# How Can Data Transform Our Place?

An Online DIZ Smart Place Seminar

8th March 2024

# Executive Report

A SMARTER PLACE

Local Government Association

Loti

Hertfordshire

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## Foreword

## Mike Warr - DIZ Programme Manager + Acting Director

The DIZ has continually sought to ask the difficult and real world questions that are raised by the ever-evolving world of digital innovation, particularly as they apply to our organisations, our residents and our businesses. Bringing together national leaders in key fields of innovation to discuss with local partners from across the DIZ how they might apply in a place like ours has always been a central element of this approach. This latest Smart Place Seminar explored 'How Can Data Transform Our Place?', and provided 'data led' inspiration to help inform and shape the future work programme for the DIZ and its partners in this key area.

## Welcome

## Councillor Alan Lion - Chair, Essex + Herts Digital Innovation Zone and Elected Member, Epping Forest District Council

Councillor Lion welcomed the attendees and reminded everyone that they can find out more details on the Smart Place Seminars that the DIZ has previously delivered on the website at www.diz.org.uk

This event was bringing together a fantastic line-up of speakers from across both local government and academia. The speakers would be exploring the world of data, described by some commentators as 'the new oil' but with the added advantage that data can be used again and again and again. Data has emerged as a highly topical opportunity for organisations of all sizes and sectors and, nowadays, everyone of us is generating more and more data. The challenge is to better understand how we might use this data to shape the services we deliver and enhance the important work we all do.

**Essex + Herts Digital Innovation Zone**

**Smart Places Seminar 9: 'How Can Data Transform Our Place?' - Executive Report**

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## Keynote 1 - Juliet Whitworth, Head of Research & Information, Local Government Association (LGA):

## Data Support for Local Government

Juliet welcomed the opportunity to speak to an audience of local authorities keen to invest in and explore the opportunities of data. The LGA Data and Transparency Programme is a programme of support available free of charge to all councils.

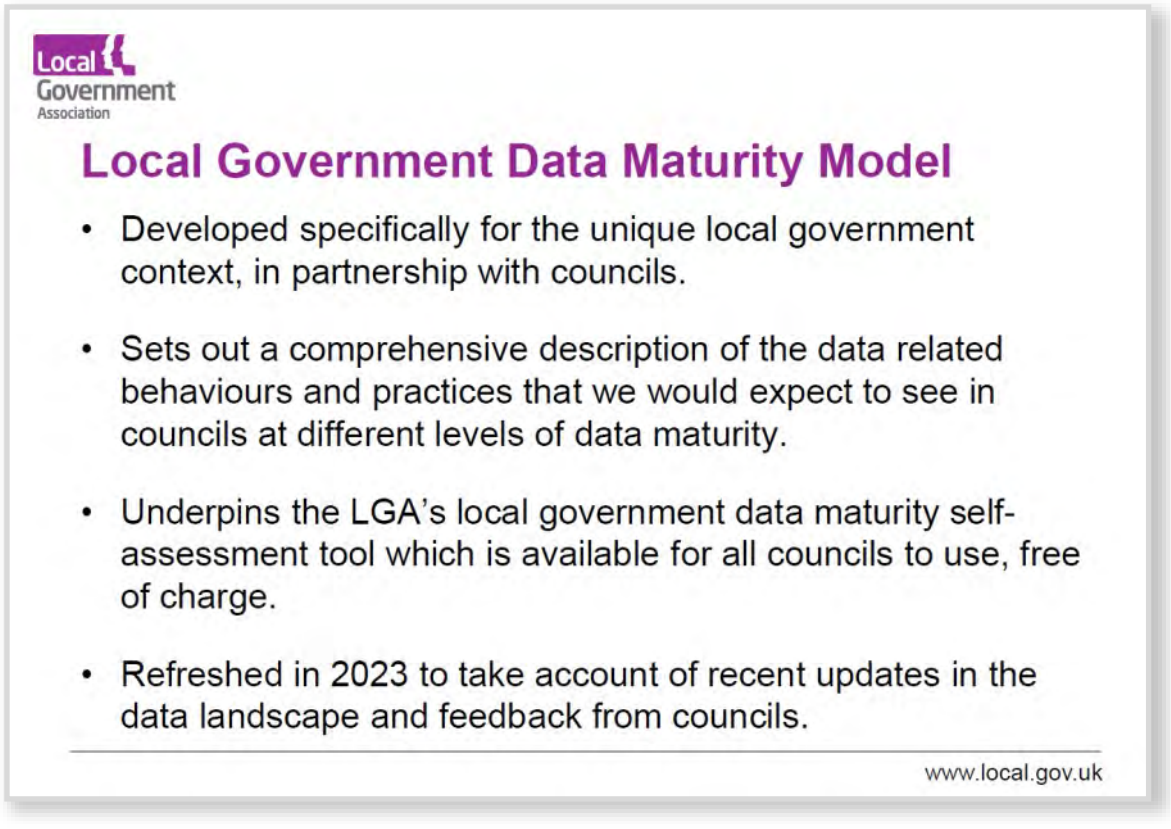
At a time of cost pressures and cuts to frontline services, data management has become as important as finance and HR management for local authorities. Data is for insight and also to realise efficiencies in service delivery but, to achieve this, authorities do need to invest in their data, not just their systems, ensuring it is of good quality. As an example of an authority that is using its data well, Juliet focused in on Brighton and Hove Council who went from multiple systems in which residents were featured multiple times, and that delivered a poor understanding of their customers, and moved to a customer index where core data was linked. Along with reduced staff processing times and cost savings of between £300k-£400k, it also enabled better communications between departments and decision-making based on linked data so that complex resident needs, involving multiple service touchpoints, could be approached in a nuanced and considered way.

