

On-Demand Mobility System

Analyzing the Interactions between urban mobility requirements and on-demand mobility services

– A System Model Approach

- Motivation:**
- Increasing presence and importance of new mobility services for individuals and companies
 - Shared on-demand mobility as a major role in the future of urban mobility (BMW ACES Strategy, Daimler CASE Strategy)

- Objective :**
- Development of an elaborate understanding of urban on-demand mobility
 - Demarcation and investigation of the entire system and its interconnections between supply, demand and general conditions (On-Demand Mobility Service System)
 - Valuation of the system behavior using criteria for urban sustainability on an individual and urban level

Method:

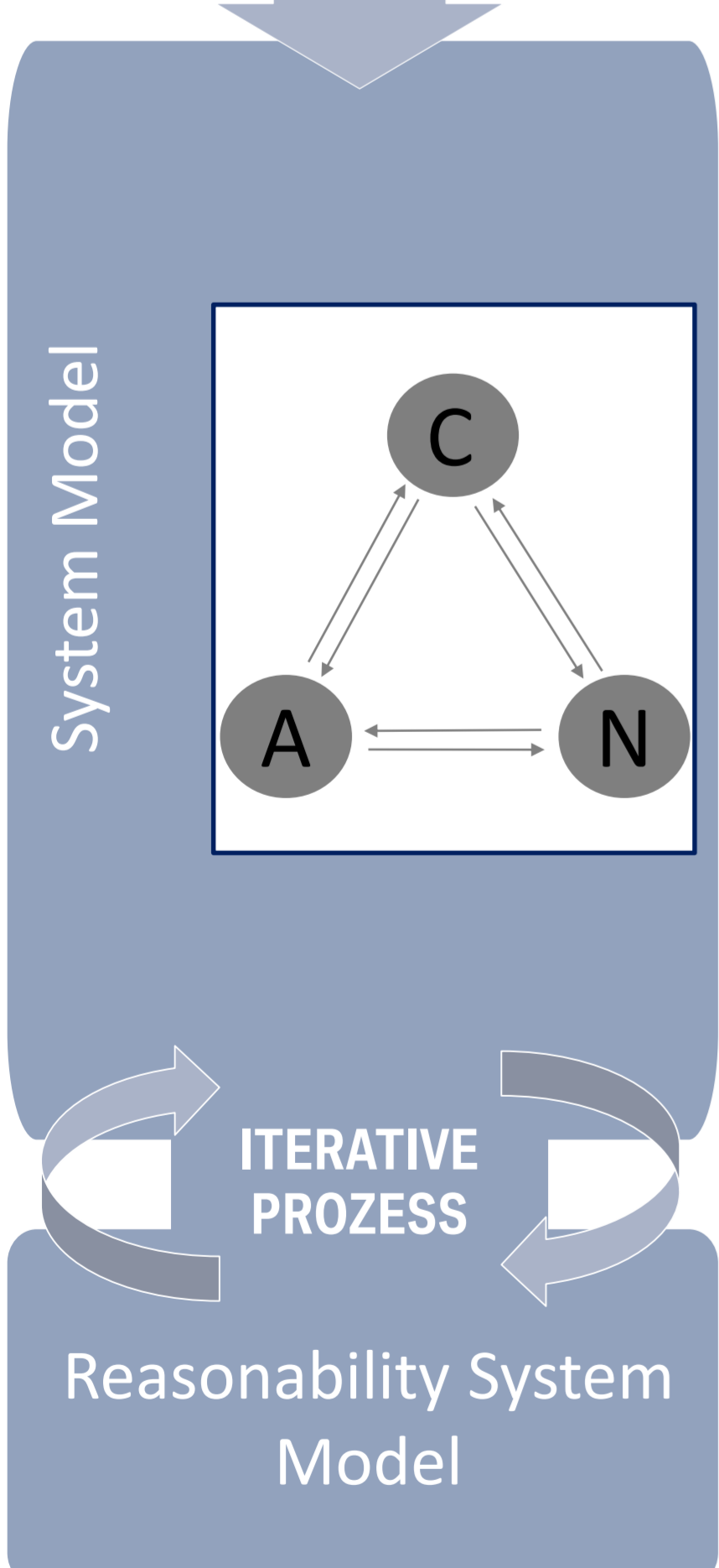
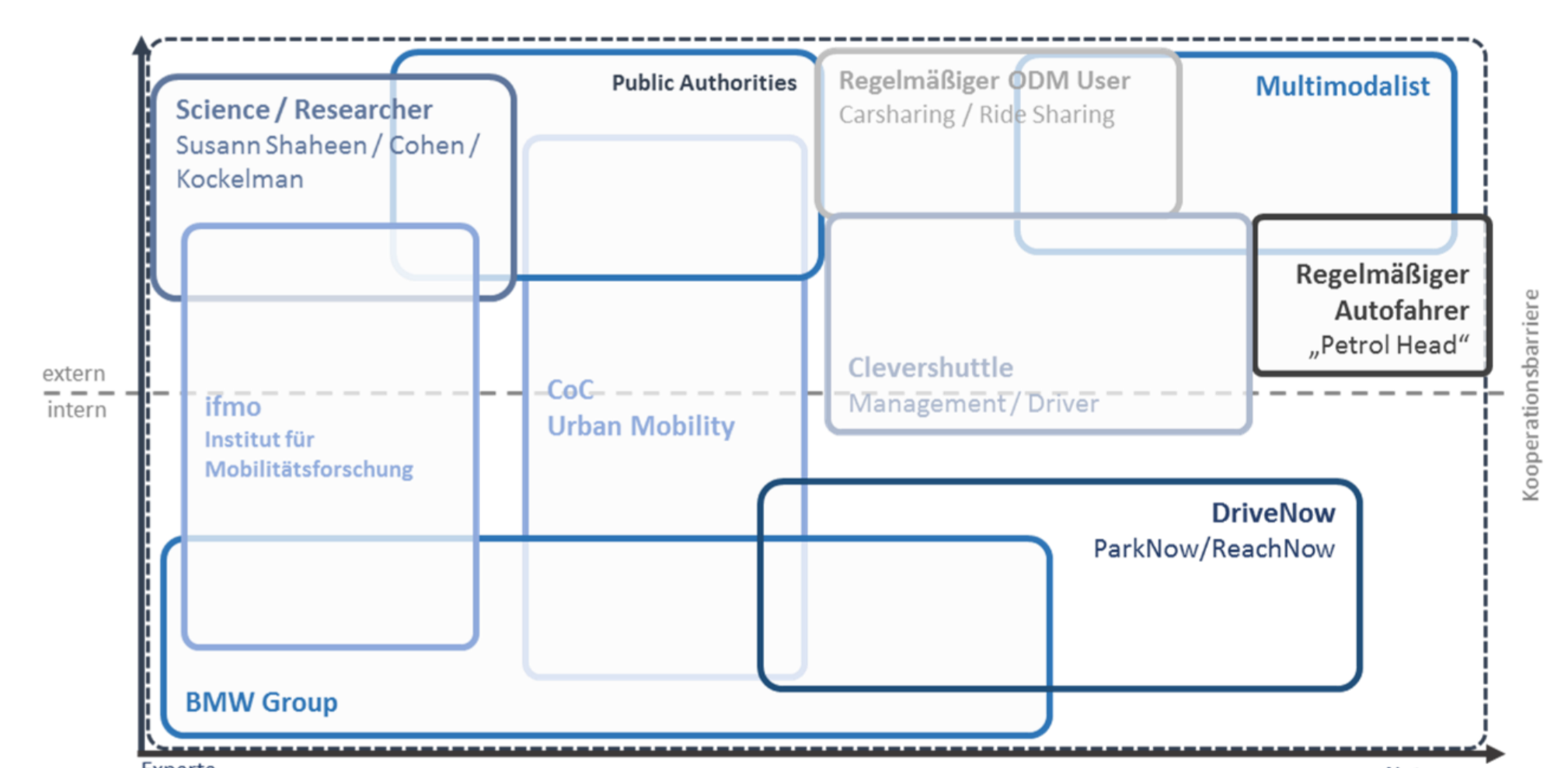


