December 2021

Ethical data governance at the GMCA: summary guidance note

Contents

About the CDEI and the project

The adoption of data-driven technologies affects every aspect of our society and its use is creating opportunities as well as new ethical challenges.

More information about CDEI can be found at www.gov.uk/cdei

The GMCA-CDEI project was undertaken by CDEI Project Lead, Lawrence Kay; with support from Policy Advisor Nathan Bookbinder-Ryan; and overseen by Policy Lead, Sam Cannicott. The project was undertaken in partnership with GMCA Team Leads Phillipa Nazari, Darren Pegram and Daniel Morris.

A memorandum of understanding was agreed between the CDEI and the Greater Manchester Combined Authority in January 2021.

Introduction

The Greater Manchester Combined Authority (GMCA) is well placed to take advantage of the new opportunities in data and modern technology, and this note gives summary guidance on how to do so ethically. The GMCA has been developing its data and technology expertise in recent years, and now has a number of strategies — such as the Greater Manchester Model — which imply substantial capability in these areas.[1] But to support such goals, the Combined Authority will need to keep reaching for some of the highest data governance standards as local citizens become more aware of the potential and risks of advanced information computation in the public sector. To do so, the CDEI suggests the following to the GMCA:

- **Recommendation one: use the GMCA's convening powers to show what modern, ethical data governance looks like.**
- **Recommendation two: communicate the progress that has been made, and the challenges ahead.**
- **Recommendation three: build ethical governance through lead projects.**

The purpose of this guidance note is also to provide a foundation for future collaboration between the GMCA and the CDEI. The GMCA-CDEI project behind this note started in early 2021 with the intention that the CDEI would provide comprehensive, strategic advice to the Combined Authority on the ethics of its data governance, but this intention was superseded by a review of the CDEI's strategy and work programme. The centre now focuses on initiatives — such as smart cities, applications of advanced technology, or initiatives for large-scale data sharing — where the centre's expertise can be applied to solve problems with public sector organisations in their responsible use of modern technology. The data governance guidance is therefore about giving the GMCA advice, while also developing mutual understanding between the GMCA and the CDEI as they consider the following and other activities:

- **Activity one: testing guidance being developed by the CDEI for local authorities on the use of data analytics in care services for children and young people.**
- **Activity two: considering the sharing of valuable and secure datasets during the development of smart city capabilities.**
- **Activity three: preparing for the adoption of autonomous and connected vehicles in the development of city transport networks.**
- **Activity four: considering the application of the [UK's Algorithmic Transparency Standard](#) to data-driven projects**

These activities are already under way to differing extents, and are the source of ongoing conversations between CDEI and GMCA. Undertaking these activities will enable the GMCA to practically apply and develop the priorities set out in this paper.

The Greater Manchester Information Strategy is the first opportunity for the recommendations in this guidance note to be considered by the GMCA and its local partners. The Greater Manchester Information Board intends the strategy to bring more coherence and direction to the collection, storage, sharing, and computation of information — whether data or otherwise — across the GMCA, the ten local authorities in Greater Manchester, other government agencies and services operating locally, and civil society organisations in the area.[2] But achieving such coherence will be a considerable task: the GMCA and its constituent councils

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[1] Greater Manchester Combined Authority (2019) The Greater Manchester Model, https://www.greatermanchester-ca.gov.uk/media/2302/gtr_mcr_model1_web.pdf

[2] The discussion in the guidance note mostly refers to missions one and four in the strategy. Mission one: 'to manage, share and use information more effectively, public sector officers need to know that we will receive the same support, guidance and expertise on information governance and practices no matter where they are. This mission is not about creating a single Information Governance team, but rather ensuring that all information governance teams are aligned – in processes, procedures and decision making. This mission will require joint working between teams, and the consistent development of a well-informed and confident workforce.' Mission four: 'The responsible and ethical use of information

are accountable for their data and technology use to around 2.8 million local people, doing so through myriad public services.

The GMCA and the information strategy are faced with hard questions about how to ethically combine large amounts of data with advanced computational technology. Data collection, storage, and computational analysis are new, 'general purpose', technologies that will have applications in many domains and in ways that are hard to predict.[3] Identifying and addressing data ethics challenges which may arise, while also deliberating with citizens to understand what is publicly acceptable, is what leads to being trustworthy. Box one describes some of the changing nature of data governance in the public sector.

The CDEI found the GMCA to have undertaken a number of thorough reviews that will help it to answer the pressing questions of data ethics in the public sector. For example, a substantial review of public attitudes towards data use by the GMCA and other organisations was undertaken in 2018, and involved a public survey of around 1,000 people and focus groups with citizens and professionals across a range of domains. More recently, a Local Data Review of the open data ecosystem in Greater Manchester sought to comprehensively understand how data was being used by public sector and other organisations in the area, and what could be done to create more public value from it.[4] Such reviews will become standard ways of working for the public sector in the years to come.

