

T15P08 / Defining Digital Public Policy and Its Role in Shaping Governance and Society

Topic : T15 / SCIENCE AND TECHNOLOGY POLICY

Chair : Grace Piddington (University of Bristol)

Second Chair : Susan Oman (University of Sheffield)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Digital Public Policy (DPP) is an evolving field, encompassing wide ranging issues, e.g., digital infrastructure and inclusion, data governance, and AI-enabled systems and decision-making. It intersects numerous disciplines with limited consensus on its scope and definition (Servon, 2002, Bernholtz et al., 2020, Califano and Becerra, 2024, Milutinovic, 2022), and is notably missed from areas of policy studies (Henman 2022).

Concurrently, the proliferation of Information and communication technologies (ICTs) creates increasingly interdependent and interconnected systems for public management (Fenger and Bekkers, 2012), making policy-making itself increasingly fragmented, yet interconnected. Improved coordination and collaboration between levels of governance are essential to address DPP's complexity (Servon, 2002 Oman, 2022, 2024) and the social justice issues of the digital divide (Schwab and Davis, 2018) and asymmetries in data power.

Increasing reliance on digital technologies and infrastructures makes the closing of the digital divide within and across countries an urgent as power may flow to those who already hold geographical, educational, and economic advantages while billions of others could be further excluded on the basis of income, infrastructure, language or content relevance (Schwab and Davis, 2018, p. 53). Through addressing these challenges, preferred digital futures which are equitable, inclusive and sustainable may be envisioned, invented, implemented, continuously evaluated, revised and re-envisioned (Dator, 2019). By addressing the social justice dimensions of DPP, particularly regarding the digital divide, the panel will contribute to ongoing efforts to ensure that digital technologies serve the public good, promoting equity and inclusivity in the digital transformation.

This panel has three objectives:

1. critically examine DPP: its definitions, applications, and role in shaping governance frameworks for digital societies;
2. understand context-specific uses across regions and domain applications;
3. reflect on how public policy can foster inclusive, ethical, and sustainable digital futures, whilst acknowledging negative impacts on vulnerable populations and the planet.

Research Questions

What constitutes Digital Public Policy? This question aims to clarify the key components of DPP, exploring national and regional differences.

What is DPP's role in shaping digital futures? With increasing digital dependence, we would imagine responses to this question focus on DPP's role in equitable and sustainable digital futures, addressing critical issues such as digital literacy, data privacy, and internet governance.

How do nations and stakeholders approach DPP? This question explores the varying approaches to DPP across regions and governance structures, examining how governments, private actors, and civil society collaborate to develop effective DPP frameworks.

What are the key challenges and opportunities in DPP? This question identifies the main barriers to implementing DPP, such as regulatory fragmentation and the global nature of digital platforms, while also highlighting opportunities for innovation and the protection of digital rights.

Understanding DPP is critical to designing governance frameworks for the complexities of the digital age

(Bloom, 2024), but is under-researched in policy contexts (Oman 2024) and policy studies (Henman 2022), and this has social justice implications (Schwab and Davis, 2018). This panel will address the theoretical and empirical gaps through exploration of theoretical frameworks and case studies that clarify DPP's role in shaping digital governance. It welcomes insights into best practices and challenges in DPP implementation and global perspectives, aiming to highlight DPP as a dynamic concern that is globally differentiated, but with a need for international cooperation on issues such as AI regulation, disinformation, cybersecurity, data sovereignty, and digital inclusion.

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CALL FOR PAPERS

This panel invites researchers, policymakers, and practitioners to submit papers that explore various

aspects of Digital Public Policy (DPP) outlined below. DPP touches on key issues such as digital infrastructure, data governance, algorithmic accountability, and digital inclusion, but the term remains under-defined across different contexts and sectors. We encourage submissions that offer theoretical insights, empirical analyses, critical approaches, or case studies focused on Digital Public Policy's potential to shape equitable, ethical, and inclusive digital futures.

We particularly welcome papers that address one or more of the following themes:

Defining Digital Public Policy: How is DPP conceptualized in different academic or policy settings?

Comparative Perspectives on DPP: How do countries with different levels of digital infrastructure and governance structures approach DPP?

Digital Inclusion and Equity: How can DPP address the digital divide and promote digital inclusion for marginalized communities?

Data Governance and Privacy: What role does DPP play in regulating data privacy, data security, and algorithmic accountability?

Regulation of Emerging Technologies: How do public policies govern emerging technologies like artificial intelligence (AI), blockchain, and the Internet of Things (IoT)?

