P14 / IT-Mediated Platforms and the Public Sector: Applications of Sharing Economy, Block-chains and Crowd-sourcing

Topic : COMPARATIVE PUBLIC POLICY

Chair : Araz Taeihagh (National University of Singapore)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Platforms significantly increase the efficiency and ease of interactions between individuals and groups in society. For instance, crowdsourcing platforms utilise information technology to collect information directly from individuals to solve problems, whereas sharing economy platforms do so to exchange goods and services without requiring the transfer of ownership (Taeihagh 2017a,b). In the public sector, platforms are a way to improve the efficiency and quality of public services and to solve increasingly complex and “wicked” problems that characterise societies today (Head 2008; Hautamäki & Oksanen 2018; Janssen & Estevez 2013; Layne & Lee 2001; Bertot et al. 2010). By leveraging on new technologies such as big data, Internet of Things (IoT) and cloud computing, platforms enable public agencies to derive insights from a critical mass of citizens to improve the design, production and delivery of public services, which are commonly known as co-creation and co-production processes (Voorberg et al. 2015; Bason 2010; Needham 2008; cite). For instance, crowdsourcing platforms can increase citizen participation in policy-making, increase transparency of the policy process, improve policy design and analysis (Prpi? et al. 2015; Taeihagh 2017), and strengthen the legitimacy of the government (Christensen et al. 2015).

Platforms will play a pivotal role in public sector innovation, but how they are implemented and managed can introduce various risks that may undermine their effectiveness for public service delivery and detriment society as a whole. Some of the risks that arise from using platforms are diminished accountability, inadequate compensation and reduced job security for individuals, widening of the digital divide and inequality, and the potential for crowds to manipulate information and outcomes (Taeihagh 2017b; Loukis et al. 2017). When applied to the public sector, the opening up of citizen’s personal data on platforms raises concerns over privacy and data security (Hautamäki & Oksanen 2018). The effectiveness of platforms may be further undermined by the risk of fragmentation among multiple platforms and the difficulty of designing attractive platforms to attract a sufficient level of citizen participation (Hautamäki & Oksanen 2018; Janssen & Estevez 2013). Some countries may face more challenges than others in building platforms in the public sector, particularly those without strong governance mechanisms and property rights to attract the required capital investments (Taeihagh 2017b). While these issues are being increasingly recognised in the public administration and policy literature, more research is required to evaluate the usefulness of the collected information from platforms and the extent to which these platforms lead to improved public service outcomes (Voorberg et al. 2015), especially if the government aims to deliver all public services through a unified digital platform (Hautamäki & Oksanen 2018).

Furthermore, more recently among the various platforms that have proliferated, blockchain-enabled platforms are being experimented with by many governments around the world for public service delivery in areas such as e-voting, digital identity and the recording of legal documents (Cheng et al. 2017; Swan 2015; Wolfond 2017; Hou 2017). Blockchain’s distributed, open and immutable nature offers many benefits for governments, including greater transparency, reduced corruption, greater efficiency and increased citizen participation (Ølnes et al. 2017). For these benefits to materialise, governments need to also guard against emerging risks of blockchain technology, which include security vulnerabilities, privacy concerns, and internal governance challenges that can result in conflicts (Li et al. 2017; Trump et al. 2018; Mattila & Seppälä 2018). In addition, organisational processes in the public sector need to transform to accommodate new infrastructures that support blockchain-enabled applications and platforms, which warrants further research into such organisational and institutional changes in the public administration and policy literature (Ølnes et al. 2017).

This panel will present papers that explore the implications of these IT-mediated platforms for the public sector in both developed and developing countries. In light of the above issues, the papers should address the following research questions:
· Theoretical, conceptual or empirical studies that evaluate the effects of IT-mediated platform (e.g. crowdsourcing, sharing economy, blockchain) activities on public sector delivery outcomes and analysis of

how IT-mediated platform activities affect the perceived political legitimacy or performance of governments in serving the needs of citizens.
· Exploration and analysis of the different types of challenges and risks that arise from adoption/implementation of IT-mediated platforms for public service delivery, and possible governance strategies to address these risks.
· Analysis of the various roles of different actors in influencing policy outcomes through participation in platforms and at different stages of the policy making process.
· Theoretical and conceptual analysis of how IT-mediated platforms contribute to policy learning in order to improve public service delivery.
· Exploration and analysis of the different types of platform governance structures in blockchain and their risks and unintended consequences (e.g. coordination challenges) and analysis of the organisational, administrative and institutional transformations in public sector organisations to accommodate blockchain-enabled platforms.
· Single and comparative case studies across different countries, sectors and types of IT-mediated platforms (blockchain, sharing economy, crowdsourcing, etc.)