The preparatory work undertaken by the GMCA should support its ambitions for data and technology use in Greater Manchester, as expressed by a number of its development strategies. The Greater Manchester Model describes how the GMCA will use its devolved powers to improve public services, and discusses the considerable demands on data governance and digital strategy implied by such an aim. In recent years the GMCA has also published the Greater Manchester Digital Blueprint, the Greater Manchester Local Industrial Strategy, and other strategies that — sometimes implicitly — put the use of data and computation at the centre of what the Combined Authority intends to do for local citizens. But the challenges in such changes were revealed by the Local Data Review, which found that the high expectations of the data projects that it looked at have not been met, perhaps because the GMCA has yet to have a systemic understanding of the datasets it controls and where they are most useful.[5]

To understand and advise on data governance at the GMCA, the CDEI used document reviews, ethics frameworks, and interviews and workshops, with authority staff and their local peers. The CDEI's frameworks have been developed from the centre's work, such as that in the 'Addressing trust in public sector data use' report; the Ethics Advisory Board to NHSX for the COVID-19 app; and research undertaken by the CDEI into data governance by police forces in the United Kingdom. Over 30 documents on data governance at the GMCA were reviewed and are listed in a previous project output. Ten interviews were conducted with senior GMCA staff, and experts, in the local area. And four workshops were held with staff at many levels of the Combined Authority, and local authorities and public bodies in Greater Manchester.

The summary guidance note has several sections. The next section offers the standard CDEI explanation of what it means to be trustworthy in the public sector when sharing large amounts of data or using modern computational technology. After that, the guidance section expands on the CDEI's recommendations to the GMCA. The conclusion then finalises this stage of the collaborative relationship between the CDEI and the GMCA.

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is an important aspect of our work. If we are not responsible, if we do not do the right things with information, we can risk the trust and confidence of the people and businesses of Greater Manchester, on whose information we rely. Putting in place the appropriate processes, training, support, tools, governance and leadership around information and its use can help ensure we can do things differently with information, whilst always doing the right things.'
[3] Agrawal A, Gans J, Goldfarb A (eds) (2019) The Economics of Artificial Intelligence: An Agenda, https://www.nber.org/books-and-chapters/economics-artificial-intelligence-agenda
[4] Digital Analytics (2021) Local Data Review: Final Research Summary,
[5] Greater Manchester Combined Authority (2020) Local Data Review: Open Data Approaches and Practices, https://www.greatermanchester-ca.gov.uk/media/3963/open-data-approaches-and-practices.pdf

Box one: the changing nature of data governance in the public sector

High data ethics standards are a prerequisite for any public sector organisation that wants the public trust necessary for using large amounts of sensitive data with advanced computational technology. For example, OpenSAFELY, a platform run from the University of Oxford for the analysis of 24 million pseudonymised NHS health care records, has a strong value proposition, transparent governance, and use of appropriate technology that may mean it is now the world's biggest health data analysis programme.[6] These measures show the public why and how the project is run, helping to communicate the alignment of the project's incentives with those of the public, and should mean that OpenSAFELY avoids the mistakes of similar projects in the past.

There is a long history of data sharing projects not being open enough, failing to build trust, and becoming an unpleasant surprise to citizens when they become public. The Royal Free NHS Trust was criticised by civil society organisations for sharing data with Google's DeepMind, and local authorities have been reprimanded for allowing third party tracking software on their websites.[7] In another example, the ContactPoint database was developed following Lord Laming's inquiry into the murder of Victoria Climbié in 2001 and the subsequent creation of the Every Child Matters programme.[8] The database was going to contain basic information on all children in England and inclusion on the database was to be a legal requirement. But ContactPoint came in for sustained criticism throughout its development, much of which was reported widely across the national and technology press, and concerns centred around:

- The legality of the programme and whether it complied with human rights or data protection law.
- Whether it was proportionate to hold data on 11 million children on a database.
- Whether it breached families' rights to privacy.
- Whether the database was sufficiently secure, and protected vulnerable children from staff inappropriately accessing records.
- The functionality of the database, which was described as 'frustrating' and 'not user friendly'.
- The cost of the database, which was projected to be £224 million to set up, with ongoing operating costs of £44 million.

The failure to collect, use or share data also has ethical consequences, not least where the use of that data might provide public benefits or prevent harms. The following are examples:

- It was reported in September 2015 that the NHS and Department of Health had spent almost one billion pounds giving 74,000 cancer patients drugs which were administered by the Cancer Drugs Fund, but had failed to collect data on the outcomes experienced by these patients, thereby reducing what could be known about the effectiveness of the drugs.[9]

