WORKING SESSION 1

DATA SHARING AND INNOVATION

21 July 2025 at The House of Lords

Introduction by Merlin Hay, the Earl of Erroll

"In an era of rapid digital transformation, our approach to data sharing is not just a technological challenge, but a critical national strategy. This work represents a pivotal moment in understanding how we can unlock innovation, drive economic growth and respond to the needs of our regions and communities.

With decades of experience at the intersection of technology and public policy, I understand firsthand the transformative power of data when harnessed responsibly and inclusively. By breaking down traditional barriers and developing a collaborative, purpose-driven infrastructure we can position the United Kingdom at the forefront of global digital innovation."

UNLOCKING PLACE-BASED INNOVATION AND GROWTH THROUGH DATA SHARING INFRASTRUCTURE

Executive Summary

This roundtable discussion has been driven by the Data Use and Access Act which received Royal Assent in June. It brought together leading voices from government, academia, industry and research to explore the transformative potential of data sharing for regions in the United Kingdom. The conversation revealed both significant progress and urgent opportunities for developing a more integrated, innovative data ecosystem. What also became clear was the need for a clear vision and narrative, a bolder more comprehensive vision and story around data.

Key findings

- Data sharing has evolved from a technical challenge to a strategic imperative
- Energy is one of the globally progressed examples of data sharing infrastructure
- Cross-sector collaboration and clear purpose are essential for effective data sharing
- Well defined use cases are essential – the more narrowly these can initially be defined, the faster progress is felt likely to be made
- Infrastructure, standards and skills development are critical enablers of innovation

Strategic insights

The discussion highlighted that successful data sharing is fundamentally a people and culture challenge, requiring:

- Clear value propositions and use cases
- Data sharing processes that build trust
- Support for SMEs and local innovation ecosystems
- Flexible regulatory approaches
- Investment in data literacy and professional standards for people

Immediate priorities

1. Strengthen national data leadership and develop consistent cross-sector governance frameworks with local relevance
2. Create flexible, value driven data sharing platforms
3. Support SME access to datasets
4. Invest in digital infrastructure and skills
5. Establish mechanisms for fair value exchange

Forward-looking

The next five years represent a critical period for increasingly transforming data from a passive resource to an active driver of economic growth and social innovation. By focusing on semantic (meaning based) and technical interoperability, actionable insights and long-term collaborative partnerships, the UK can position itself at the forefront of global data innovation.

Roundtable Outline and Approach

Exploring the transformative potential of data sharing infrastructure for place-based innovation, this roundtable brought together experts to examine how a step change in data access can empower local decision-making, drive regional economic growth and reduce systemic disparities across UK localities.

Objective Explore data sharing infrastructure for local innovation, drawing on successful models and sector-specific data sharing initiatives

Audience Cross-sector leaders focused on regional development, including local authorities, research institutions and technology innovators

Convening approach Inaugural roundtable bringing together leading voices in data innovation and place-based development

Strategic focus Examining opportunities to unlock economic growth through improved data sharing mechanisms

Participant diversity Representation from government agencies, academic institutions, technology sectors and innovation platforms

Overview

At the intersection of technology, governance and local innovation, this roundtable discussed how improved data sharing can unlock new opportunities for regions. The conversation focused on creating a robust, responsible data ecosystem that supports targeted interventions, technological innovation and more nuanced understanding of local needs.

Strategic outlook

- Moving from principle to practice in data sharing, with lessons learned from successful initiatives like Open Banking that have demonstrated the potential for transformative data ecosystems
- Shifting from data collection to data connection and generation of insights, recognising that the value of data lies in the ability to create meaningful, actionable intelligence across sectors
- Building infrastructure that enables trusted scalable data sharing, with particular emphasis on supporting SMEs and local innovation ecosystems
- Accelerating cross-sector collaboration and AI-driven innovation, with a focus on creating flexible, purpose-driven data sharing mechanisms

Key Takeaways

- Data sharing is fundamentally a cultural challenge, requiring more than technical solutions
- Cross-sector collaboration is essential, breaking down silos within and between government, academia, industry and research
- An impact focused approach must be prioritised, with practical use cases validating potential and demonstrating value
- SMEs, with tailored support, can contribute to UK growth through innovative uses of data
- Step-by-step regulatory support that provides clear guidance and will accelerate data sharing
- National data leadership from PM/Cabinet Office will enable strategic coordination
- Data quality is fundamental to future technologies, particularly emerging fields like AI
- Developing a common data language and professional standards will drive cross-sector understanding and collaboration

Landscape Overview

The current data infrastructure reveals significant variations in local digital capabilities, highlighting the urgent need for a comprehensive approach to data sharing that can bridge existing gaps. Understanding these regional disparities will mean the UK can better develop strategies that support equitable technological and economic development. It opens debate about centralised and regional approaches and prompts the question: where should government consolidate efforts?

