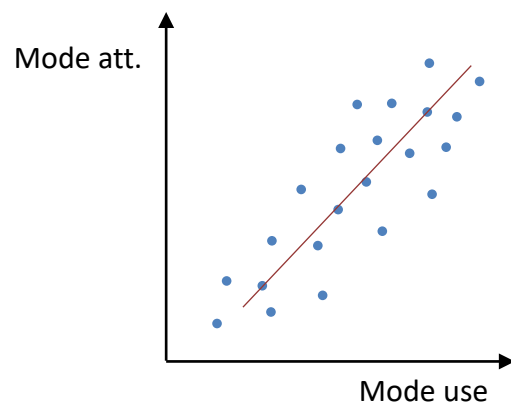
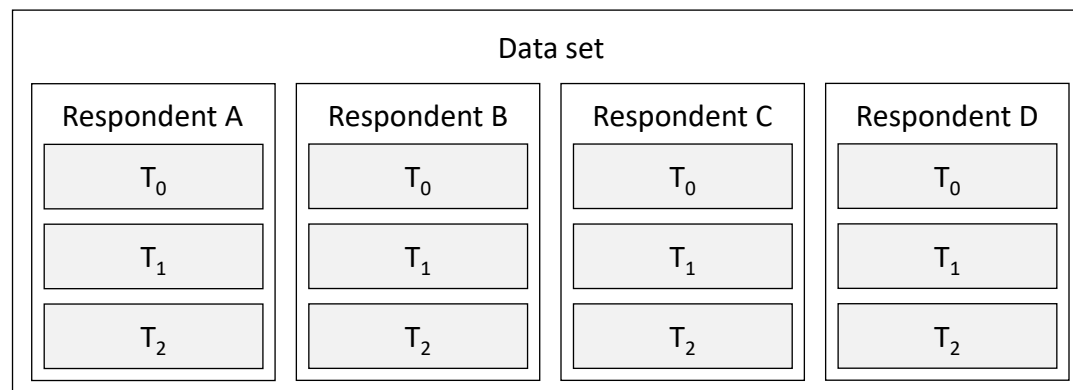
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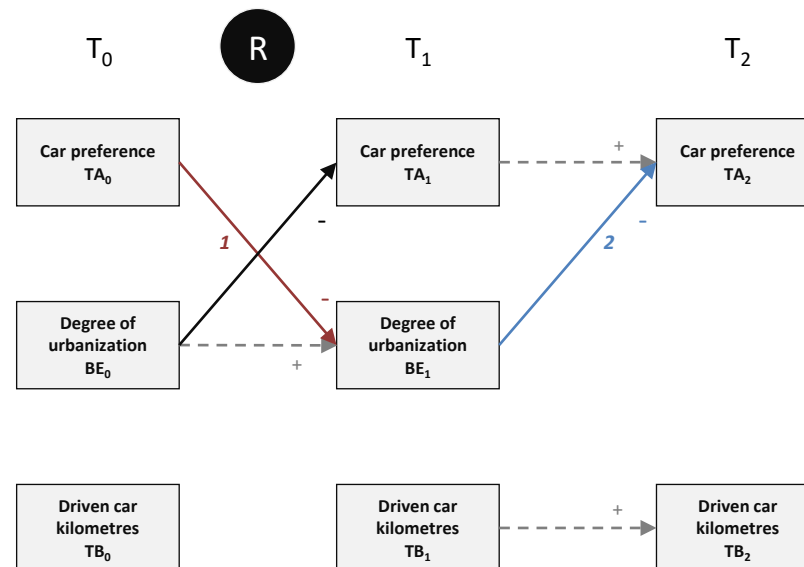
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## Residential self-selection and reverse causality

- Based on the RI-CLPM:
  - People with higher car preference move to less urbanized locations, and vice versa (**RSS**)
  - People who move to more urbanized locations show a decrease in car preference over time and vice versa (**RC**)
  - The degree of urbanization influences car preference also between  $T_0$  and  $T_1$



1. To what extent do travel attitudes before moving affect the built environment and travel behaviour after moving?

2. To what extent do the built environment and travel behaviour after moving affect travel attitudes over time?

## Limitations

- Travel behaviour specification
  - Contained a lot of zeroes (around 90 per wave, with  $N = 347$ )
    - Other modes contained too many zeroes to include
  - Probably not representative on the longer term
  - Attempt at solving this through translating into categorical variable
- Methodology
  - Significant effects with travel behaviour captured by random intercepts
    - Meaning they exist on between-person level
  - But what explains the lack of relationships on the within-person level?
    - Using summed car kilometres might be unreliable
    - Both models do not account for time-varying third variables