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[6] OpenSafely, https://opensafely.org/
[7] Dillet R (2017) UK data regulator says DeepMind's initial deal with the NHS broke privacy law, TechCrunch, https://techcrunch.com/2017/07/03/uk-data-regulator-says-deepminds-initial-deal-with-the-nhs-broke-privacy-law/?guccounter=1 ; Marsh S (2020) Councils let firms track visits to webpages on benefits and disability, The Guardian, https://www.theguardian.com/technology/2020/feb/04/councils-let-firms-track-visits-to-webpages-on-benefits-and-disability
[8] House of Commons Library (2011) Research Briefing: The ContactPoint database, https://commonslibrary.parliament.uk/research-briefings/sn05171/; HM Treasury (2003) Policy Paper: Every child matters, https://www.gov.uk/government/publications/every-child-matters
[9] Campbell D (2015) NHS failed to collect data on cancer treatment outcome, *The Guardian*, https://www.theguardian.com/society/2015/sep/17/nhs-failed-collect-data-1bn-cancer-treatment-outcome-rejected-drugs-health

- Public Health England was criticised in 2020 by politicians and pressure groups for failing to publish the data it held on ethnic minority patients from COVID-19, despite such patients being over-represented in critical care units and among NHS staff who have died.[10]
- The All-Party Parliamentary Group on Women's Health found in 2019 that despite stroke and heart attack being two of the most common conditions women experience, the conditions are under-researched, under-diagnosed, and under-treated in women, compared to men.[11]

Trustworthy data governance

The regularly changing nature of data, technology, and public opinion means that data governance works best when it is derived from a set of principles that are clear to the public and guide decisions. The CDEI has worked with a range of organisations on such principles, like Bristol City Council, Police Scotland, and the Ministry of Defence. The right principles for a public body are created from a foundation of data ethics, with an appreciation of the circumstances of the organisation and public expectations of it, and engagement with data subjects and citizens. This section looks at these factors from several perspectives.

The CDEI use the Public Trust Matrix to ask pressing questions about the data ethics of an organisation, out of which has come the recommendations to the GMCA. The first subsection below explains the matrix, and why its elements speak to the foundational aspects of what can make a public body trustworthy with data and advanced computational technology.

The CDEI Public Trust Matrix

The CDEI's Public Trust Matrix asks questions about the actions of trustworthy data collection, management, use, and sharing by an organisation, and their outcomes. Its elements of value, security, accountability, transparency, and control, are some of the fundamental aspects of being trustworthy with data and its computation. Using the matrix is about identifying how a data governance system or a given project responds to respective issues on these aspects, and identifying the elements of trustworthy data sharing and use rather than producing answers.

The Public Trust Matrix does not imply that more transparency, more individual control, or more accountability, are better. In some cases there will necessarily be limited transparency, but this may be offset by, say, accountability measures. In others there may be little or no individual control, but this might be balanced by high levels of public benefit. A data use where views differ on how beneficial it is, might still be responsible if it is an application that only affects those citizens who choose to use it.

Box two: CDEI Public Trust Matrix
Value
- Who benefits from the data being shared?   - Who has to take on any risk?   - How could specific individuals be affected?   - How are different groups in society affected?

[10] Barr C and Siddique H (2020) Failure to publish data on BAME deaths could put more lives at risk, MPs warn, *The Guardian*, https://www.theguardian.com/world/2020/apr/16/data-on-bame-deaths-from-covid-19-must-be-published-politicians-warn

[11] All-Party Parliamentary Group on Women's Health (2019) Heart and stroke inquiry, http://www.appgwomenshealth.org/inquiry-2018-19

- Is there a clear statement of the expected benefits?
- Does the benefits statement distinguish between benefits from 'anonymous' use of data — to produce statistics, test hypotheses, model impacts, develop potential products — and use of personal data, to deliver products to individuals or make decisions about individuals?
- Does the benefits statement clearly state how benefits will be measured and how data will be used both to deliver the benefits and assess whether or not they are being achieved?

Security

- What is in place to ensure data is used securely and protects individual privacy?
- What measures are in place to prevent misuse, and to control for extensions to the original purposes?
- Is there appropriate use of data minimisation, de-identification and privacy enhancing technology?
- Is the extent of data used justified by the benefits statement?
- If data is being used anonymously is there a clear definition of what this means and how it is applied?

Accountability, over and above compliance with the Data Protection Act 2018

- Who is responsible for decisions about data use?
- How are decisions about data use being made?
- What governance structures are in place?
- If individual subjects do not give explicit consent, what mechanisms are in place to ensure broader societal consent?

Transparency

- To what extent is the rationale and operation of the project open to public scrutiny?
- Are answers to the issues raised in this framework in the public domain, including the rationale for any trade-offs between privacy and efficacy?
- Is an appropriate budget and resource in place to communicate the rationale for the project to those affected?
- To what extent is the evidence of efficacy and privacy open to independent scrutiny through open source code and scientific evaluation?

Control

- What role do individuals have in the decision to use data about them?
- To what extent does the project result in a product or service that delivers a benefit to individuals who can choose whether or not to use it?
- To what extent does the project allow individuals to use any data generated themselves through, for example, data portability mechanisms or the use of personal data stores?

