



Taking steps towards Data4Good

Factors affecting efforts to harness the power of data for better public services

A UKAuthority Event Briefing Note

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1. Introduction

The case for making more of data has been widely accepted in the public sector. Almost every organisation now acknowledges the operational benefits in sharing data, internally and with other organisations, and the potential for valuable insights through analytics and, for the more ambitious, data science.

But there is a gap between accepting the principle and taking positive action to make it happen. Organisations face a series of barriers in attempting to harness the data they hold, and the evangelists are often frustrated in efforts to take it from a good idea to a clear course of action with positive outcomes. Some of the problems are technical, some in perceptions of the law and others cultural, and the solutions are not always in clear sight.

This formed the backdrop to UKAuthority's Data4Good conference, held in London in October 2018, which brought together a range of public sector practitioners with thought leaders and experts from the technology industry. There was a consensus among delegates that there is immense potential in making more of public sector data, and while there were discussions about the obstacles, there was plenty of positive thinking about what could be done to make progress.

This paper sums up the ideas on how to approach the issues and turn the principle into common practice.

2. Safety in data sharing

One of the steps reflects the lingering anxiety around the legal aspects and security of data sharing. The implementation of the General Data Protection Regulation (GDPR) earlier in the year heightened the concerns, and while there is guidance as to what is legitimate, it has left a cautious attitude in many organisations.

It can be possible to allay the fears by making the point that data sharing is about providing partners with access to a dataset rather than transferring it between organisations, although it is still a priority to get solid information governance arrangements in place. Paul Hodgson, GIS and infrastructure manager for the Greater London Authority, held up the case of its City Data Analytics pilot, for which it followed the example of the Information Sharing Gateway for the North-West in developing a catalogue of data sharing agreements on which the partner organisations could draw.

An important element of this is to go beyond aiming for compliance with the law to achieving high ethical standards, evidenced by clear benefits that can be made public and directly related to the data sharing.

Related to this was a point made by Neil Sartorio, local public services partner at EY. He said that many organisations apply a lot of energy in using data for commercial purposes and providing the relevant protection, but they also need to do so in building a culture of safe data sharing.

There is a technical element to this in privacy engineering, an emerging concept in which tools and techniques are developed to help provide the right balance in enabling data sharing while providing effective controls. It can involve a blend of techniques to provide and authorise access while ensuring that privacy is built in, with anonymised data brought together in a way to reduce the risks.

It is important to recognise that it is impossible to completely eliminate the risk of data being de-identified – there have been demonstrations that it is often possible to do so through identifiers in other datasets – but applying controls in the dissemination of data can sharply reduce the risk. Part of this is in recognising that privacy is contextual and can vary according to the type of data, which organisations are sharing it, their purpose in doing so and how the risk can build up over time. By taking these factors into account it is possible to strike the right balance between protecting privacy and sharing the data for positive outcomes.

All this can be done to create the environment for privacy with innovation, one of the big objectives of extending the use of public sector data.

3. Emphasise the relevance

There is a tendency among operational staff, and some senior officials, to see any work on data as abstract and remote from their priorities. So the data specialists need to build an understanding of its relevance, not just through evangelising but by providing a clear sense of priorities and demonstrating the potential benefits.

One approach, being pursued by the London Office of Data Analytics, is to put together a list of strong ideas for projects that have a clear relevance to delivering services, capacity planning and supporting innovation. This can require an iterative approach, being ready to revise some ideas and drop those that do not stand up to scrutiny, but it can help to win over frontline staff and give the work momentum within the organisation.

This will often require an exercise to quantify the expected benefits, or at least outline a credible case for their realisation. It has not been a strong point of the public sector and it can be an inexact process, but talking with the service directorates and frontline staff can help the data specialists to develop the case and convey what it can achieve in terms that will be widely understood.

Placing it all in a financial context can be an important step. It is not a straightforward business, as it is often difficult to attach a cost to a particular problem or outcome, and the data models related to finance can vary between organisations. But whatever financial data can be brought into the equation, and included in the prospective benefits, will do a lot to win support for an exercise.

The emphasis should not, however, be confined to the stakeholders. An effort to engage with members of the public using a service can do a lot to give the data specialists a stronger understanding, the right terms of reference and vocabulary to demonstrate what can be achieved. One of the conference speakers commented: “Find yourself some sociable nerds. You need people who are able to interact and engage with a range of stakeholders and end users.”

In all this, it might need a case-by-case approach early on, but as awareness grows it can boost the reputation of the data team and provide the momentum for widespread cooperation with its work. A strong indication of projected benefits can spread the understanding of the relevance of data projects and support the case for data sharing and an investment in analytics.

4. Build the infrastructure

One of the more telling comments at the event – from Eleanor Harwich of the thinktank Reform – was that government is often focused on the legal strategies and gets excited over tools and analytics, but shies away from difficult conversations over data infrastructure. She said there is a need to create a coherent infrastructure in which different organisations can easily and legally access secure data.