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## Implications

- Research
  - Further investigate potential effects on behaviour
  - Focus specifically on subsets of movers
    - With theoretical foundation of the RI-CLPM
  - Explore the effect of time-varying third variables
- Policy
  - Provide sustainably-minded people with fitting locations that they can self-select into
  - Difficult as no actual behaviour change was found
    - And this is often the goal of many policies

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Thank you for your attention

*Questions?*



Quality in parking



# Shared Mobility Hubs in Urban Developments

A qualitative research on how developers can steer on the integration  
of shared mobility hubs within urban development

 **Q**PARK Student Award presentation

**Rik van den Bogaerd**

November 9<sup>th</sup>, 2023

# Colophon

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**Dipl.-Ing. M. (Marcel) Bilow**

Associate professor AE+T



## Graduation internship company



**Marco Bosch & Hans Broekman**

Department of Smart City/Real Estate

**Drs. A. (André) Mulder**

Substitute Delegate



Coalition Agreement 2021:  
“Looking after one another, looking forward to the future”





**“We develop ‘hubs’  
where travelers can easily transfer  
to a (shared) car, (shared) bike, train or metro  
through a multimodal customized travel advise.”**



**Omzien naar elkaar,  
vooruitkijken naar  
de toekomst**

Coalitieakkoord 2021 – 2025

VVD, D66, CDA en ChristenUnie

15 december 2021



# Problem Statement

Over the last decade, shared mobility has more often become a part of urban development.

Studies are increasingly pointing to mobility hubs as a vehicle to deliver shared mobility.

However, lesser is known about how mobility hubs can be integrated into urban development.

# Problem Statement

**Motive 1:** Unclear roles

**Motive 2:** Uncertainty related to shared mobility and mobility hubs

**Motive 3:** Knowledge gap about shared mobility and mobility hubs within urban developments



# Research Questions

How can developers steer on the integration of shared mobility hubs within urban developments?





Feyenoord City  
Rotterdam

Feyenoord City (n.d.)



Nieuwlandplein  
Schiedam



Waterlandkwartier  
Purmerend

Gemeente Purmerend, n.d.



# Feyenoord City Rotterdam

- Transformation
- + 3700-4000 dwellings
- Located within a G4 city
- Urban densification
- Large-scale development with planned network of hubs