Global Digital Governance: How does DPP intersect with global governance challenges, such as cybersecurity, net neutrality, and cross-border data flows?

This panel invites contributions from a variety of methodological backgrounds, including qualitative research, quantitative analysis, and policy case studies. Papers should aim to advance our understanding of how DPP can be a driving force for inclusive, ethical, and sustainable digital governance frameworks.

We look forward to submissions that engage deeply with these critical issues, offering new insights and actionable solutions for shaping the digital futures we collectively envision.

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Session 1

Thursday, July 3rd 16:00 to 18:00 (C4)

Digital Public Policy: undefined mechanisms, drivers and boundaries across social, cultural, media and economic policy

Susan Oman (University of Sheffield)

This paper presents findings from my two-year placement in the UK Government's Department for Digital, Culture, Media & Sport (DCMS [2022-24]), which happened as digital responsibility unexpectedly leaves DCMS in 2023. UK cultural and media policy are managed as social and economic policy (Gray 2009; Oman 2021). Digital policy-making has been conceptually linked to cultural policy since 1998 in the UK, with the invention of the department, and the idea of 'creative industries' embracing tech industries, including software development (DCMS 1998). However, analysis of policy documents and administrative changes (e.g. DCMS & BIS 2009; DCMS 2018) see digital being coupled and decoupled from cultural policy in terms of departmental ownership, and in policy documents and formalised strategies. This poses questions for the mechanisms, drivers and clarity of digital policy.

The placement investigated 'digital' across a portfolio of social and technical responsibilities for DCMS, which had the (ostensibly competing) aims of "driving growth, enriching lives, promoting Britain to the world". Digital innovations through COVID-19 adaptations formed the basis for commissioning my placement (DCMS 2021; DCMS 2023, p46). Subsequent and in parallel to COVID-19, 'digital' was posed as a default solution to other crises, including the cost of living, fuel and sustainability crises, the impacts of Brexit (ibid) and central disinvestment. However, these 'solutions' predominantly exclude consideration of the social and technical crises of digital exclusion (House of Lords 2023) or the social and environmental impacts (WEF 2020).

Embedded research (ER) strengthens the relations between evidence and policy (Cheetham 2018). I undertook an 'embedded evidence review' (EER) of digital policy whilst embedded in (DCMS) and across some of the sectors of its responsibility. Additionally to 1, lived experience of working across public and commercial cultural sectors; 2, research experience of cultural, media and policy organisations as an academic, the fellowship granted me access to offices, data, and documents. This 'embedded evidence review', therefore, enabled a review of evidence in the following categories: in the public domain; government sensitive; evidence in production; unpublished stakeholder evidence; perceptions of published evidence and evaluations of specific programmes; reflections from stakeholders on what had worked, and crucially, what the barriers are to what works.

This paper presents answers to the following questions:

How does a EER enable an 'in-the-round' approach to the evidence/policy nexus?

What are the mechanisms, drivers and boundaries of digital policy in a UK department that has both owned and not owned digital?

How does 'digital' appear across these linked policy areas of social, cultural, media and economic policy in the UK?

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From Rule-Taker to Rule-Maker: The European Union's Evolving Role in the Governance of Digital Technologies

Nora von Ingersleben-Seip (University of Amsterdam)

