(Virtual) P01 / Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Topic : SCIENCE, INTERNET AND TECHNOLOGY POLICY

Chair : Masaru Yarime (The Hong Kong University of Science and Technology)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Data-driven innovation, including the Internet of Things (IoT), blockchain, and artificial intelligence (AI), has significant potential to address various issues concerning sustainability. These challenges range from reducing air pollution and increasing energy efficiency to maintaining resilience to natural disasters and providing accessible and inclusive health services to all. Vast amounts of various kinds of data are increasingly available from a variety of sources through sophisticated equipment and devices installed in buildings, automobiles, and infrastructure.

For facilitating data-driven innovation, effective collection, sharing, and use of data through cooperation and collaboration among stakeholders are critical. While open data access and management can contribute to creating innovation, there are many challenges that we need to address in promoting societal benefits. There are technical issues related to data, such as metadata tagging, quality control, cleaning and error elimination, and interoperability between various standards, which must be addressed to support data sharing. Stakeholders would have different interests and motivations and would not necessarily be willing to disclose or exchange data with each other . A balance needs to be considered between open and proprietary data.

Serious concerns are also raised about collecting, sharing, and using sensitive data, particularly personal data, in terms of security and privacy. A variety of ideas are proposed for institutional arrangements for data governance. The government would be in charge of governing public data, whereas platform enterprises in the private sector play a critical role in assembling and applying an increasing amount of data for various purposes. Alternatively, a data trust can be established as an independent institution to make decisions about who has access to data under what conditions, how that data is used and shared for what purposes, and who can benefit from it.

Data-driven innovation poses a particularly difficult challenge to policymaking. The speed of technological change is rapid, and the path of its evolution is not entirely predictable or explainable. That would produce a widening gap between technological change and institutional readiness. Also, various sectors, such as energy, housing, and transportation, which were not connected previously, are increasingly integrated through data in cyber-physical systems. Hence new policy approaches, such as regulatory sandboxes, would be required to incorporate the ability to learn from real-world use and experience and improve performance through adaptation.

In-depth research is required to investigate how policy measures and institutional arrangements influence the collection, management, and use of data and what impacts would be made on facilitating data-driven innovation while addressing societal concerns. The topics we discuss in this session concern the ownership of and accessibility to data, data management and governance systems, incentives to data collection, disclosure, and sharing, and the impacts of policy measures on creating data-driven innovation. Policy implications are explored for maximizing the potential of data-driven innovation while minimizing risks to individuals and communities.

CALL FOR PAPERS

This session aims to discuss theoretical as well as empirical research findings that examine the current situations concerning the collection, sharing, and use of data and the policy measures and approaches introduced to facilitate and govern data-driven innovation to address pressing challenges concerning sustainability.

Examples of data-driven innovation tackling sustainability issues can be found in various fields. In the energy sector, smart grid systems make it easier to integrate renewable energy sources and balance energy

supply and demand smoothly, improving energy efficiency and reducing CO_2 emissions. Dynamic charging systems adjust traffic flows depending upon road congestion and contribute to decreasing air pollution. For urban infrastructure, smart monitoring systems based on IoT enables us to measure winds and rainfalls precisely and strengthen urban resilience to natural disasters such as typhoons and hurricanes. In the medical sector, AI can help conduct diagnosis and treatment efficiently and accurately, providing better services for health and well-being.

Possible questions we would discuss in this session include, but not limited to, the following:

· How are various kinds of data collected, shared, and used for innovation among stakeholders?

· What incentives are provided to stakeholders with different interests and motivations to facilitate data sharing?

· What kinds of governance systems are established to manage data availability, accessibility, and ownership?

· What policy measures and institutional arrangements are introduced to deal with sensitive data, including personal data, in terms of security and privacy?

· What are the impacts and consequences of policy measures on facilitating innovation while addressing societal concerns?

Case studies in different countries and regions are particularly welcome to examine the mechanisms and processes concerning data collection, sharing, and use for innovation, which would reflect local specificities of the actors and institutions involved. Based on theoretical and empirical studies, implications and recommendations for public policy are explored to maximize the potential of data-driven innovation while minimizing risks to individuals and communities.

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Session 1Morning Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Wednesday, July 7th 10:00 to 12:00 (Virtual 01)

(Virtual) The Effects of Smart-city Related Public-Private Partnership Contracts on Innovation and the Performance of Smart Cities in China

Xiaohui Jiang (The Hong Kong University of Science and Technology)

Masaru Yarime (The Hong Kong University of Science and Technology)

(Virtual) Trust-Enabled Data Technology in Sustainable Smart City: The Case of COVID-19 Contact Tracing App in Hong Kong

Wilson Wai Ho Wong (The Chinese University of Hong Kong)

(Virtual) WORK AND WELL-BEING IN THE SHARING ECONOMY: EVIDENCE FROM INDIA

Akash Krishnan (Masters' Union)

Subhasis Mishra (Indian Institute of Management Calcutta)

(Virtual) Understanding Greenfield Smart Cities: Data Governance for Sustainability in Kashiwa-no-ha, Japan

Kevin Florentin (The University of Tokyo (Japan))

Masaru Yarime (The Hong Kong University of Science and Technology)

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Session 2Morning Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Thursday, July 8th 10:00 to 12:00 (Virtual 01)

(Virtual) Towards an integrative framework governing the data-driven innovation in sustainability agenda – a discourse network analysis of the Chinese policy discourse

Mushan Jin (City University of Hong Kong)

(Virtual) Interoperability and recursivity of information: governability through open data in Uruguay

Kirill Neverov (Saint Petersburg State University, Russia)

(Virtual) Why people are reluctant to share data, while like to benefit from data: Case study to analysis the difficulty of involving citizen as major stakeholder in public policy

Hiroko Kudo (Chuo University)

(Virtual) THE IMPACT OF INTELLIGENT MANUFACTURING PILOT POLICY ON ENTERPRISES' INNOVATION PERFORMANCE: EMPIRICAL EVIDENCE FROM INTELLIGENT MANUFACTURING ENTERPRISES IN GUANGDONG PROVINCE

Siqi XIE (The Hong Kong University of Science and Technology)

Masaru Yarime (The Hong Kong University of Science and Technology)

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Session 3Afternoon Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Thursday, July 8th 14:00 to 16:00 (Virtual 01)

(Virtual) Personalised nutrition technologies: a new paradigm for European public policy in a digital transformation era.

Rachel Elands (Maastricht University)

(Virtual) The Sustainability Action Platform: a knowledge management mechanism for advancing global sustainability transitions?

Amy Burnett (University of Surrey)

(Virtual) The Struggle between Digital Platforms and States within the Concept of "Net Neutrality."

Dilek Dede (Istanbul University)

(Virtual) Assessing Data Governance by Institutional Analysis Development Framework

Fernando Filgueiras (Federal University of Goiás)