Nieuwlandplein  
Schiedam



Waterlandkwartier  
Purmerend

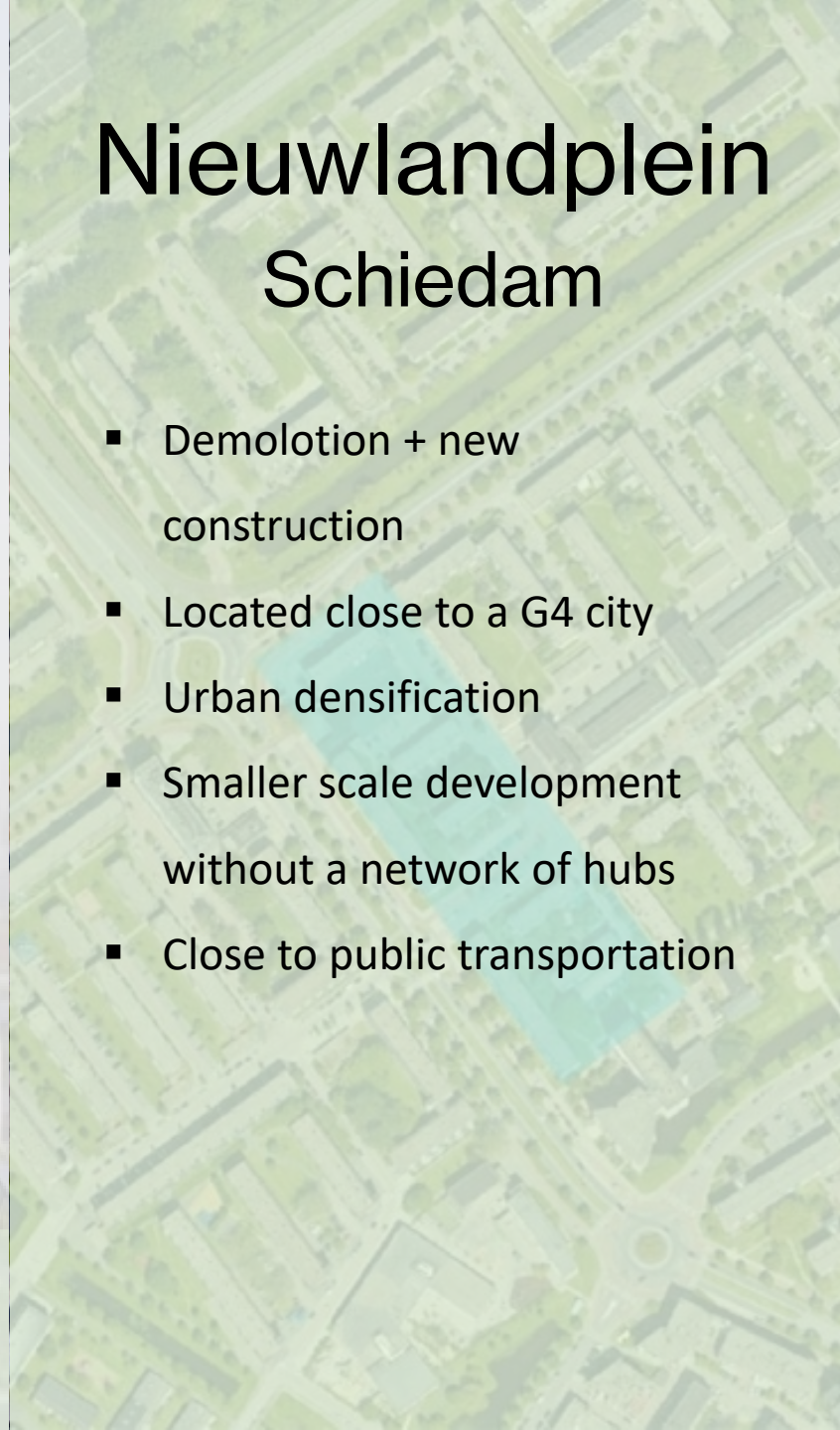




Feyenoord City  
Rotterdam

# Nieuwlandplein Schiedam

- Demolition + new construction
- Located close to a G4 city
- Urban densification
- Smaller scale development without a network of hubs
- Close to public transportation