How can we explain the European Union's (EU's) evolution from a rule-taker to a rule-maker in the domain of digital policy, and how has this evolution manifested itself in the EU's policies for governing digital technologies? To shed light on the EU's efforts to claw back decision-making power from private actors such as the large digital platform firms and from countries such as the United States and China, this article examines the EU's digital policies from the late 1990s until the present. In particular, it focuses on the EU's policies with regard to (i) open source software (OSS) and open standards, (ii) digital platforms, and (iii) artificial intelligence (AI). In the process, it reveals which actors and institutions have shaped these policies, which internal and external factors have led to changes in the policies, and how the EU has evolved over the past 25 years from being a rule-taker in the domain of digital policy to being a rule-maker. In the late 1990s, influenced by the neoliberal policy paradigm and a belief in the benefits of digital technology, the EU allowed digital technology companies to self-regulate. My research shows that the market power and behavior of the emergent American digital giants raised concern among some EU policymakers as early as 2004, but efforts to curb these companies' dominance by promoting open standards and OSS "made in Europe" failed. The lack of success of this initial attempt to increase the EU's digital sovereignty was driven by the lobbying efforts of the American digital giants and of European companies with large patent portfolios. For the next decade, the digital giants set the rules, with the EU relying on competition policy to address anti-competitive behavior ex-post. This laissez-faire approach shifted with the Digital Services Act and the Digital Markets Act, introduced by the European Commission in 2020, which impose ex-ante obligations on the digital giants. However, these obligations came after a decade of mostly unregulated operation by the digital platform firms, which meant that they could not prevent the economic, social, and political harms that had already been caused by these firms. At best, they could reverse some of the damage. I moreover argue that, contrary to the intentions of policymakers, the ex-ante rules contained in the Digital Markets Act might end up causing more damage to market fairness and contestability in the EU, as they create incentives for the digital giants to engage in anti-competitive behavior. In the early 2020s, the EU finally shifted from a reactive to a proactive stance in response to AI's rapid evolution. The EU AI Act, introduced by the European Commission in 2021, aims to ensure that AI developed or used within the EU aligns with the EU's values and respects fundamental rights. It seeks to prevent economic, social, and political harms caused by AI and therefore represents a departure from the neoliberal rationale of relying on regulation only when needed to safeguard market efficiency. Given the AI Act's focus on prevention, I argue that it marks the completion of the EU's metamorphosis from digital policy rule-taker to rule-maker. However, standards for AI are often set by international organizations, in which the EU either has only indirect influence or needs to agree with other countries that have vastly different values. This means that the EU is in danger of being relegated to the role of digital policy rule-taker once again. In order to trace the EU's evolution from digital policy rule-taker to (fragile) rule-maker, I conducted in-depth interviews with 32 experts from three continents, studied a wealth of both primary and secondary sources, and applied deductive coding. With this article, I hope to contribute to a better understanding of the roots and consequences of the EU's past and current digital policies

(Virtual) Translating Policy to Code and Code to Public Policies: AI-Driven Policy Implementation Systems Shaping Digital Governance

Christiana Freitas (University of Brasilia)

The article focuses on analysing government initiatives that implement artificial intelligence (AI) systems and tools in the field of public security in Brazil, drawing on the theoretical framework of science and technology

studies for digital public policies and governance (Mendonça, Filgueiras, Almeida, 2023; Rosa, 2022; Epstein; Katzenbach; Musiani, 2016).

First, we identify and analyse digital public policies and regulatory mechanisms developed for the implementation of these AI-driven initiatives. These initiatives are understood as algorithmic instruments of public action that "guide the internal functioning of institutions and organise public arenas for discussion and deliberation" (Lascoumes, Le Galès, 2012, p. 14).

Subsequently, we analyse the implemented instruments and their sociotechnical and political implications conditioning strategies of coordination and control over the population in the field of public security. We discuss the opacity of a significant part of the identified instruments and how such characteristics may infringe democratic principles in the context of automated decision-making processes (Morozov, 2018; O'Neil, 2016; Benjamin, 2019). Perhaps the most evident implication is the observed opacity of most of the instruments, putting democratic practices and principles at risk.

Finally, we propose an analytical approach to guide the development and implementation of AI-driven instruments, considering the multiple necessary dimensions of a democratic algorithmic governance framework.

The research analysed primary and secondary data on AI-driven initiatives for public security within municipal, state, and federal governments in Brazil. Initially, manual collection of the initiatives was conducted, followed by the use of an algorithm for automated and more comprehensive data collection. The thirty-seven mapped algorithmic instruments were analysed from four dimensions: (a) characteristics of the tools; (b) risks to rights due to the nature of the tool; (c) risks to rights from algorithmic discrimination; and (d) risks to the right to privacy (Transparência Brasil, 2020). Our research found that the mapped AI-driven systems and tools can threaten fundamental rights, such as the right to privacy, the presumption of innocence, freedom of movement, the security and protection of personal data, freedom of expression and assembly, among others. The effects of the analysed algorithmic instruments reflect the database used for their development, which are often not disclosed or publicized leading to significant ethical implications of big data (Oman, 2021). This scenario highlights discriminations perpetuated by individuals and institutions printed on the data used. Such discriminations tend to be reproduced with non-inclusive datasets that do not represent the existing social diversity (especially in terms of gender and race). Transparent algorithmic instruments, in the context of digital public policies and algorithmic governance imply the development of auditable algorithms that are open to dynamics of social control to enable democracy in contemporary society.

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(Virtual) The role of policy actors in achieving Digitally Inclusive Futures

Grace Piddington (University of Bristol)

Digital Public Policy (DPP) describes strategies relating to digital technology and systems which are integrated into all aspects of individual and collective life (Bernholtz et al., 2020) These policies regulate issues such as connection speed, pricing, data traffic, digital infrastructures, and responsible use of networks (Califano and Becerra, 2024) and aim to ensure that developments are inclusive and promote growth (Milutinovi?, 2022). This paper outlines a methodological framework for analyzing DPP implementation through semi-structured elite interviews, forming part of a larger cross-national comparative study of the four nations of the United Kingdom. The research contributes to the panel's objectives of examining DPP's context specific uses across different regions that enable equitable and sustainable digital futures.