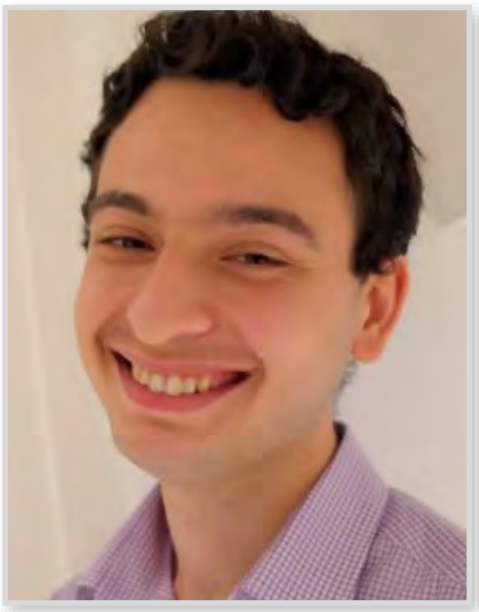
Beyond these internal benefits, data also has the power to enhance external working relationships and partnerships; and the LGA Data and Transparency Programme comes from trying to help councils realise both internal and external benefits. A key element of the programme is the Data Maturity Tool which pulls together the different elements that you might need for data to work well and to be used effectively in a council. That could be around skills needs, developing a culture that prioritises data, having the right software, ensuring that the systems and data standards that allow data to be shared are in place and, in particular, that the data quality is good. The tool helps you take an holistic look at the whole data life cycle of all of those elements and consider where your own organization is on that journey. It is a quick and easy way to take you through each of the elements that makes for good use of data in your organization, giving you an individual assessment of your council's data maturity across six themes and highlighting both areas of strength and where you might make improvements. Importantly it links to resources that could help in addressing these.

The tool, which is very much about internal self-assessment, can invite contributions from officers of all levels of an authority as well as elected members and enables the results, which are not shared beyond the organisation, to be collated and combined to give a representative view of the whole organisation.

Juliet concluded by highlighting the other elements of the programme including Performance Management, Advanced & Predictive Analytics Network, ONS data science training and the LG AI Network

In summing up Juliet impressed the importance of persevering with work on data. It is important and can deliver real value and the LGA would be interested to hear from authorities using the tool and perhaps come back and talk to them about putting together case studies on the work they have done.