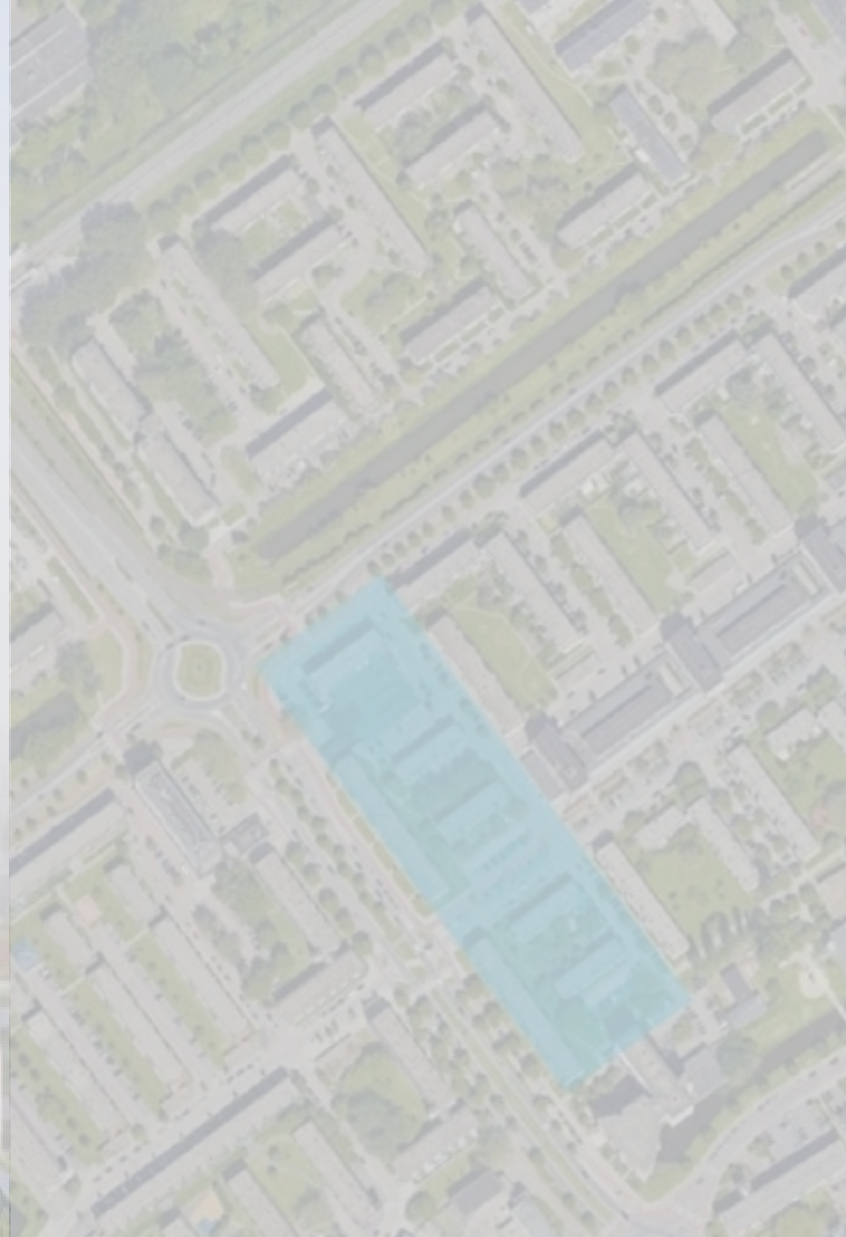
Waterlandkwartier  
Purmerend





Feyenoord City  
Rotterdam

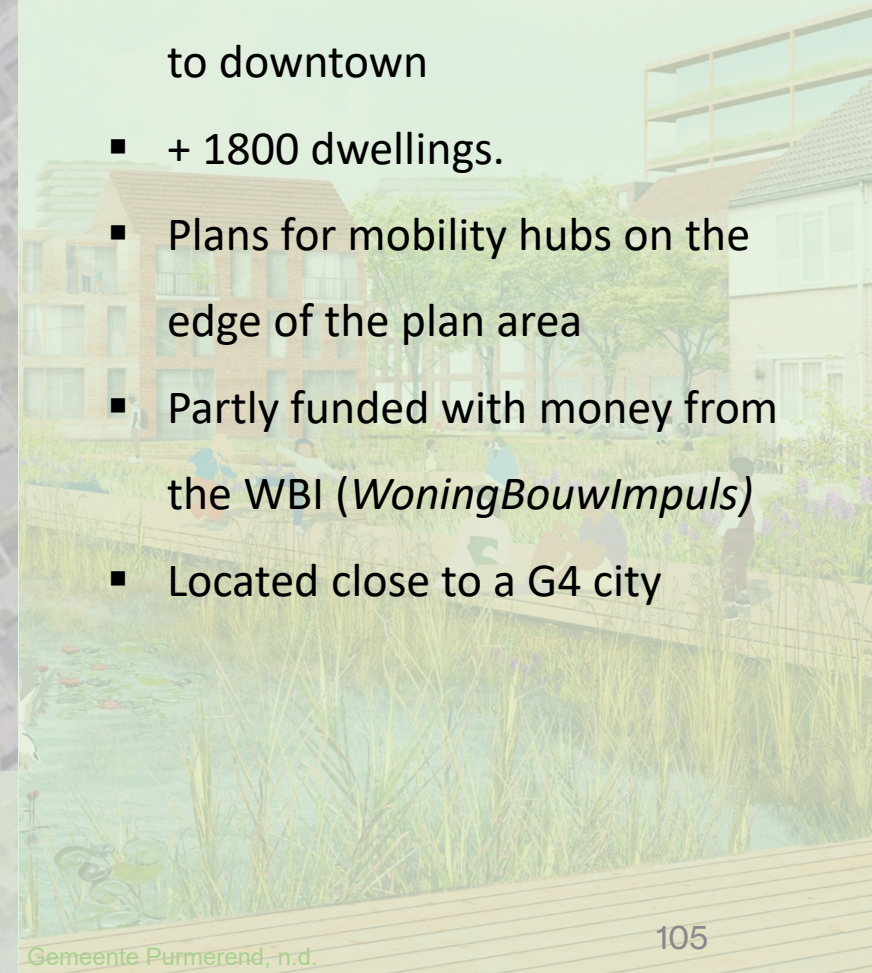
Feyenoord City (n.d.)



Nieuwlandplein  
Schiedam

# Waterlandkwartier Purmerend

- Transformation of an area close to downtown
- + 1800 dwellings.
- Plans for mobility hubs on the edge of the plan area
- Partly funded with money from the WBI (*WoningBouwImpuls*)
- Located close to a G4 city



Gemeente Purmerend, n.d.