The CDEI uses the Public Trust Matrix as a way to articulate the issues in the use of data and computational technology by the public sector. The CDEI's Review of Online Targeting, for example, undertook public attitudes research around the acceptability of different organisations' use of data, and found that there was a higher level of trust for public bodies, and local authorities, to use data and personalise services.[12] When asked if a public sector organisation should use personal data to target services or advise people only 22 percent said they should not, compared with 49 percent in favour, provided there were greater

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[12] Centre for Data Ethics and Innovation (2020) Review of online targeting, https://www.gov.uk/government/publications/cdei-review-of-online-targeting

levels of control as to how information about them is used with strict rules in place to ensure responsible practice. When asked about the comparative trust levels of various organisations to personalise content to them in a responsible way, 52 percent trusted local authorities a fair or great deal.

Maximising the value of data and modern technology relies on creating and accessing data, but the CDEI has found that there are many reasons for why public sector organisations may not share and use data.[13] For example, data sharing within and between such organisations can be hindered by technical, legal, cultural, time, and money constraints. Ethical challenges can arise in sharing data with commercial organisations; in addressing cultural norms; linking data; and evaluating individual rights and the public interest. Common reasons for data sharing and use in the public sector — which are often where ethics questions arise — are discussed below, and box five discusses some of the common features of data-driven projects that create tenuous trust towards them among the public:

- Provision of public services to individuals, where data is used to improve the effectiveness and efficiency of delivering services to the public, when it is often necessary for different parts of the public sector to share information about an individual's circumstances.
- Law enforcement and community protection, where personal data about an individual can be shared between public sector organisations to police the behaviour of that individual, or social services are expected to share information that relates to risks to children, and health services are required to share information in relation to communicable diseases.
- Planning, managing and regulating public services and national infrastructure, where access to information about a population guides organisations which have responsibility for budgeting, commissioning or overseeing the delivery of services.
- Developing new policies, where sharing personal data can enable more innovation to help drive simpler and more efficient public services by finding new ways to address different policy goals.
- Monitoring — such as for research that uses reviewed data sets which are shared with researchers through a defined request and approvals process, or regular data feeds — can be more challenging with routes to accessing such data being less defined.
- Evaluating existing policies, in which the analysis of data about populations is essential to understand whether or not government policy is working, and sharing data enables departments to understand the long-term effects of their policies across a number of factors in an individual's life and build a full picture of the benefits and costs.
- Research by independent researchers that may submit research proposals to access data to inform their work, either on public policy or other social science research.[14]

Box three: features of tenuous trust towards data sharing and use by the public sector
Ambiguous value
Data protection impact assessments are undertaken and published, however there is not often a common understanding around the conditions under which personal data should be shared in the public interest and what level of risk it is reasonable to ask of individuals.
High but inconsistent security
Data is shared securely with rigorous protocols in place, but security requirements differ across the public sector and may sometimes be a barrier to data being shared. Many bodies apply the best practice of the ONS 'Five Safes', while the General Data Protection Regulation requires that 'all the means reasonably

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[13] Centre for Data Ethics and Innovation (2020) Addressing Trust in Public Sector Data Use, https://www.gov.uk/government/publications/cdei-publishes-its-first-report-on-public-sector-data-sharing
[14] Centre for Data Ethics and Innovation (2020) Addressing Trust in Public Sector Data Use, https://www.gov.uk/government/publications/cdei-publishes-its-first-report-on-public-sector-data-sharing

likely' are used to ensure that anonymous information cannot be re-identified, a process which requires continuous review.

Limited accountability
Data is shared across the public sector when specific powers enable it, and in most cases there are specific legal gateways that are ultimately subject to parliamentary approval. Data sharing arrangements tend to be subject to regular reviews, although the exact governance frameworks vary. There is not a universal approach to addressing the ethics of data sharing, nor are there general governance mechanisms to evaluate whether projects are in the public interest.
Limited transparency
While it is generally possible to find limited details of data sharing projects, often on gov.uk, such information tends not to be proactively shared with the people whose data is being used. Privacy notices are published, often on websites or displayed on notice boards, but it is unlikely that they are read by many people. The benefits of data sharing are also rarely communicated to the people whose data has been used.
Limited control
The lack of data portability, user-centred applications, and other mechanisms for citizens to direct data towards uses that benefit them, creates the impression that data is being used to monitor citizens for the benefit of government, rather than used by government for the benefit of citizens.

The next section discusses guidance to the GMCA, on balancing the dimensions of the Public Trust Matrix as it seeks to achieve its objectives and be trustworthy with data and modern technology.

Guidance

The GMCA is well placed to move towards its goals for the ethical and trustworthy use of data, and perhaps advanced computational technology, in the future. The recommendations discussed below take a strategic view, based on the CDEI's understanding of the GMCA and the data ecosystem in Greater Manchester, and knowledge of how to help public sector organisations speak to citizens' expectations of the use of data about them. Identifying projects that the CDEI and the GMCA could work on together, should mean that the CDEI can help Greater Manchester to navigate the innovation possibilities of modern data and technology.

