

Policy Coordination in Innovation Systems

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EU-SPRI, June 2020



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Coordination Challenges

PERSPECTIVE I

Interaction of technologies with multiple purposes and systemic effects

PERSPECTIVE II

Cross-over between policy domains and administrative jurisdictions

PERSPECTIVE III

Design vs implementation coordination



(photo: Kopp, 2019)

Objective: Theoretical and Empirical Contribution

FOCUS I

Technological innovation system approach: agency and role of different organisations associated with the state

FOCUS II

Public administration analysis: coordinative overlap vs underlap, regulatory discrepancies, design-implementation dichotomy

FOCUS III

Multi-technology innovation: overarching 'mission-orientation' vs on the ground implementation with autonomous vehicle as primary example

Objective: Theoretical and Empirical Contribution

QUESTION

How are multi-technology innovation systems shaped by public administrative organisations and how can they overcome associated policy coordination problems?

METHODS

Combination of network analysis, TIS analysis, coordination analysis; data collection through 45 semi-structured interviews, policy documents, site visits, and secondary resources; triangulation and process tracing; comparative analysis across three countries with leading CAV sectors

GOAL

Understand ‘the **how**’ of public administrations in innovation systems, going beyond policy design and towards implementation analyses

Approach: Public-Administrative TIS Analysis

**CENTRALITY
LEADERSHIP**

**INDEPENDENCE
CAPACITY**

**REGULATORY
EXPERIMENTS**

**COMMON
GOALS**

F1 KNOWLEDGE CREATION/DIFFUSION

F2 ENTREPRENEURIAL ACTIVITY

F3 GUIDANCE OF THE SEARCH

F4 MARKET FORMATION

F5 RESOURCE MOBILISATION

F6 LEGITIMACY CREATION

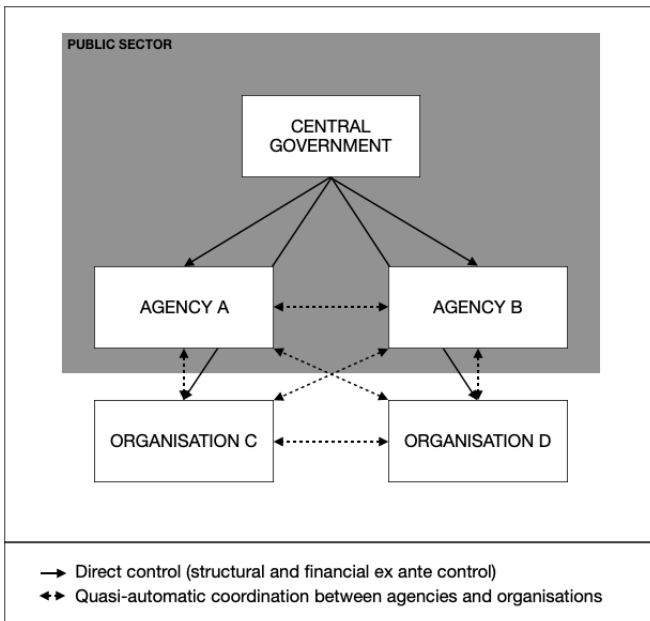
F7 POSITIVE EXTERNALITIES

Detect: Blocking/inducing mechanisms, administrative influences, feedback loops

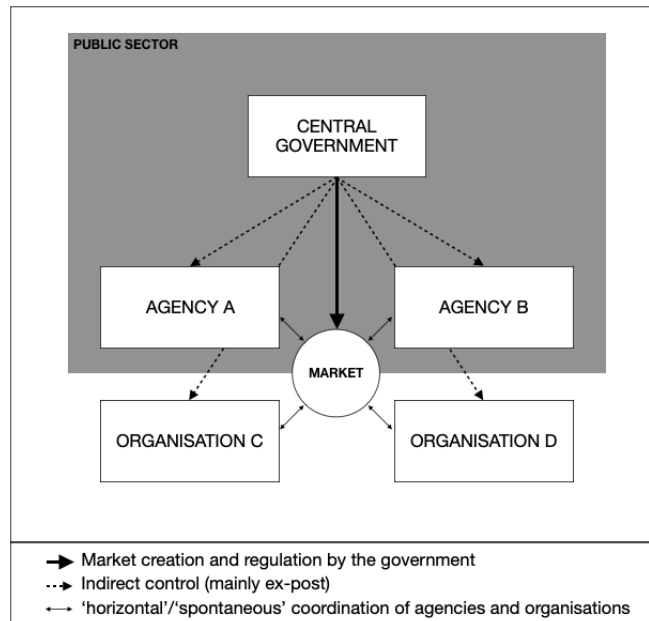
(adapted from Hekkert et al. 2007, Bergek et al. 2008/2015, Wieczorek & Hekkert 2012, Karo and Kattel 2015/2018, Gehring & Oberthür 2009)