## Feyenoord City Rotterdam

Developer

Municipality

Mobility Advisor



## Nieuwlandplein Schiedam

Developer

Municipality

Housing Association



## Waterlandkwartier Purmerend

Developer

Municipality

## General Stakeholders

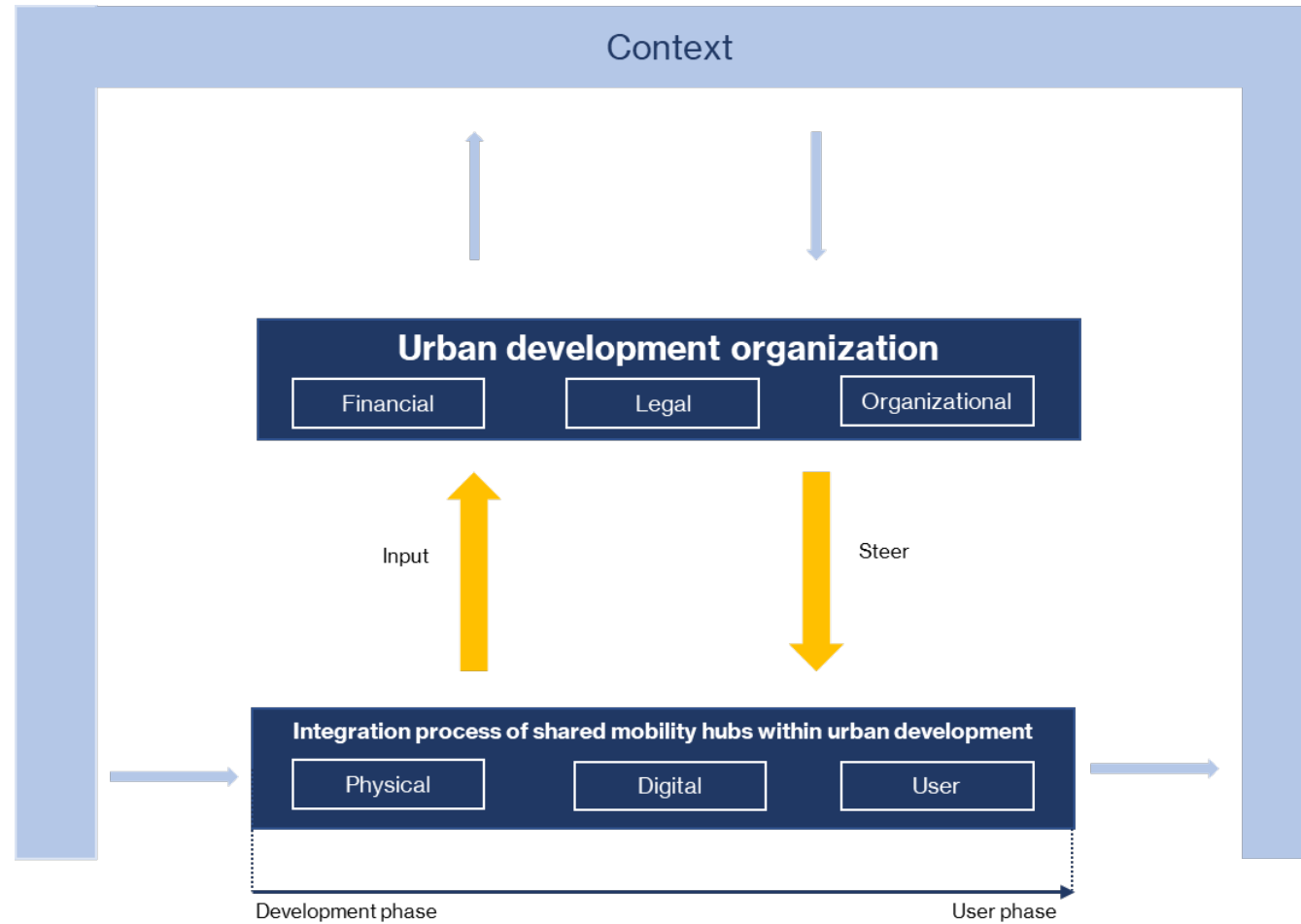
Shared Mobility Provider

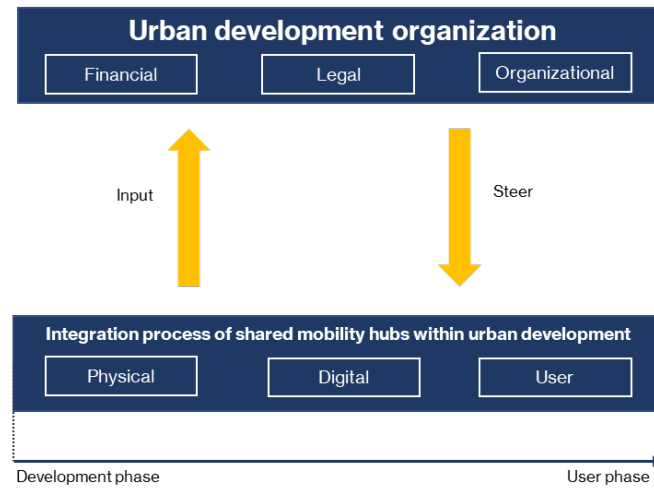
Shared Mobility Service  
Provider

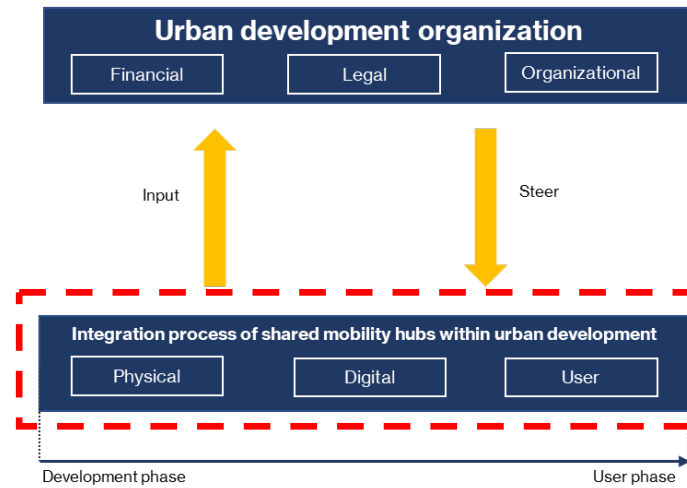
Advisor Logistics



# Conceptual Model







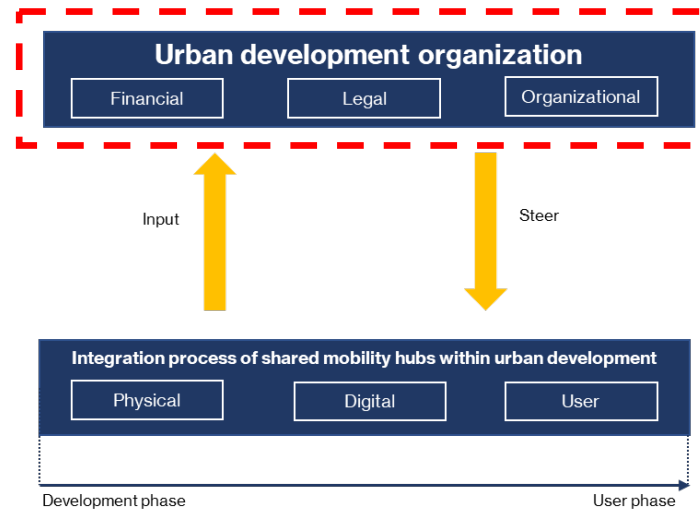
## Mobility Hub Concept

*Everything related to the mobility hub as a product and the way it is used. This includes physical, digital, and user aspects.*

## Urban Development Organization

*Everything related to organizational process of creating and operating the mobility hub. This includes organizational, financial, legal, and steering aspects.*





## Mobility Hub Concept

*Everything related to the mobility hub as a product and the way it is used. This includes physical, digital, and user aspects.*

## Urban Development Organization

*Everything related to organizational process of creating and operating the mobility hub. This includes organizational, financial, legal, and steering aspects.*

# Structure of Results

## Mobility Hub Concept



Mobility Hub Concept (general)



Physical Design and Adaptivity



Digital and MaaS



User and Behavior (demand)



Modalities and Operation



Energy

## Urban Development Organization



Organization and Management



Business Case and Exploitation



B2C