Current data infrastructure

- Significant variations in technological capabilities across regions and sectors
- Emerging sector-specific data sharing initiatives
- Growing recognition of data as a critical national infrastructure
- Increasing investment in digital transformation strategies

Key existing initiatives

- CReDO and DIATOMIC cross-sector data sharing programmes at Connected Places Catapult
- Geospatial Commission's spatial data frameworks
- National Underground Asset Register (NUAR)
- NESO's Energy Data Sharing Infrastructure (DSI)
- NHS secure data environment
- Open Banking as a guiding model
- Perseus Programme, first national cross-sector data sharing scheme, backed by 10 banks and lenders and over 30 carbon accounting providers

- Rail data marketplace
- Sector-specific data governance approaches in energy, transport, and digital markets
- Smart Data Council data sharing schemes

Regulatory and policy landscape

- Data Use and Access Act provisions creating new data sharing opportunities
- Clean Power 2030 strategy driving energy sector innovation
- Increased regulatory support for cross-sector data sharing
- Emerging standards for data governance and interoperability

Technological foundations

- Development of digital twin technologies and approaches
- Advances in privacy enhancing technologies
- Growing capabilities in AI and machine learning
- Improved data storage and cloud infrastructure in the UK

Sectoral variations

- Energy sector leading with operational/ useable/ real DSI in practice
- Transport sector faces significant interoperability challenges due to sheer number of different stakeholders
- Local authorities with varying digital capabilities and skills
- Research institutions developing new data sharing models

Opportunities

Data infrastructure innovation – emerging possibilities for creating interconnected, intelligent data ecosystems that bridge current sectoral and regional divides, with potential to transform national decision-making and economic strategy. Key areas:

AI and advanced technologies

Significant potential for transformative insights through high-quality, standardised data sharing, particularly in areas like energy, transport and urban planning.

- **Unique identifier development** –creating cross-system data matching mechanisms to enable more seamless information integration and analysis
- **SME and local innovation support** – developing platforms that enable smaller organisations to access and leverage complex datasets, driving place-based technological development
- **Cross-sector collaboration** – establishing mechanisms for seamless data exchange between government, academia, research institutions and private sector entities

Technological and sectoral innovations

- **Digital twin and spatial technologies** – expanding opportunities for creating comprehensive, real-time models of infrastructure, urban systems and regional dynamics
- **Use cases** – creating innovative use cases through data, improving national infrastructure through data insights
- **Clean energy and sustainability** – leveraging data sharing to support strategic initiatives, enabling more precise and effective environmental interventions
- **Privacy-enhancing technologies** – developing advanced mechanisms that allow data sharing while maintaining robust privacy protections
- **Blockchain** – explore blockchain as a potential data storage and value exchange mechanism

Strategic development

- **Regulatory innovation** – creating flexible governance frameworks that balance innovation, privacy and security
- **International leadership** – positioning the UK as a global leader in responsible, innovative data sharing approaches
- **Value measurement** – developing mechanisms to quantify and monetise data as a strategic asset
- **Research infrastructure enhancement** – creating more actionable pathways for transforming research data into practical insights

Economic and social potential

- **Reducing regional disparities** – using data to create more targeted, effective local interventions
- **Supporting economic growth** – enabling more sophisticated, data-driven decision-making
- **Enhancing public service delivery** – creating more responsive, efficient government services
- **Driving technological innovation** – supporting startup ecosystems and technological development

Humanities and social science integration

- Need to bring a broader humanities perspective to different forms of data
- Importance of developing narrative and stories from data

Emerging collaborative models

- **Public-private partnerships** – developing new frameworks for data sharing
- **Academic-industry collaboration** – creating platforms for joint research and innovation
- **Cross-regional data exchanges** – establishing mechanisms for broader, more comprehensive data sharing

Challenges

Local authorities face multifaceted barriers to effective data utilisation, including limited digital infrastructure, skills shortages and complex governance challenges. These obstacles threaten to impede place-based innovation and the potential for data-driven, targeted interventions across different regions

