CDEI AI Forums:

Local Government Use of Data During the Pandemic

Centre for Data Ethics and Innovation

About the CDEI

The Centre for Data Ethics and Innovation (CDEI) is an independent expert committee, led by a board of specialists, set up and tasked by the UK government to investigate and advise on how we maximise the benefits of data-driven technologies.

Our goal is to create the conditions in which ethical innovation can thrive: an environment in which the public are confident their values are reflected in the way data-driven technology is developed and deployed; where we can trust that decisions informed by algorithms are fair; and where risks posed by innovation are identified and addressed.

For more information about the discussion or the CDEI's work, please get in touch at ai-forums@cdei.gov.uk.

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Introduction

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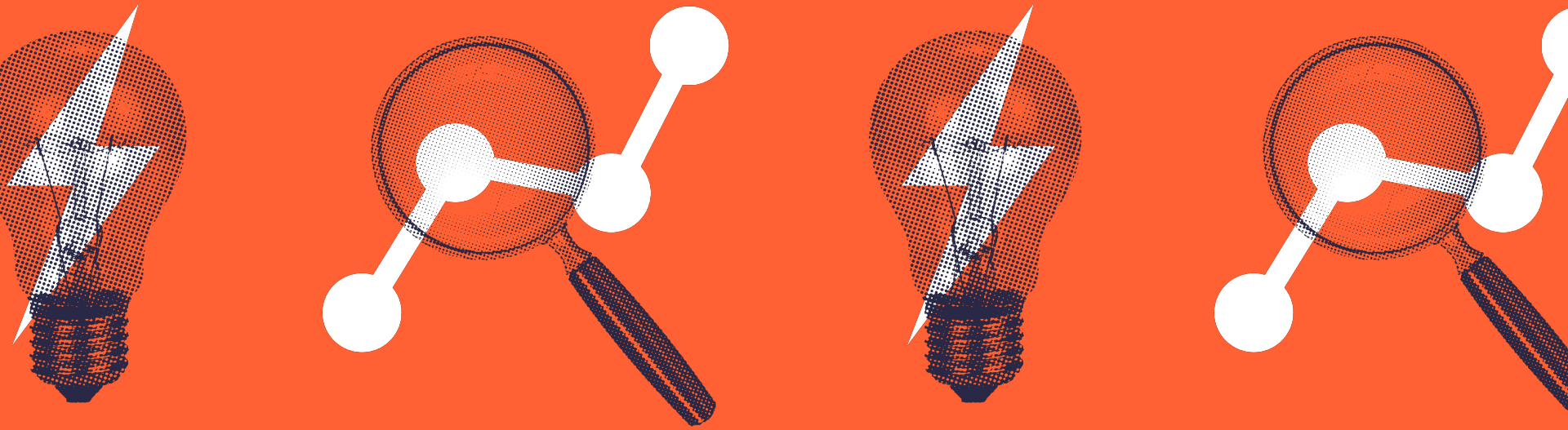

Introduction

The coronavirus pandemic has created unprecedented challenges for local government. Since the first lockdown began in March 2020, local authorities across the country have been forced to take action to keep their residents safe, support local businesses, and find new ways of delivering services at a distance. From social care to children's services and from waste collection to housing, there have been few aspects of local government that have not required at least temporary reform over the last 9 months.

Although the crisis is ongoing and the outcomes remain to be seen, local authorities told us that better use of data has been important in helping them to rise to the challenge and respond effectively. This has included acquiring new data that they did not have access to previously, and deploying existing data in novel ways. In the summer of 2020, the CDEI began to collate examples of these data-driven use-cases - an exercise that revealed an eclectic range of interventions.

Examples include:

- Identifying those most clinically and economically vulnerable to the effects of COVID-19;
- Predicting demand and pressures on local services;
- Informing direct public health responses to COVID-19 outbreaks, including local-level; collaboration on NHS Test and Trace.

The CDEI's AI Forums

This discussion forms part of the **CDEI's series of AI Forums,** in which we invite a range of experts from academia, industry and civil society to discuss the most pressing issues relating to data-driven technology. Our aim through these debates is to identify areas of consensus and disagreement, highlight outstanding research questions, and give an early indication of what might be required to maximise the benefits of AI and data use in a given setting.

Introduction

The apparent success with which local authorities have used data during the pandemic has raised the question of whether this progress might be sustained in the long run. Will the practices instigated during the current crisis set a new high-water mark, raising awareness of the value of data-driven innovation and strengthening the case for more investment? Or will the desire and interest in data-driven innovation ebb away as the emergency subsides?

Maintaining this momentum is desirable in many cases and participants felt that there were aspects of the new ways of working that should be retained. However, it should be noted that practices that are justified in a pandemic are not automatically justified in business as usual, and it should not be taken for granted that retaining access to certain data outside of an emergency context is necessarily beneficial or, indeed, ethical.

To shed light on these questions, the CDEI hosted a Forum in 2020 that brought together data leads from several local authorities to share their experiences of using data during the pandemic. This was supplemented by a number of individual conversations with local government stakeholders, as well as desk research to paint a clearer picture of the history of data use and sharing in this sector. We were particularly interested to understand:

- How data use had changed in local authorities since the outset of the pandemic, including lessons learned and ambitions for the future.

Introduction

- How recent achievements and new practices might be maintained and improved upon beyond the duration of the pandemic.
- How local authorities had approached questions of data governance and ethics during this period, and what extra support they might need in the future to use data to the highest ethical standards.

The rest of this slide deck details the outcome of that discussion. It should be noted that, while we endeavoured to invite a UK-wide group of participants, our attending local authorities were primarily urban and English. Further work will be required to capture the experiences of other types of authority.

Other recommended reading on local government use of data:

***A Catalyst for Change* by Nesta**
Nesta's recent paper looks at how the pandemic has changed practices in local government, including how local authorities have altered the way they use data.

***Data Science for Local Government* by OII**
The Oxford Internet Institute's report draws on interviews with expert practitioners to map the different ways data can be used to improve service delivery within local authorities.

Participating councils and organisations

- Coventry City Council
- Greater Manchester Combined Authority
- Leicester City Council
- London Borough of Camden
- London Borough of Hackney
- Nottingham City Council
- Norfolk Office of Data and Analytics
- Suffolk Office of Data and Analytics
- Warwickshire County Council
- West Midlands Combined Authority

- Local Government Association
- Ministry for Housing, Communities and Local Government

Key findings

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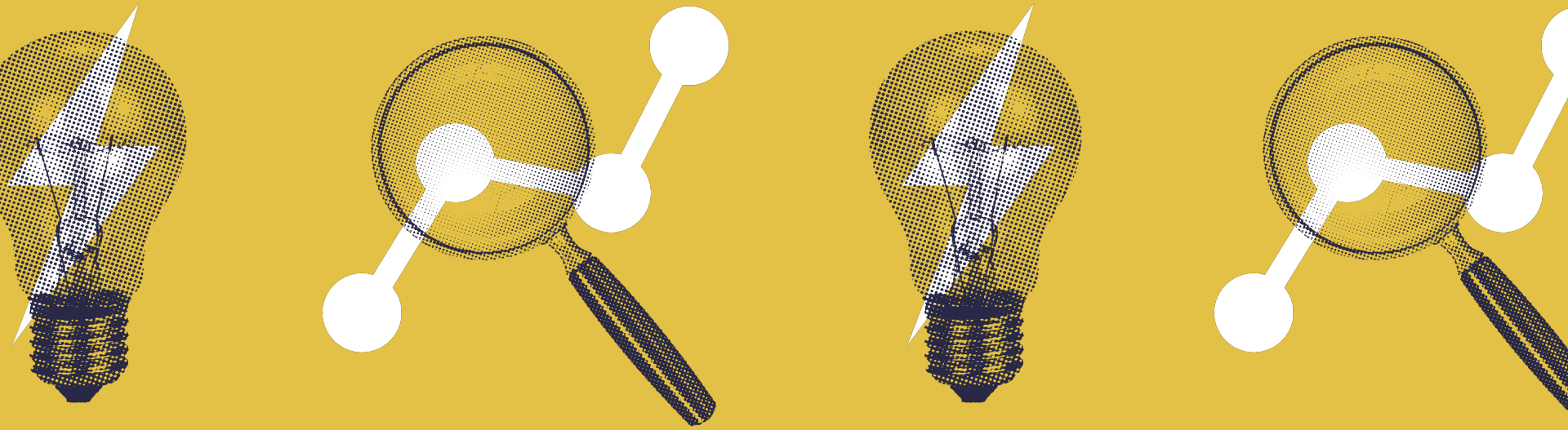

Key findings

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- **The outbreak of COVID-19 has led to substantial positive developments in the use of data by local government.** Faced with a once in a generation public health crisis, local authorities have sought novel ways of keeping their residents safe while continuing to deliver public services at a distance - and data-driven interventions have played a key role in these efforts.

- **A range of data-driven interventions have been launched or repurposed during the pandemic.** Examples include:
    - Hackney Council's attempts to combine internal and external datasets for the first time to help them identify residents who are particularly vulnerable to COVID-19 as an illness.
    - The use of the 'VIPER' tool by local authorities in Essex, which has enabled emergency services to share data in real time during the pandemic.
    - An agreement made among London authorities to share data about children in receipt of free school meals, allowing them to be better supported while schools were closed.

- While we expect the positive nature of changes in data use to be true across many authorities, **the scale of change may be less for those without dedicated data teams**, or those authorities that were **less developed in their data use** practices going into the pandemic. With a range of data maturity levels across local authorities, for some the improvements made necessary by the pandemic may have simply been learning the fundamentals, putting them in a better starting position for the future.

- According to the participants at our Forum discussion, local authorities have had more success in **changing how they deploy existing datasets** than in acquiring or sharing data with central government or local service providers. **The exception is the sharing of health data**, which has changed significantly. Central government, for example, has given local authorities access to the NHS shielding patients database, allowing authorities to better target support, including food parcels and pharmacy deliveries, to those individuals who are particularly vulnerable to COVID-19 as an illness.

Key findings

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- Participants in our discussion were confident that their data use practices had changed for the better since the start of the crisis, noting that it had altered attitudes at different levels of the organisation. However, **there was some nervousness that the momentum generated over the last year could easily be lost,** and that data use behaviours could revert to the pre-pandemic status quo.