Parking

# Mobility Hub Concept (general)

Concreteness

Program & Objective

Scale & Design

“To me, the hub is much more of a conceptual model than one single object.”

(L) Advisor Logistics

“My statement often is: a hub is a glorified parking garage, complemented by space for shared cars or other modes of shared mobility. That’s it, in essence”

(H) Developer Waterlandkwartier



# Digital and MaaS



## MaaS

- The investment needed to connect multiple platforms/providers outweighs the potential financial gains
- Providers not keen on having 1 application
- Network?

## White Label Hubs & Interoperability

- More than just a digital linkage (also support & servicing)
- Interoperability might be possible with a network of hubs within urban development

“Our vision says that *wijkhubs* cannot really function on their own, because a network is needed to have everything at the right distance. In addition, it is necessary to have *buurthubs* that are easily accessible. In this way, the network is city-wide. Separate hubs are not really of use.”

(C) Municipality

# User and Behavior (demand)



- Target groups
  - Desirable or most prone to use shared mobility
    - Everybody or specific groups?
- Social target groups and affordability
- Business use (pool cars)
- Attractiveness
  - Proof, ease of use & comparing alternatives
  - Change of behavior
    - Status
- Communication
- Customer Attention
  - Staffed hubs

“If you listen to your customer, then it is going to work. If you don’t, then you’re gone.”

