



Limiting Factors for a Robust Railway System: The Case of Germany

Chameleon Workshop on
Barriers to Adaptation

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Motivation and Background

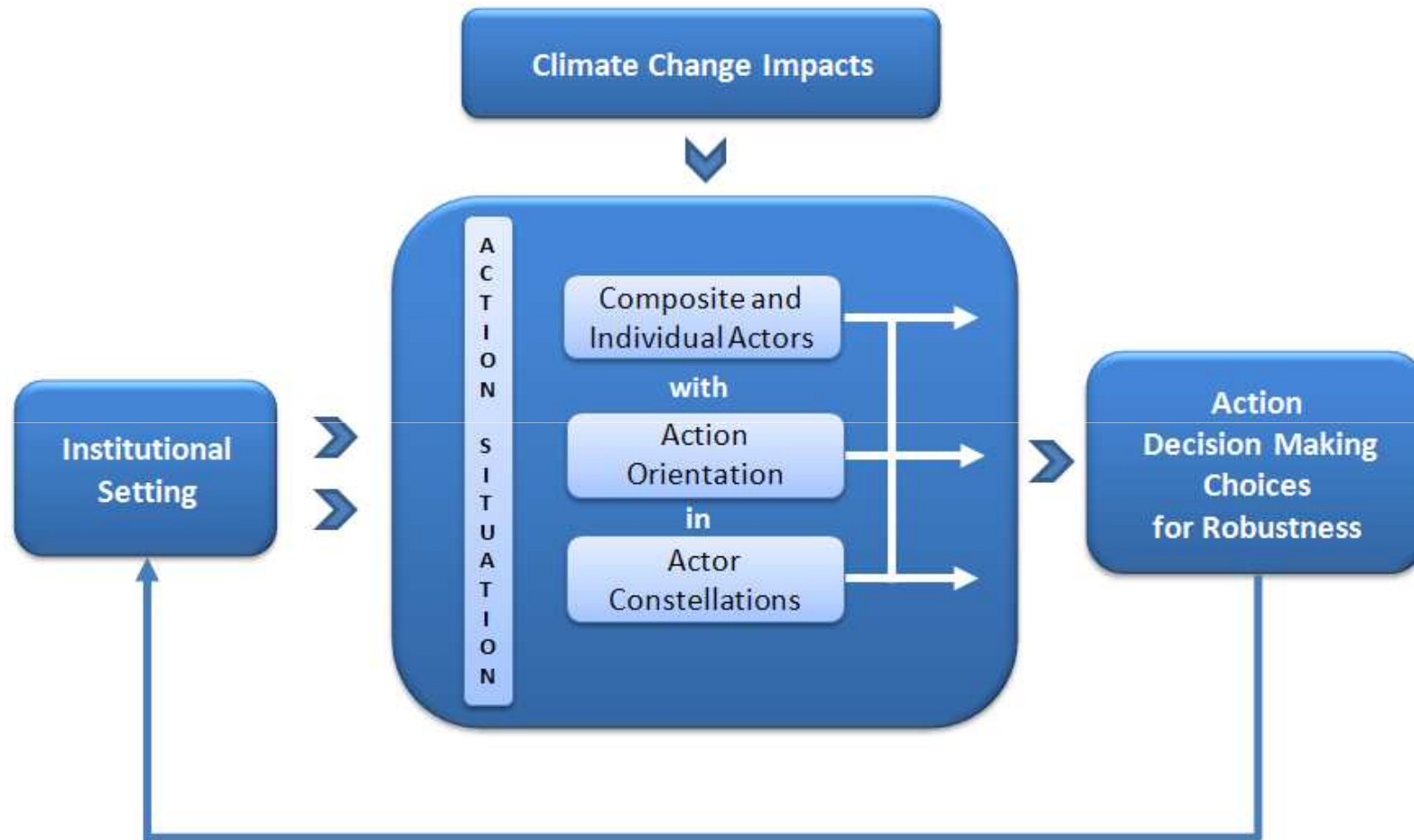
- **Railway infrastructure is a critical infrastructure**
 - Failure may result in shortages of supply as well as dangers to public safety and security
 - Disruptions in railway infrastructure may cause severe consequences for economic sectors and society as a whole

- **Little research on adaptation of the railway sector so far**
 - Analyses of vulnerabilities and adaptation options have a very technical perspective
 - Actors and institutions can be a lever for adaptation (Eisenack et al. 2012, Savonis et al. 2008, TRB 2008)