The task of ethical data governance at the GMCA is considerable. As discussed in the documentation review by the CDEI for the GMCA, high quality data governance is called for or implied by the Greater Manchester Model — which discusses the considerable potential for joining-up and improving public services across health, social care, early years, education, police and community safety, housing and employment through the personalisation of services — the GM Health and Social Care Prospectus, the GM Industrial Strategy, the GM Children's Plan, the Standing Together: Police and Crime Plan, and other strategies among other elements. [15] The amount of data controlled or accessed by the GMCA and its constituent councils is also large and diverse, which inevitably creates data sharing challenges.

The CDEI was not aware during the project of any challenging use of advanced computational technology at the GMCA. The centre sometimes finds in its work with public sector organisations, that a unit within it is using large amounts of sensitive data or analytics that is far in advance of its data governance strategy or

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[15] Greater Manchester Combined Authority (2019) The Greater Manchester Model, https://www.greatermanchester-ca.gov.uk/media/2302/gtr_mcr_model1_web.pdf

public understanding of its activities. The CDEI guidance is therefore based on the understanding that this is not the case at the GMCA.

Recommendation one: use the GMCA's convening powers to show what modern, ethical data governance looks like

The GMCA has an opportunity to show how to govern data and technology in an ethical and trustworthy way, by using its convening influence.[16] The powers devolved to the GMCA do not appear to confer new functions for the Combined Authority in governing data and new technology, but such governance is necessary for the fulfillment of the authority's role, as discussed by the Greater Manchester Model. The Combined Authority is therefore in the position of needing to use the powers it has in health and social care, transport, economic development, policing, and many other areas, to convene discussion and direction of local data collection and use into a system that governs often sensitive information for the benefit of local citizens.

Many GMCA staff understand that the Combined Authority lacks formal power over local data and technology issues. In several interviews with the CDEI, GMCA staff and others mentioned the lack of statutory powers held by the Combined Authority to enforce some of the policies behind, say, their data sharing ambitions, on local public organisations that hold useful information.

Greater Manchester's strategic documents show the lack of statutory power held by the GMCA over data and technology issues. National legislation makes no reference to data and technology use at the local level: the Cities and Local Government Devolution Act 2016 does not contain provisions directly related to data, data protection or information governance, and the word 'data' is not in the act; and the Digital Economy Act contains few references to local authorities and these are limited to duties such as management of civil registrations and do not reference Combined Authorities. It is therefore not surprising that the discussions in the GMCA documentation available to the CDEI tend to stress a capacity to convene and coordinate local parties involved.[17]

The range of policy responsibilities held by the GMCA, added to the growing use of digital information, means its data governance is taking place in a large and complex system. Several interviewees and workshop participants told the CDEI that the data ecosystem in Greater Manchester had no defined beginning nor end, and that the GMCA was part of a large web of organisations collecting, controlling, and sharing data. Getting such a system to act ethically is therefore likely to be about setting strategic principles, defining standards, and convening ongoing discussions of how to use new technology for the benefit of citizens.

Greater Manchester has already made strides towards data governance through convening. The Greater Manchester Information Board is one of the most advanced of its kind in the United Kingdom that the CDEI is aware of, and has managed to bring together representatives from the health sector, the local authorities, civil society, education, and other sectors in an attempt to make 'make full use of the opportunities that digitally enabled approaches can bring to improving public service delivery.[18] But — as mentioned to the CDEI — the

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[16] As discussed in the documents review by the CDEI, the centre found through a rapid review of relevant legislation that the GMCA has not been granted special powers over data or the use of technology during devolution. Giving more power to Greater Manchester and other areas was driven by wanting to stimulate economic growth through policy that would better meet local conditions; and the powers, responsibilities and funding streams in the first wave of devolution deals were focused on that aim. The factors driving devolution imply the use of more data and technology, but devolved authorities do not have special legislative powers over these relative to other types of local authority. See Legislation.gov.uk, Cities and Local Government Devolution Act 2016, www.legislation.gov.uk/ukpga/2016/1/enacted; Legislation.gov.uk, Digital Economy Act 2017, C2, www.legislation.gov.uk/ukpga/2017/30/contents; Communities and Local Government Committee Devolution: the Next Five Years and Beyond (HC 2016 369), https://publications.parliament.uk/pa/cm201516/cmselect/cmcomloc/369/369.pdf

[17] Legislation.gov.uk, Digital Economy Act 2017, C2, www.legislation.gov.uk/ukpga/2017/30/contents; Legislation.gov.uk, Cities and Local Government Devolution Act 2016, www.legislation.gov.uk/ukpga/2016/1/enacted; https://www.greatermanchester-ca.gov.uk/what-we-do/digital/greater-manchester-digital-ecosystem/

[18] Greater Manchester Information Board (2019) GM Information Board: Terms of Reference

board has little executive power and mostly takes a pluralistic approach to working across public sector and civic bodies.