## ‘Data In Action’ Case Study 1 - Josh Wahnon, Data Scientist, Hertfordshire County Council:

## Traffic surveys: A practical use for artificial intelligence and cloud computing in local government

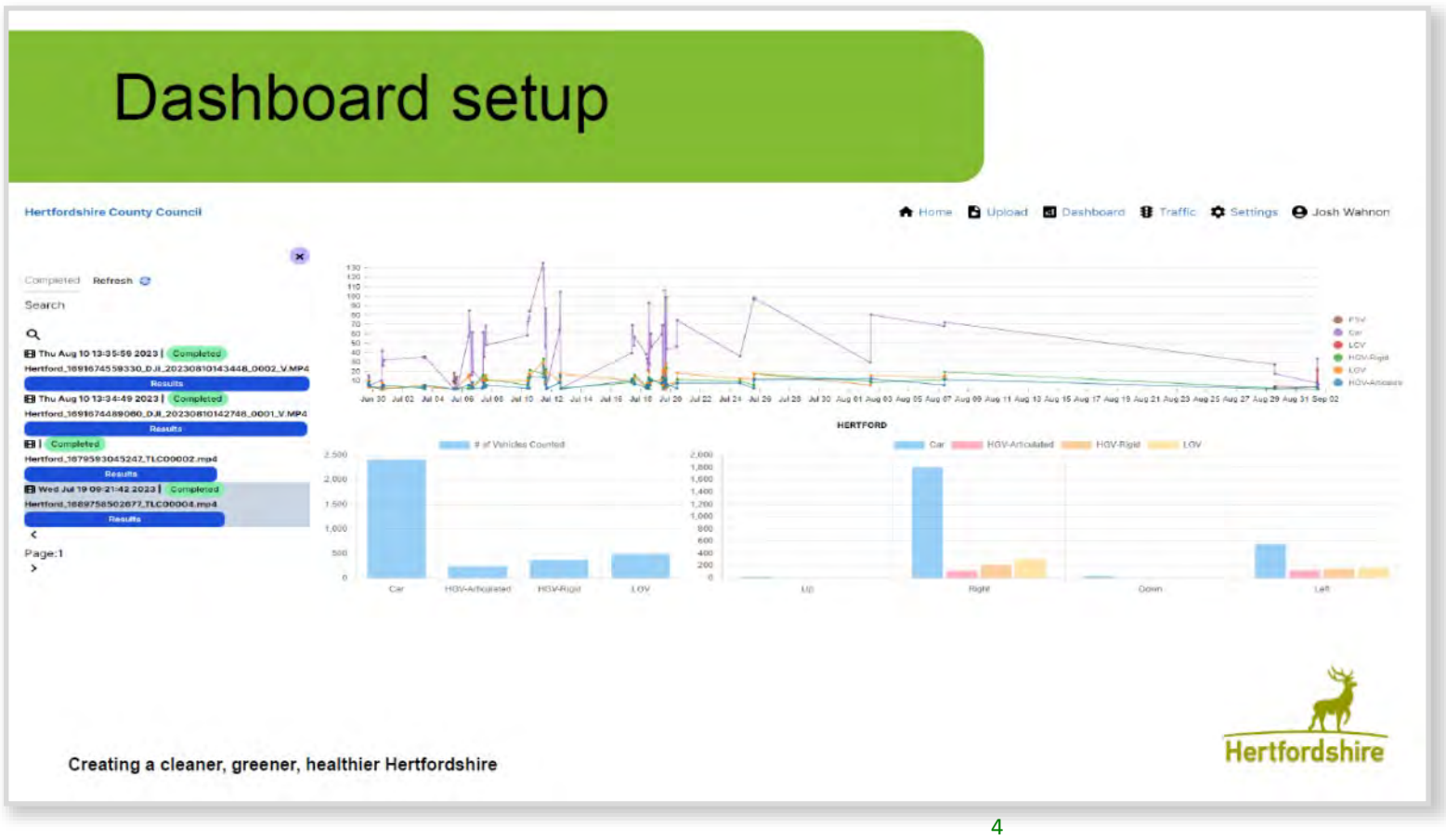
To bring the power of data to life, Josh followed Juliet’s presentation with a practical illustration of how artificial intelligence (AI) and cloud computing can be used to deliver enormous savings, both financially and in time, for authorities, in this example through their application to traffic surveys.

Cloud computing can provide local authorities with access to computing technologies in a cost-effective, ‘pay as you use’ way that they might not ordinarily be able to afford and it has enabled Hertfordshire CC to consider an alternative to its manual monitoring of traffic flows across the county. Traffic is monitored in order to plan maintenance, schedule road upgrades and keep traffic flowing. The council has a year-long programme that covers more than 5,000km and counts 200 sites automatically (using radar to collect but involving manual analysis) and 60 by hand, with additional manual counting carried out on an ad-hoc basis. Manual surveys can involve up to 12 hours of manual counting which brings various pain points including health and safety risks, time spent counting, calculating and preparing results and updating their database.

The solution was to use cloud computing and AI to examine uploaded survey videos and detect all vehicles, classify them correctly, identify their directions of travel correctly and make the tool available to all relevant staff. Focusing on the counting of vehicles, Josh explained the process that was involved. Using an AI model they identified every vehicle in every image collected by type and then used an open-source programming language to track the direction the vehicles were travelling and store the results in a cloud database. Josh shared a short video showing how the vehicles were identified in bounding boxes before the direction of travel is established. The system is able to differentiate between moving and parked cars enabling application in areas with on-street parking. The results are then uploaded to an online dashboard that presents the statistics for each video. Analysis has shown high (and improving) levels of accuracy in comparison with human counted surveys.

The system is able to process 12 hour surveys in just two hours and the surveys, which are now all done in exactly the same way and using the same approach to ensure consistency, can be deleted to protect the privacy of the vehicle owners. There are also big cost savings. A standard simple survey can require four people which can now be done with one camera, lowering the cost and enabling multiple surveys to be run simultaneously.

In terms of key takeaways for a similar project, Josh was keen to encourage authorities to experiment with their ideas and not to be afraid to ask for help, always ensuring they are working toward a set of SMART goals.



