

Smart Cities UK 2016

Announcing the King's College London
Smart Cities Survey 2016





The King's College London

UK Smart Cities Survey 2016

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The UK Smart Cities Survey 2016

The SMART-ECO research team spent 6 months in 2015-16 doing research on 73 cities in the UK, trying to go beyond the hype and build the first map of UK smart cities. This leaflet contains some of the key findings from the complex picture of smart city initiatives and projects which emerged.

About the SMART-ECO Project

SMART-ECO is a €1.2m project funded by UK, Chinese and European research agencies and led by Dr Federico Caprotti at King's College London. The project is a three-year research initiative looking at smart, eco and low-carbon cities in the UK, China, Germany, the Netherlands and France.

The SMART-ECO team involves, in the UK, King's College London, the University of Westminster, Plymouth University and Cardiff University. In China, the team includes researchers from the University of Nottingham's Ningbo campus, and Renmin University of China in Beijing. The project also involves Delft Technical University and Utrecht University in the Netherlands, Freiburg University in Germany, and the universities of Toulouse and Paris 10 in France. The team is interdisciplinary and involves geographers, researchers in science and technology studies, scholars of innovation and transition, and an anthropologist.



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Mapping Smart in the UK

Our survey was based on analysis of smart city strategies, policies and projects in 73 urban areas in the UK with a population of more than 100,000. Rather than imposing our own definition of smartness on the analysis, we kept an open mind, looking instead for *initiatives and activities which cities themselves label as smart*.

One of the key aims was to move past a focus on the smart city overly focused on technology for its own sake, and become more sensitive to what the UK smart city of the near future can be in terms which also encompass both environmental and social sustainability. Our approach revealed a wide range of activities and initiatives currently labelled as 'smart' which extend far beyond the smart city narrowly conceived in terms of 'big data' and digital technology. The environmental focus brought to light initiatives such as Nottingham's REMOURBAN EU-funded project aimed at leveraging the smart city to achieve low-carbon urban regeneration.

Method

In order to analyse smart city initiatives, we developed a set of 190 indicators against which we tested each city. These indicators fell into the categories of governance, economy, mobilities, environment, and social sustainability. Our model was developed over the course of 2015, based on our own analysis as well as on an adaptation of smart city criteria proposed in the European Parliament's own recent (2014) EU smart city mapping exercise (see References at the end of this report).

We gave extra weighting in our analysis to projects that were already underway rather than currently planned. This was based on the recognition that in order to develop useful and successful smart cities, it is key that city councils move beyond policies and strategic visions (Hollands 2008), and into pilot studies and implementation.

Where Are the UK's Smart Cities?

Just under half of the urban areas we studied currently have a clear 'smart' ambition and/or substantial smart initiatives taking place – these 33 are shown on the map below. But this is not the whole story: in other places too, smart visions are at various early stages of discussion and development. The national landscape is rapidly changing.



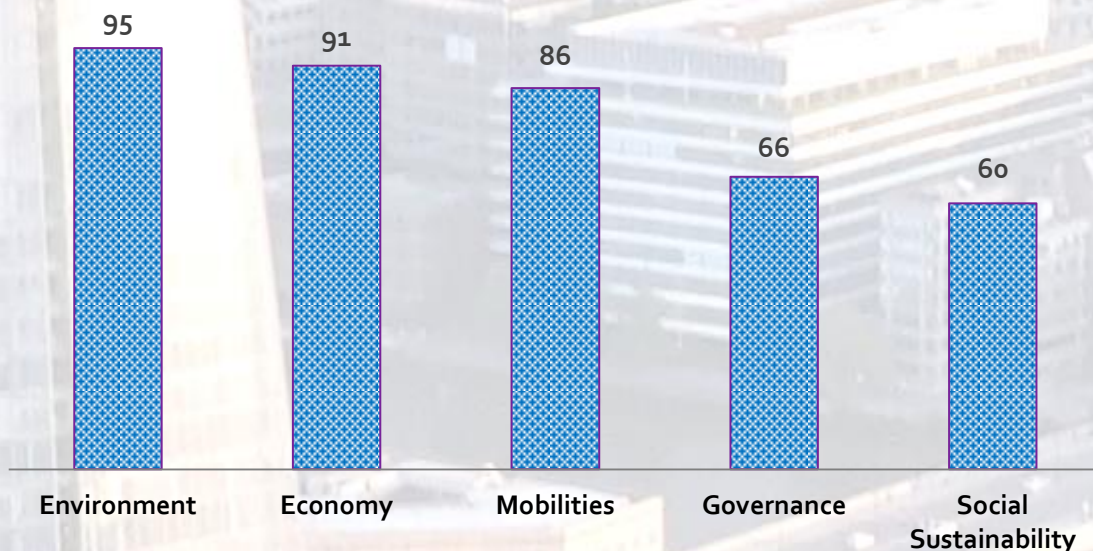
Smart Cities in 'Operational Mode'

With funding from the national government's Future Cities Demonstrator competition, Glasgow is the prime example of the 'operational' smart city in Britain, understood in terms of planned activities being implemented across different sectors, with the potential implication of more systemic urban change.