The paper will explore the methodology for the semi-structured interview employs purposive sampling to recruit policymakers and public officials actively engaged in DPP across Scotland, Wales, Northern Ireland, and England. The interview schedule, carefully designed to explore participants' roles, challenges, and visions for digitally inclusive futures, draws on themes of digital inclusion, inter-regional collaboration, and the socio-political complexities of policy implementation (Jaeger et al., 2012; Bernholtz et al., 2020; Califano and Becerra, 2024). The interviews will provide insights into how DPP's address issues such as inequality, data governance, and digital literacy while identifying systemic barriers to achieving a minimum digital living standard across the UK (Robinson et al., 2015; Lutz, 2019; Yates et al., 2024).

The study aims to address how actors understand their role in achieving a digitally inclusive futures by addressing the following questions:

- How do actors understand the benefits of digitally inclusive futures in their nation or region?
- What variations exist in DPP implementation across the four nations of the UK?
- How do structural, cultural, and governance differences shape these approaches?

Findings from the interviews, analyzed through thematic analysis(Naeem et al., 2023), will uncover shared challenges and divergent strategies in DPP implementation across devolved and regional governance contexts. These findings will directly address the panel's call for papers, particularly on DPP's role in shaping governance and fostering inclusive digital transformation (Servon, 2002; Dator, 2019; Milutinovi?, 2022). The methodological approach also underscores the value of semi-structured interviews in capturing nuanced perspectives on policy enactment, offering a replicable model for comparative policy analysis in complex, multi-actor environments.

By examining DPP implementation through the lens of policymakers, this research contributes to ongoing discourse on the governance of digital societies, highlighting opportunities for collaboration and innovation to bridge the digital divide (Schwab and Davis, 2018; Bernholtz et al., 2020). The implications of this study extend to broader conversations on creating equitable, ethical, and sustainable digital futures, both within the UK and in global policy contexts (Henman, 2022; Bloom, 2024).

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Session 2

Friday, July 4th 08:00 to 10:00 (C4)

Digital Inclusion and Equity in Kenya: Evaluating the Impact of Digital Public Policy on Marginalized Communities

Caroline Ikiriinya (University of Nairobi)

Kenya has made significant strides in digital transformation, yet disparities in internet access and digital literacy persist, particularly among marginalized communities. This case study examines the impact of Kenya's Digital Public Policy (DPP) initiatives in bridging the digital divide, with a focus on expanding internet access, affordability, and gender inclusivity. It evaluates government-led programs such as the National Broadband Strategy, the Digital Literacy Programme, and Universal Service Fund (USF) projects aimed at enhancing connectivity in underserved regions. The study also explores structural barriers that hinder women's participation in the digital economy, including socio-cultural norms, affordability constraints, and limited digital skills. Through policy analysis and stakeholder interviews, this research assesses the effectiveness of Kenya's DPP frameworks in fostering equitable digital inclusion. The findings offer insights into best practices and policy recommendations to ensure that digital transformation efforts are inclusive, sustainable, and aligned with Kenya's long-term socio-economic development goals.

Enabling Digital Governance through Public Policy: An Analysis of Digital Nation Pakistan Act 2025

Mahnoor Farooq (University of Haripur)

Digital Governance has become a top priority in the public policy sphere of developed countries and the developing world. Data governance, artificial intelligence, and the regulation of the digital world are also concerns of the global south countries. Regulation and governance of the digital arena have led to different public policies in various contexts. Depending on the context the initiatives and the processes may vary which calls for the public policy researchers to delve into the different frameworks to explore and contribute to the literature. Following the policy footsteps of the developing countries, Pakistan has recently introduced a Digital Nation Act 2025 in which key initiatives have been introduced to secure the digital arena of the country. This act echoes the policy choices of the government reflecting the intention to secure the digital pathways by promoting digital inclusion programs. This act includes the establishment of a Digital Authority and a National Digital Commission for the regulation and governance of the digital economy, citizen rights, and digital inclusiveness. This is a significant step in the country's public policy history and this act will pave the way for numerous interventions. It is incumbent to study and explore this public policy initiative in light of the existing regulatory frameworks to have novel insights. Therefore, this study will be based on the content analysis of the Digital Nation Pakistan Act 2025. The insights from this exploration will add interesting and unique insights into the first digital governance public policy initiatives for the citizens of the global south.