## Keynote 2 - Eddie Copeland, Director, London Office of Technology & Innovation (LOTI):

## Collaborating Across Organisations to Maximise the Benefits of Data Sharing

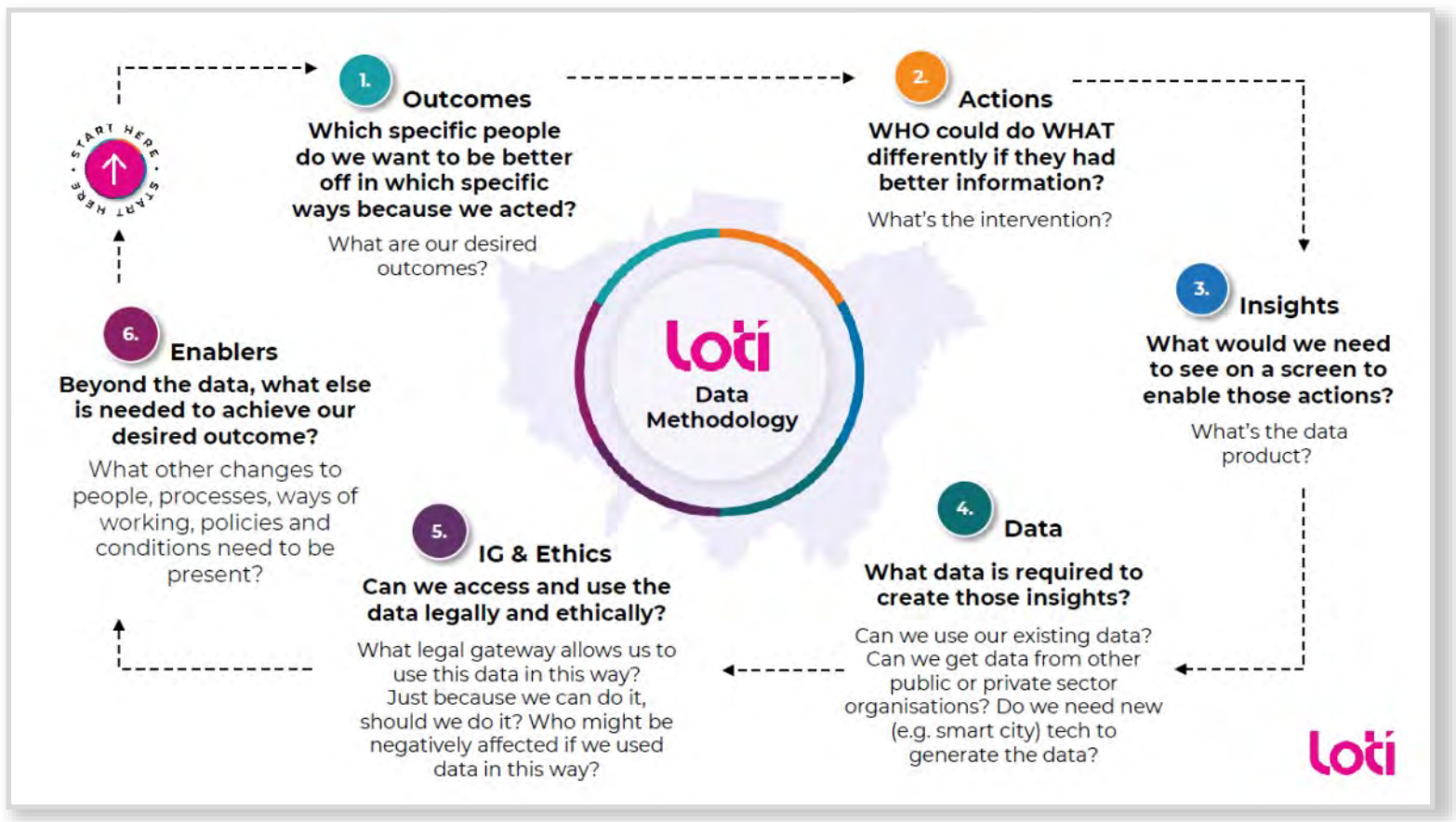
Eddie introduced LOTI who work collaboratively with the London borough councils to tackle key challenges such as net zero, adult social care reform, digital inclusion and homelessness. Working across London and the boroughs is similar to a jigsaw puzzle where the problems referred to above transcend, and have no regard for, borough boundaries. This could also apply to poverty, air pollution, COVID or any future pandemics, flooding and homelessness - any or all of these issues. And the same applies to opportunities.

So there is a need to collaborate with surrounding partners and, if you want to design better shared services, you need to be able to see what your neighbouring areas have got in order to know where there is an opportunity to share. To target areas of greatest need, individuals of greatest need, those needle in the haystack problems, we need to target resources where they are most needed and intelligently coordinate the actions of different teams. The data held by a single authority is often not enough to enable prediction and prevention so having more data enables models to be much better and more reliable. And, if you can release data at a much wider scale, at city scale or a region scale, you will often find external companies and freelance analysts coding with your data and creating useful products and services.

Eddie then highlighted that in order to establish an office of data analytics you need some key components in place including the people, the methodology, information and governance and data ethics support, technology and the right projects. But, importantly, for effective collaboration across areas and organisations this needs to be a full-time role. You also need to rally all of the data practitioners across the different authorities, connecting people in similar roles so that they can talk strategy or share case studies and discuss projects they want to work on collaboratively. The methodology is important and projects should start with the outcome you are trying to get to. Real world change is a resident being better off or maybe some of your colleagues being better off. Which specific people do you want to be better off and in what specific ways, who would do what differently with what insight and what data is required to create that insight.