If, alternatively, we consider how many types of activity are already up and running and labelled as 'smart' (whether or not they result from, or are coordinated into, an overall strategy), a different set of forerunners emerges: Sheffield and Wolverhampton are in prime positions, with Nottingham and Aberdeen following their lead.

Types of Activity

Looking at planned and operational activities as a whole, UK smart city initiatives tend to focus on the environment, the economy, and mobilities. Governance and social sustainability are less widely addressed.



Above: The number of smart city initiatives in each survey category, across all 33 cities examined

It would be unfair to describe one city as smarter than another purely on the basis of the number of initiatives publicised. Some cities elaborate their smart ambitions with reference to a large number of activities; others have produced narrower, but sometimes more detailed strategies and plans. In comparing cities, we therefore chose to focus on the *relative* prominence of different types of activity in each city's smart ambitions. Comparing these differences in emphasis gave us insight into the ways in which smartness is variously conceptualised in the UK at the moment.

Those cities where the environment, economic activity, and mobilities are relatively prominent are shown below:

Stronger focus on environment

1. Milton Keynes
2. Walsall
3. Nottingham
4. Stoke on Trent
5. Manchester

Stronger focus on economy

1. Peterborough
2. LB Greenwich
3. Leeds
4. London (GLA)
5. Glasgow

Stronger focus on mobilities

1. Southampton
2. London (GLA)
3. Manchester
4. Nottingham
5. LB Greenwich

While social sustainability is the least addressed area of smartness overall, some cities do place it more centre stage than others. Aberdeen stands out in this respect, reporting initiatives as 'smart' which include improvements to green spaces and parks, provision of sites for gypsies and travellers, telecare for the elderly, and encouraging participation in arts and culture. Liverpool, in second place, aims to bring a wide range of services together through its 'Connected Liverpool' smart city app.

Stronger focus on social sustainability

1. Aberdeen
2. Liverpool
3. Southampton
4. Southend on Sea
5. Wolverhampton
- =5. Stoke on Trent

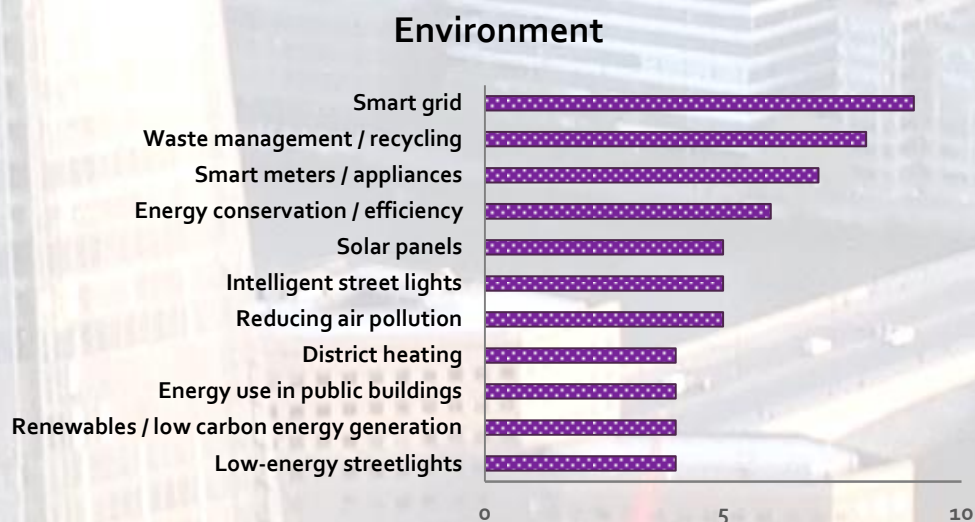
Governance, the other smart city area least addressed in 2016, is crucial to the question of how the smart city is to be run and organized – not only in terms of e-governance and participation, but also in the context of the use of data for public services. Cities that are addressing this area in innovative ways include Glasgow, with its Innovate UK-funded smart city Operations Centre.

Stronger focus on governance

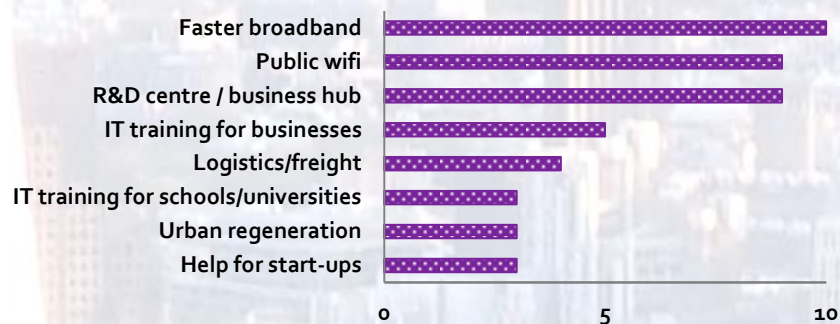
1. Glasgow
2. Leeds
3. Birmingham
4. Peterborough
5. Bristol