- One reason is uncertainty around whether emergency powers granted to local authorities in the summer of 2020 will be retained and for how long. This includes regulation that gives local authorities access to data about residents who are particularly vulnerable to COVID-19 as an illness and need to shield. There was also **concern among some participants that local authorities will lose their appetite for experimentation once the emergency subsides,** and with it their willingness to experiment with untried data-driven interventions. **Ensuring local authorities have confidence that such uses are not just permissible but desirable post-pandemic will be crucial.**

- Local authorities also have to grapple with **long-standing barriers to data-driven innovation**. Participants made reference to skills gaps, budgetary constraints, poor technical practice, and a lack of legal clarity regarding how data can be used. As highlighted in a separate CDEI report on data sharing in government, these issues preceded the pandemic and will remain in place after it has abated.

- The challenge facing local authorities, however, is not just to use data well, but to use it in a manner that is consistent with the values and expectations of their residents. **Good data governance was top of mind for all our participants,** yet it was clear that many saw the potential for improvement in their procedures and practices. Participants commented on the difficulty of translating theoretical frameworks into practical steps.

- Participants appeared fearful of **misjudging the public**

Key findings

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mood on what is an acceptable use of data. This is particularly true in cases where data is used for algorithmic decision-making. Many expressed **a nervousness of being a "first mover"** in what is perceived to be a high risk environment. Local authorities are keen to avoid the same public criticism that has been levelled at other public sector bodies for their use of data during the crisis (for example, in relation to the contact tracing app).

- Participants finished the Forum by **discussing ways of overcoming the barriers to effective and ethical data use**. Some talked about the value of sharing good practice through networks and bodies, such as the London Office of Technology and Innovation. Others talked about making better use of external expertise - such as from universities - to sense check their data strategies and evaluate new initiatives.

- While it was not the subject of debate at our Forum, the government's new **National Data Strategy** is expected to create new opportunities to improve local government's use of data, at the same time as giving public sector organisations a fresh mandate to do so. The strategy sets out a number of commitments that will impact local authorities, including to upskill staff at all levels and to improve local authority access to trusted data resources. The strategy will build on existing efforts to remove the barriers to ethical innovation in local government, including from the Local Government Association (LGA) and the Ministry of Housing, Communities and Local Government (MHCLG).

- The **challenges raised by our Forum are systemic in nature**, and will require cultural shifts, legal changes and funding decisions that will improve over a period of years, not months. However, the data-led innovations we have seen over the course of 2020 have given us a glimpse of the progress that is possible within local authorities, and have shown that the rewards can often justify the effort and expense.

The CDEI will continue to work with partners in local government on this agenda, helping them to maximise the benefits of data-driven innovation for the benefit of all their residents.

Notes from the discussion

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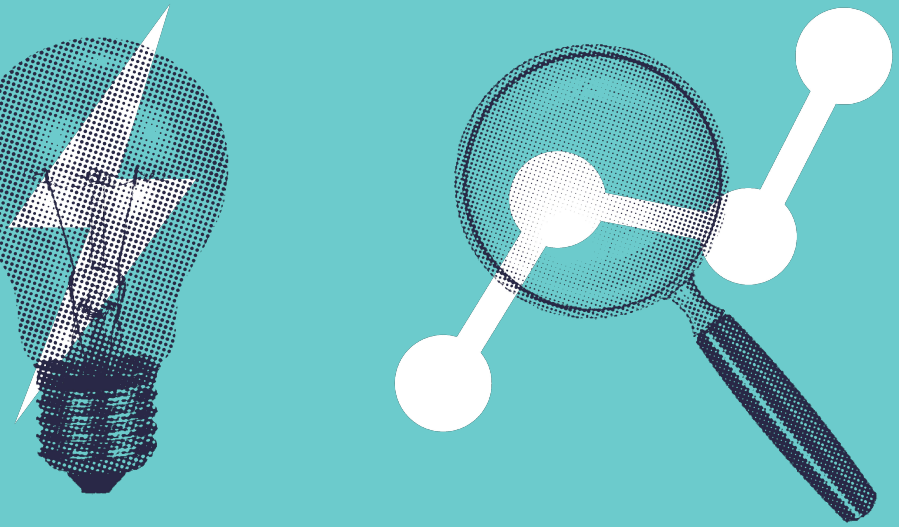

Part 1: How has the pandemic changed data use?

How can local authorities use data?

Used well and used responsibly, data can be a powerful asset for local authorities. It can help them to improve decision-making, allocate resources more efficiently and fairly, and enable greater transparency for residents. While local authorities are not recognised as pioneers in their use of data, there is significant potential for data-driven interventions to improve outcomes across the range of services they deliver - from the provision of social care to the collection of business rates.

Data can be used to:

- **Identify at-risk individuals** - Datasets can be combined to better understand the needs and vulnerabilities of residents. Under the Troubled Families Initiative, several local authorities have brought together data from different local public service partners (e.g. school attendance and employment data) to identify families experiencing multiple problems, thereby allowing for more targeted interventions.

- **Predict need for services** - Data can be used alongside algorithms to predict future outcomes for residents, known as 'predictive analytics'. This has been used, for example, in emergency services to identify the households most likely to place the greatest demand on police, fire and ambulance teams, also allowing for preventative interventions.

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- **Promote transparency** - Data can be used to help residents understand the state of their local area and how their local authorities are performing. Examples of data made available by local authorities include information about business rate charges, procurement decisions and the availability of housing stock. This promotes accountability and allows local authority decisions to be adequately scrutinised.

In undertaking these activities local authorities often use data that they have not themselves collected. Many rely on data sharing arrangements with other bodies in their region (e.g. schools and FE colleges), as well as with central government.

How have local authorities used data in their response to the pandemic?

Participants at our Forum agreed that the pandemic had spurred a significant increase in the use of data over a short period of time, and from a low baseline. One participant described the change as being equivalent to taking "a leap 2 years forward". However, progress was seen to vary by the data practice in question. The majority of data-driven interventions cited by the data leads we spoke with centred around identifying at-risk individuals, in particular by integrating different datasets in new ways. Unsurprisingly, the efforts of data teams in local authorities were mainly directed at alleviating the public health crisis, however in some cases data was used to cushion the wider economic and social effects of the pandemic.

The CDEI's COVID-19 Repository

Since the first lockdown started in March 2020, the CDEI has been tracking how AI and data were being used in response efforts. In August 2020 we published a special edition of this repository, focusing on new practices within local government. It captures thirty different initiatives from across the UK, ranging from Argyll and Bute Council's trial of drone technology to deliver vital medical supplies across its islands, to the use of mapping tools that support social distancing. The Repository can be viewed here.

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Examples of new data-driven practices include:

- **Combining individual-level datasets to identify residents who are most clinically and economically vulnerable to COVID-19** - Hackney Council sought to combine a number of internal and external datasets to help them identify residents most in need of support. This includes older residents and people with disabilities who live alone, as well as those most susceptible to the economic consequences of lockdown. Hackney was able to use unique property reference numbers (UPRNs) to link datasets that were previously siloed, for example data related to council tax and tenancy deposits.

- **Using population-level data on coronavirus infections to help contain local outbreaks** - Local authorities have used granular postcode-level data on infection rates to inform outbreak containment plans and to help them target messages to residents in at risk neighbourhoods. Officers at Blackburn with Darwen Council have commented on the importance of postcode-level data for being able to communicate local restrictions and to provide supporting evidence for lockdown decisions.

Examples of data practices that have been enhanced or adapted during the pandemic include:

- **Analysing population-level data to identify areas of need** - Camden Council drew on preexisting population-level data to determine where demand for services was likely to be greatest during the pandemic, which in turn informed the commissioning of COVID-19 response services. Captured in

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an annual Joint Strategic Needs Assessment, this population-level data includes data related to demographics, housing, education, crime, poverty and employment.

- **Analysing service-level data to monitor pressures on public services** - Several local authorities have sought to collect data on children's services to better understand the pressures they have been facing during the pandemic, allowing them to intervene early where necessary with targeted interventions. The Commissiong Alliance (CA) has provided a range of tools and services for local authority commissioning throughout the pandemic. They are working directly with fifteen member authorities, but have made access available for any authority to join.

How important has data sharing been to pandemic relief efforts?

These examples demonstrate the varied ways in which data has played a role in supporting pandemic relief efforts across the country. Participants did, however, caution that progress in using data has been variable across local authorities. Those that lacked mature data strategies and experienced data teams going into the crisis were expected to have launched fewer data-driven initiatives in response to the crisis.

Discussions at our Forum also revealed that local authorities have had more success in deploying existing internal datasets in new ways than they have had in acquiring new datasets from other bodies. The exception is the sharing of specific types of health data, which have been facilitated or enforced by central government, and which have previously been difficult for local authorities to access.

Offices for Data Analytics

In recent years, public sector organisations have increasingly come together to set up offices for data analytics (ODAs), with the aim of improving public services through better data analytics and data sharing practices. **Nesta** has been a key champion of this model, highlighting the value this can bring in an environment of tight budgets and high demand for services.

Crucially, ODAs can help local authorities to make improvements in data use with a much greater impact than might be possible alone, particularly for smaller local authorities. The relationships, practices and information governance procedures established before the pandemic made work, such as identifying vulnerable residents, easier for those involved in ODAs. Examples include the London Office of Technology and Innovation (LOTI), and Suffolk Office for Data and Analytics.

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Significant changes include:

- **Changes to patient information regulations,** whereby the Department of Health and Social Care (DHSC) mandated health organisations and local authorities to share and process confidential patient information for the purposes of controlling the COVID-19 outbreak.
- **The decision to share the NHS shielded patients list with local authorities** (among other organisations), allowing local authorities to identify and support those who are at a high risk of developing complications from COVID-19 infection.

Alongside the above, local and central government continue to work together on testing and tracing COVID-19 infections, which includes sharing data on rates of infections down to the postcode level. Participants at our Forum described these as essential data sharing arrangements, and drew a contrast with the period before the pandemic where it was difficult for local authorities to gain access to health data about their residents.