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CALL FOR PAPERS

Platforms significantly increase the ease of interactions and transactions in society. In the public sector, platforms are a way to improve public service delivery and solve increasingly "wicked" problems that characterize societies today (Head 2008; Hautamäki & Oksanen 2018; Janssen & Estevez 2013; Layne & Lee 2001; Bertot et al. 2010). Aided with information technology, public agencies can derive insights from a critical mass of citizens through platforms and improve citizen participation, transparency, policy design, and political legitimacy (Prpi? et al. 2015; Taeihagh 2017; Voorberg et al. 2015; Bason 2010; Needham 2008; Christensen et al. 2015).

Platforms will transform public sector innovation, but how they are implemented and managed can introduce various risks. Platforms can diminish accountability, reduce job security for individuals, widen the digital divide and inequality, undermine privacy, and can be manipulated by crowds (Taeihagh 2017b; Loukis et al. 2017; Hautamäki & Oksanen 2018). Fragmentation among multiple platforms and the difficulty of attracting sufficient of citizen participation may also undermine platforms' effectiveness (Hautamäki & Oksanen 2018; Janssen & Estevez 2013). Furthermore, countries without strong governance mechanisms and property rights to attract the required capital investments may face challenges in building platforms (Taeihagh 2017b). Currently, studies have yet to evaluate the extent to which platforms improve public service outcomes (Voorberg et al. 2015).

More recently, governments have experimented with blockchain-enabled platforms in areas such as e-voting, digital identity and storing public records (Cheng et al. 2017; Swan 2015; Wolfond 2017; Hou 2017). Block-chain's distributed, open and immutable nature offers many benefits for governments, including greater transparency, reduced corruption, greater efficiency and increased citizen participation (Ølnes et al. 2017). However, governments need to mitigate blockchain's emerging risks such as security vulnerabilities, privacy concerns, and conflicts resulting from governance challenges (Li et al. 2017; Trump et al. 2018; Mattila & Seppälä 2018). Also, more research into the organisational changes in the public sector to accommodate block-chain-enabled applications and platforms is required (Ølnes et al. 2017).

This panel welcomes papers that explore IT-mediated platforms' implications for the public sector. Key research questions to be addressed are:
• Theoretical, conceptual or empirical studies that evaluate the effects of IT-mediated platforms on public service delivery and analyse how these platform activities affect the perceived political legitimacy of governments.
• Examining the different types of challenges and risks that arise from adoption/implementation of IT-mediated platforms for public service delivery and the governance strategies to address these risks.
• Analysis of the roles of different actors in influencing policy outcomes through participation in platforms and at different stages of policy making.
• Theoretical and conceptual analysis of how IT-mediated platforms contribute to policy learning to improve public service delivery.
• Examining the different types of platform governance structures in block-chain, their risks and unintended consequences (e.g. coordination challenges), and the organisational, administrative and institutional changes in the public sector to accommodate block-chain-enabled platforms.
• Single and comparative case studies across different countries, sectors and types of IT-mediated platforms (e.g. block-chain, sharing economy, crowd-sourcing

P14 / IT-Mediated Platforms and the Public Sector: Applications of Sharing Economy, Block-chains and Crowd-sourcing

Chair : Araz Taeihagh (National University of Singapore)

Session 1

Thursday, June 27th 16:30 to 18:30 (MB 3.435)

Discussants

Nora von Ingersleben-Seip (University of Amsterdam)

Blockchains, Property Rights and the Circular Economy

Katrien Steenmans (Coventry University)
Phillip Taylor (University of Warwick)

In the context of concurrent global waste and resource crises, there is significant interest in transitioning towards resource efficient and circular economies at all levels, where resource and waste streams are reused, recycled, or recovered instead of sent to landfill or incinerated in order to achieve both economic prosperity and environmental protection. Many laws and policies have been adopted for this very purpose, such as the European Union's 2018 Circular Economy Package and Germany's Closed Substance Cycle and Waste Management Act of 1996. The challenge lies with operationalising such transitions. Property rights in resources and wastes are one key influential component that can facilitate these by influencing resource and waste governance, but fundamental questions remain: How can we monitor who owns waste? Can we systematically track where wastes end up? While laws and policies need answers to these questions, critical practical challenges remain, which, this paper argues, blockchain technology can address. This paper therefore focuses on examining the relationship between blockchains, property rights and policies. In particular, we explore how blockchains can be employed to clarify property rights in products and wastes and thereby support policy goals towards resource efficient production and consumption.