- Procurement and analysis of relevant documents and findings on the objects of:
 - Mobility requirements / mobility behavior
 - On-demand mobility services
- Analysis of enabler and push factors for on-demand mobility
- Market analysis on-demand mobility services

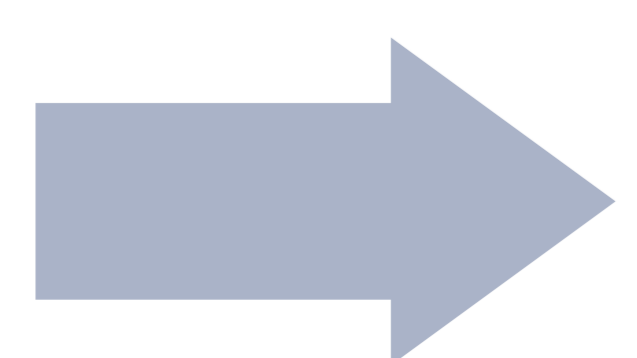
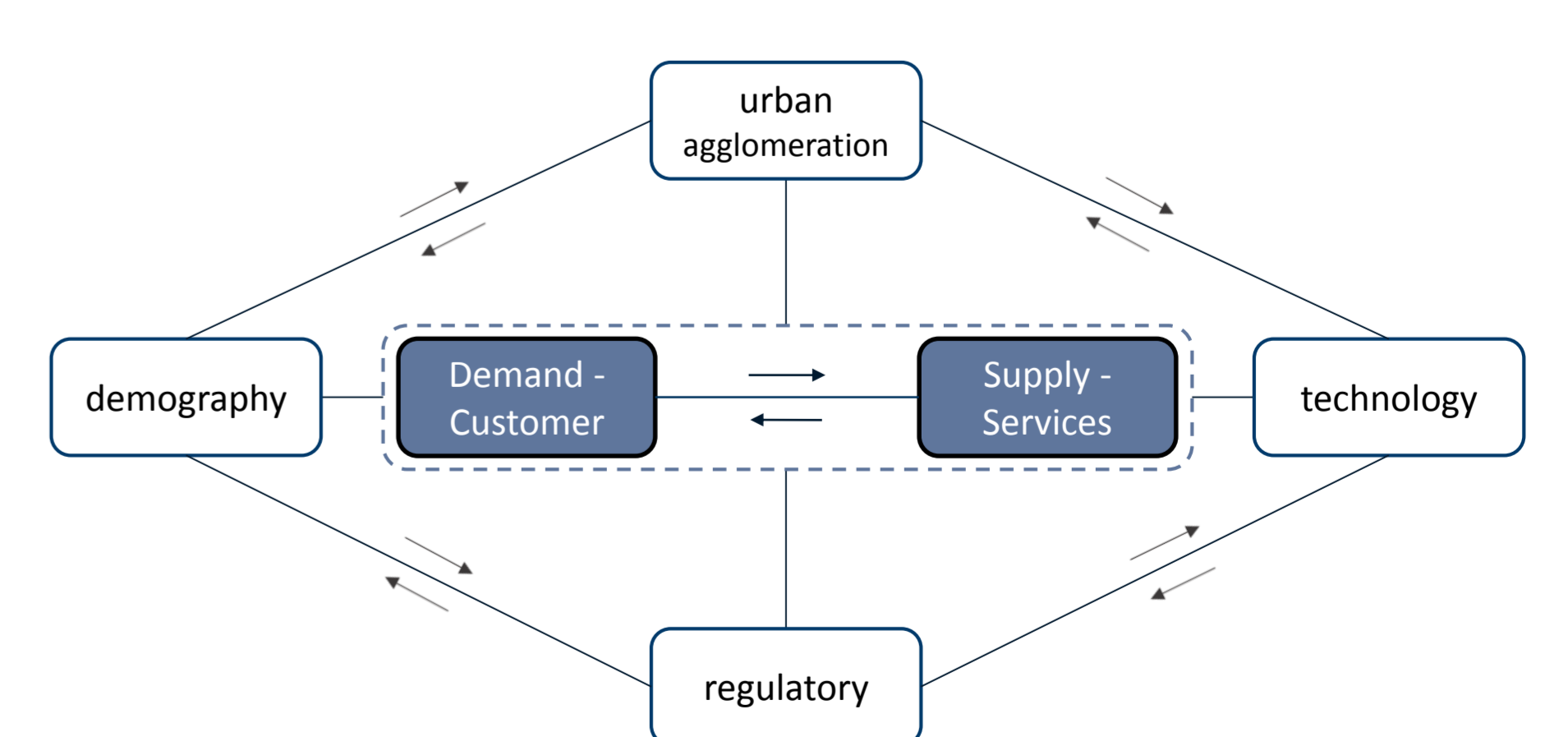
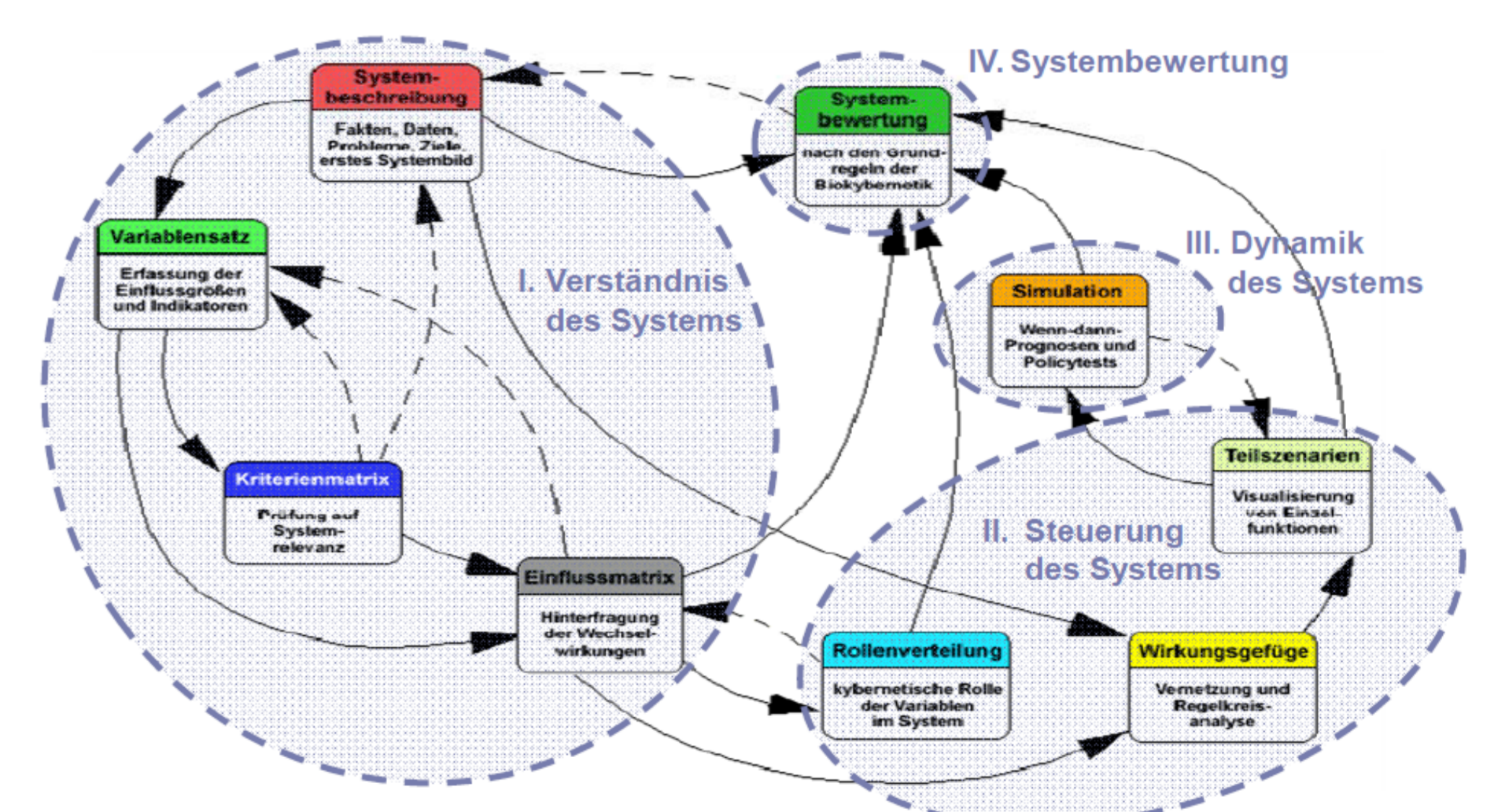
	RIDE HAILING	POOLING	SHARING	RENTAL
Serviceleistung	gefahren werden	gefahren werden	selber fahren	selber fahren
Individualitätsgrad	hoch	niedrig	hoch	hoch
Fahrtpreis	mittel-hoch	niedrig	niedrig	niedrig - mittel
Beispiel Unternehmen	UBER, DIDI, BLACKLANE, TAXI	BLA BLA CAR, uberPOOL, SuperShuttle	DriveNow, CAR 2GO, Flinkster	SIXT, Europcar, Hertz



- Exploratory interviews on supplier and user side
- Half structured interviews
- Content survey on the factors: demography, regulatory, urban agglomeration and technology
- Structuring and evaluation of the interviews using the software MAXQDA



- Building a system model using Vesters' 'Sensitivity Model' and further methods of system thinking
- Application of an 8-step method: system description, defining variables, criteria matrix, influential matrix, role allocation, complex network, szenarios, simulation and system evaluation
- Modeling the interactions of supply, demand and the given framework conditions and analyzing impact factors regarding the on-demand system model
- Checking the plausibility of the system model using an iterative workshop design



Evaluation of the system behaviour using appropriate targets to measure sustainability on an individual and urban level



Christian Assmann
 PhD Student funded by BMW Group
 Research, New Technologies, Innovation
 Mobil: +49-151-601-76656
 Mail: christian.aa.assmann@bmwgroup.com
 PhD fellow mobil.LAB doctoral research group
 Technische Universität München
 Ingenieur fakultät Bau Geo Umwelt
 Professur für Siedlungsstruktur und Verkehrsplanung
<https://www.sv.bgu.tum.de/mobilab>