However, it was clear from our discussions that local authorities were not always able to share or access the data they wanted to. Camden Council, for example, talked about the challenges they faced in passing data to local and voluntary organisations over the last year (although they have since made a successful bid to MHCLG's COVID-19 Challenge Fund to improve data exchanges with third sector organisations). The local authorities we spoke with also had mixed views on the ability of

Collaboration between local and central government

The ability of local authorities to acquire and share data with central government was not addressed in detail in our discussions. However, the future success of data-driven innovation in local government will depend on effective collaboration between the two sides. Further work may be necessary to understand the strengths and weaknesses of existing data sharing relationships, and to consider how they might be reinforced (e.g. by improving data quality and granularity).

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central government to share data, remarking that data quality, granularity and timeliness were all issues at the start of the pandemic. In addition, there could have been more clarity in the definitions and terminology used to describe the data shared. Some participants had also requested that infection rate data be provided on an hourly, rather than a daily basis - although in practice it would have been challenging for central government to realise this ambition, particularly early on in the pandemic.

Public views on the use of health data during the crisis

According to polling by the National Data Guardian (NDG), 78% of the public agreed that "during a public health emergency, such as COVID-19, it is more important than usual that health and care data is shared with all those involved in the emergency response". Although 70% thought that data sharing rules should return to normal after the pandemic, 60% agreed that organisations such as local authorities and researchers should be permitted to continue using health and care data to improve services.

Part 2: Will the momentum be maintained?

Will the pandemic make a lasting difference to how local authorities use data?

Notwithstanding the concerns laid out in the preceding slides, the overriding message from those who attended our Forum was that data use practices within local authorities had overall changed for the better during the pandemic. Participants also talked of attitudinal changes within local government, with the severity of the public health emergency acting as the catalyst. The media's widespread coverage of data-driven interventions at a national level (e.g. around the contact tracing app), may have helped to alert councillors, chief executives and other decision makers to the power and potential of data.

A question we posed to the Forum's participants was whether these changes to practices and attitudes would endure after the pandemic subsides, referring to the cases where continuation would be both beneficial and ethical. Could progress be maintained and even accelerated, or would enthusiasm for data-driven innovation dissipate as the crisis fades from view? The participants at our discussion expressed some nervousness that the achievements seen in 2020 could be temporary, with data use practices reverting to the pre-pandemic status quo. Among the reasons for pessimism were that:

- **Emergency access to datasets could be repealed** - Participants were concerned that they could lose access for example to data on shielding patients, which would otherwise have long-term value for local authorities in supporting residents. (Although participants also acknowledged the concerns residents might have about their health data being used outside of an emergency).

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- **Enthusiasm for data-led interventions among senior decision-makers could wane** - While understanding and appreciation of data has improved within local authorities in recent months, including at a senior level, it is unclear whether this amounts to a substantial and long-term shift in mindsets. As time passes, there is a risk that senior leaders focus less of their attention on data innovation projects, particularly where they court controversy.

- **Risk of being the frontrunner local authority** - Most participants said they were wary of being a 'first mover' in the use of data, particularly in circumstances that involved the deployment of algorithms, which have become increasingly contentious. The fear of courting controversy or losing public trust can often lead to delays and sometimes to the termination of data-driven programmes. This can be the case even where local authorities have done significant work to assure projects on legal and ethical grounds. **Local authorities may be unwilling to continue new or innovative practices beyond the pandemic, even where there is clear value, if they fear they will be the outlier in such practices.**

Even were attitudinal changes to be long lived, and were local authorities able to retain access to emergency datasets, they would still have to grapple with **historic barriers to innovation**, which have for some time prevented them from making full use of data. Participants made reference to:

- **Budgetary constraints -** Putting data to work requires the funding to pay for teams of data analysts and potentially outside consultants to upskill staff. It can also require investing in

The financial impact of the pandemic on local authorities

The Institute for Fiscal Studies (IFS) has found that the pandemic has increased financial risk for many local authorities, particularly in terms of lost income such as business rates revenues. The scale and impact is likely to vary from one local authority to another, with lower-tier shire councils as well as authorities in more affluent areas expected to be worst affected. The IFS believes that councils in England as a whole will collect £12bn less in business rates and £1.5bn less in council tax revenues than they were initially planning.

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expensive software and licensing regimes. Smaller local authorities in particular can find it difficult to cover these costs.

- **Poor data quality** - Local authority datasets are not always of the highest quality, which prevents data from being put to effective use. One issue is that many records are incomplete or duplicated. Another is that datasets are often stored in spreadsheets rather than databases, which creates challenges for sharing access rights and maintaining proper data logs. This can be true even where local authorities have access to database software.

- **Skills gaps** - Attracting and retaining people with skills in data collection and analysis has been a long term challenge for local authorities. In-house data expertise not only means projects can be delivered to a high standard, it also helps to reassure decision-makers that those projects are worth proceeding with. Participants noted that a fear of the unknown and a "culture of no" is more able to take hold in the absence of qualified staff.

- **A lack of legal clarity** - Local authority data teams are not always aware of what is legally permissible in the collection and use of data, particularly personal data. This is because some provisions in the law are unclear and leave much to the interpretation of data protection officers. The Data Protection Act, for example, includes a number of provisions where the meaning has been contested, including those relating to the lawful processing of personal data.

Skills gaps in local government

The LGA has been conducting a COVID-19 workforce survey throughout the pandemic. It has found that recruitment of ICT professionals remains a challenge for many local authorities across England, Wales and Northern Ireland. However, this is just one area where local authorities are facing skills shortages. The LGA's September 2020 survey found that only 25% of surveyed councils placed shortage of ICT professionals in the top 5 specialist roles that face the greatest recruitment challenges.

Part 2: Will the momentum be maintained?

- **Insufficient demand from frontline teams** - Some participants expressed concern that the results of data analysis are not being used effectively by frontline service providers, for example housing and social care teams. Frontline practitioners can lack faith in the veracity of data-driven analysis, preferring instead to rely on their own judgement. It appeared from our Forum discussion that data teams lack the feedback loops to know whether their findings are being well used.

While the discussion largely centred on the obstacles to data *use*, **the same barriers were also seen as hindering data *sharing***, both to and from local authorities. Data sharing between local authorities and other public sector organisations (e.g. police forces) has historically been piecemeal and difficult, as highlighted by a recent CDEI report on data sharing in central government. Participants at our Forum pointed to excessive risk aversion from both data providers and recipients - something made worse by a lack of incentives, as well as confusion in relation to what can legally be shared. Since the forum, the Information Commissioner's Office (ICO) has published its Data Sharing Code of Practice, which provides practical advice on how to share data in line with data protection law.

Another barrier to data sharing comes from inconsistencies in how data is managed between two parties. In areas where local government is split between County and District Councils, it is sometimes the case that individual District councils in the region hold and manage data in different ways, making it difficult for the single overseeing County Council to link up datasets. An example is data on homelessness, which County Councils gather from their District Council partners. Such inconsistencies across a range of data and contexts creates a significant challenge for effective sharing and use of data.

Part 2: Will the momentum be maintained?

Our participants did not treat every barrier as equally significant. For example, while we might have expected funding to be front of mind, it was referenced by fewer of the local authorities at our event and during our interviews than issues relating to talent and access to data. It may be that budgetary constraints are seen as more difficult to address, or that they affect every department within local authorities, making data teams wary of requesting special treatment.

How have local authorities approached questions of data ethics during the pandemic?

The challenge facing local authorities is not just to maximise the use of data, but to do so whilst upholding the highest ethical standards. In this regard, the pandemic has created new pressures on data teams, who were being presented with datasets they had not previously worked with, and who were being asked to perform novel types of analysis they had seldom undertaken previously. Participants were conscious that engaging in new practices could lead to new risks, particularly with regard to the use of health data, where preserving the privacy of data subjects is critical.

When discussing data ethics during the Forum, we referred to the **CDEI's Trust Matrix** - a framework that consists of five principles designed to help data controllers think through the ethical implications of new data-driven initiatives (see the bar to the right for more information). Each of the local authorities present had a distinct approach to safeguarding the data of their residents, while each also faced their own combination of challenges in creating a robust data governance regime. Nevertheless, some common challenges were identified:

The CDEI's Trust Matrix

The CDEI's Trust Matrix sets out five key principles of trustworthy data use and sharing. These are:

Value - Is there a clear benefit to individuals and society from the data being used and shared?

Security - Is data being used securely and is the privacy of data subjects being protected?

Accountability - Is it clear who is responsible for how the data is being used and shared?

Transparency - Can the public scrutinise how their data is being used and do they know why?

Control - Do people have a say in how data about them is used and shared?

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- **Implementing data ethics guidance that everyone understands** - Participants noted that those charged with drawing up data ethics guidance faced the difficult task of creating something that is relevant and understandable across their local authority, and potentially outside of it. They noted that what is helpful for technical staff may not be for their frontline colleagues. Participants commented that guidance that goes too far into specifics may appeal greatly to one team but be ignored by most others in the organisation.

- **The cost of engaging with residents:** participants acknowledged the importance of understanding residents' concerns as well as increasing public awareness of how local authorities use data. However, public consultation can be a 'nice to have', as it often involves significant costs where budgets are already limited.

How have local authorities engaged residents in decision-making?

To deploy data responsibly also means understanding what the public deems to be acceptable. Public engagement exercises can help local authorities to understand residents' concerns and needs, as well as to build trust and faith in the legitimacy of data-driven projects. All the local authorities participating in our Forum spoke of the importance of consulting their residents, but also said that public engagement was difficult to do well, not least during times of social distancing where most interaction has to happen online. Participants remarked that:

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- **Public engagement can take many forms** - Local authorities and those advocating for public engagement often use the term 'co-production' to describe their work, but in reality consultation exercises seldom involve residents on the scale suggested by this language. Participants felt it important to use more precise language to accurately reflect how much say residents have over decision-making.

- **Residents need context to make informed judgements** - Public engagement exercises work best when those being consulted are given sufficient information about why a data-driven intervention is deemed necessary, and when they are presented with clear information about the trade-offs involved. Without sufficient context, changes that are proposed by local authorities can be misunderstood, either leading to unnecessary fears among residents or conversely giving them false reassurance when risks are significant.