Eddie emphasised the critical importance of an information governance role and the value of a full-time, region-scale lead on this topic that gives partners the reassurance that what they are looking to achieve with data is legal and ethical and reflective of their residents' trust to use their data responsibly. There are lots of resources on data ethics, as well as LOTI case studies, freely available through the LOTI website and Eddie closed by highlighting the importance of a secure data platform that partners can utilise to collaborate across and to share their data. LOTI make use of the London Datastore which also has a range of guidance on data sharing.





## ‘Data In Action’ Case Study 2 - Anna Humpleby, Data Projects Manager (LOTI):

## Strategic Insights Tool for Rough Sleeping

Building on Eddie’s presentation, Anna spoke on LOTI’s approach to data collaboration and the Rough Sleeping Insights Project she had been leading on. The outcome LOTI were aiming towards was ‘Making rough sleeping in London rare, brief and non-recurrent, within the context that rough sleeping continues to rise in London (and across England), suggesting there is a need to reassess current policy measures and support services.

At its core, this is not necessarily a ‘data problem’ but LOTI developed the business case that better access to data and a better ‘joining-up’ of that information could contribute to addressing the problem. The ‘journeys’ of rough sleepers are very complex, interacting with lots of different services but that information can be very siloed. This can mean services do not have a clear information exchange or pathway to really understand the full journey, the needs of these individuals and to make informed strategic decisions about how best to support them. LOTI’s solution was to design and deliver a platform that brings together data from across the rough sleeping ecosystem to provide actionable insights that can help support rough sleeping prevention.

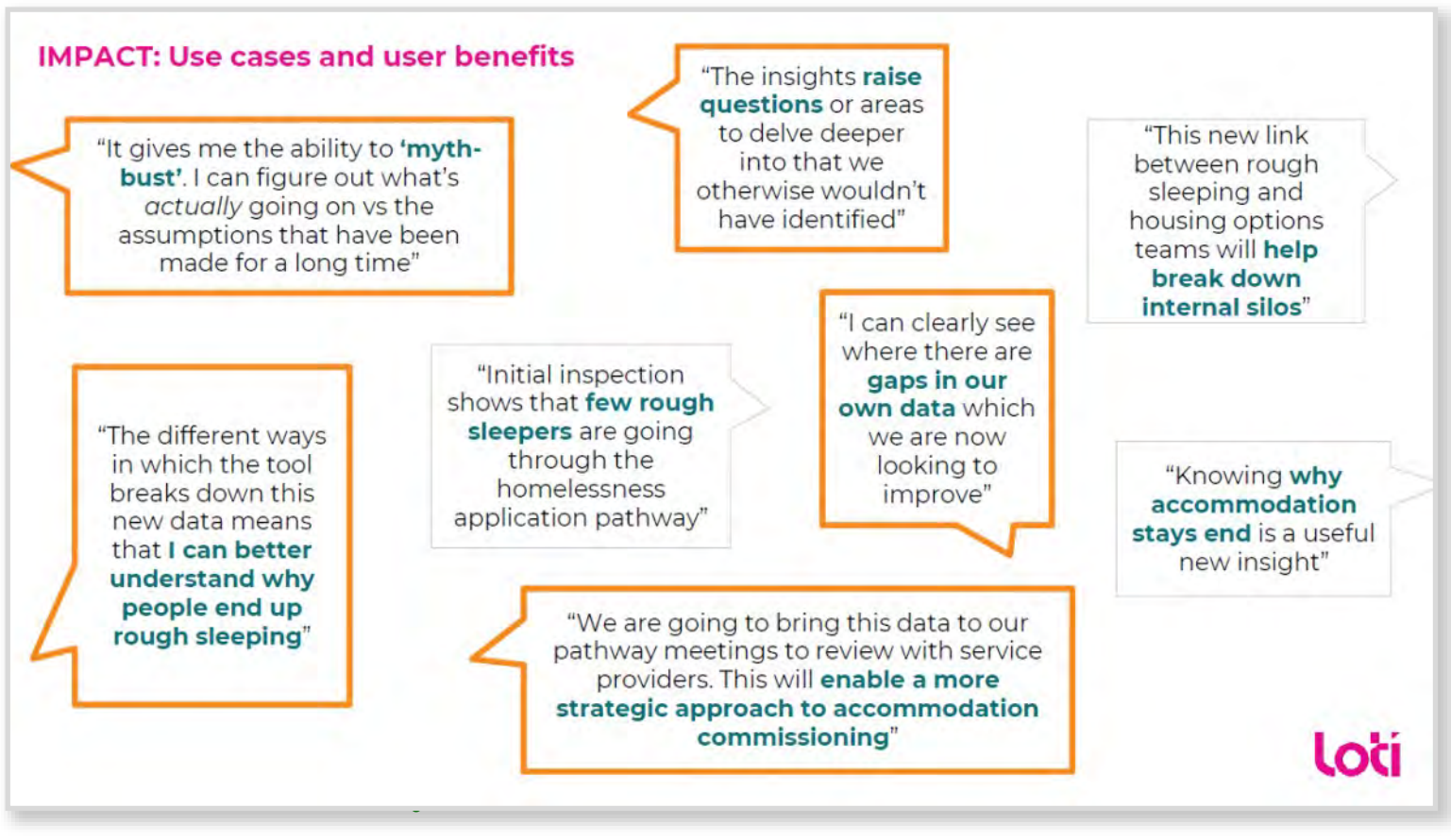
The project is a local government led initiative driven by LOTI in partnership with the GLA and London Councils and co-funded by Housing Directors from all of the London boroughs, the GLA, and DLUHC. The LOTI data methodology outlined previously by Eddie was at the heart of the project. The solution developed was the Strategic Insights Tool for Rough Sleeping (SITRS) that gives decision-makers in GLA, London Councils, London local authorities, and homelessness service providers a clearer view of rough sleeping in their local area. The new tool merges, integrates and probabilistically matches multiple sources of data to show the aggregated journeys of rough sleepers over time, unlocking new insights, as they show up through touch points in multiple systems. All outputs are anonymised and aggregated so that individuals cannot be identified.