- **Research Question:**

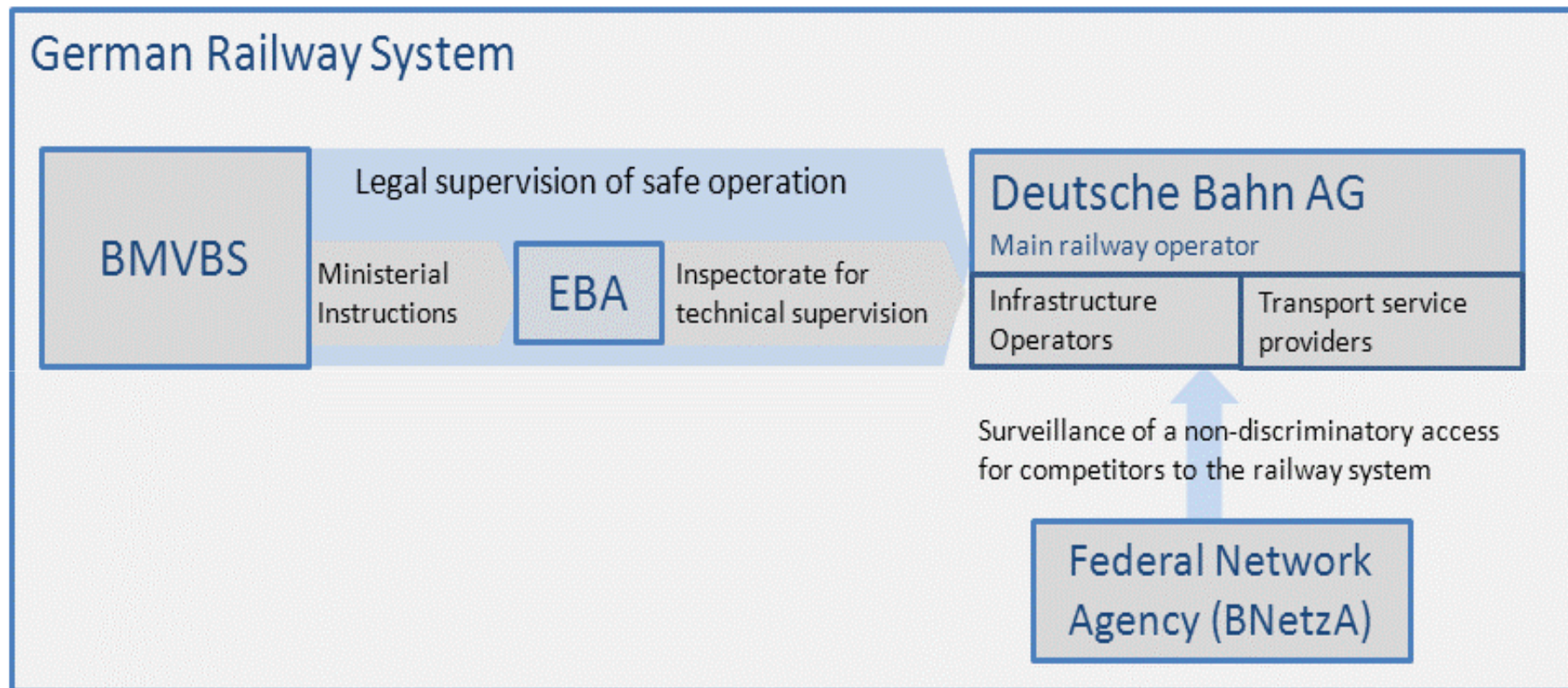
Which factors limit action and decision making towards a (climate) robust infrastructure in the German railway system?

Conceptual Framework: Actor-centered Institutionalism



Own figure based on Mayntz and Scharpf 1995, Scharpf 1997

Actors and Institutions in the German Railway Sector



Own figure: (Corporate) Actors and institutional setting in the German railway system

Example of Action Situation:

Analysis of Internal Standards Deutsche Bahn (Climate Check)

- EBA and DB: established exchange on environmental issues
 - EBA brought up concerns of vulnerability and adaptation to climate change impacts
 - Consultation and arguments led to agreement

- Infrastructure operation and rail traffic rely on standards and technical guidelines
 - DB will analyze internal standards for parameters that might be sensitive towards climate change
 - 20 internal standards have been identified and need to be evaluated

Limiting Factors on Adaptation Decision Making

- Actor Constellation (meso level – Deutsche Bahn)
 - Environmental division on holding level was in charge in beginning and in favor of process
 - Environmental division can only foster coordination (mode of interaction)
 - Some (eventually important) divisions refused to take part in the process
 - DB Netze Track took lead over time

- Actor Constellation (macro level – Deutsche Bahn vs. EBA)
 - EBA has no option for hierarchic direction
 - Coordinative mode of interaction
 - Neither EBA nor DB Holding divisions have competences to act

- Actor Orientation
 - EBA perceives need to strategically address climate change
 - DB Netze Track asserts to have the best knowledge and claims to be in the best position to judge and evaluate consequences of climate change
 - EBA's role and influence is neglected by DB employees (Track)
 - EBA aims at autonomy and defining its influence and responsibility

Conclusions and Discussion

- Institutional Void
 - Actors have different perceptions on strategic or operational decision-making
 - Actors ask for top-down decision-making

- Value of framework
 - Name actors, their task and responsibilities in a given institutional setting
 - Reveal challenges in existing institutional settings

- Further research
 - Compare with other sectors and national systems
 - In order to identify suitable institutional settings and actors constellations



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Thank you for your attention!

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