

# Radical innovations in freight transportation:

## A comparative analysis of success factors for innovation processes in France and Germany

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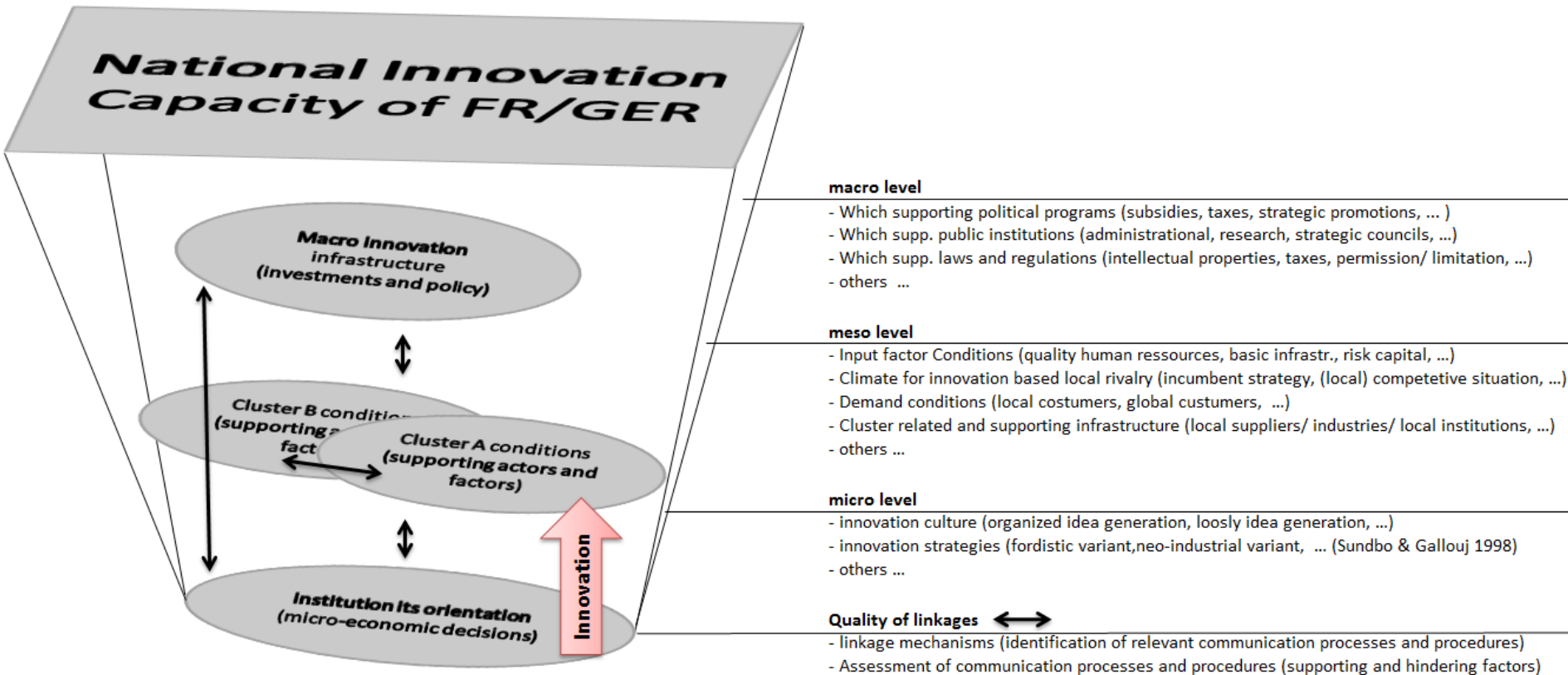
# Why are radical innovations of interest in freight transportation?

- Types of innovations have different consequences
- The singularity of radical innovations in transportation ...and freight transportation

**How do national factors influence radical innovation process' performance in freight transportation?**



# Questionnaire Approach (interviews with inventors)



# Case Studies in France and Germany

## FRANCE

	Technology	Description
<b>emergents</b>	VAM (2008)	Automated goods vehicle
	R-Shift-Я (2008)	Pickaback system for semi-trailer on rail
	DIRISOFT (2007)	Airship for heavy goods transportation
<b>successful</b>	MODAHLOR (2006)	Bogie to load trailer on rail wagon
<b>non-successful</b>	COMMUTOR (1994)	Automated management system at trimodal ports

## GERMANY

	Technology	Description
<b>emergents</b>	CargoCap (2002)	In-ground tube for freight transport
	CargoBeamer (2007)	Rail wagon takes semi-trailer pickaback
	CargoSpeed (2006)	Bogie to load trailer on rail wagon
	EEELZ	Energysaving adventure-shopping and logistic center
	CACC (2008)	Connected automated driving of trucks in a platoon
<b>successful</b>	SkySails (2001)	Wind propulsion systems for modern cargo vessels
<b>non-successful</b>	CargoRapid (2009)	Magnetic, contactless (Transrapid) rail goods transport



# Results: commonalities and national specifications – Micro level

## The determinants in the internal organisation of projects

### Commonalities

**Projects require the sharing of a common vision**, which goes beyond the juxtaposition of technical skills.

**The role of the Coordinator is essential** here. Managerial skills are then required, which do not always have the inventors.