Digital Policy Decoupling in Practice: Understanding Implementation Gaps in China's Open Government Data Initiatives

Mingxi Zhang (Hong Kong University of Science and Technology(Guangzhou), China)

Hanzhi REN (Hong Kong University of Science and Technology)

Recent studies have revealed the presence of decoupling in public sector digital transformation, where members retain their legitimacy without actual implementation practices (Crusoe et al., 2024). Digital Public

Policy (DPP) implementation often faces similar challenges of decoupling, where policy commitments diverge from actual practices. This study examines this phenomenon through the lens of Open Government Data (OGD) initiatives in China, a critical component of digital transformation in public administration that intersects with broader issues of digital inclusion and governance (Ansari et al., 2022).

While Chinese governments have made substantial policy commitments to OGD, implementation varies significantly across regions, reflecting broader challenges in DPP implementation. Local governments face diverse institutional pressures, resource constraints, and varying capacity levels, leading to potential gaps between policy rhetoric and actual implementation. This research investigates how and why local governments exhibit varying degrees of policy-practice decoupling in their OGD initiatives, contributing to understanding DPP's role in shaping digital governance frameworks.

Using a mixed-method approach, we combine BERTopic analysis of policy documents (2015-2024) with a comprehensive evaluation of provincial OGD platforms. Our novel measurement framework captures both policy attention through automated text analysis of government documents and implementation effectiveness through a multidimensional evaluation index. This systematic approach enables objective measurement of policy-practice gaps and their evolution over time, addressing the limitation of existing research that relies primarily on self-reported data.

Our findings reveal complex patterns of decoupling across regions, demonstrating that local governments' responses to institutional pressures for digital transformation extend beyond simple compliance or resistance. The temporal analysis shows varying implementation trajectories, with some regions showing consistent progress while others exhibit fluctuating or stagnating patterns. These patterns reflect broader challenges in DPP implementation, including resource constraints, institutional pressures, varying regional capacities, and the complex interplay between central and local governance structures.

The study contributes to DPP theory and practice in the following aspects. First, it extends digital transformation decoupling theory to OGD implementation, offering insights into how institutional pressures shape digital transformation outcomes. Second, this study develops an objective measurement framework for policy-practice gaps. Third, we provide insights into regional variations in DPP implementation, highlighting the importance of contextual factors and identifying specific institutional and organizational factors that influence implementation success.

The research addresses critical gaps in understanding DPP implementation challenges and their implications for digital inclusion and governance. These findings inform efforts to design more effective digital governance frameworks and highlight the importance of considering regional contexts in DPP implementation. For practitioners and policymakers, our results suggest the need for more nuanced approaches to digital transformation that account for local conditions and capabilities while maintaining alignment with national policy objectives.

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Polycentric Governance for Cybersecurity Resilience: Public-Private Partnerships in Australia, Singapore, and Japan (2014–2024)

Isti Marta Sukma (University of Warsaw)

This study examines the roles of polycentric governance and public-private partnerships (PPPs) in shaping cybersecurity strategies in three Indo-Pacific countries—Australia, Singapore, and Japan—during the transformative decade of 2014 to 2024. This period has been characterized by rapid digitalization, increasing dependence on technology, and the escalation of cyber risks. Against this backdrop, these countries have adopted innovative approaches to cybersecurity, leveraging decentralized governance and cross-sector collaboration to address complex and evolving challenges.

Grounded in Ostrom's concept of polycentric governance, the research explores how decentralized governance structures and PPPs contribute to the adoption of cybersecurity policy in these three countries. While prior studies have emphasized the importance of polycentric governance in fostering adaptability and resilience (e.g., Kikuchi & Kubo, 2020) and highlighted the efficacy of PPPs in cybersecurity initiatives, limited attention has been given to their intersection in national cybersecurity policies. Existing work, such as Kianpour et al.'s (2022) agent-based modeling of cybersecurity governance and Kianpour & Frantz's (2024) study of polycentricity in the EU's cyber incident coordination, underscores the potential of these frameworks but lacks comparative analysis in the Indo-Pacific context.

This research addresses the question: *What roles do polycentric governance and public-private partnerships play in shaping cybersecurity strategies in Australia, Singapore, and Japan between 2014 and*

2024? By employing Institutional Grammar (IG)-inspired methods to analyze key legal and policy documents, the study provides a comparative assessment of how governance frameworks and partnerships are operationalized in these states.