Organisational and cultural

- Persistent “secret sauce” mentality inhibiting wider data sharing
- Perceived deep-rooted resistance to cross-sector collaboration
- Limited understanding of data’s strategic value
- Complex internal governance structures at organisational levels
- Commercial sensitivity and IP concerns

Sector challenges

- Different approaches needed for different sectors, for example, the transport sector is more fragmented than the energy sector

Technological and infrastructure

- Significant variations in digital capabilities across regions
- Lack of common data standards and interoperability across sectors and regions
- Limited digital infrastructure in local authorities
- Outdated legacy systems limiting data exchange

Regulatory and governance

- Fragmented legal frameworks governing data sharing
- Unclear legal gateways for information exchange
- Balancing privacy protection with innovation potential
- Inconsistent data protection regulation interpretation

Skills and capabilities

- Limited and uneven data literacy across organisational levels and sectors
- Shortage of cross-sector data expertise
- Insufficient training in advanced data technologies
- Challenges in recruiting data specialists

Economic and value

- Difficulty measuring and monetising data assets
- Unclear mechanisms for fair value exchange
- Limited understanding of data’s economic potential
- Misaligned incentive structures

Trust and security

- Apprehensions about data misuse
- Complex security requirements
- Lack of trusted sharing frameworks
- Concerns about competitive disadvantages
- Views and Insights

Views and Insights

Key perspectives

- Data sharing is fundamentally a people and culture challenge
- Narrow, purpose-driven approaches are most effective
- Innovation requires collaborative, cross-sector ecosystems

Expert observations

- Urgent need for leadership in data infrastructure development
- Importance of creating clear, tangible value propositions
- Potential for transformative cross-sector insights
- Necessity of building trust through transparent, focused initiatives

Emerging consensus

- Public sector should be fairly compensated for data contributions
- AI requires high-quality, standardised data
- Small businesses are a key element of driving innovation
- Regulatory support can accelerate data sharing mechanisms

Strategic insights

- Importance of developing common data language and standards
- Need for flexible, adaptive data governance frameworks
- Potential of privacy enhancing technologies
- Significance of creating interoperable data systems

Collaborative approaches

- Breaking down traditional organisational silos within and across sectors
- Developing mechanisms for shared value creation
- Supporting SME participation in data ecosystems
- Creating platforms for cross-sector knowledge exchange

Views and Insights

"High quality curated data requires money and resources and is an investment in the fabric of the UK for the future. It would be helpful to see data given the same consideration as physical assets."

Grant Wilson

"Value and quality are a function of use case (rather than the data). Monetisation is an extreme way to do value exchange. There are simpler ways to start, such as sharing efficiency benefits from the use of a combined data source"

Miranda Sharp

"We need to professionalise data. We need to have codes of conduct, practices and a common language so that everyone understands what is meant when using these expressions and terms."

Stuart Coleman

"We spend an inordinate amount of time convincing decision makers across organisations that there are legal gateways for sharing data, and we can actually do this. Getting hold of the data and engineering it to match properties and people from different source systems, can be a significant challenge."

Liz St Louis

"The Data Act mandates data sharing, and it mandates the way we've been doing data sharing in Open Banking for 10 years across the rest of the economy. It's not a free-for-all, but a decentralised, governed approach that actually works."

Gavin Starks

"If you bring organisations together, the opportunity for improvement grows. The bigger the collaboration space you can get, the better the outcome."

Phil Greening

"We need to build this as quickly as a human can. Because the moment you start building, you create that chain reaction and the use cases will be there."

Accelerating innovation

"The variance in data competency is huge... We've got to find a way to get private public sector stakeholders, at least on a fundamental understanding of data literacy."

Data literacy

"My biggest wish is that we could agree... on data sharing, what that looks like for a general purpose, [not narrow purpose,] because that will really speed things up."

Legal challenges

"More open data. Open it up to innovators in the market, and they'll do clever things that we haven't anticipated."

Open innovation

"We need to bring more humanities and social science into the mix so we can model new ways of thinking, new ways of engaging, build the trust and lower the barriers."

Cultural shift

"Quantify the skills gap and have a plan to bridge it all the way from schools right the way through to SMEs and big companies."

Skills development

"OFGEM has been particularly innovative in supporting data sharing infrastructure. They've regulated that use of the data sharing infrastructure in energy will be mandatory for network organisations, creating both certainty and enough time for implementation."

