

Finding a route to smart places

Perspectives from the UKAuthority Smart Places and Communities 2023 conference



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Events Partners



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1. Introduction – What is 'smart'?

Amid all the talk about smart cities and places, there is still uncertainty in many quarters about what it all means.

Eddie Copeland, director of the London Office of Technology and Innovation (LOTI), has provided a degree of clarity with the statement: "If 'smart city' is to mean anything at all, it's about how smart we are in using all the tools and methods at our disposal to achieve outcomes that matter". He made the statement in the context of London but it can be valid for anywhere, in rural as well as urban areas.

This was one of the scene setting presentations at UKAuthority's recent Smart Places and Communities virtual conference, which brought together a range of perspectives from the public sector and industry to highlight key issues and examples of pioneering work in the field.



2. The foundations

Copeland added detail to his definition, saying that smart city projects should be driven by achieving outcomes that meet citizens' needs, not the desire to use a specific technology. Other key features are that they are conducted transparently and ethically, enabled collaboration between different organisations, are secure by design and recognise that the whole solution will usually involve more than technology and data.

He highlighted the LOTI data methodology, which runs from identifying the desired outcomes, to what actions could provide these, the insights needed, what data is required, to ensuring the information governance and ethics are in place, to creating the enablers for the outcomes. This has to be supported by interoperability for organisations to share data and solutions. He pointed out there are 33 boroughs in London and nobody wants 33 versions of solutions that perform a similar function (think parking apps!) and this creates the need for interoperability – facilitated by open APIs – to create a pan-London picture. This is crucial as most of the issues addressed in smart places projects are likely to spill across local authority boundaries.

“We risk sleepwalking into recreating that dynamic in the smart city world, and the kind of things, because it is about the urban environment with issues like flooding and pollution, do not neatly confine themselves to borough boundaries,” he said. “The user need is not vis a vis a relationship with your borough, but as a resident of your city.”

Perceptions of the other technical foundations often involve an emphasis on the use of internet of things (IoT) technologies. These are steadily proving to have an immense potential, but as Liz St Louis, director of smart cities for Sunderland City Council, pointed out, they are disruptive technologies that will not always produce the expected outcome. There has to be room to test, fail, make corrections and test again in their deployment – which is among the reasons Sunderland opted for a 20-year partnership with BAE Communications for its smart city programme.

There is also a need for a robust platform to support initiatives. Stu Higgins, head of smart cities and IoT for Cisco, emphasised this in talking about its role as partner of the Greater Manchester Combined Authority (GMCA) in the development of the GM One network as a public sector digital infrastructure for the city-region. He conveyed the platform as consisting of orchestration and application layers, along with a centralised infrastructure and software defined network fabric. These can be connected to 5G and other types of network and street layer IoT technologies to provide a wide range of citizen services.

“You start by connecting things together, and once you get that right it means you can use that same technology platform approach across different use cases,” Higgins said.

Inevitably, cyber security also comes to the fore. Andrew Elliot, deputy director cyber security, innovation and skills at the Department for Science, Innovation and Technology (DSIT), pointed out: “As we connect different tech across realms in a single place we are creating a greater attack surface and increasing potential risk from wider cyber threats. Often in this environment there are different systems that have been brought together with no clear lines of accountability or responsibility for security; the boundaries are sometimes unclear.”

He outlined DSIT's work in the area, notably the publication of the [Secure Connected Places Playbook¹](#) to help local authorities manage the cyber risks, and the activities of its teams for working with councils, suppliers and on the relevant governance.

Elliot also acknowledged the concerns that there is a security risk in using technology provided by some Chinese companies. “It's a genuine threat and something we all need to keep an eye on,” he said. “We are working on different strands to raise the bar on security in this space.”

Location data was also identified as an increasingly important factor. Anna Broberg and James Perrineau of Maptionnaire, described it as a key feature in the use of the company's citizen engagement platform. Adding a location element to surveys and communications with the public can do a lot to ensure smart places initiatives are better targeted and reflect the different dynamics across a city or region. They described how it has been used in Helsinki, Finland to collect local insights towards

creating routes to make it the most walkable city in the world.

Relationships with technology suppliers are also important. Georgina Maratheftis, associate director local public services at IT industry association techUK, spoke about reframing these from public authorities seeing suppliers not as sales partners but value added partners.

She highlighted the value of pre-procurement market engagements, in which it is possible to access industry knowledge in a neutral forum. There is an example in the form of techUK's 'art of the possible' workshops, in which both sides can look at which councils can learn about new innovations and how digital tech can improve outcomes, while suppliers can develop an understanding of the problems faced by councils. Both sides can look at challenges and articulate the problems, and take up opportunities to co-design solutions.

"Don't be afraid to engage with the market early" was her core message.

