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Do Smart Solutions Help Create Sustainable Cities?

Matthew Cook, Stephen Potter, Per-Anders Langendahl
Department of Engineering and Innovation, The Open University, UK

Global urbanization, increasing levels of affluence and resource constraints mean that systems (such as energy and transport) which underpin everyday life in city regions are under increasing pressure to satisfy demand. In response, so-called smart solutions have been developed in various locales to help resolve such strategic challenges. For example, smart grids have been constructed in a number of city regions. These aim to better manage electricity production and consumption by among other things, using information and communication technologies to integrate distributed low carbon electricity generation sources such as photovoltaic panels and combined heat and power units.

However, the contribution of smart solutions to the development of sustainable cities is unclear. On the one hand, smart solutions can increase the efficiency of electricity production and consumption, as well as facilitate small-scale low carbon generation. On the other, smart solutions can create a number of opportunities for new products which induce energy demand. In this contribution we therefore begin to explore and unpack the relationships between smart solutions and sustainable cities. We consider a range of smart projects undertaken in the Milton Keynes city region in the UK and city regions in other parts of the world, e.g. Aarhus, Kochi, Amsterdam, Lyon, Malaga, Santander and Stockholm. We draw on case study research that involved data collected from multiple sources using multiple methods.

The research highlights the notion that sustainability does not fall evenly across space and time. Therefore it is not possible to simply review smart solutions in light of a universal view of the sustainable city region. Equally smart solutions do not accord with a universal definition, blueprint that is simply applied through a pre-determined implementation process. Rather both smart solutions and notions of sustainable cities are constructed locally by social actors and vary between locales. Seen in this way, both smart solutions and ideas of sustainable cities co-evolve in multiple construction sites (e.g. the council chamber, the planning team meeting room, formal inquiry processes), which are situated in an institutional landscape.

Practically, this research suggests that ‘fixing’ smart solutions in best practice narratives that highlight universal definitions, designs and methods as well as the problems that such solutions may resolve, should be avoided. Instead a fluid interpretation of smart solutions is needed. One which recognises that the meanings and characteristics of smart solutions are locally constructed along with notions of the sustainable city region and other constructs, such as the economically competitive city. Institutional spaces are needed to enable actors to consider the meaning of smart solutions, their nature and characteristics and to identify plans for implementation in a particular locale. Such spaces should promote democratically legitimate decision making. And importantly, a workable toolbox needs to be created to support such activity. Rich descriptions of how smart solutions and sustainable cities have been constructed in previous episodes elsewhere should be included to help enable effective deliberation.