A two-fold approach is adopted in this paper. First, we explain the ways that blockchains are useful for managing property rights. We highlight critical gaps in existing waste laws and policies that could be addressed by greater clarity about particular property rights, as well as greater diversity in the types of property rights that are applied (such as 'private', 'communal', 'state', and 'no property'). For example, the abandonment of waste is not permitted in the European Union, yet it still occurs in the form of litter. Property right attribution (and responsibility) is thus limited and inhibits reuse. Blockchains could be used to address this challenge by monitoring who owns the waste and where it ends up. They may provide means of managing greater data management complexity and thereby facilitate the implementation of those different kinds of property rights in waste. This would mitigate waste being solely viewed as a commodity, and provide a critical step towards circular policy implementation.

Second, we set out the specificities of what blockchains offer for the implementation of different property rights systems – specifically private, state, communal, and no property approaches. We review the risks, challenges and opportunities faced by different stakeholders involved in waste management and governance, as well as the data capture requirements, and interface design requirements. Exploration of these dimensions is an important contribution as blockchains are typically employed to support and underpin private and not communal resource management relationships. Finally, the paper concludes with discussion of the ways that blockchains can facilitate hybrid top-down and bottom-up governance approaches. This, we hope, will provide transferable insights about the future forms of accountability and legitimacy in public management and service delivery, and the roles that blockchain technologies will play in this.

An examination of blockchain technology as a new public sector meta-tool

Araz Taeihagh (National University of Singapore)

Hazel Lim (Policy Systems Group, Lee Kuan Yew School of Public Policy, National University of Singapore)

Industry and government worldwide have enthused over blockchain's revolutionary potential to decentralise interactions between all members of society and have lost no time in embracing their purported benefits, ranging from greater transparency, efficiency, security to scalability of transactions. Amidst the hype, blockchain technology still remains at a nascent stage of development and the race to develop novel applications obscures a deeper understanding of the technology's fundamentals and the larger role being played by blockchain across different applications and sectors. Against this backdrop, this study examines the emergence of blockchain technology in the public sector as a meta-tool for policymaking. As the basis of our analysis, we first review the underlying mechanisms of blockchain comprising of multiple technologies, including consensus protocols, linked timestamping, public key cryptography and digital cash. We then analyse the key functions of blockchain and discuss various use cases enabled by these functions. Next, we examine the concept of meta-tool and explore whether blockchain technology functions as a meta-tool for policy making by exploring its ability to act as a technological enabler that facilitates both substantive and procedural tools through a myriad of functions it provides as well as exploring the already existing multifaceted functions of the technology used or under development in the public sector.

Keywords: blockchains, distributed databases, ledger, smart contracts, meta-tools, policy tools, public sector, policymaking

Data management for platform-mediated public services - challenges and best practices

Agnieszka Rychwalska

Geoffrey Goodell

Magdalena Roszczynska-Kurasinska (University of Warsaw, NIP 525-001-12-66, Krakowskie Przedmie?cie 26/28, Warsaw)

Services mediated by ICT platforms – car sharing, hotel booking, social media, and more – have shaped the landscape of the digital markets and produced immense economic opportunities. Unfortunately, the growth of platform-mediated services comes with a cost. One of the most serious challenges is the accumulation and centralization of Big Data. The users of platforms not only surrender the value of their digital traces but also subject themselves to the power and control that data brokers exert for prediction and manipulation. Moreover, if the security of the data is compromised – as often occurs due to negligence of service providers – such power can fall into the wrong hands.