Several interviewees and workshop participants said that there should be a body which sets data governance standards for all relevant organisations in Greater Manchester. Some of this view was expressed alongside the observation that data governance processes were not as established as they should be, and that some staff could be too cautious towards the legal basis for activities such as data sharing. This may explain the view of some GMCA staff that there needed to be a sense of working towards a shared mission with data, that would be facilitated by more consistent — perhaps centralised — interpretation of legislation that affects it, and data sharing cases that may require careful judgement. The Information Strategy may address some of this, as might a stronger role for the Information Governance Board.

Higher staff skills and more capacity across more public sector organisations will help the GMCA to convene a better ecosystem in Greater Manchester. Many participants in the workshops said that the information governance capacity of the local councils had been thinned in recent years, and that even basic training on data protection legislation was required for a range of staff. And even though data science skills are not necessary for more than a given amount of specialists in an organisation, some participants suggested that many other staff did not understand the questions that could be asked of the large datasets accessed by the GMCA and others, limiting their ability to create value from it or perhaps spot ethics problems. The CDEI understand that there is an interest in professionalising information governance skills in the Combined Authority and across Greater Manchester.

The CDEI noted comments by some staff in the workshops that there needed to be a better data culture across Greater Manchester, coordinated by the GMCA. Such comments were often made to the CDEI with regard to the lack of awareness of data and technology issues at the most senior level of the GMCA's management. At other times, similar views were offered to the CDEI with regard to the need for funding on projects to be assigned to data governance, and that the local authorities and others should have some of their annual performance and business plans dedicated to the collection and sharing of valuable information.

The GMCA will need to undertake further research to understand where it can increase its data and technology effectiveness through convening. The Greater Manchester Model lists many of the organisations that this would involve: ten local authorities; 15,890 voluntary organisations, community groups and social enterprises; 15 NHS trusts; ten GP federations; the police service; the fire and rescue service; ten clinical commissioning groups; the Job Centre Plus partners; probation organisations; and 28 housing providers.[19]

Recommendation two: communicate the progress that has been made, and the challenges ahead

The Greater Manchester Information Strategy could become a foundational document for the GMCA's data governance if it is communicated to the public well, and the challenges it has been written to address are explained. The strategy has 6 missions that cover a great deal of the public sector's use of information, and a set of principles to guide it. And as mentioned above, the GMCA has ambitious plans — such as those in the Greater Manchester Model — for improving public services, and raising economic and health outcomes for the local population, that imply a considerable role for data governance. Achieving the GMCA's plans will partly rest on the ability of the authority to explain its uses of data and seek a reputation for being trustworthy with it.

The public's views on data sharing collated via the GMCA's attitudes review show why trustworthiness will be necessary for the authority as it seeks to use more data and computational technology than it is now. The survey revealed that a majority of respondents believed that public sector bodies should not share

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[19] Greater Manchester Combined Authority (2019) The Greater Manchester Model, https://www.greatermanchester-ca.gov.uk/media/2302/gtr_mcr_model1_web.pdf, p30

personal information, even when it benefits individuals and public services, with 37 percent being strongly against such sharing.[20] The focus groups explored the motivations behind these beliefs, revealing that there were fears of security breaches and of erroneous information being recorded, perhaps caused by malicious cyber attacks and inconsistent staff training.

The attitudes review echoed the principles in the CDEI's Public Trust Matrix. Focus group participants were found to unanimously believe that transparency was important in the use and sharing of data by public sector bodies, with nearly half of survey respondents saying that they would feel more confident in the management of information about them if they knew who it was being shared with.[21] Many research participants also felt that they were not in control of data about them, while 91 percent of survey respondents believed that their consent should always be sought for data sharing by a public body.[22]

The attitudes review suggested that the GMCA could gain the public licence to do more with data and advanced technology by communicating the value of such use to citizens. Respondents in the focus groups struggled to say whether they knew if data was being shared in given scenarios, but large majorities supported it when, for example, they were presented with GPs sharing with hospitals in emergency situations; or it taking place between respective bodies in response to mental health problems and cases of domestic abuse.[23] A good number of the research participants suggested that public bodies may be able to persuade citizens of the benefits of data sharing if they were clear and compelling about it.[24]

During the interviews and workshops, the CDEI were often told that the GMCA and the local authorities had yet to start a conversation with the public about data and technology. Some expressed the view that many public service users had not been consulted about the implications of large data sharing. Others argued that asking citizens about the uses of data would invite many different answers because public understanding of what local authorities do with data in Greater Manchester is so low.

In some conversations with the CDEI, GMCA staff and others suggested that a lack of communication with the public might be a cause of risk aversion. Some expressed the view that assumptions about how the public may react negatively to data sharing leads to general risk aversion across Local Government. This view was made with the suggestion that engaging local citizens, and being less risk averse with data, could allow more freedom for innovation.

