Smart Cities in the Making

End of project report

April 2019

Research Context

The research project *Smart Cities in the Making: Learning from Milton Keynes* (hereafter SCIM) was funded by the UK Economic and Social Research Council and ran from January 2017 to April 2019. It was devised following a move in urban governance and technology sector circles towards the 'smart city' – a broad term generally taken to mean **the gathering and analysis of digital data in order to improve how cities function**. At the time of the project's design, while considerable research had been undertaken that looked at the technical aspects of such developments, there was an urgent need to understand moves towards smart city discourses and practices in terms of their effects on the social life of the city.

Therefore, **the focus of SCIM was to understand the difference smart city interventions might make to social difference within the city**, by reproducing or deepening existing lines of social difference (race, class, gender, sexuality and so on) or by creating new ones. As such, the project's central research question was 'how is smart assembling and engaging different forms of social difference in Milton Keynes?'.

That focus on Milton Keynes (hereafter MK) is significant. MK was chosen as the case study for two principal reasons:

First, **MK is one of the UK's leading smart cities with a number of significant public and privately funded smart city activities** underway or recently completed at the time of the project. These include the Transport Systems Catapult which was involved in testing autonomous vehicles in the city amongst other projects; the university and private sector collaboration MK:Smart which examined data, energy, water, transport, innovation and citizen engagement largely from a technical and commercial perspective; as well as a wide range of other projects. In terms of governance, MK has become known as a place in which the local government was open to experimentation and novelty in the smart city field.

Second, the researchers wanted to contribute something new to the debate. The vast majority of existing research was based on urban areas which were in some ways exceptional. For example, it looked at the greenfield developments of Songdo or Masdar City in which new technology was integrated from the outset, or international cities like London, New York or Tokyo. By contrast, this project looked at an 'ordinary' city. **Its aim was to be attentive to the way that smart city activities come about in the kind of towns or city most people live in**. Its aim also was to see how smart city technologies fitted into an urban space which was not a blank canvas and in which the city's social and physical fabric had already been constructed.

Research Methodology

The project took five 'slices' across MK's smart city landscape. The five slices became the five work packages of the project. They were selected because they each spoke to significant attributes in the constitution of the smart city:

- The material and practical engagements of **citizens** in smart city approaches
- The **businesses** whose products are often at the core of smart city technologies
- The local and national **governance** practices which make the smart city possible
- The collection and curation of **data** upon which many smart city platforms operate
- The **visual materials** by which people interact with smart city technology or through which it is marketed or explained to them

The research was conducted using qualitative methods. Each work package devised its own approach in order to best gather the data in the area it was working. Overall, **researchers used techniques like interviews, participation and observation as their primary research methods, and supported this by gathering relevant documents, images and video files**. Interviews were transcribed and their content analysed.

Project Findings

Overall, the SCIM concluded **that smart city projects are rarely focussed on social difference** as usually understood by social scientists and practitioners in the community sector, for instance in terms of class, poverty, race, gender and so on.

However, **this is not to say that social difference is not discussed at all by contributors to the smart city field**. SCIM did detect an implicit vocabulary that understands the social in terms of flows of data rather than structures of difference. In other words, smart city technologies use data to categorise people into groups in order to make technologies work better, understand user and citizen groups, and market products to potential purchasers.

Smart governance

The project's case studies focussing on smart city governance show how **MK's innovative history as new town fed into its adoption of smart city approaches**. Approaches to governance, in particular the openness to new ideas and flexibility to deploy them that have been around since the 1960s, set the tone for MK's current smart city initiatives**. The approaches to governance that are currently used draw upon relations between MK Council and other relevant organisations in the city and beyond**. These connections extend from the local to the international scale. However, within MK, there is little

attention paid to specifically to social difference.

The governance case studies increases our understanding of smart city policy and the way it is put together. We see this policy as being a result of those local and wider scale connections, which we call 'governance assemblages'. It is the complexity of those relations which generates smart city policy in MK.

Smart data

The case studies examining data concluded **that smart information architecture solutions are not a one stop answer to improving a city's efficiency**. In other words, simply accumulating, storing, and making data available ultimately achieves little unless a surrounding infrastructure is put in place to make that data useable by groups who might have an interest in working with it. The act of collecting data should certainly not be assumed to be helpful for making urban social difference actionable.

The investigation of an open data hub revealed that the data scientists given responsibility for the portal did not have a strong sense of local institutional culture. As a result, the portal they created did not become useful to those seeking to use the data to address social inequalities. **What is needed**

instead is a fully fledged data-driven ecosystem that connects authorities and citizens, strengthens groups, mobilises communities, and positively shapes policy and decision making.

Smart businesses

The case study focused on the multiple forms of labour that come together to produce a startup smart city project. It looked at a platform that uses a range of data sources to link community members with potential renewable energy installation options. All the participants involved in the conceptualisation, creation, implementation and the mobility of the startup were interviewed.

The research demonstrated the range and variety of work needed to make a smart city project. Most significantly, we found that **smart city projects rely upon the development and maintenance of partnerships between themselves and other actors**, including the local council and the voluntary sector.

Smart citizens

The citizens case studies looked at a suite of citizen-initiated projects supported by SCIM's predecessor, MK:Smart. All the projects revealed **inherent difficulties in including members of the public in new digital technologies**, especially people who were already marginalised due to income, other socio-demographic factors or limited tech knowhow. The projects that were the most successful were those championed by one determined individual with a vision and a clearly defined idea.

We concluded that cities and businesses need to consult more actively with community groups as they develop smart city initiatives. **Citizens must also be included** in developing a vision for the community in conjunction with the council's vision too.

Smart visuals

The final aspect of the project looked at the forms of visual communication used by smart city stakeholders in the city. The accuracy of their representations of smart city activity in MK was assessed and it was established that most visualisations of smart city projects pictured business people, almost entirely white and mostly men. Further discussion established significant ignorance about smart city activities in MK and considerable scepticism about futuristic smart city visions.

This part of the project concluded that smart **city visualisations would benefit from an approach sensitive to local people, landscape and infrastructure**, rather than depicting idealised versions of the city that bear little resemblance to the places they portray.

Impacts and public engagements

As well as contributing to the academic debate, this project also sought to add to the public and specialist debate about smart cities. We achieved this in various ways.

Engaging with the public we:

- Acted as a specialist panel of **the BBC Radio 4 social science programme** *Thinking Allowed*, which consisted of Gillian Rose, Sophie Watson and Oliver Zanetti;
- Produced **open access learning materials** for Open University students on OpenLearn;

- Convened a **public engagement event** at thecentre:MK, engaging local people in smart city visualisation technology and opening conversations with the public on what the smart city means to them.

Engaging with smart city specialists, we:

- Delivered **talks on our research findings** at Futurebuild, the Future Cities Catapult, and the MK Arts and Heritage Alliance;
- Contributed to **policy development** with project lead Gillian Rose's membership of the Centre for Digital Built Britain Advisory Committee;
- Worked with MK Insight and its users to improve strategies for urban data collection, management and use by community groups in the city;
- Produced an online **toolkit for smart city practitioners**, called www.engagingsmartcities.org which we are now disseminating amongst interested parties.