Approach: Coordination Analysis

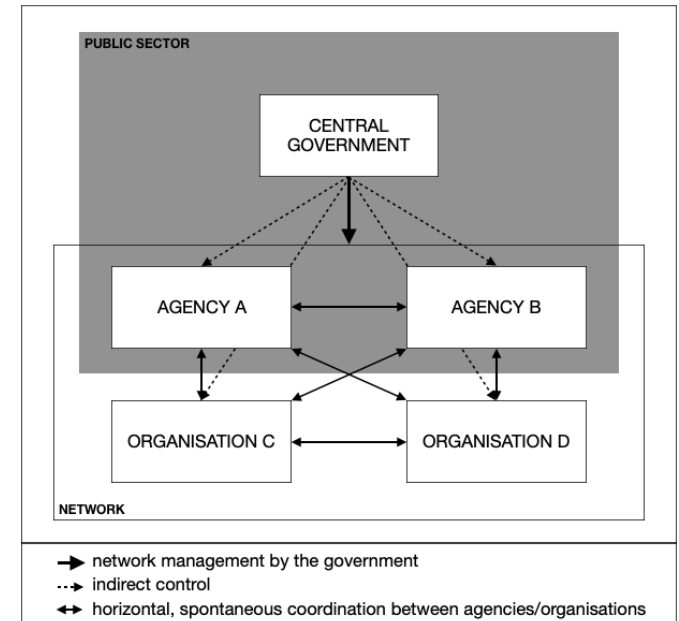
HIERARCHICAL



MARKET-BASED



NETWORK-ORIENTED



Detect: coordination changes, changing administrative impacts, feedback loops

(adapted from Bouckaert, Peters, Verhoest 2010)

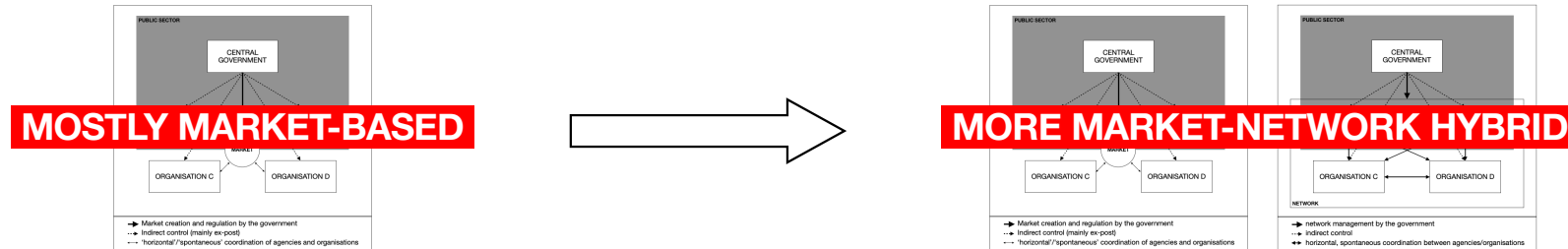
Case Study: AV Coordination in Estonia

STATUS	11+ pilots Shuttles, mini-robots, small cars
NETWORK	130 network nodes Government: not a central node Few governance organisations involved
CHALLENGES	Regulatory uncertainty Lack of governance expertise Market-driven imperative
MEASURES	Formation of AV expert group Permit exemption model Concentration on Road Admin.
OUTLOOK	Testing of business models Further trials in planning International cooperation



(photo: Kopp, 2019)

Estonia findings: Shift of Coordination Patterns



I

Network-oriented coordination approaches suited to mirror the complexity of multi-technology innovation (actors, interests, impact)

II

Network-oriented coordination likely to prevent underlap/overlap and allows adaptive regulation (information, power sharing/transmission)

III

Network-oriented coordination modes maintain stronger feedback mechanisms across the innovation system and between policy design and implementation (organisational learning, evaluation, trust, etc.)

Thank You.

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