The project was delivered through a phased approach of user research > minimum viable product build > system testing and review > before leading to a full rollout that onboarded all boroughs and major service providers. It has enabled data sharing and linking across circa 47 organisations and, using LOTI’s pan-London data sharing approach, agreement was reached on a single Data Sharing Agreement and Data Protection Impact Assessment in a matter of weeks. Early engagement with Information Governance colleagues was a key element of this.

In terms of project impact the platform enables users to see trends over time, for example numbers of rough sleepers and new rough sleepers, as well as where they move to and from, interactions with Housing Options services and successes of accommodation-based interventions. Users of the platform are already beginning to see positive impacts through access to these insights and the enhanced understanding of the problem it brings.

Anna concluded with lessons learned, that large-scale data sharing is challenging but by no means impossible and, whilst engaging with local authorities under pressure has its challenges, if the need is important enough and you have a clearly-defined set of outcomes, you can get it off the ground.



## The Q& A Panel

Throughout the morning's session, attendees had been submitting questions for the online Q&A Panel Session. A number of these were answered by the speakers, a selection of which are highlighted below:

### What are the primary risks associated with data use by local authorities and how far along is the UK in mitigating these?

- Eddie highlighted a key challenge that authorities are facing. In looking to undertake more ambitious use of the data they hold, they need to do so in a way that is worthy of residents' trust. Sometimes, that's about being really transparent, telling the residents what you are doing whist, at other times, that is not appropriate but, however you approach it, if you lose residents' trust you will never get to do the more advanced stuff with data and never get the positive benefit. Also, there's the cyber security risk of things so making sure your IT or digital team is really supporting you in thinking through the cyber security aspect is important. And then there is a risk in thinking the technology is the answer. Data and technology are tools but they do not negate the need to know what you are trying to do as an organization, and make some hard decisions about what are you changing.

- Juliet reinforced this idea of asking these questions about what it is we are trying to do and what is the outcome we are looking for. Making the case on the basis of the positive outcomes is really important and helps with the conversation with citizens

### To what extent have digital twins been developed to optimize the ways in which data are reported and shared?

-Eddie highlighted that different people mean different things by the term digital twin. There are examples where the data in the 'twin' is literally creating a digital representation of the borough which allows certain straightforward 'visual' tasks to be undertaken from a desk rather than having to make a visit which is helpful, but also examples where you are creating a data replica of a thing and potentially in a whole host of different formats to facilitate better conversations by different groups of people. The rough sleeping project was exactly such an example of how they are getting boroughs talking to each other, talking to homelessness providers, helping the sector have much better cross-cutting conversations because they have got a data replica, to some extent, of reality.



### Has the experience of the pan-London data sharing and linking as part of the rough sleeping project put you in a stronger position now to explore new projects without having to reinvent the wheel each time you undertake a new project?

- Anna explained that this was the very idea behind the pan-London approach that, each time LOTI does a data project, they now have an established approach to follow that they know works and that helps them to deliver these kind of scalable projects where they are not just working with one or two boroughs, but can actually work with every single borough. They have a tried and tested way of working, which does not involve eating into loads and loads of their time.

### Are there any examples of local authorities in the UK where you see they have had success monetizing data?

- Eddie answered this in the Q&A during the session. "One key challenge is that monetising data requires an organisation to be put in place, a whole business model, around it to provide support to data users etc. and monitor non-authorised sharing of those datasets which itself costs a lot of money. Another is that many council uses of resident data are not based on consent, but rather to carry out a public duty. As a result, we do not have the residents' consent to share their data onwards for other uses outside the context of service delivery. There might be potential for monetising data on non-personal datasets - e.g. from Internet of Things (IoT) sensors placed in public spaces, but it is likely that local government would get more value from releasing those datasets openly."

