

Paper Session

[I22] Standardising The Smart City: Technical Interoperability or Computational Governance?

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Over the last decade there has been an explosion in national and international efforts to make new 'smart city' standards in the US, Europe, South America, Asia and China. The International Standards Organisation (ISO) is currently coordinating the formulation of a new set of international standards on smart cities (i.e. cities in which technologies based on digital infrastructure and ICT-enabled services are positioned and implemented as a potential way to more effectively monitor and manage physical and social resources in the city). This ISO portfolio of guidance documents is intended to help public, private and community-focused city leaders take forward the smart city agenda through; a coherent set of definitions, highlighting the benefits of becoming a smarter city, outlining the processes through which cities can boost their smart credentials, and explaining how standards can help to eliminate risks, lower costs and reduce efforts required to manage cities effectively. In order to formulate these standards the ISO will draw upon national and regionally-coordinated standard setting processes and will selectively integrate these into a single global smart city standard.

This paper explores the contested and paradoxical processes of standard making by focusing on the processes undertaken by five national states – France, UK, Spain, The Netherlands, and Germany – in the collaborative development of smart city standards. Whilst the processes of smart city standard-making appear very different in each of these European countries in terms of how tightly prescriptive or flexible the definition of the concept and its application are, some symmetry can be seen. For example, how leading exponents in the field of 'smart cities' are brought together from across divergent stakeholder groups to impart expertise (i.e. public, private, and community-focused). We draw upon approximately ten interviews *per* national context held with diverse stakeholders pivotally involved in these processes between 2014-2017. These interviews are supported by a detailed review of relevant documentation and website materials. For each national context, we explore the following issues:

First, how was an intermediary capacity created to formulate a view of national priorities for standardising the smart city concept and its implementation, and to what extent did this involve municipalities, innovation agencies, and corporate actors? In examination of this question we are interested in how national priorities were set, the actors and rationales that were excluded and included in the processes of standard setting, the situated tensions and opportunities that arose, and how they were, or not, resolved.

Second, what was the focus and purpose of standard setting? Did processes primarily focus on questions of enhancing *technical* interoperability to ensure that data captured in cities' infrastructure and systems could be used across a range of service delivery channels? Were the standards intended to improve 'city' *operational* dynamics – by targeting data privacy and security, accessibility of services, and the resilience of city systems? Alternatively were standard setting processes intended as the *strategic* means to gain enhanced urban governmental control and to allow decision-making at the city level through implementation of a standardised framework and approved Urban Operating Systems (UOS)?

Third we undertake a comparison across the five national contexts to explore the tensions and contradictions inherent in the processes of smart city standard setting. In particular, we investigate the degree to which standardisation was contested, and even rejected in particular contexts (e.g. Germany), but embraced in others (e.g. UK).

We conclude by arguing that whilst smart city standards may aim to provide a model and roadmap for good practice and sustainability transition, they can only ever provide a partial view of the city and can reinforce particular aspects of city functioning, whilst limiting and excluding others (i.e. leading to issues of path dependency and obduracy). Furthermore, we argue that smart city standards reconfigure the urban context to make it amenable to the specification, purchase and implementation of certain products and services, in order to facilitate the rapid development of an effective smart city market. We contend that smart city standards are intended to reconfigure urban contexts to match the technological and commercial presuppositions of software products, thereby establishing a universal logic of urban control. As such, in contrast, we speculate on alternative standard setting logics that work with decentralised, experimental, user-led and open-sourced smart city innovations and solutions.