(K) Shared Mobility Service Provider

# Modalities and Operation












- Modalities
  - Potential of shared bikes is doubted
- Free-floating & station-based
  - Differing views of desirability
  - Potential of free-floating cars is doubted
- Transfer

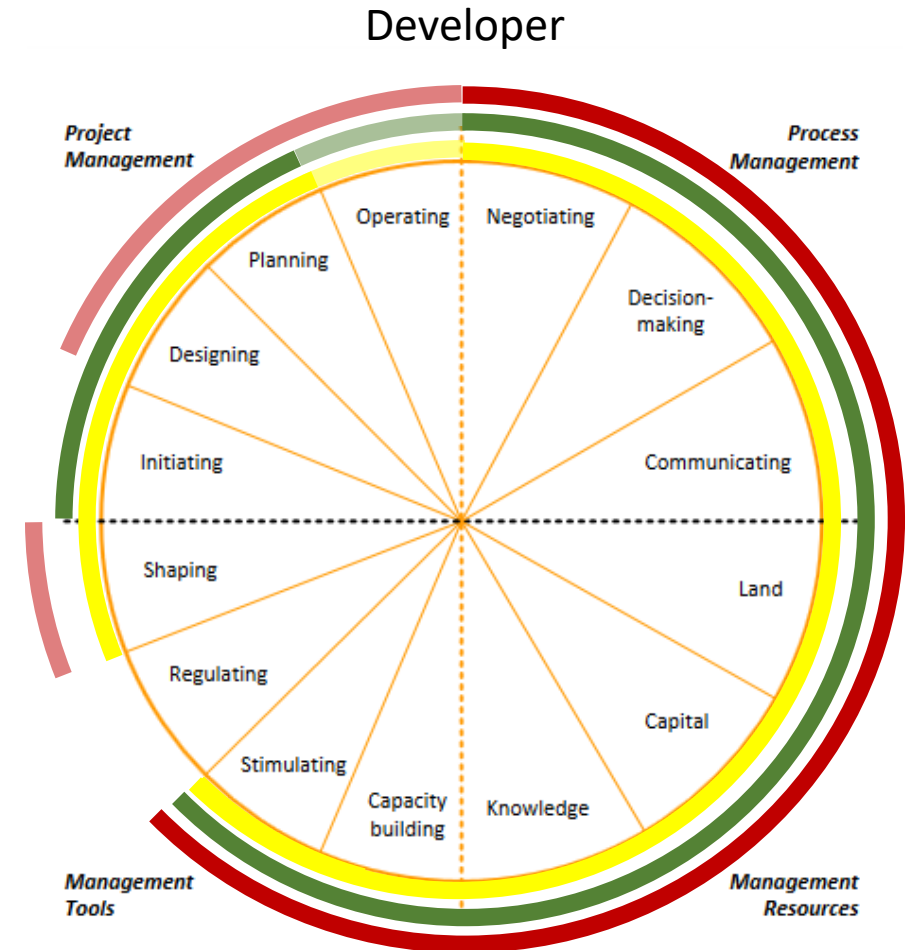
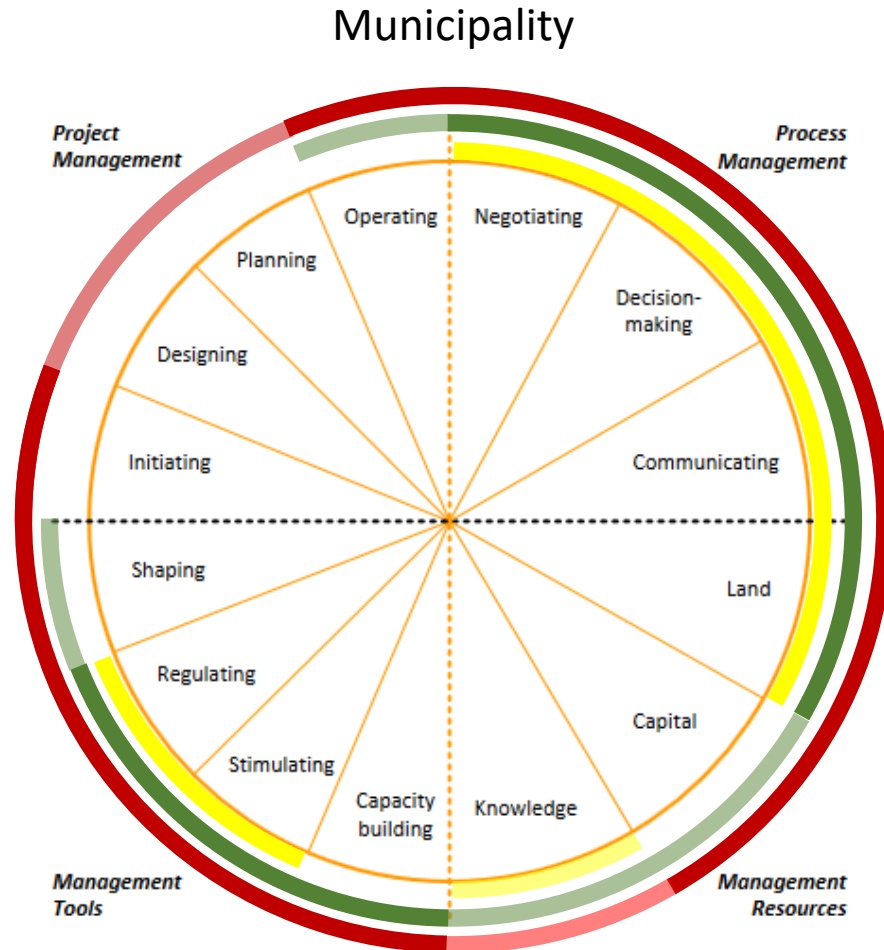
“We all bike here, right? And it works. Finally, hundreds of millions are invested in bike infrastructure, that is what needs to happen [...] But shared bicycles in a neighborhood: no.”