Speakers and delegates raised a number of points around what can make this possible, referring to the need – now highly familiar in the public sector – to get data out of departmental silos. This does not necessarily involve breaking them down but at least providing appropriate access for partner organisations to support cross-agency services. The increasing use of application programme interfaces (APIs) is making a significant contribution that promises to increase; although this comes with its own challenges.

There is also a need to codify and standardise the data, so it is easier to find and integrate with data from other sources. Again it comes with difficulties, not least that organisations tend to do this to suit their own purposes, and it will need the wider adoption of standards from central sources, preferably developed with a relevant community of authorities, to encourage take-up.

Reform has addressed the steps for building the infrastructure in its Sharing the Benefits¹ white paper on public sector data. One of the prime recommendations is that authorities should offer synthetic datasets – consisting of dummy data that is structurally similar to that they hold – to help others understand how it is structured and what to ask for. This would help to ensure that the correct data is made available.

Others include the Department for Digital, Culture, Media and Sport creating a Data Quality Assurance Toolkit and a seal of approval; that technology vendors should make new systems for the public sector compatible with APIs; any public sector system should adopt open standards; and that government departments should develop audit trails to track how data is used.

Another point to emerge from the event was the significance of geospatial data in the infrastructure. Nick Chapallez of GeoPlace – which manages the central source of addressing data provided by local authorities – pointed to the importance of the unique property reference number (UPRN) and unique street reference number (USRN) as identifiers that can link different datasets. This can lay

¹ <https://reform.uk/research/sharing-benefits-how-use-data-effectively-public-sector>

the ground for increased collaboration between public agencies and help an organisation identify factors affecting a locality as it lays plans.

5. Agility, experimentation and unknowns

The conference discussions frequently turned to the prospects for data science, an area in which central government and some local authorities are investing resources.

The key point to emerge was the need to recognise it is about experimentation and that it may not always produce such clear results as more established exercises in data analytics. It is an attitude that might not fit easily with some authorities, given the public sector's traditional aversion to investing in anything without an identifiable benefit, but there is still a big long term potential in allowing data scientists to test hypothetical 'What ifs?'

One of the recommendations was to make data science agile, accept a few failures along the way but deliver fast. Instead of working on a six-month timeline for projects it can be useful to follow the agile approach for service development, in coming back every couple of weeks to identify any gains, check that the direction is correct and change plans if necessary.

Authorities need to recognise that the culture of experimentation is invaluable to data scientists. Sometimes they can be asked to test hypotheses that come the experience of others in their organisations; but the ability to bring together and test data in a less structured fashion often enables them to detect factors that nobody had even thought of examining. This can do a lot to increase the understanding of social issues and how public services can respond.

It was summed up by a point in the event's closing discussion: "There are known unknowns, but without experimentation we are never able to identify the unknown unknowns." Often this can be a significant step towards using data for the public good.

6. Speakers and their presentations

[\(Visit the UKAuthority Data4Good 2018 event hub\)](#)



Developing the National Data Strategy:

Gaia Marcus, Head of National Data Strategy, DCMS

[\(Presentation slides\)](#)



Opening unique location identifiers for the public good:

Nick Chapallaz, Managing Director, GeoPlace

(Interview)



Data ethics in the public sector:

Sarah Gates, Senior Policy Adviser (Data), DCMS

[\(Presentation slides\)](#)



London Office of Technology and Innovation - A New Deal for City Data:

Paul Hodgson, GIS & Infrastructure Manager, Greater London Authority

[\(Presentation slides\)](#)



One year as an Office of Data Analytics:

Neill Crump, Chief Data Officer, Worcestershire Office of Data Analytics (WODA)

[\(Presentation slides\)](#)



Advanced analytics: bringing data together to improve outcomes for vulnerable individuals and families:

Neil Sartorio, Local Public Services Partner, EY

[\(Presentation slides\)](#)



Lowering the barrier to analysing big data in the UK Public Sector:

Alex Purkiss, Public Sector Lead & Tim Hunter, Solutions Architect at Databricks

[\(Presentation slides\)](#)



Enabling Patient De-Identification Standards across the NHS: Des Shanahan, Senior Account Director, Public Sector, Privitar

[\(Presentation slides\)](#)



Sharing the benefits: how to use data effectively in the public sector: Eleonora Harwich, Director of Research and Head of Digital and Tech Innovation, Reform

[\(Presentation slides\)](#)



NHS Digital Data Services - Supporting the NHS and Improving Care: Graham Spearing, Portfolio Product Manager, NHS Digital

[\(Presentation slides\)](#)



The role of data in product development:

Emma Presley, Lead Data Scientist, DWP

[\(Presentation slides\)](#)

7. Data4Good 2018 – Our Partners



Databricks helps government agencies accelerate innovation by unifying big data and AI.

Big data for public sector has huge potential benefits both in terms of cost management but also improved public services - but are the benefits too speculative in the context of a world of restrained skills and budgets?

With the open source project, Apache Spark, big data and artificial intelligence have moved to a new phase. Spark, and the cloud, are drastically reducing the barrier to entry to leverage public service data assets.