Types of Activity - Detail

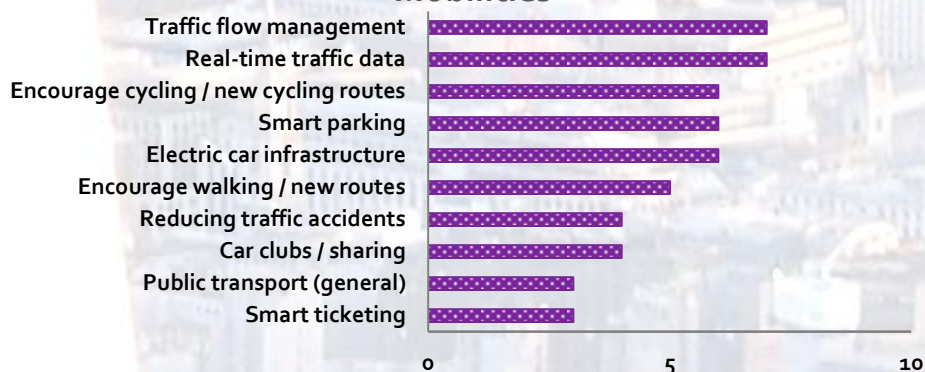
A flavour of the variety of the specific smart initiatives taking place across the UK's cities is given below, within each of our broad categories. Of course, many of the activities captured are in fact rather more widespread across different cities, but not always labelled as smart.



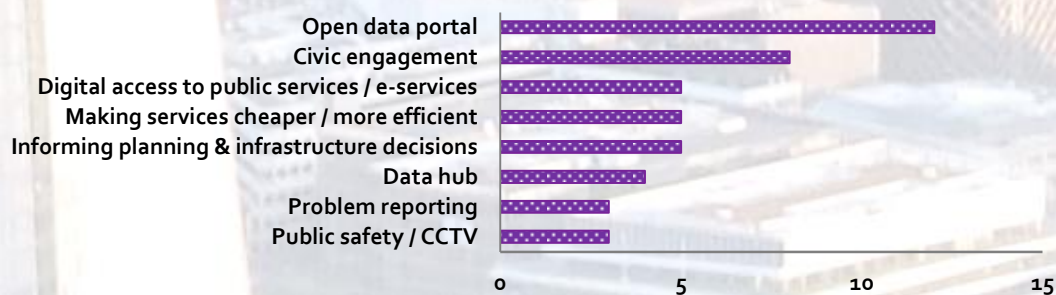
Economy



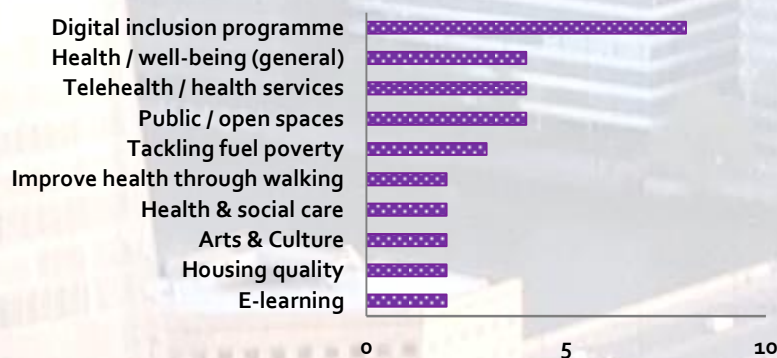
Mobilities



Governance



Social Sustainability



Above: The most common types of 'smart' initiatives in each survey category, across all 33 cities examined (only most common types shown)

Full Report: 10 Interesting Stories

These are only our preliminary findings. Our survey of UK smart cities is part of a wider mapping of smart cities in the EU and China. This is being undertaken by the SMART-ECO international research team, with the results due to be released at a workshop in China in May 2016.

The full report will also include an in-depth focus on a small number of cities in each country. In the UK, our selected cases are: Bristol, Birmingham, Glasgow, London, Manchester, Milton Keynes, Newcastle-Gateshead, Nottingham, Peterborough, and Sheffield. Each of these has been chosen because it has a substantial smart ambition; each also articulates and attempts to implement smartness rather differently. Collectively, they will illustrate the variety of the 'actually existing' contemporary smart city in the UK.

For information and updates on our project, reports and other publications as they become available, and contact details, please visit our website:

www.smart-eco-cities.org

References

Caprotti, F. (2015) *Eco-Cities and the Transition to Low-Carbon Economies*. London, Palgrave.

Cowley, R. (2015). 'In defence of top-down sustainability planning: the case of Sejong City.' In: Condie, J. and Cooper, A. (eds.) *Dialogues of Sustainable Urbanisation: Social science Research and Transitions to Urban Contexts*. Penrith, University of Western Sydney.

European Parliament (2014) *Mapping Smart Cities in the EU*. IP/A/ITRE/ST/2013Bo2. Brussels, European Parliament. Available at: <http://tinyurl.com/jlbxnrq>

Hollands, R. G. (2008) 'Will the real smart city please stand up? Intelligent, progressive or entrepreneurial?' *City*, 12(3): 303-320.

Joss, S. (2015) *Sustainable Cities: Governing for Urban Innovation*. London, Palgrave.



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Our project partners:



Our funders:

