

T09P11 / The Governance of Innovative Technologies

Topic : T09 / Governance, Policy networks and Multi-level Governance

Chair : Araz Taeihagh (National University of Singapore)

Second Chair : Li Yanwei (Nanjing Normal University)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Innovative technologies, such as high-speed railways, wind turbines, solar, geothermal, and other types of renewable energy projects, etc. along with the recent developments in ICT such as the sharing economy, block chain technology, crowdsourcing, big data and open data initiatives are increasingly adopted around the world to increase efficiency and effectiveness and improve decision making (Taeihagh, 2015; Prpic, Taeihagh and Melton, 2015; Janssen and Helbig, 2016; Hilbert, 2016). However, these technologies become sources of new problems due to unintended consequences and by creating new, previously unimaginable risks, as a result of which the social acceptability of these innovative projects may be low (Gerrits, 2016; Li, 2016). For decision makers and practitioners, how to address these issues in order to govern risks and uncertainties in a satisfactory manner is a challenge (Brown and Osborne, 2013). This raises several interesting questions awaiting to be answered by public administration and governance scholars.

- What types of unanticipated outcomes can result from adoption of innovative technologies in different fields (such as ICT, energy, transport, climate change, water management etc.)?
- How to govern risks and uncertainties inherent in innovative and often disruptive technologies?
- How to reconcile the relationships between innovative technologies and incumbent industries?
- What are the limitations of the traditional top-down approaches in governing uncertainties in the adoption of innovative technologies?
- What are the implications of responsible (technological) innovation for public administration and how to achieve it?
- What are the best practices in governing risks and uncertainties in adopting innovative technologies?
- What can we learn from other disciplines in regards to the governance of unintended consequences and unintended challenges in adopting innovative technologies?

This panel will be dedicated to addressing this issue through enhancing our theoretical understanding of risk and uncertainty, and our empirical insights into their governance. Papers are welcome on the following topics:

- Theoretical and conceptual approaches to uncertainties and risks,
- Risk and innovation in public service delivery,
- Risk / uncertainty and its governance,
- Innovation and governance,
- Risk and complex socio-technical systems,
- Robustness and resilient thinking (including Antifragility pending the working definition used for resilience),
- High-reliability organizations (HRO),
- Risk and engagement of vulnerable stakeholders,
- Transfer of risk to vulnerable stakeholders (through Automation, Sharing economy etc.)

Reference:

- Brown, L., & Osborne, S.P. (2013). Risk and innovation. *Public Management Review*, 15 (2), pp. 186-208.
- Gerrits, L.M. (2016). For the love of complexity: Governing technological innovations. Inaugural lecture delivered in abridged form on the acceptance of the Chair of Political Science, especially Governance of Complex and Innovative Technological Systems. Bamberg: University of Bamberg Press.
- Hilbert, M. (2016). Big data for development: a review of promises and challenges. *Development Policy Review*, 34(1), 135-174.
- Justen, A., Schippl, J., Lenz, B., & Fleischer, T. (2014). Assessment of policies and detection of unintended

effects: Guiding principles for the consideration of methods and tools in policy-packaging. *Transportation Research Part A: Policy and Practice*, 60, 19-30.

Li, Y.W. (2016). *Governing environmental conflicts in China: Government responses to protests against incinerators and PX plants*. Rotterdam: Erasmus University Rotterdam.

Prpi? J., Taeihagh A., and Melton J. (2015). The fundamentals of policy crowdsourcing. *Policy & Internet*, 7(3), 340-361.

Taeihagh A. (2015). Policy and Planning on the Interface of Socio-Technical Systems. *Instruments of Planning: Tensions and Challenges for More Equitable and Sustainable Cities*, 193-207.

CALL FOR PAPERS

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Session 1 Theoretical Discussions

Thursday, June 29th 10:30 to 12:30 (CJK 1 - 1)

Discussants

MIKOLAJ FIRLEJ (University of Oxford, Faculty of Law)

The Regulation of Cyber-Physical Systems (CPS): Facing the Rise of Sensor Networks, Artificial Intelligence, and Robotics

Alberto Asquer (School of Oriental and African Studies, University of London)

Inna Krachkovskaya (SOAS University of London)

The Role of Transnational Expert Associations in Governing the Cybersecurity Risks of the Internet of Things

Irina Brass (University College London (Department of Science, Technology, Engineering and Public Policy))

Jesse Sowell (Stanford University)

Madeline Carr (Cardiff University)

Blackstock Jason (UCL STEaPP)

The governance of risks in ridesharing: Lessons learned from Singapore

Li Yanwei (Nanjing Normal University)

Araz Taeihagh (National University of Singapore)

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Session 2 Applied research

Thursday, June 29th 13:30 to 15:30 (CJK 1 - 1)

Discussants

Irina Brass (University College London (Department of Science, Technology, Engineering and Public Policy))

The Effect of Deployment Policy Design on the Lock-In of Innovative Technologies – A Model of Alternative Policy Design Scenarios and the Case of the Solar PV Feed-In Tariff in Germany

Leonore Haelg (ETH Zurich)

Tobias Schmidt (ETH Zurich)

Regulatory Adaptation in the Face of Technological Adaptation: Conceptual Framework and Hypotheses

Eric Montpetit (Université de Montréal)

How to govern risks and uncertainties inherent in lethal autonomous weapon systems? Key legal challenges.

MIKOLAJ FIRLEJ (University of Oxford, Faculty of Law)

Emergent Challenges in International Investment Law: Investing in ICT

Ivory Mills (Northwestern University)