**The economic dimension – including the infrastructure – must be an integral part of the projects.** However, transport culture gives most attention on the technical dimensions, or confines the economic dimensions in approaches to evaluation of technological choices.

**Long temporalities of projects...**

### National specificities

**The culture of the business and experimentation is more important in Germany.**

**The industrial type mobilized in projects is not the same in France and Germany.** This has consequences on the contribution of these industrial projects



# Results: commonalities and national specifications - Meso level

## *The determinants relating to the structure of the system of transport and industry*

### Commonalities

**Inadequate diagnosis of the difficulties of the freight transport system** (the one-time technical idea ahead of the need), or focused on the technical conditions of production of the transport-related problems. Therefore, the importance of any organizational innovation is reduced.

**The systemic dimension of transport must be taken into account** (linking infrastructure, vehicle and service): any change of a part of the system has implications for the other.

**the balance of power between actors is** requested by radical innovations. Incumbent firms uses power to maintain their position.

**It is essential to mobilize all the actors of the supply chain, and in particular the operators, who will ultimately implement the projects.**

### National specificities



# Conclusion: commonalities and national specifications – Macro level

## ***The context institutional and regulatory determinants***

### Commonalities

**(Public) Financial support is essential for the implementation of projects.**

**Obtaining the financing, political support and lobbying are closely linked.**

**The poles of competitiveness (Cluster) for their part must enhance their contribution in terms of support for the marketing of innovations.**

**Finally, the transport sector includes many regulatory locks (approval, authorization of traffic) that must be taken into account in the conduction of projects.**

### National specificities

**Different linkages established in between science, industry and policy.**

**Scientific policy falls within the Federal Countries in Germany, while it has long relied on a centralized tool in France.**



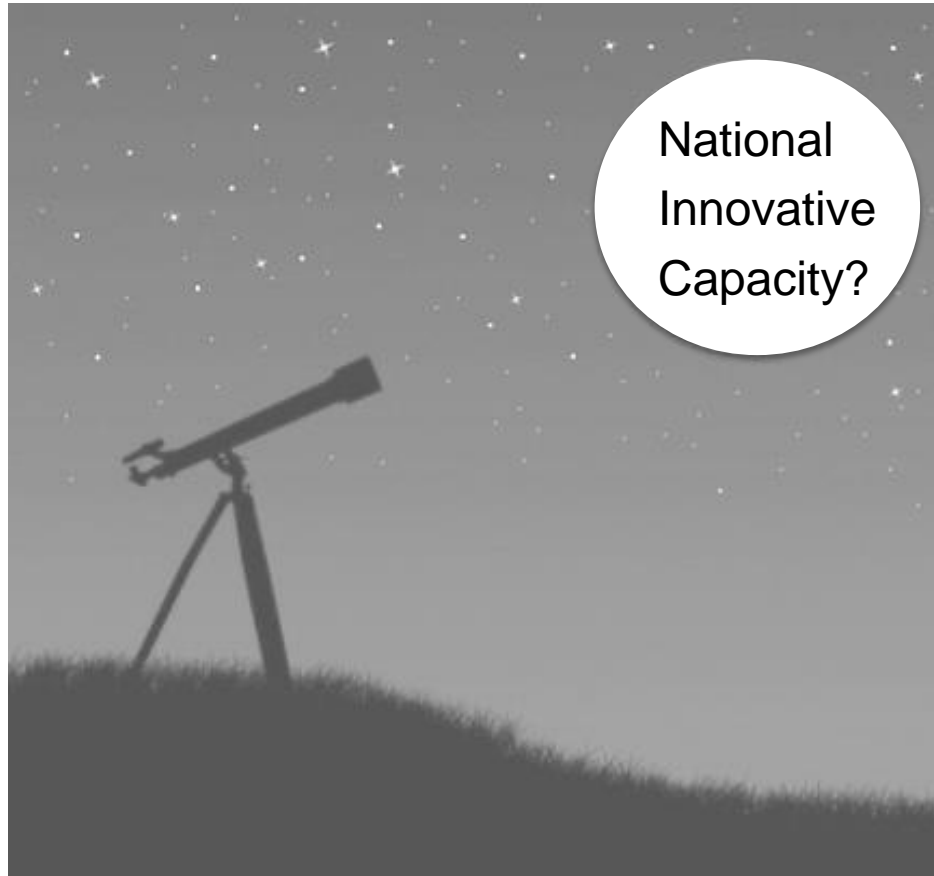
# Summary

- Great influencing NIC factors are:
  - How supportive political programs are constructed and how available they are for inventors
  - How political institutions interact with inventors to favour the innovation (quality of linkages)
  - Cope of regulations/laws
  - Access to capital
  - National landscape of available companies (SMEs, technical orientation)
- Moreover and not yet included in the NIC theory are:
  - Power games and backdoor activities by the established system
  - Cultural specificities and self-understanding of the actors and institutions
  - Managing skills of the inventors





# Outlook



# Outlook



**Thank you very much for your attention!**

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