There are a number of platforms for communication about digital initiatives in Greater Manchester that could be replicated for engagement about data ethics in the future. For example, the Digitober initiative was used to promote understanding of the new Greater Manchester Digital Blueprint.[25] And the second Greater Manchester Digital Summit in July 2017, could be used in similar ways in the future.[26] Perhaps the first opportunity for this is the Digital City Festival in 2022.[27]

The GMCA could seek to start deliberating with local citizens about its responsible innovation with data-driven technology. The OECD recently reviewed public, deliberative processes used by governments around the world, and found that citizens' panels have become some of the cheapest and quickest ways to

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[20] Enventure Research (2018) Attitudes to Data and Information Sharing for Public Benefit, p8

[21] Enventure Research (2018) Attitudes to Data and Information Sharing for Public Benefit, p9

[22] Enventure Research (2018) Attitudes to Data and Information Sharing for Public Benefit, p12

[23] Enventure Research (2018) Attitudes to Data and Information Sharing for Public Benefit, p10

[24] Enventure Research (2018) Attitudes to Data and Information Sharing for Public Benefit, p9

[25] Greater Manchester Combined Authority, Digitober, https://www.greatermanchester-ca.gov.uk/what-we-do/digital/digitober/

[26] About Manchester (2017) Digital Summit Reveals how Greater Manchester Reach its Ambition of Becoming a World-leading City Region by 2020, https://aboutmanchester.co.uk/digital-summit-reveals-how-greater-manchester-reach-its-ambition-of-becoming-a-world-leading-city-region-by-2020/

[27] Digital City Festival, https://www.digitalcityfestival.com/

consider issues with the public and have often been used for technology policy.[28] They can be used to gather informed citizen views on policy, and often involve groups of randomly selected participants meeting over four days to use information provided to them in advising on the right course of action. According to the OECD, they cost around GBP 60,000 and can lead to better policy outcomes, more legitimacy for hard choices, and garner public trust by showing that the views of citizens have been heard and responded to.[29] The CDEI advised the same approach to Bristol City Council in its efforts to engage local citizens.

Recommendation three: build ethical governance through lead projects

Building a responsible and ethical data governance system that reaches for innovation and the benefits of new technology while appreciating public trust, is often about choosing which projects to prioritise. Ambitious initiatives with data and advanced computational technology test data governance because they often raise new ethical tensions, perhaps between the innovations that may arise and the expectations discussed in the first section on ethics principles. A public sector body can choose to start with projects that are innovative but raise few ethical concerns, learning how to run them and moving to more ambitious endeavours with time.

There are a range of projects that the GMCA could choose from to develop its responsible use of technology while being innovative in ways that benefit citizens. The CDEI's documents review found over 30 projects — many of which will be at different stages of maturity and would need to be considered in greater depth than they have been in this discussion note — that the GMCA could consider as a focus for learning and developing data governance at the GMCA. Some of the most interesting ones included the local application of the Troubled Families Programme; using air quality data to monitor the effects of pollution on health outcomes; health data sandboxes for safe and secure access to such data; work on smart ticketing, and connected autonomous vehicles; and trialling data stewardship models.

Box two discusses projects linked to the list of 30 identified in the documents review, that the CDEI and GMCA could work on together. Discussion of the projects took place at the workshops. Engaging in them could lead to an ongoing project-level relationship between the GMCA and the CDEI.

Box four: further GMCA-CDEI collaboration

Data analytics for children and young people in social care

This project is being undertaken by the CDEI with a view to helping the Department for Education to develop guidance for local authorities on data analytics that uses information on children and young people in social care. The aim is to support local authorities to innovate responsibly, as they develop and use data analytics tools to support outcomes for children.

The project will seek to develop guidance that is tailored to each local authority context, but also develop a consistent approach to understanding responsible and trustworthy use of data analytics. In doing so, the CDEI will consider how the riskiness of the data analytics use case affects the level of rigour and robustness required.

The project is taking place in two parts. The first will be about developing draft guidance in close consultation with local authorities. and key stakeholders. The second part will test the draft guidance with a

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[28] OECD (2020) Innovative citizen participation and new democratic institutions: catching the deliberative wave, https://www.oecd.org/gov/innovative-citizen-participation-and-new-democratic-institutions-339306da-en.htm
[29] OECD (2020) Innovative citizen participation and new democratic institutions: catching the deliberative wave, https://www.oecd.org/gov/innovative-citizen-participation-and-new-democratic-institutions-339306da-en.htm

small number of local authorities. The project would benefit from the GMCA's involvement during both stages.

Connected places and smart cities

The CDEI is undertaking a project on connected places and smart cities that aims to identify how various datasets are used in such contexts, particularly considering opportunities and risks — particularly from a security perspective. The project is being undertaken over the summer and autumn of 2021 and is seeking to develop guidance on data governance for connected places. The project will focus on a number of domains, such as transport and new mobility solutions; the public realm; the built and natural environment; critical infrastructure and utilities; health and wellbeing; and decision-making and institutions.