For more information visit: <https://databricks.com/>



Government and public sector organisations are continually seeking innovative answers to complex challenges as they strive to provide higher-quality, lower-cost services and ensure sustainable economic development, increased accountability and a better environment for their citizens.

EY are passionate about better outcomes for citizens. EY work alongside their clients to ensure more efficient public services, bringing the best thinking and practical experience to help deliver tangible, sustainable improvement.

For more information visit: <https://www.ey.com/uk/en/industries/government---public-sector>



GeoPlace LLP is a public sector limited liability partnership between the Local Government Association (LGA) and Ordnance Survey. GeoPlace is a world class expert in address and street information management, working internationally as well as in the UK to help our partners and customers maximise the value of their spatial information for better decision making.

GeoPlace maintains a national infrastructure that supports the address and street information needs of the public and private sectors. Its work relies heavily on close working relationships with every local authority in England and Wales. This relationship has been developed over 15 years, to build the National Address Gazetteer infrastructure and National Street Gazetteer. Ordnance Survey develops the range of AddressBase products from the National Address Gazetteer and OS MasterMap Highways Network from the NSG. Both datasets underpin efficient and effective services, bringing direct service delivery benefits to users.

The Unique Property Reference Number (UPRN) and the Unique Street Reference Number (USRN) are the unique identifiers for every addressable location and street in Great Britain. They are created by local authorities who have the statutory authority to name and number every street and property and Ordnance Survey who identify objects on the landscape which may otherwise not attract an address.

For more information visit: <https://www.geoplace.co.uk>



Privitar helps organisations engineer privacy-enhancing data operations, using advanced data privacy techniques that protect sensitive information while retaining data utility. Privitar's software accelerates and automates privacy-preserving data provisioning, helping their customers get more business value from their data, generate data-driven insights, and drive innovation.

For more information visit: <https://www.privitar.com/>

8. Participants at Data4Good

8.1 Where they came from

Birmingham City Council, Brighton & Hove City Council x3, Cambridge City Council, Camden & Islington Councils, Centre for Data Ethics & Innovation, Colchester Borough Council, Defenddigitalme, Department for Digital, Culture, Media & Sport x2, Department for Work & Pensions, Essex County Council, Future Cities Catapult x2, Greater London Authority x2, Hampshire County Council, Haringey Council, Harrow Council, HM Land Registry x4, London Borough of Barking and Dagenham, London Borough of Enfield, London Borough of Newham, London Borough of Redbridge, London Borough of Sutton, London Borough of Tower Hamlets, Luton Council x2, Metropolitan Police, Nesta, Newcastle City Council, NHS Digital x2, North Yorkshire County Council, Office of National Statistics, Open Data Institute, Ordnance Survey x3, Portsmouth City Council x2, Reform, Royal Borough of Kensington and Chelsea x2, Scleroderma and Raynaud's UK, Social Finance, Southwark Council, Staffordshire County Council, Surrey County Council x3, Thames Valley Police, The Pensions Regulator x4, Royal Borough of Kingston upon Thames, UK Space Agency, Warrington Borough Council and Worcestershire Office of Data Analytics (WODA)

8.2 What they do

Applications Business Lead, BI Manager, Business Analyst x2, Business Intelligence Analyst, Business Intelligence Lead, Chief Analytical Officer, Chief Data Officer, Chief Technology Officer, Content Manager, Councillor, Customer Insight Lead, Data & Intelligence Manager, Data Administrator, Data Governance Adviser x2, Data Management Officer, Data Migration and Analysis SME, Data Officer, Data Protection Officer, Data Science Team Lead, Digital Connectivity Advisor, Director, Director of research and head of digital and tech innovation, GIS & Infrastructure Manager, Governance Compliance and Control Manager, Government Relationship Manager, Head of Digital and Data, Head of GSS Quality Review Programme, Head of Information Management, Head of National Data Strategy, Head of Product, Head of Public Health Intelligence, Head of Research and Intelligence, Head of Smart Programmes, Interim Strategic Insight Manager, Geovation Programme, Lead Data Scientist, Performance Lead, Performance Lead & Analyst, Planning & Delivery Manager, Planning & Policy Support Manager, Policy Advisor, Portfolio Product Manager, Principal Digital Consultant, Product Co-Ordinator, Product Manager x2, Public health intelligence lead, Research Business Manager, Research Officer, Senior Business Analyst, Senior Data Scientist, Senior Operational & Delivery Manager, Senior Policy Adviser x2, Senior Programme Manager, Service Improvement Lead, Space for Smarter Government Lead, Supporting Families Strategic Manager, Systems Manager, Systems Thinking Analyst, Transformation Manager, Urban Technology Team Lead

9. Forthcoming UKAuthority events

Book your place at Digital Health & Social Care 2019



Book your place at Smart Places, Smart People 2019



Book your place at Cyber4Good 2019



To discuss speaker and sponsor opportunities contact Helen Olsen Bedford: helen@ukauthority.co.uk

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