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## An academic perspective: Professor Jennifer Schooling, Professor of Digital Innovation and Smart Places, Anglia Ruskin University / Digital Cities for Change

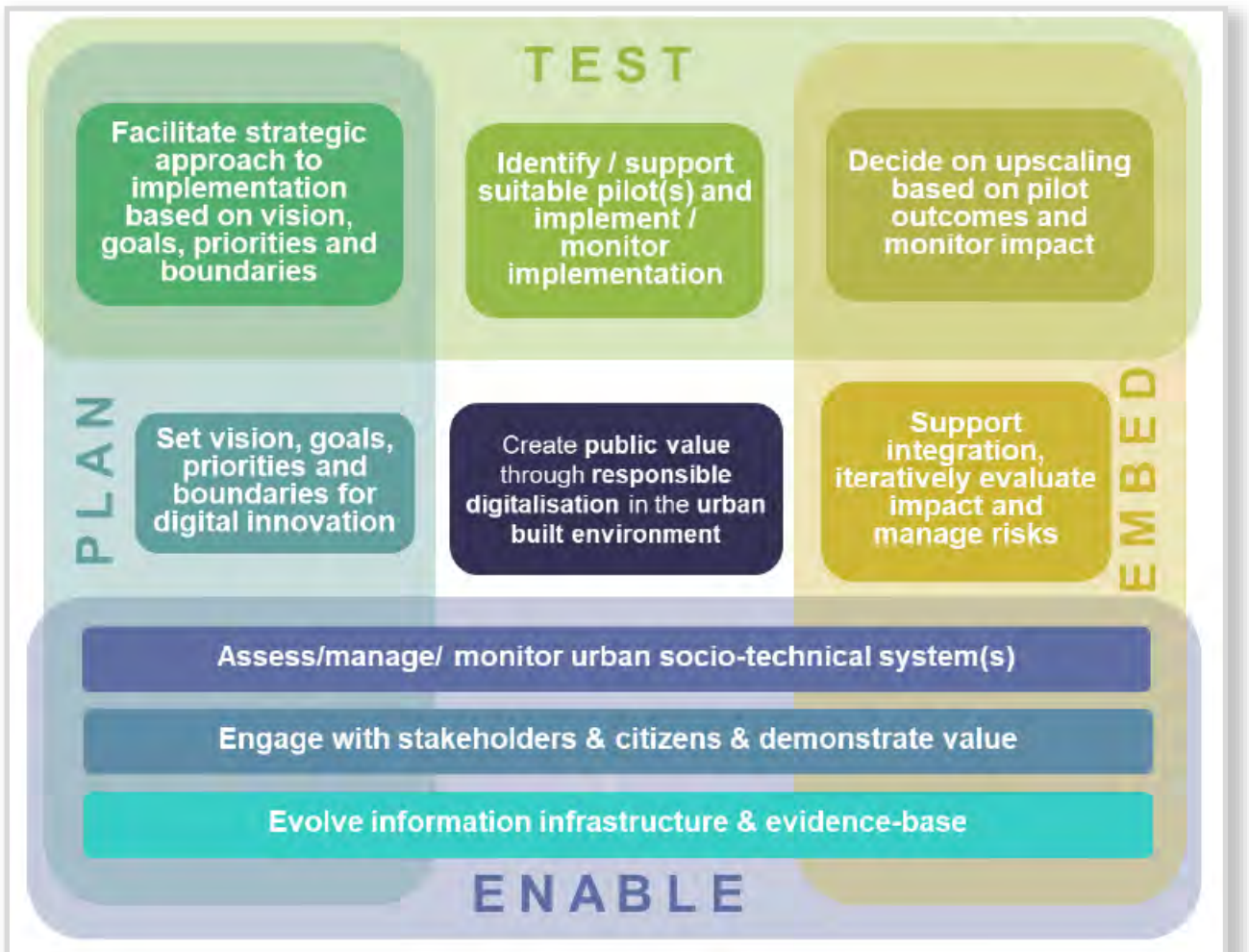
## Transforming places through data and opportunities for cross-sector collaboration

Jennifer opened her presentation by asking what it is that we mean when we talk of Smart or Digital Places and why is it that smart place projects pilot well but do not persist in time or place. Many such projects have been technology driven and not answered the question 'What are we trying to change and why?' People come to places for many reasons, but not usually because they are 'Smart' places. But, if we are clear on how we are trying to make our place better, then there are many opportunities for digital innovation and data-led services to help in doing that, including mobility e.g. transport forecasting, public safety e.g. pandemic response, water & waste, energy, healthcare etc.

But it is a complicated landscape with many complex elements contributing to an ever-changing picture of the tools and technologies that can be applied to addressing these key public challenges. The non-neutral nature of data, whereby it is a product of what we choose to collect or gather, is another complicating factor, particularly where we are collecting data about place, where we are also considering people and where data bias can drive inequalities and unfairness e.g. where generative AI is based on datasets that are inherently biased the conclusions the AI reaches are likely to also be biased.

The governance of technology is something that we are only just starting to get to grips with and it represents a significant socio-technical challenge, a challenge which is magnified by some of the issues of bias we are seeing in AI. Jennifer recommended the UN Habitat 'AI and Cities' report (2022) which highlights some of the opportunities but also some of the risks and challenges with AI. Another report. 'Responsible artificial intelligence – from principles to practice' (Dignum, Virginia 2022) argues that "...ensuring responsible, ethical AI is more than designing systems whose result can be trusted. It is about the way we design them, why we design them, and who is involved in designing them".

The Digital Cities for Change has been focused on how they can 'Create public value through responsible digitalisation in the urban built environment' and this stands on two pillars 'Knowing' and 'Governing'. Knowing requires an empirical focus which considers what are the things that we need to know and a technology perspective that not only considers the data visualisation, processing and analytics, but also about how you might capture that data and the principles you will need to apply, essentially, understanding what technologies are appropriate for what we are trying to do. Governing is also critical and we should be sure that our processes are focused on achieving socially desirable outcomes efficiently, effectively and democratically to create trust and that we are clear on the ethical principles, anticipating, evaluating and managing any societal impact.




The Digital Innovation Process (DIP) Model has been developed to assist the delivery and embedding of any digital programme from planning through testing to embedding. It encourages thinking about the boundaries of both the test phase and the ultimate delivery of the innovation and seeks to explore what the issues are that are going to come up in doing this - data sharing, liability, decision-making, data quality, training, public acceptance.

A competency framework has also been developed to sit alongside and support the model. This helps with identifying what the competencies and capabilities are that are needed within the organization and supply

chain and at what level are they needed in the different parts of the organization and programme. The framework includes various elements such as governance and management e.g. finance, procurement and business models as well as citizen engagement; digital and technical skills e.g. cybersecurity, domain expertise, awareness of technology trends; and, ethics and responsible innovation e.g. anticipating impact, reflecting on the causes and mechanisms of issues. You do not need all of these competencies within your own organization but what you do need is an awareness of all of them so that you can know where you need to get them from.

Bringing the presentation full circle to reflect back on the implications of AI for places, Jennifer highlighted a number of key considerations. Any AI or algorithmic system is only as good as the data it is based upon and citizens should actively participate in the development of these systems, with a voice on what data gets captured and how, particularly if it involves personal data. To build trust, any algorithms deployed must be as transparent as possible as well as being explainable so that the reasons for decisions made and answers arrived at can be understood. Maintenance is needed throughout the life of the AI system and context matters, what works elsewhere cannot be assumed to work in our place.

Jennifer closed by highlighting that there are lots of opportunities for collaboration with the academic sector including research projects, empirical work, shared learning or impact and knowledge transfer. In terms of subject matter, they are looking at place-based initiatives, the implications of ethical and explainable AI and further work on the competency framework. Specific projects include one on Ethical AI for Public Value with local authorities, Executive Education to upskill organisations and the Digitalising of the Planning Process. The East Anglia Digital Innovation for Places project is a current bid which, if successful, will look at how we can use place-based digital innovations to help solve challenges we face as a region and how we can bring together our activities across the region to take a regionally strategic view.



## Closing Remarks

### Cllr David Holliday - DIZ Vice-Chair and Deputy Leader of Broxbourne Borough Council

Cllr Holliday closed the event with a reflection that it had been a really insightful morning on a subject that is important to many of us and about which we actually have been talking for a long time. What it had done was take a subject that we had perhaps considered to be a problem or challenge for us all and reframed it so that it can be seen as a major opportunity for all of our organisations.

It had been great to hear about so much fantastic work with data that has been going on in both the local government sector, including across the DIZ, and through our academic partners. Many councils have embraced the opportunities that digital technologies provide, and we are all too aware of the amount of data that we create and collect on behalf of our residents. But knowing how best to use the data sensibly and securely to transform the lives of our residents and our businesses is not always an easy leap to take and we can take something from each of the sessions to draw on the experience of others, to learn from the way that they have overcome challenges and to seek their advice and guidance when we take steps along our own data led transformation journeys.

Cllr Holliday thanked all of the speakers for their presentations and our attendees for taking time out of their days to join us and looked forward to many more insightful and interesting sessions.

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## About the DIZ

The Essex & Hertfordshire Digital Innovation Zone (DIZ) has been created jointly by organisations from business, health, education, local authorities and the voluntary and community sector, each with a key role in making sure that our place, west Essex and eastern Hertfordshire, is ready to respond to the challenges and opportunities ahead.

This geography crosses many borders and the partnership crosses a number of sectors but it has in many ways a common business and health economy.

We want our place to be a beacon for the application of new technology, to use it to grow our economic prosperity and provide the best services to our local communities in the most efficient way.

The DIZ has previously run a number of Smart Place Seminar events on key digital challenges including digital health and social care, infrastructure, digital skills, planning for garden towns, digital inclusion, sustainability and the opportunity of 5G connectivity. You can access reports and resources for all of these at diz.org.uk/diz-resources/.











To find out more about the DIZ and to view the recording of the speaker sessions from 'How Can Data Transform Our Place? visit:

https://diz.org.uk/

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