As the platform revolution takes hold in the area of public services, it is important to first safeguard such services from the pitfalls that have already been identified in the application of platform services to other areas. Just as importantly, public services have a responsibility to ensure that their technology is accessible, suitable, and appropriate for everyone. In the chase for innovation, many policymakers embrace technologies without proper consideration of all the costs and risks, and the consequences of misuse of Big Data collected via the administration of public services might be even more harmful not only because the data might be particularly sensitive and detailed but also because the users might not have a legitimate choice about whether to share their data.

The main risk lies in the aggregation of digital traces from many sources (services), which in turn allows user profiling and therefore surveillance, prediction, and control of user behaviour. We argue that in public services such profiling should not happen, as it undermines citizens' right to privacy and can be used to compromise democratic processes through the manipulation of incentives, opinions, and barriers to access. Therefore, any platforms that furnish government services to the public should be designed to prevent the linkage of data records from various interactions the citizens might have with the services. At the same time, the platforms should be interoperable, allowing users to access a diverse set of services without manually inputting the same data multiple times.

We propose a set of design constraints that should underlie data systems in public services and which can serve as a guideline or benchmark in the assessment and deployment of platform-mediated services. The principles include, among others, minimizing control points and non-consensual trust relationships, empowering individuals to manage the linkages between their activities and empowering local communities to create their own trust relations.

We further propose a set of generic and generative design primitives that fulfil the proposed constraints and

exemplify best practices in the deployment of platforms that deliver services in the public interest. For example, blind tokens and attribute-based authorization may prevent the undue linking of data records on individuals. We suggest that policymakers could adopt these design primitives and best practices as standards by which the appropriateness of candidate technology platforms can be measured in the context of their suitability for delivering public services.

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Chair : Araz Taeihagh (National University of Singapore)

Session 2

Friday, June 28th 08:00 to 10:00 (MB 3.435)

Discussants

Mehmet Akif Demircioglu (Carleton University)

The Effects of Social Media Usage On Public Sector Innovation

Mehmet Akif Demircioglu (Carleton University)

This paper tests the effects of using social media on innovation in employees' workgroup. Social media is one of the latest tool for innovation in the governments. Almost all government agencies regardless of the size of the agency has a social media accounts and even many government agencies have multiple social media sites. Nevertheless, existing studies do not link social media and innovations in organizations. Using a large dataset from the Australian Public Service Commission with using structural equation models as an estimation strategy, this study shows that social media usage is positively associated with employees' innovativeness and innovation climate mediates the relationship. We also test the effects of different types of social media sites and the frequency of using social media on innovation. We also test the effects of social media for different types of innovations: product, process, organizational, and policy. Findings suggest that using social media by agencies can help organizations to achieve both types of innovation. We recommend government agencies to use social media smartly. Social media can also be a part of performance measurement and management. Agencies may assess performance targets such as the frequency of using social media, how quickly they are responding comments and then measure whether these targets are achieved. While doing so, agency leaders may also create a specific social media sites for specific targets to make certain policy programs priority.

We also argue that social media usage by government organizations have spillover effects; it can increase not only innovation, but it can also be related to democracy, citizen engagement, citizens' involvement for government decision makings, and also increasing awareness for a particular issue/problem. It will also give priority to certain policies over others. However, creating a couple of social media page is not enough unless the government provides this unit with some resources and granting power to employees who use social media on behalf their agencies.

ENHANCING SERVICE DELIVERY THROUGH INNOVATIONS IN PUBLIC UNIVERSITIES: A CASE OF A“ONE STOP SHOP” AT UNIVERSITY OF NAIROBI, KENYA

Joseph Obosi (University of Nairobi)

ENHANCING SERVICE DELIVERY THROUGH INNOVATIONS IN PUBLIC UNIVERSITIES: A CASE OF A“ONE STOP SHOP” AT UNIVERSITY OF NAIROBI, KENYA