3. Local initiatives

The conference included presentations on several local initiatives, among them an example of how the Maptionnaire platform has been used in Cardiff. The city council's curriculum achievement officer, Sarah King, described its role in the Child Friendly Cities local development plan, used in schools to obtain children's perspectives on questions such as what could make their areas better and how safe they felt cycling on pavements. It has been used again in a project assessing knife crime in the city.

Responses have been fed into the council's mapping systems for analysis by the resources, performance and partnership teams, with the results shared with senior planners and councillors. The council is now looking at using the platform in other projects and working on ensuring the interactive data can be used by those that need it.

Sherelle Fairweather, digital strategy lead at Manchester City Council, spoke about

its efforts to deliver a people centred smart city strategy, responding to society challenges such as changing demographics, the long term impacts of Covid-19, inequality and high levels of poverty, and climate and environmental issues. She said that for Manchester a smart city is about looking at all those challenges and bringing the priorities together, then relating these to the council's digital strategy.

One of the country's leaders in the deployment of IoT for smart places has been the Greater Cambridge Partnership – which incorporates local authorities, academia and businesses – and has been running projects on smart traffic signals and automated transport. Its head of innovation and technology, Dan Clarke, described its staged approach to the use of autonomous vehicles, beginning with a safety operation for each one, then moving to one remote operator for each, then to one operator for multiple vehicles. Key elements of the Cambridge Connector Project include a mixed fleet of electric, autonomous vehicles, a private 5G network, a virtual simulation capability test the system, remote operation and extensive field testing for validation.

He also referred to the importance of the partnership's [Innovation Prospectus²](#) in all of its work, setting out how the market can engage with it in testing and trialling new technologies. The trials and pilots are run on specific challenges and the prospectus creates a framework for assessing which companies receive resources, the procurement approaches, embedding innovation in all workstreams and setting out principles for trialling technologies.

Liz St Louis provided an update on Sunderland's progress, saying that the model it created for its smart city programme in 2019 has stood it in good stead. Key features have included ubiquitous connectivity through a range of networks – including fibre, LoRaWAN, mmWave wireless and 5G – which have been deployed according to which is right for a specific use case. Other elements have been the sensor network, operations centre and data analysis and visualisation capability. The data platform can take data from a range of sources, IoT sensors and applications, and has segments for IoT management and a data warehouse – both running on Microsoft Azure – and analytics on Data Explorer and PowerBI. This is all supporting a range of initiatives to support education, enterprise and digital inclusion in the city.

Another leader, especially in the deployment of IoT technology, is the South London Partnership, a group of five boroughs in the area. Rebekah Brown, IoT project

delivery manager for the Royal Borough of Kingston, outlined its objectives to promote economic growth, support the response to Covid-19 and to the climate emergency, using a challenge focused approach that begins with a real life problem, has a clear expected outcome and involves specific questions for data to answer. The supplier of a solution is selected on the basis of these.

Since 2020 the partnership had assessed 150 use case ideas, with 47 of them going live within 18 months and 65% of these moving into 'business as usual' after a 12-month trial. They have included projects to provide insights into road usage and air quality around schools, to support people suffering from food and fuel poverty, to reduce flooding events, cut down anti-social behaviour on housing estates, provide improvements for road users, help to reduce damp and mould in housing, and engage with high street retailers on footfall around their shops.

Takeaways from the partnership's experience include that: IoT technologies can make a positive difference; data ownership must be mandatory; ongoing engagement with the relevant authority offices is vital; the IoT data platform needs corporate support to be worthwhile; some trials are going to fail; and deployments should be agile and swift.

4. National efforts

There are always national initiatives that provide valuable support in building smart places. The Crown Commercial Service provides one of the core features in the form of procurement frameworks, and its network services commercial lead, Peter Takacs, highlighted the potential in the new Network Services 3 contract, which provides a route for procurements from solution based service providers and involves four lots divided into 12 sub-lots, two of which had been awarded shortly before the conference.

Takacs emphasised the importance of the emerging technologies lot, which has one sub-lot for IoT, smart cities tech, CCTV and surveillance, and another for communications as a platform services. The former can provide support for the development of smart buildings, water and waste management, crime prevention,

education, street light and the monitoring of air and noise pollution, and takes in technologies such as 'edge' sensors, image recognition applications and infrastructure monitoring, along with services for the design, build, management and support of solutions. The communications lot enables applications to be integrated with a communications suite through APIs.

He also emphasised the growth of the market for IoT and smart cities tech, which is projected to be around £190 million in the UK by 2025, with government accounting for a significant share.

"The framework enables further competition and direct award which means that suppliers will be allowed to post their service offers into the marketplace, and customers will be able to initiate requests for information, get solutions providers around you, get them to design solutions that you can then purchase through a further competition," he said.

The Scottish Government has also been taking ambitions for connected places seriously, as was outlined by the Chief Technology Officer, (Digital Office for Scottish Local Government), Dr Colin Birchenall. He highlighted the range of options for adopting IoT in the country, supported by a nationwide LoRaWAN that is making it possible for local authorities to experiment with solutions, and the partnership between the Digital Office and the national innovation centre for IoT tech CENSIS.