(J) Shared Mobility Provider

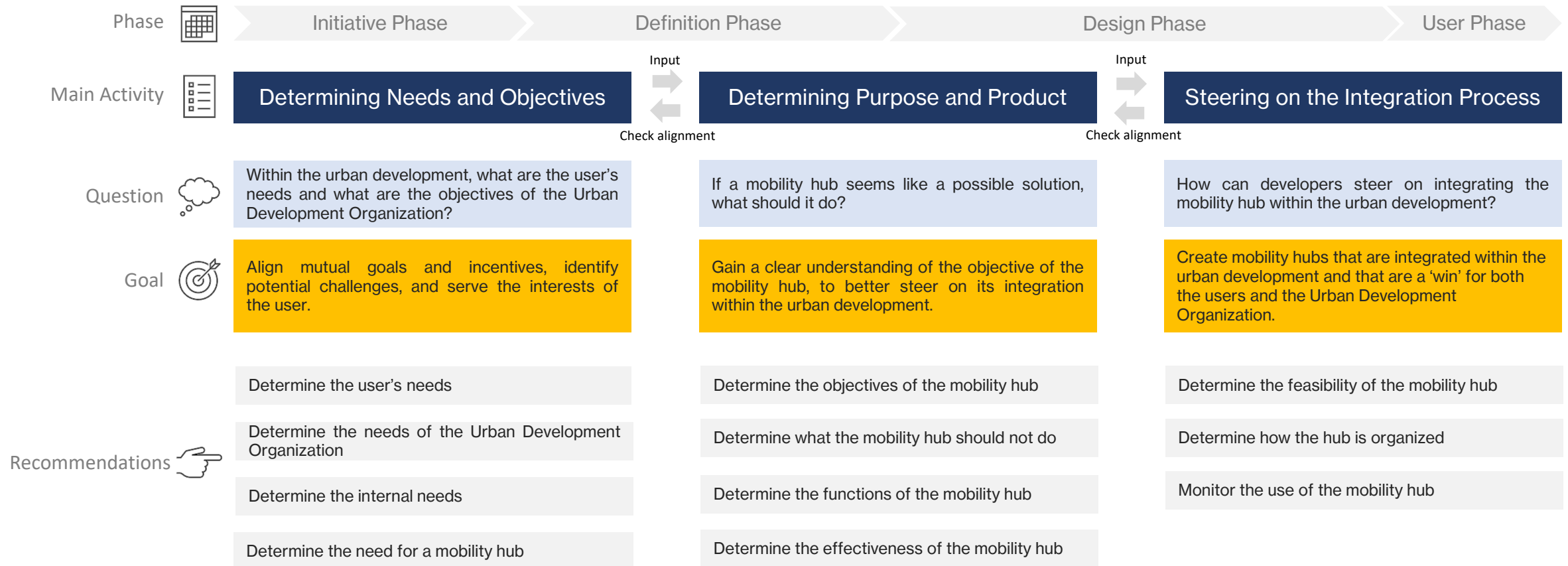


# Cross-case Analysis

		Yes	Yes (partly)
Schiedam			
Rotterdam			
Purmerend			



# Management Guide



Thank you for your attention.



We  
Develop  
Quality