While there is now huge potential for places to collect and analyse new data which can inform better service delivery, in most cases there has not been due consideration as to how to handle the volume and types of data being collected. In some cases, the risks associated with 'owning' this data encouraged bodies to outsource this risk to private companies. Such a decision can have opportunity costs and lead to citizen data as well as other types of data such as smart meter data, traffic movements and camera footage being owned by private companies in a way which diminishes trust.

The GMCA and the CDEI could work together to consider the development of guidance for the handling of connected places data. There appears to be a need for a more nuanced understanding of the risks and opportunities which are associated with the large volumes and new types of data. A deeper understanding will support proportionate risk management, giving greater confidence to local authorities and citizens alike to seize the opportunities connected places can provide.

Connected and autonomous vehicles

The CDEI is starting a project that aims to identify the ethical issues posed by autonomous vehicles, and to develop proposals to address them. This could be of interest to the GMCA, as such vehicles require long-term planning and concern questions which are likely pressing in the development of Greater Manchester. The CDEI's current focus is on issues of safety; privacy, data protection and governance; explainability, transparency and fairness; and public trust and engagement, as these pertain to autonomous vehicles.

As the CDEI project develops, the centre would welcome interest from the GMCA on considering the following and other such questions:

- How do we establish a common ethical standard across autonomous vehicles models while avoiding imposing requirements that might stifle innovation?
- How can we assure that autonomous vehicles have a satisfactory level of reliability when faced with both unforeseen, and predictable changes in their operating environment?
- How can we assure that autonomous vehicles and the networks they operate on are robust to attack?
- How do we mitigate against bias in autonomous vehicle systems, and ensure that they produce fair outcomes for all citizens?
- What level of explainability should be required of autonomous vehicle manufacturers?
- Who should be responsible for the governance and regulation of autonomous vehicle data?
- How do we secure public trust for autonomous vehicles?
- Who will be responsible for managing and responding to the secondary impacts of autonomous vehicles?

Algorithmic Transparency Standard

The CDEI has worked in partnership with the Central Digital and Data Office (CDDO) to create a standardised way for public sector organisations to collect and provide clear information about the

algorithmic tools they use, and why they're using them. The Standard's purpose is to deliver greater transparency on algorithm-assisted decision making in the public sector.

Having published the Standard, the project is now focusing on collecting information from public sector bodies on the algorithmic tools they are using and formatting this information in accordance with the standard.

The GMCA and the CDEI could work together to consider which projects underway in Greater Manchester could match the criteria for projects that would benefit from being published under the Algorithmic Transparency Standard, and understand the potential upsides that greater transparency on algorithmic projects could bring for GMCA.

Conclusion

This summary guidance note made strategic recommendations to the GMCA, and suggested projects that the Combined Authority and the CDEI could undertake together. The Combined Authority is one of the leading examples of frontier data governance practice in the United Kingdom, and could benefit greatly from convening a high trust, ethical, responsible system for data and advanced technology use in Greater Manchester. As it moves towards such a position, other public sector bodies at home and abroad will likely benefit from the example set by the GMCA.

This note also suggested several sources of future collaboration between the GMCA and the CDEI. Conversations are already underway about potential areas for work on Smart Cities, on Children's Social Care, and on the application of the UK's Algorithmic Transparency Standard. Building these projects as pilots will allow the GMCA to develop its responsible use of technology, demonstrate its commitment to ethical development of data-driven tech, whilst also bringing clear benefits to citizens of Greater Manchester. Through these projects, there is the potential to practically apply the priorities identified in this report, while further developing knowledge and expertise across GMCA on how to develop responsible data governance.

Annex one: interviews and workshops

Interviews

Dr Amir Hannan, Full-time General Practitioner, Haughton Thornley Medical Centres, 4th April 2021.

Jane Forrest, Director Public Service Reform, Greater Manchester Combined Authority, 12th April 2021.

Phil Davies, Chief Superintendent: Director of Information, Greater Manchester Police, 13th April 2021.

Christopher Pope, Principal, Digital Analytics, Greater Manchester Combined Authority; John Wrathmell, Director, Strategy, Research, and Economy, Greater Manchester Combined Authority; Daniel Morris, Principal Researcher, Early Help and Troubled Families, Greater Manchester Combined Authority, 15th April 2021.

Roger Prudham, Chair, Greater Manchester Information Board, 16th April 2021.

Alison McKenzie-Folan, Chief Executive, Wigan Council, 19th April 2021.

Phil Swan, Director, Digital, Greater Manchester Combined Authority, 20th April 2021.

Warren Heppolette, Executive Lead, Strategy and System Development at Greater Manchester Health and Social Care Partnership, 22nd April 2021.

Simon Warburton, Transport Strategy Director, Transport for Greater Manchester, 14th May 2021.

Workshops

Data Ethics, Children, Young People, and Social Care, 8th July 2021.

Data ethics and data governance with GM partners, 15th July 2021.

Data ethics in urban transport and smart places, 20th July 2021.

Data ethics in organisational change and public sector reform, 23rd July 2021.