The two bodies are now focused on building an environment for organisations to move from proof of concepts and pilots to scaling up the use of solutions. Some resources are already in place, including a collection of business and technical blueprints, a resource library and one-to-one support, and there are plans for a shared alarm receiving centre for telecare, a shared data exchange platform, and a "vision for connected places in Scotland".

5. The inclusion issue

The event also provided a reminder of an underlying issue that cannot be ignored around digital inclusion. Building connected places that involve interactions with the public demands that as many as possible have access to devices and connectivity, and there is a significant problem with a large proportion, especially among the elderly and vulnerable, being subject to digital poverty.

“Digital inclusion not only is an issue of equity and fairness, but is instrumental in my work making London a smarter city,” said Theo Blackwell, chief digital officer for the Greater London Authority. “Democratically elected politicians will not be convinced, however strong a business case for digital transformation or smart city innovation, unless we have a strong play around digital inclusion. It is a fundamental part of how we become a smart city.”

He outlined the [Get Online London programme](#)³, developed with LOTI, which began with understanding the personas of digital inclusion, then led to an teaming with the Good Things Foundation to a service comprising three elements: ensuring people have the connectivity the need; providing devices; and building digital skills. It works through organisations that have regular contact with digitally excluded people, and there are ambitions to scale it up more widely.

“The fundamentally important thing is that it’s a service that can be directed towards the user, so it is adaptable and open to iteration over time. It’s a service, not a programme, and I think that’s an important conceptual step change that we’ve made in London,” Blackwell said.

6. Seeing more clearly

All this conveys that a lot of ingredients have to be brought together into the smart places mix, and most local and regional authorities are still at relatively early stages of finding their way with the technologies involved. There are plenty of uncertainties about how to approach initiatives for the best results.

But there is a growth in understanding the issues, more sharing of experience and good practice, and a sense of methodologies emerging that will help organisations in planning and making their technology choices. This is building confidence and encouraging more to from talking about them to taking firm steps.

Smart places remain new ground for many public authorities, but they are becoming more visible and people are seeing more clearly how to make them a reality.

7. Smart Places & Communities



More than 170 delegates took part in this three day online event on how digital technologies and data can empower communities to connect and communicate as they build a smart future together. Public sector leaders shared examples of what can be achieved and took part in lively discussions and Q&A sessions with delegate participation too. Discussions were hosted by Helen Olsen Bedford, publisher at UKAuthority, and all sessions can be viewed in full at www.ukauthority.com.

Session One - Wednesday 21st June 2023



Andrew Elliot,
Deputy Director
for Cyber Security,
Innovation & Skills,
DSIT



Eddie Copeland,
Director, LOTI



Anna Broberg,
COO & Co-founder,
Maptionnaire



James Perrineau,
Sales Manager,
Maptionnaire



Sarah King,
Curriculum
Achievement Officer,
Cardiff Council



[Watch now](#)

Session Two - Thursday 22nd June 2023



Dr. Colin Birchenall,
CDO, Glasgow Council
& CTO, the Digital
Office for Scottish
Local Government



Dan Clarke, Head
of Innovation and
Technology, Greater
Cambridge Partnership



Stu Higgins,
Head of Smart and
IoT, Sustainability
Ambassador, Cisco



Sherelle Fairweather,
Digital Strategy Lead,
Manchester City Council



Peter Takacs,
Network Services
Commercial Lead,
Crown Commercial
Service



[Watch now](#)

Session Three - Friday 23rd June 2023



Liz St Louis, Director
for Smart Cities,
Sunderland City Council



Georgina Maratheftis,
Associate Director,
techUK



Rebekah Brown,
IoT Project Delivery
Manager, Royal
Borough of Kingston



Theo Blackwell,
Chief Digital Officer
for London, Greater
London Authority



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8. Events Partners

Cisco



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Maptionnaire



Maptionnaire is a hassle-free citizen engagement platform. It enables cities, consultancies, and research organizations to easily collect local insights and make GIS-backed decisions. Since 2011, Maptionnaire's customers have gathered more than 25 million responses that influenced 13,000+ planning projects across more than 40 countries. At Maptionnaire's core are map-based tools for designing questionnaires, collecting information, and analyzing data. Maptionnaire also helps planners and local governments to collaborate, report, and communicate about community engagement and participatory budgeting projects with citizens and stakeholders, as well as internally within the organization.

[Find out more about Maptionnaire here](#)

Follow them on [twitter](#) | [linkedin](#)

References

- 1 <https://www.gov.uk/guidance/secure-connected-places-playbook>
- 2 <https://www.greatercambridge.org.uk/smart-technology-innovation/innovation-prospectus>
- 3 <https://www.ukauthority.com/articles/developing-a-capital-approach-to-digital-inclusion/>

UKAuthority

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