By

Dr. Joseph O. Obosi

Department of Political Science & Public Administration

University of Nairobi, Kenya

E-mail: jobosi@uonbi.ac.ke ; jokeyoobosi@gmail.com

Abstract

Borrowing from Battali (2011), Public administration innovation process is considered in the sense of e-services introduction and reengineering strategies that examine the current state of play in providing administrative services to citizens. The innovation process also includes changes in the organizational structure, human recourses and the level of Information Communication Technology (ICT's) implementation geared towards improving service delivery. Public sector innovation originated from a reform movement known as "new public management" or "reinventing government" which began in Great Britain and New Zealand in the 1980s and expanded to other countries, including the United States in 1993. In Kenya, the need to refocus on public service delivery was realized in the 1990s and like other developing countries, it was faced with challenges such as: Congestion in public offices; Inefficient and ineffective bureaucratic procedures; Highly manual processes; Poor service delivery; Loss of faith in public service by customers; Lethargy; Need for service delivery innovations; Intervention by the private sector in public service. As a way of addressing the issues, the Government of Kenya adopted integrated services which were reflected in the form of: Customer Care points, E-government, Public-Private Partnerships and One-stop shops, commonly referred to as "Huduma Centre Concept". A One stop shop was expected to use innovative approaches to integrate customer care and e-government with the aim of improving service delivery on Information Technology (IT) platform.

Like, in the main public service, the University of Nairobi innovatively replicated the electronic "one-stop shop" as a platform to integrate and manage the hitherto autonomous Management Information Systems i.e. Annual Leave Management Information systems (ALMIS), Student Management Information System (SMIS), Financial Management Information System (FMIS). The innovative concept not only integrated the existing MIS on one electronic platform but also ensured all the needed services would be accessible under one roof, commonly known in the Kenyan public domain as "Huduma Centre".

The study compared and analyzed recorded data from the "Huduma centres" and the hitherto manual operations as recorded in the office document delivery books so as to ascertain impact on the turnaround time, costs involved, the number of staff involved and the extent to which the customers were either assisted or enabled to assist themselves before and after the introduction of the Huduma centres at the university. It was established that since the introduction of the Huduma centres, the queues by those in need of services at various offices and paperwork reduced remarkably. The reports for the transactions that take place are also available real-time at the click of a button.

The paper concluded that the one stop shops at the University of Nairobi anchored on an integrated IT platform has brought efficient and responsive service delivery through: enhanced coordination; effective and timely communication with the rest of the University.

Keeping Software Platforms Open: Resisting the Power of the (Would-be) Monopolist

Nora von Ingersleben-Seip (University of Amsterdam)

Two-sided platforms such as software platforms exhibit strong network effects which drive the emergence of monopolies in the information technology (IT) industry. Prior research suggests that the use of open source software (OSS) and software implementing open standards can mitigate the anti-competitive dynamics driven by network effects, thereby inhibiting the rise of platform monopolies. Moreover, as a consequence of increasing competition between software platforms, OSS and open standards mandates have the potential to decrease costs, increase innovation, and foster the emergence of a home-grown software industry. Therefore, encouraging or even mandating the use of OSS and open standards in public administrations is often said to be sensible policy that contributes to good governance.

The European Union appears to recognize the potential benefits of open source software and open standards, at least if its rhetoric is to be believed. However, in practice the EU has behaved very haphazardly when it comes to passing OSS and open standards mandates. For example, in 2004 the European Commission published the European Interoperability Framework (EIF), a public procurement framework which contained far-reaching provisions in support of open source software and open standards, delighting open source advocates. In 2010, however, the Commission revised the EIF and weakened many of the framework's OSS and open source provisions.

The proposed paper explores why this was the case, and in particular how private actors influenced the process. The paper puts forward two hypotheses: Hypothesis one holds that the Commission supported strong OSS and open standards mandates in 2004 because it wanted to weaken the market positions of the dominant proprietary software vendors from the US. Hypothesis two holds that by 2010, the Commission had changed tack as a result of the lobbying efforts of representatives from the proprietary software firms and their proxies.

Using process tracing, the paper draws upon three different data sources to test the two hypotheses: 1) Interviews with officials from the European Commission, industry representatives and open source activists;

2) the minutes from relevant Commission meetings; 3) the multiple drafts of the second version of the EIF. The annotated drafts of the second version should be particularly valuable in determining who suggested the changes to the open source and open standards provisions in the EIF.

By examining the drivers of the different levels of support for open source software and open standards in the different versions of the EIF, the paper contributes to a better understanding of how private actors influence the regulations governing platform technologies. This matters because the extent of private actors' influence determines, at least in part, how successful regulations can be at ensuring that platforms fulfil their potential of facilitating interactions between individuals and groups in society. The lessons learned from the EIF will therefore also be important when regulating new platform technologies such as blockchain-enabled platforms and sharing economy platforms.