

University of Bamberg



On the (im)possibilities of complexity-informed policies

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Chair Governance of Complex and Innovative Technological Systems



Overview

- Complexity and policy analysis
- Two examples:
 - Mixed-methods
 - Complexity informed
 - Policy recommendations
- Observations regarding implementation

Example: cost overrun infrastructure projects

- Commissioner: Ministry of Infrastructure
- Aim: to understand nature of cost overrun



Example: cost overrun infrastructure projects

- Approach:
 - Nested nature of complexity
 - Specific vs. generic patterns
 - Occurrence of chance
 - Capricious, developmentally-open world

Example: cost overrun infrastructure projects

Mixed method:

- Casing
 - Reconstruction disruptive events
 - Qualitative data
 - Processed using AtlasTI
- Qualitative Comparative Analysis
 - Coding, quantification
 - Scoring, calibration
 - Processed using Tosmana

Example: cost overrun infrastructure projects

Satisfaction	Response	Cooperation	Type	No. events	Con f.
Low	Internal	No cooperation	Social	9	A
Low	Internal	Private actor autonomously	*	13	B
High	Internal	Public actor autonomously	*	2	C
High	Internal	Full cooperation actors	Physical	1	D
High	Internal	Public actor mediates	Physical	1	E
High	External	*	Social	16	F

*) empty cell: unnecessary for explaining the outcome

Source: Verweij, Gerrits & Teisman (2014)

Example: railway disruptions

- Commissioner: ProRail infra-provider
- Aim: to understand cascades of failures



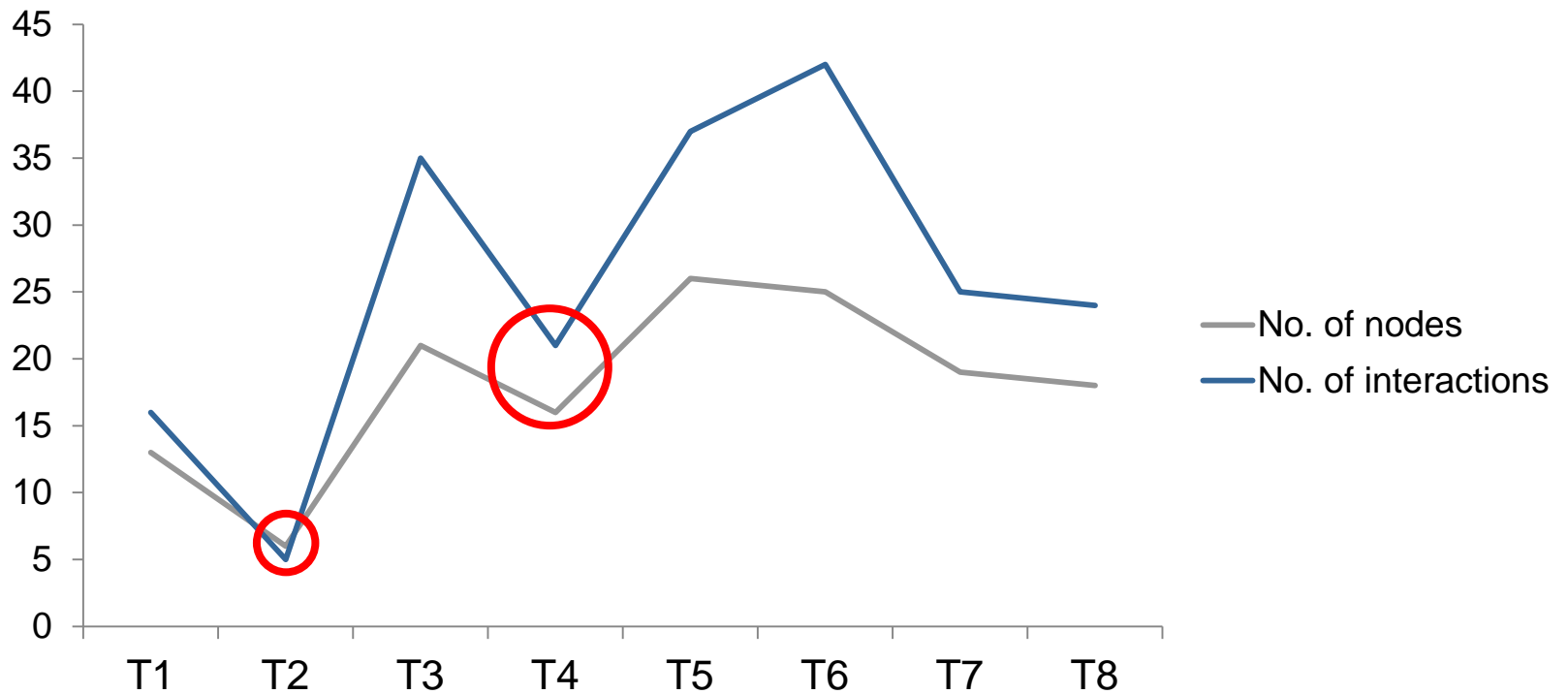
Example: ProRail

- Approach:
 - Systemic nature of railway operations
 - Non-linear dynamics, volatility
 - Coping behavior under
 - time pressure
 - uncertainty

Example: ProRail

- Mixed-method:
 - Dynamic Network Analysis
 - Structures information flows
 - Quantitative data
 - Processed using ORA
 - Sense-making
 - Structures quality of information
 - Qualitative data
 - Processed using MaxQDA 11

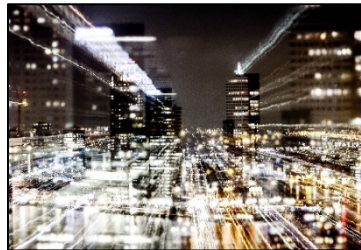
Example: ProRail



Source: Schipper & Gerrits (forthcoming)

Two projects: experience with implementation

- Commissioners generally receptive
- Results match their experience
- Research process structures their world



... but many reasons why it doesn't work

- At odds with power and legal frameworks

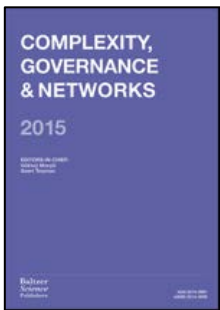
Doesn't:

- Fit political agenda
- Deliver the magic wand
- Match time-frames

Further reading (a.k.a. shameless plugging of own work 😊)



- Gerrits, L. (2012). *Punching Clouds*. Emergent Publications



- Journal: *Complexity, Governance & Networks* (www.cgnj.info)