- **Local authorities could do more to consult residents on predictive analytics projects** - While public engagement is expensive and difficult to deliver at a time of social distancing, participants believed that highly contentious projects - particularly those involving predictive analytics - would struggle to succeed without it. Some noted that residents were often opposed to predictive analytics projects before they had begun, and that part of the pushback was born out of a fear that residents would have little say over the direction of how data and algorithms would be deployed. Predictive analytics projects are highly sensitive by

Public engagement in Camden and Islington

The Camden and Islington Public Health team, alongside colleagues from both councils and a number of VCS organisations, undertook a programme of resident engagement work through the summer of 2020. The purpose was to gain an understanding of how local communities and residents understand and engage with COVID-19 prevention and control measures, and how they feel impacted by the pandemic. The aim of this work was to inform how local systems can better support residents, in particular the more clinically and economically vulnerable residents, throughout the pandemic.

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virtue of forecasting future outcomes for individuals, which often tend to be negative or stigmatised (e.g. predicting risks of homelessness or low educational attainment).

Despite the difficulty of running effective public engagement exercises, some of the participants were confident that recent consultations run by their own local authorities during lockdown had been rigorous and valuable. This includes the Camden and Islington Public Health team who undertook a remote consultation process on the impacts of COVID-19 (detailed on the previous slide).

What do the public think?

On behalf of the CDEI, Deltapoll conducted an online survey of 2,025 individuals representing all regions of the UK from 10th-17th December 2020.

- The majority of survey respondents **(59%) reported that they had not engaged with their council in any way over the last five years**. Of those who had engaged, only 8% had attended a discussion forum, and 30% had completed a survey for their local council.

- The survey suggests that, while there is some desire from citizens for greater engagement from their local authority (35% of respondents agreed that in order for their council to effectively operate and work for them, it is important that they can actively participate in its decision-making), the majority do not feel the need to participate outside of elections.

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- The picture is optimistic for public engagement in decision-making around local council use of data, with **50% of respondents reporting that they would be interested in engaging with their local authority to give their opinion on how data should be used to make decisions.**

- The **desire for more active engagement with one's local authority was shown to be greater amongst the younger respondents to the survey**, with 41% of Millenials agreeing that it is important that they engage in the decision-making process above and beyond elections, compared with 29% of Baby Boomers.

- When asked about the barriers that would stop them from engaging with their local authority and participating in the decision-making process, the most popular response was *not* that they were not interested (15%) or did not have the time (14%), but that **they were not aware of the discussions happening** (27%). This further highlights the need for effective comms around the opportunities for public engagement.

- The survey results show that the level of comprehension around local-council data use is extremely varied. When asked about their understanding of how their local council is currently using personal data and presented with a list of possible uses, **39% of respondents reported that they do not know how their personal data is being used.**

Part 2: Will the momentum be maintained?

- While there is a clear desire for greater involvement and awareness of consultation processes from some residents, this does not necessarily mean that residents will be keen to directly engage with the details of local authority decisions relating to data use. Public consultation should ensure that local authorities can understand what residents might find acceptable, or where they might be most uncomfortable with certain practices, while building trust and public awareness of how their data is used.

Part 3: What support do local authorities need?

How can local authorities maintain the momentum of the last year?

Participants finished the Forum by discussing how they could improve the way they use and share data, and how they might do so responsibly. Perhaps unsurprisingly, the conversation focused on what was in their immediate control, or what felt possible for others to do with little expense. Among the measures discussed were:

- **Finding new ways to communicate the value of data** - Participants frequently referred to the importance of finding new methods for conveying the results of their data analysis, for example via data dashboards. This was seen as a way to help decision-makers and frontline service providers access the information they need (and to interpret it correctly), as well as a means of demonstrating the value of data to senior leaders in authorities.

- **Testing data-driven interventions in a safe environment** - Participants commented that it is not possible to anticipate every potential hazard associated with a novel use of data. Some supported the use of pilots and experiments before committing to the rollout of new data-driven interventions. One idea could be to use 'sandbox' techniques, which invite regulators and others to observe projects as they are being designed. In 2019, the Ministry of Housing, Communities and Local Government entered into the ICO's first Regulatory Sandbox; their project aimed to work with Blackpool Council to create a new dataset to help them understand issues around private rented accommodation in the town.

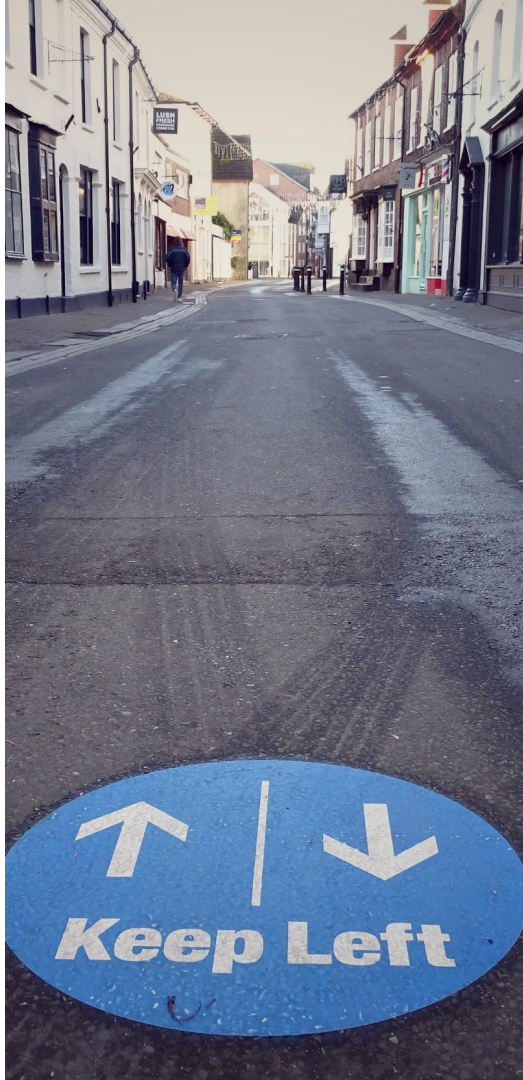
Pre-pandemic work on data use in local government

In 2016, Nesta published a discussion paper on "Datavores of Local Government". It highlighted the emerging ways in which data was being used in local authorities, as well as how local authorities can get more from their data. Many points raised in the paper resonate with our findings, for example the importance of supporting the use of data 'from the top', and leveraging senior managers to create a data-oriented culture. It remains a useful document for understanding the types of data use in local government and the potential for further developments.

Part 3: What support do local authorities need?

- **Learning from the experiences of other local authorities** - Our discussion revealed that local authorities pay close attention to what their counterparts do elsewhere in the country. Meet ups and networks can help data teams understand what has worked and why elsewhere, enabling them to adopt similar technical and ethical approaches in their own contexts. Seeing the achievements of other local authorities can also build confidence, both among data teams and senior leaders. One participant said they regularly looked at what councils were doing with data in other parts of the world, helping them to understand the art of the possible. While participants could point to many information sharing events, there was a sense that these tend to be held in London, making it more difficult for local authorities outside of the South East to participate.

- **Making use of external expertise** - As well as learning from others informally, participants felt that local authorities could benefit from greater engagement with experts in data-driven innovation, particularly those who can advise them on how to deploy data responsibly. External support, for example from data specialists at universities, can give data teams confidence that they are using cutting edge techniques, and that they are giving due consideration to ethical risks. Some, however, felt that such support was difficult to access, while others were wary of the additional scrutiny it would generate for their work.

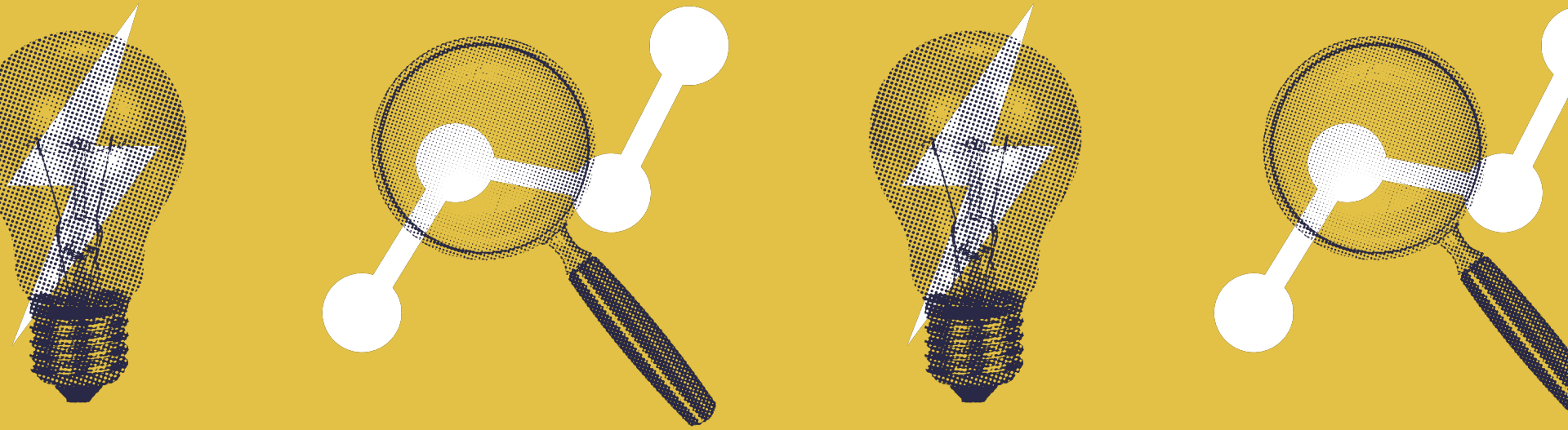


Part 3: What support do local authorities need?

Local authorities have the power to act on many of these ideas and principles without the need for external assistance. However, a number of the barriers to data use that were revealed in our discussion will require more concerted effort to resolve, sometimes involving central government and other parties.

Conclusion

Centre for Data Ethics and Innovation

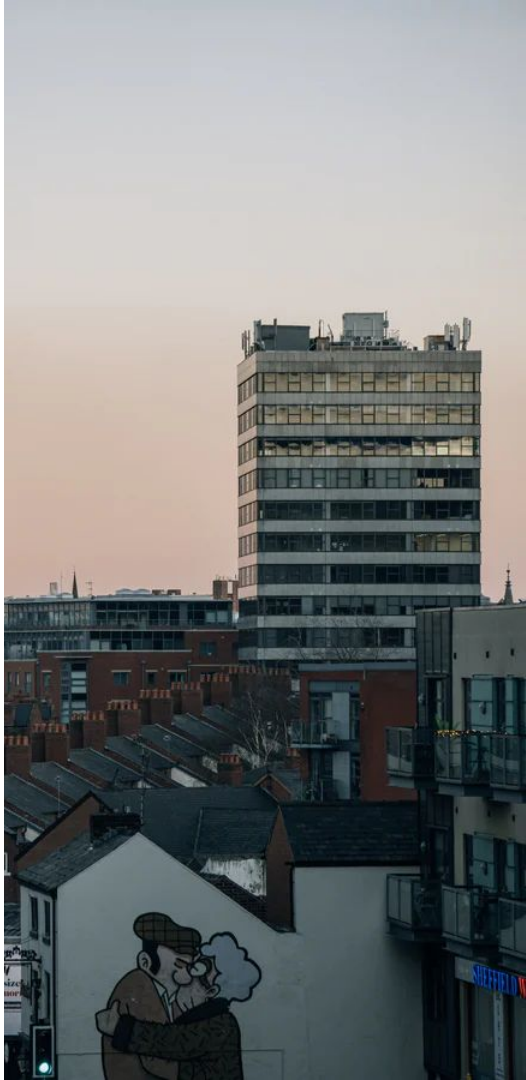


Conclusion

2020 was a year of upheaval for local authorities, having faced severe and unprecedented challenges in responding to the pandemic. As we have seen during our Forum, data and data-driven interventions have played an important part in cushioning the impact of the crisis, helping to inform public health measures, protect the most vulnerable in society, and keep public services running. While it is difficult to quantify the impact of these practices, they have undoubtedly made a difference, potentially reducing loss of life and limiting the physical, mental and economic impact on residents.

The question we posed in this Forum was whether the changes witnessed in data use and sharing since the start of the pandemic could be maintained over the long term. The data leads who attended our discussion were optimistic about the future, but they did not believe progress would be sustained of its own accord. While most recounted that the pandemic had led to positive changes in attitudes towards data use in local government, they cautioned that it did not amount to an ingrained shift in the mindsets of decision-makers. A reversion to the 'old normal' was seen as a plausible scenario, with a clear risk that local authorities would lack the confidence to continue or expand upon positive developments.

Local authorities are also hampered by a number of longstanding barriers to data-driven innovation. Among those highlighted during our discussion were a shortfall of talent, issues with data quality, and confusion over what the law allows. In addition, local authorities need to master the art of data governance, ensuring that they protect the privacy of their residents and deploy data in a way that is in keeping with their expectations. This requires skills and expertise that are not always in plentiful supply.



Conclusion

In the Forum, we discussed a number of ways that data teams could address these barriers on their own, for example by finding better ways of articulating the value of their programmes. Yet progress is unlikely to be made without commitments from senior leaders in local authorities, and support from central government and other external organisations. Crucially, it requires increased investment and an improvement in data skills, without which it will be difficult to fully retain and build on the achievements seen during the pandemic.

It is promising that many organisations have stepped up to support local authorities. This includes:

- The Local Government Association (LGA), which recently published a guide for the use of predictive analytics in public services by local councils. This work highlights where predictive analytics are in use in local government, its benefits and risks, and a practical guide for data teams and decision makers.
- The Ministry of Housing, Communities and Local Government (MHCLG), which launched a COVID-19 Challenge Fund for digital and data projects that help with the pandemic response and recovery. Eleven projects have so far been awarded a share of the £800,000 fund (see bar to the right for more information).
- The University of Essex, whose Business and Local Government Data Research Centre launched a Data Analytics Voucher scheme, which will give participating local authorities access to data research expertise.

MHCLG's C-19 Challenge Fund

The Local Digital C-19 Challenge was launched in July 2020 to find Digital, Data and Technology (DDaT) projects that help local authorities in England with their COVID-19 recovery and renewal efforts. Funded projects include:

Newcastle City Council's project to develop a digital tool to identify which parts of a city are overcrowded and breach social distancing requirements. The tool then disseminates information to citizens so they can make informed decisions about their movements.

Camden Council, Greater London Authority and London Office of Technology and Innovation (LOTI)'s project to improve data exchanges with voluntary community services (VCS) in order to better support vulnerable residents post-pandemic.

Conclusion

- The Government Digital Service, which in September 2020 published an updated version of the Data Ethics Framework, designed to encourage practitioners in the public sector to consider the ethical implications of their data projects and take appropriate steps to minimise risks.

- The CDEI's partnership with Bristol City Council, where we are supporting them to develop a new data governance framework, rooted in the principles of transparency and inclusion.

These interventions are narrowly focused, and on their own, are unlikely to move the needle in how local authorities use data. Yet they give an indication of the type of support that could be made more available. They also signal a growing conviction both inside and outside of government that data can indeed transform the way public services are delivered, and that data capabilities are worth investing in. The recently launched **National Data Strategy** is in keeping with this sentiment, presenting a number of commitments that will support local authority data teams in the coming years (commitments for example to strengthen skills, improve data standards and bring clarity to regulation).

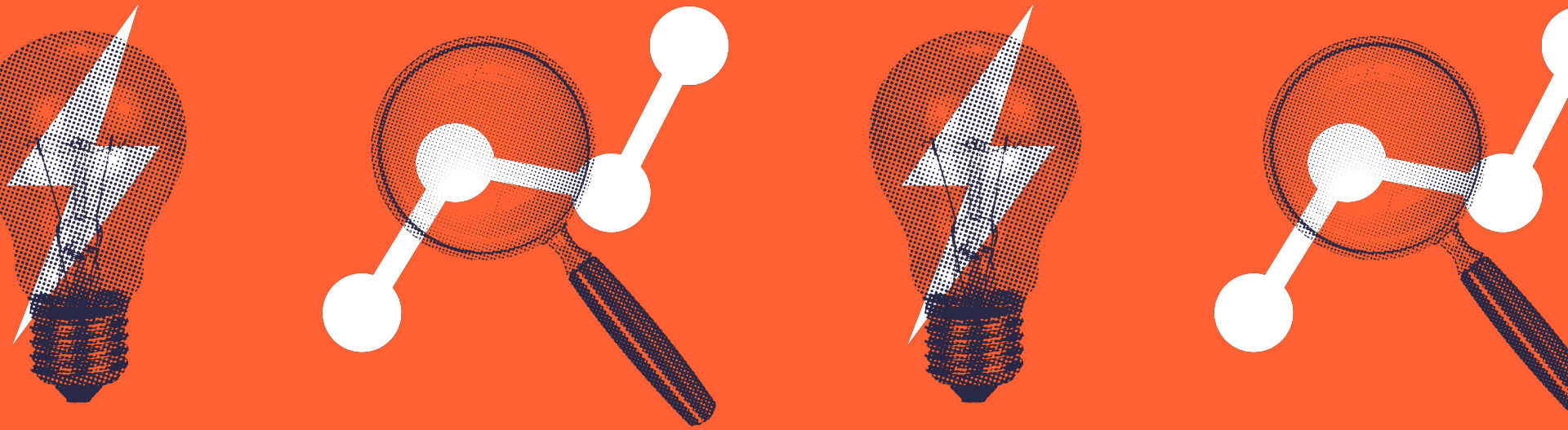
For its part, the CDEI will continue to explore ways of helping local authorities to maximise the data at their disposal. In doing so we will seek to highlight the best practice that is often hidden below the surface, as well as to draw in insights and lessons from other sectors. We are particularly keen to help local authorities that are less mature in their use of data, including rural and district councils, which tend to be overlooked in discussions such as these.

For more information about the discussion or the CDEI's work, please get in touch at ai-forums@cdei.gov.uk.

Annex A

A closer look at skills and funding barriers

Centre for Data Ethics and Innovation



Underlying challenges for good data use: skills

Attracting and retaining data skills has been an ever-present challenge in local government. This is a problem that reduces capacity to capitalise on positive developments during the pandemic, while the skills challenge may in fact be further exacerbated by the pandemic.

- **Lack of skills remains a problem:** hiring and retention are challenging, particularly outside of London and larger cities, while reduced budgets have led to a loss of people and skills. Skills needs relate not only to technical expertise and experience in data, but also in attracting innovators and those comfortable with data ethics, who are well placed to enact change.

- **Recruitment** of sufficient numbers of experienced and qualified staff in this area has long been a challenge, inevitably linked, in part, to funding challenges.

- Some participants noted that a **lack of necessary in-house expertise** has resulted in colleagues with limited knowledge **perpetuating the fear of the unknown** and a "culture of no", which might have been tempered by a greater wealth of experience. This inevitably risks undermining the any progress in the use and attitudes towards data in local authorities, and reversion to the status quo. Inevitably, this may also prompt difficulties for harnessing opportunities and lessons learned.

- **Greater access to skills due to work from home:** in the short term, the pandemic may increase the availability of expertise as staff will not need to be close to the office.

Skills challenges across local government

The LGA has been conducting a COVID-19 workforce survey throughout the pandemic. Our discussions support the LGA's findings that recruitment of ICT professionals remains a challenge for a range of local authorities across England, Wales and Northern Ireland. Worryingly however, this is but one area where local authorities are facing skills shortages. The LGA's September 2020 survey found that only 25% of surveyed councils placed shortage of ICT professionals in the top 5 specialist roles that face the greatest recruitment challenges.

Underlying challenges for good data use: skills

However, this could also lead to greater competition in recruitment, with authorities that can afford to pay more gaining a particular advantage.

- The skills gap **extends beyond data teams to wider local authority ICT capabilities, such as a lack of skills in software design**. Such skills can be crucial in effectively communicating and visualising shared data for colleagues to make use of effectively, from strategic decisions to the day-to-day off front line services. Many local authorities have increasingly used data dashboards during the pandemic, but excessive use of excel spreadsheets continues and presents barriers to internal data sharing.

- **There is clearly a need to better understand the extent and nature of this skills shortage.** Worryingly, this is just one area where local authorities lack sufficient skills and resources, meaning that it is just one of many priorities both for now and beyond the pandemic. **Nonetheless, the evidence from data use during the pandemic makes clear the necessity of good data skills.**

Underlying challenges for good data use: funding

Similar to the skills problem described above, funding is an ever-present challenge in local government, and one which may be further exacerbated by the pandemic.

- **Funding for local authority services has been a sustained challenge for more than a decade;** data and digital teams are just one aspect of local authority work that has been impacted by this. **Surprisingly, funding was barely mentioned in the course of our discussions**, likely because it remains a systemic, ever-present challenge.

- Where tough financial decisions need to be made, it may be easy to consider data projects as 'nice to haves' relative to frontline work such as children's social care. However, participants in our discussion cited that they **increasingly pitch data analytics projects as something that the local authority cannot afford not to do.** Addressing the issues of today without investing in the future of data use will only continue a cycle of underuse of data.

- **Sunk costs can lead to an unwillingness to roll back projects, even when clearly needed.** Limited budgets and the substantial cost of starting individual projects or

Surprisingly, funding was barely mentioned in the course of our discussions, likely because it is a systemic, ever-present challenge.

The financial impact of the pandemic on local authorities

The **Institute for Fiscal Studies** has noted that the pandemic has increased financial risk for many local authorities, particularly in terms of lost income such as business rates revenues. The scale and impact is likely to be diverse, with lower-tier shire councils as well as those for more affluent areas potentially taking more of a hit.

It seems then that even if improving resourcing and skills in data teams post-pandemic is seen as a priority, it is likely to be only one of many challenges to be addressed.

Underlying challenges for good data use: funding

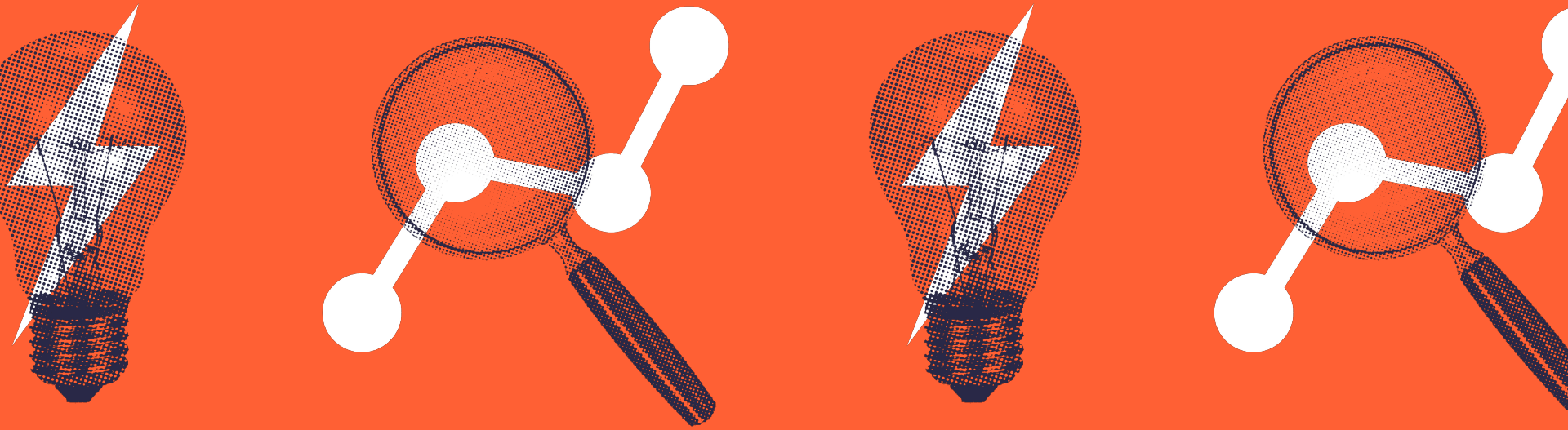
procuring systems can lead to retention even when not fit for purpose. The raw cost of new systems relative to a local authority's budget and limited technical bandwidth to roll back or wind up certain parts of a project can mean, as one participant put it, that "once the genie is let out of the bottle, it is hard to get it back".

- As with skills (which is highly reliant on funding), **increased funding for data teams and projects could make substantial progress in improving data practices and the culture of data sharing.** Equally however, with the range of other urgent funding requirements, this message risks being either unheard, or not acted upon even if heard due to lack of necessary funding.

Annex B

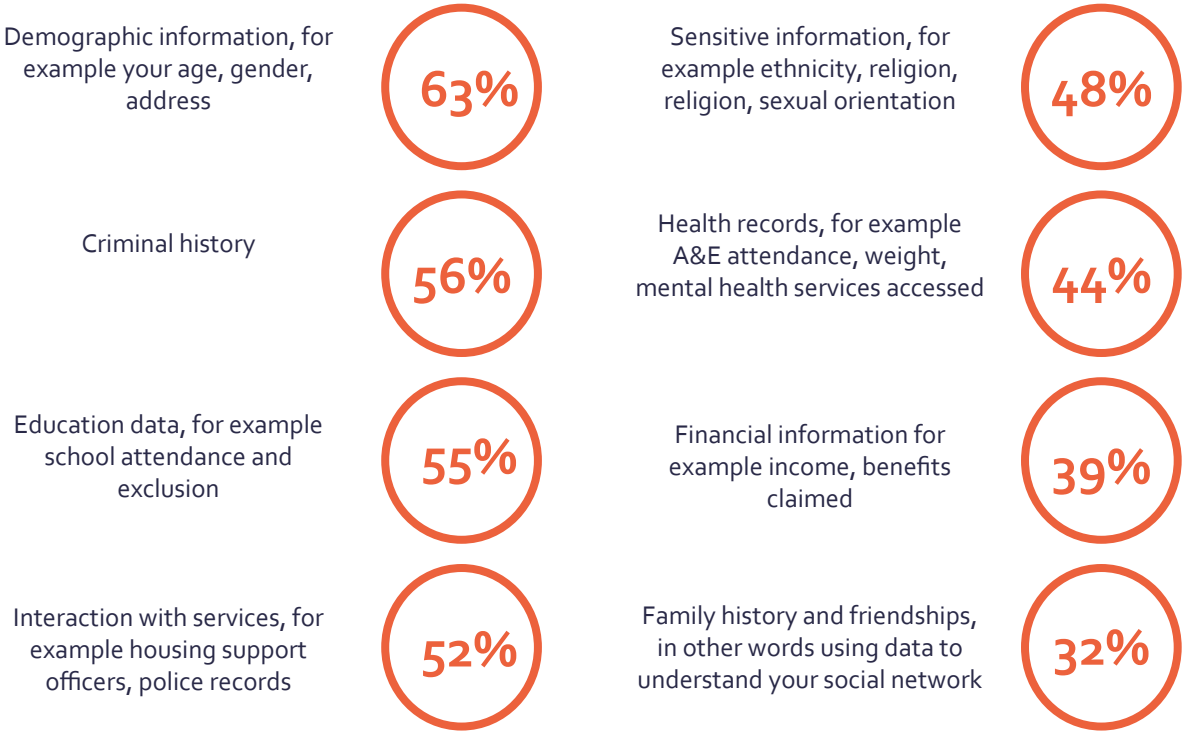
Public attitudes survey: additional findings

Centre for Data Ethics and Innovation



Public Attitudes: local council collection of data

The percentage of respondents who said they were comfortable with their local council collecting and using the following information about them during the pandemic:



Unsurprisingly, the survey respondents were most comfortable with their local council collecting demographic data (age; gender; address), and least comfortable around the collection of family history and friendship data.

Notably, the proportion of participants who reported feeling comfortable with the collection and use of this data centred around the 50% mark, indicating that approximately half of respondents were uncomfortable or selected 'don't know'. This further suggests the need for effective public engagement from local authorities, to build citizen awareness and trust.

Public Attitudes: local council use of data

The percentage of respondents who said they were comfortable with their local council using data about them in the following ways:

To predict air quality and traffic jams, so that they can reduce journey times or encourage people to take different modes of transport

To identify children who might be at risk of domestic violence and arrange for social workers to visit those families

To predict whether young people in particular areas are at risk of violence, crime and gang-related activity and target communications campaigns to young people

To predict whether you or your family member might need extra support from local services, for example to help families with children under five to be ready to start school

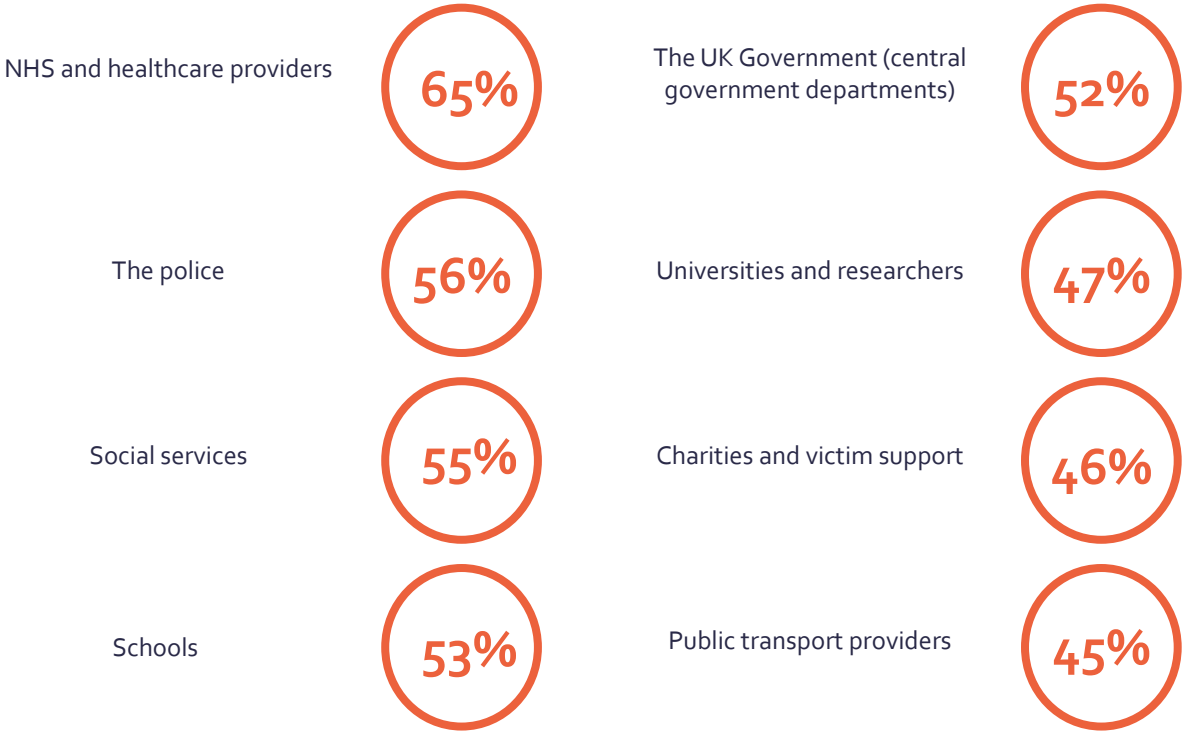
To predict people in your area's weight and susceptibility to health conditions, and improve access to exercise classes

The proportion of respondents who reported feeling comfortable with these scenarios is, on average, slightly higher than the proportion who cited feeling comfortable when asked about the use of the raw data. This suggests that when additional context is provided around **how** the data will be used, citizens are better able to see the potential benefits, both for themselves and for their communities.

However, there is a tension between these figures and those recorded on the previous slide. 67% of respondents said they were comfortable with data being used to protect children at risk of domestic violence, but only 32% said they were comfortable with the use of family history data. It is very difficult to do the former without access to the latter.

Public Attitudes: local council data sharing

The percentage of respondents who were comfortable with their local council sharing their personal data with the following organisations to provide services:

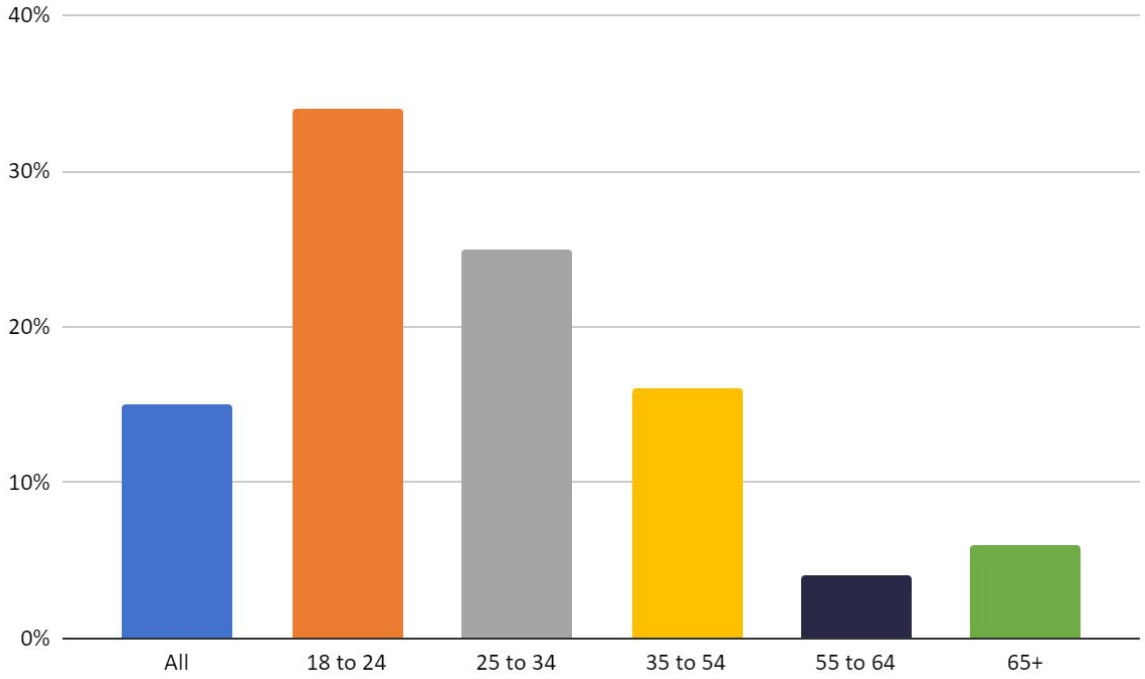


The survey respondents were most comfortable with their personal data being shared with the NHS and healthcare providers. This finding is consistent across age group, region and annual household income.

Respondents were least comfortable with their personal data being shared with public transport providers. However, this findings has a generational element; while 55% of Millennials were comfortable with this, only 36% of Baby Boomers reported being so. Furthermore, the figure (63%) was much higher for London than any other region. This is to be expected given the greater reliance on public transport in the capital, compared to other UK cities.

Public Attitudes: local council monetisation of data

The percentage of respondents who said they would be comfortable if their local council sold their personal information to private companies:



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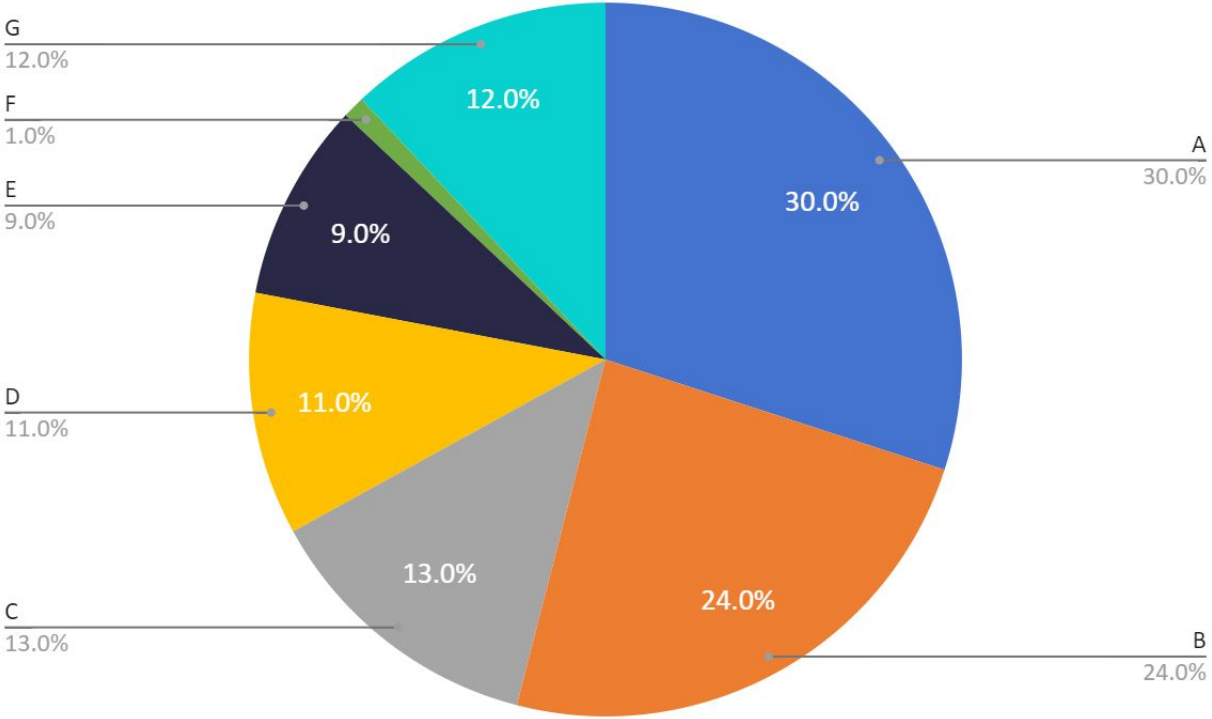
Only 15% of respondents said they would be comfortable with this scenario. However, this figure varied considerably across age groups. The general trend shows a decreasing degree of comfort as you move up the age brackets. 34% of 18 to 24 year olds reported that they would be comfortable if their local council sold their personal information to private companies, compared with just 4% of 55 to 64 year olds.

Overall, there was a very low level of comfort around this potential scenario, which sends a clear signal to local councils.

It should be noted that this comprises one scenario on the far end of the public-private data sharing spectrum. There are less extreme methods which are more commonplace in practice.

Public Attitudes: local council data use - concerns

Taking everything into account, which of the following would you say would be your GREATEST CONCERN over your local council collecting information about you?



A - I do not know how my data is used.

B - My local council won't use or manage my data responsibly.

C - My council knows private information about me.

D - I will not benefit from the data use.

E - My local council gives me a negative label from the information it has about me.

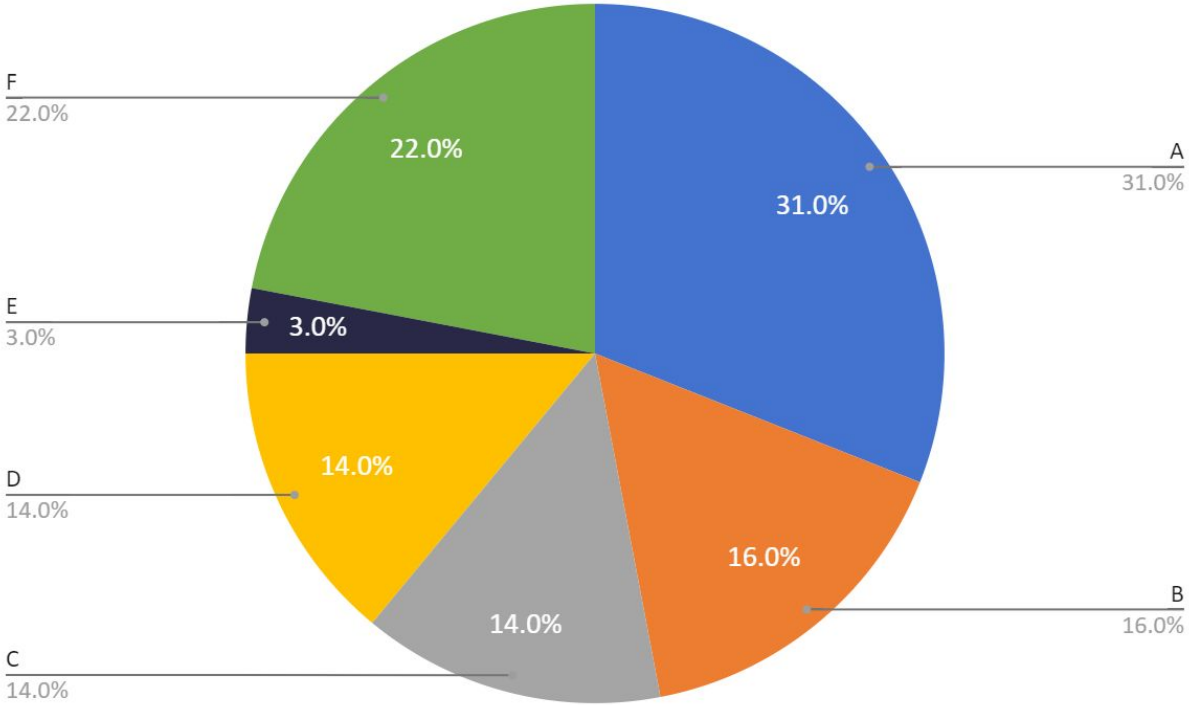
F - Other.

G - Don't know.

The chart shows that the greatest concern for respondents was that they didn't know how their data was being used by their local council. There may be some optimism here for local councils because this concern is rectifiable with a consolidated comms and public engagement approach. However, there is still unease from citizens that the council won't use or manage their data responsibly, with almost a quarter (24%) of respondents citing this as their greatest concern.

Public Attitudes: local council data use - benefits

Taking everything into account, which of the following would you say would be the GREATEST BENEFIT about your local council collecting information about you?



A - To improve your local community, for example by reducing the crime rate or improving environmentally friendly initiatives.

B - To help you to find resources which may improve, for example your health and wellbeing.

C - To save you money, for example on energy bills.

D - To personalise the services they offer you, based on your needs and interests.

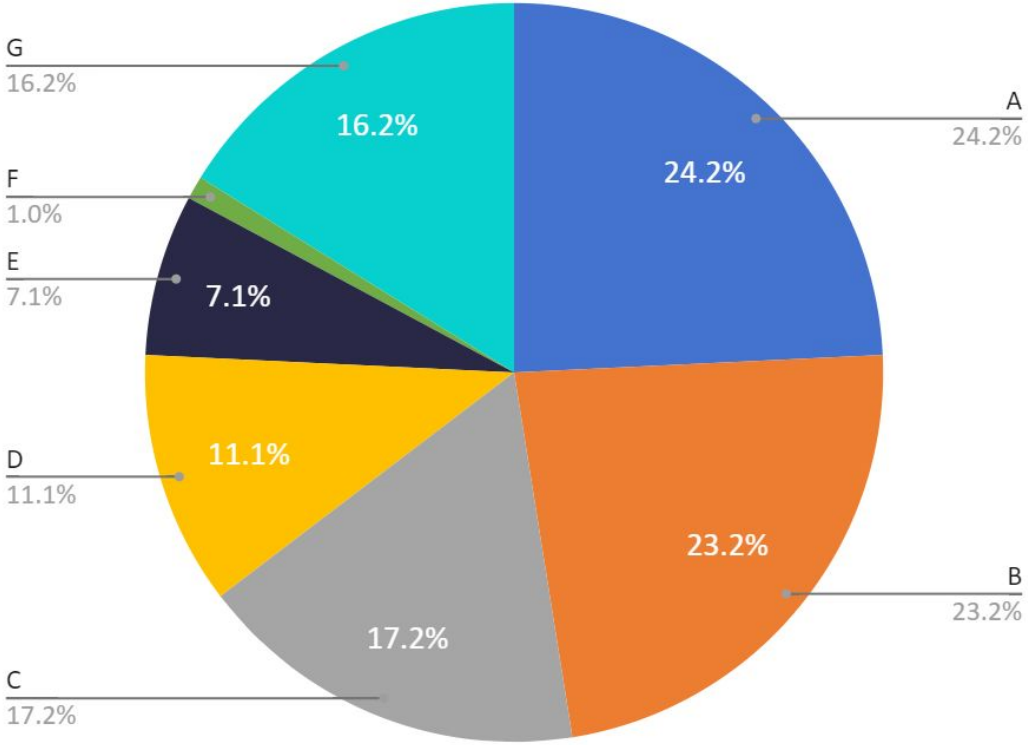
E - Other.

F - Don't know.

It is worth noting that these results do not suggest that respondents who picked one option do not see the others as beneficial or important; rather they were asked for the greatest single benefit.

Public Attitudes: most important protections

Which one of the following would you say would be the MOST IMPORTANT in order for you to trust your local council's use of data?



A - There is a guarantee that information is anonymised before being shared, so your data can't be linked back to you.

B - There are strict controls on who can access your information, and how it is used.

C - You know and understand about how your data is being used, and who it is being shared with.

D - Your local council asks you and others in your area your opinion about whether it's acceptable for them to use data about you in a particular way.

E - There is a direct personal benefit of sharing this information, for example improving your access to particular services.

F - Other.

G - Don't know.

Annex C

Format of the discussion

Centre for
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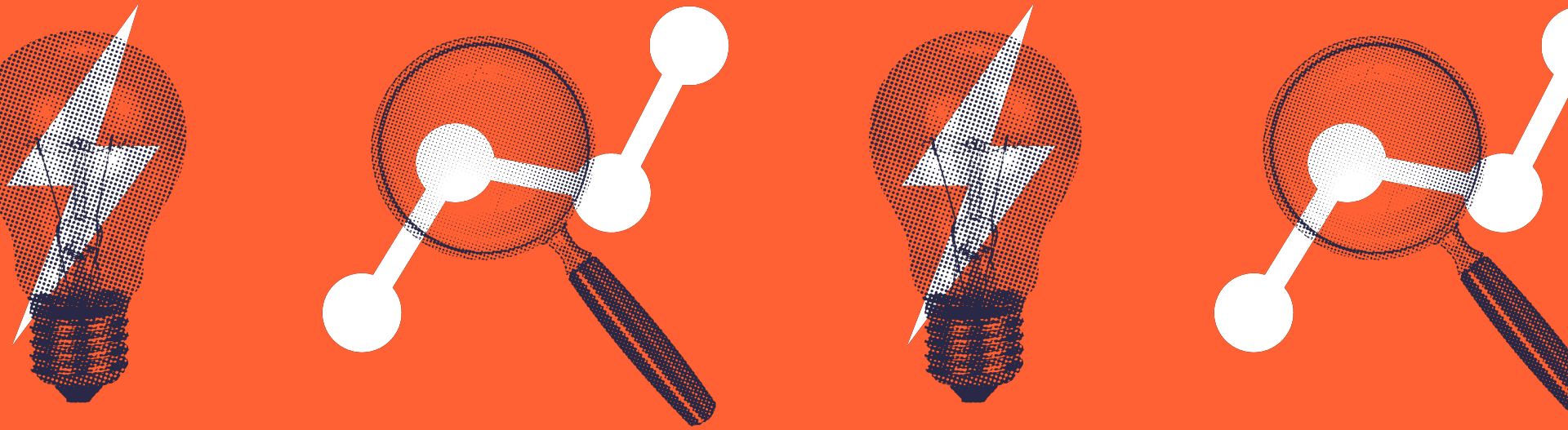
and Innovation

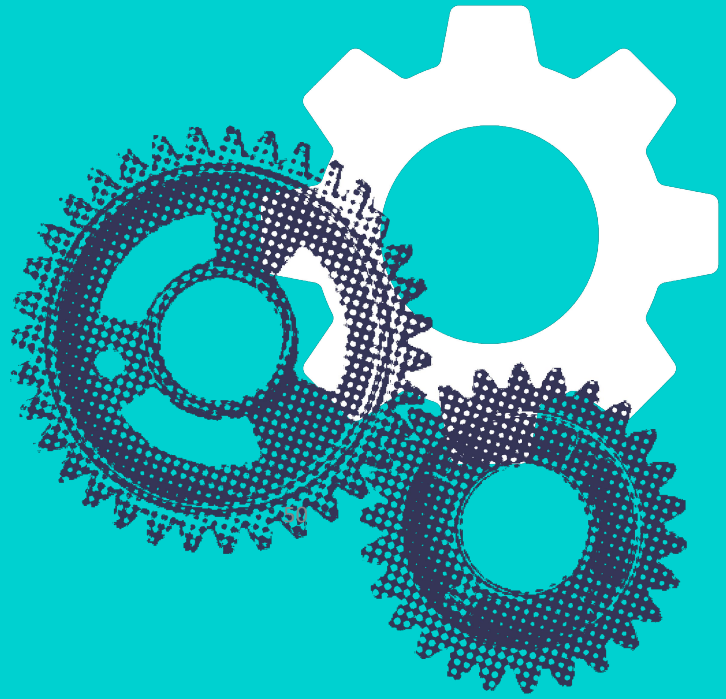


Format of the discussion

Centre for Data Ethics and Innovation

The event took place under Chatham House rules, and was led by the CDEI's Head of AI Monitoring, Benedict Dellot. Participants were informed that a note of the discussion would be passed on to policymakers and published externally, but that the CDEI is an independent body, and does not represent government policy. While conversations have already started on what should be retained post-pandemic, this discussion pushed thinking further by focusing particularly on data sharing and crucially data ethics, which has been minimal in much of the wider debate.

In advance of the session, participants were provided with a slide deck outlining some key principles (value, security, accountability, transparency and control) for good data governance, and questions that should be asked when considering each principle. The framework was devised from the Trust Matrix (the framework proposed in the CDEI's report on public sector data sharing) and GDS's Data Ethics Framework. It was not intended to be exhaustive, but to provide a helpful steer ahead of the conversation.



Format of the discussion

Centre for Data Ethics and Innovation

The session was split in two parts, the first covering reflections on data sharing during the pandemic, and the latter focusing on ethics and good data governance.

Part 1: reflections on data sharing and use during the pandemic

This session collated high level reflections on how participants have coped with the pandemic from an access to data perspective.
Questions included:

- Where has there been greatest positive change and gain in the way data is shared and how you can use it? Is it a behavioural change, regulation, relationships?
- To what extent does this make you feel optimistic for the future? How transferable do any changes during the pandemic feel to a post-pandemic world, and to the wider range of priorities you have?
- Have there been instances where you wanted to share data, but were prevented from doing so? What barriers remain, and how problematic is this?
- What most worries you in terms of access to and use of data for combatting COVID-19 in the immediate and longer term?

Part 2: data ethics and good governance

This session focused on data ethics and good data governance.
Questions included:

- Do you currently take any steps, above and beyond legal compliance, to maintain public trust in this sharing or use of data? Examples could be public engagement work, public information media campaigns, independent accountability processes, giving individual controls or opt-outs.
- Where do you find best practice?
- How confident do you feel in making these decisions?
- How have the pressures of the pandemic response affected this? Is getting things done quickly while having assurance of high ethical standards a challenge?
- Where would you expect support from and in what form?