Data sharing infrastructure

"I think it is the culture shift, consumer public perspective of actually starting to look at data sharing differently."

Public perception

"In three years or five years' time, we will see if we have built sufficient environmental homes with use of data and have actually made a difference."

Future impact

Recommendations and Next Steps

The following recommendations provide a strategic roadmap for empowering local authorities through improved data access, supporting SMEs and local innovation ecosystems, developing robust digital infrastructure, and creating mechanisms to reduce regional technological disparities.

National data leadership

- Establish cross-sector data governance framework
- Create dedicated national data leadership role at PM or Cabinet Office level
- Ensure strategic coordination across government and private sectors
- Develop comprehensive, long-term data strategy

Infrastructure development

- Build secure, flexible data sharing platforms
- Learn from successful models like Open Banking
- Implement clear purpose and controlled access mechanisms
- Develop interoperable data infrastructure

Skills and capability

- Comprehensive skills gap analysis from schools to SMEs
- Invest in data literacy across sectors
- Create professional standardisation pathways
- Establish professional bodies for data specialists
- Develop comprehensive training and career development programs

Regulatory approach

- Implement staged, supportive regulatory mechanisms
- Provide clear guidance while supporting innovation
- Follow examples like OFGEM's innovative regulatory model
- Balance data protection with innovation potential

Innovation support

- Create collaborative spaces for SMEs and research institutions
- Provide dedicated funding for data innovation
- Develop shared infrastructure access
- Support cross-sector research and development

- **Strategic opportunities**
- Leverage initiatives like Clean Power 2030 Action Plan
- Use spatial data frameworks
- Drive cross-sector innovation
- Support place-based technological development

Cross-sector collaboration

- Facilitate ongoing dialogue and knowledge exchange
- Develop fair data value exchange mechanisms
- Support SME participation in data ecosystems
- Create spaces and platforms for collaborative innovation

Building knowledge

- Develop NUAR and Open Banking case studies
- Understand “valley of death” for data innovation

International positioning

- Develop global best practices in data sharing
- Position UK as leader in responsible data governance
- Encourage international knowledge transfer
- Support global data innovation standards

Closing Words from the Chair and Acknowledgements

Unlocking Place-Based Innovation and Growth Through Data Sharing Infrastructure brought together leading voices from government, academia, industry, and research to explore the transformative potential of data sharing in the United Kingdom.

The next five years represent a significant period for data sharing. Success hinges on a fundamental transformation from mere data collection to generating meaningful insights that directly inform decision-making. This requires a coordinated approach that prioritises interoperability and actionable outcomes. By developing common standards and identification mechanisms, the UK can create a more cohesive data ecosystem.

Central to this approach is building trust through purpose-driven data sharing that demonstrates clear, tangible benefits to all stakeholders. The infrastructure must be designed to support emerging technologies like AI, with a rigorous focus on data quality and assurance.

Breaking down cultural and organisational barriers is a priority. This requires clear value propositions that show the benefits of data sharing, creating infrastructure that supports innovation, and developing mechanisms for fair value exchange.

Emphasis must be placed on supporting small and medium-sized enterprises and local innovation ecosystems. The UK has a unique opportunity to position itself as a global leader in responsible data governance. By taking a strategic, collaborative approach that balances innovation with ethical considerations, the nation can unlock significant economic and social potential through intelligent data sharing.

The participants' diverse expertise and commitment to collaborative innovation provide a strong foundation for this transformative journey.

We would like to thank Dr Grant Wilson, co-Director of the Birmingham Energy Institute at the University of Birmingham for chairing the roundtable and extend our thanks to the participants who generously shared their insights, challenges and a vision for the future of data sharing.

Resources

Clean Power 2030 Action Plan
CReDo Climate Resilience Decision Optimiser
Data Use and Access Act
DIATOMIC Scalable Digital Twins
Geospatial Commission Framework Document
National Underground Asset Register (NUAR)
NESO's Energy Data Sharing Infrastructure (DSI)
NESO Virtual Energy System
OFGEM Governance of the Data Sharing Infrastructure
Open Banking Roadmap
Perseus Programme
Smart Data Roadmap
UK Government Resilience Action Plan (HTML) - GOV.UK
UK Infrastructure: A 10 Year Strategy
UK Modern Industrial Strategy

About Connected Places Catapult

Connected Places Catapult is the UK's innovation accelerator for transport, the built environment, cities and local growth. As a not-for-profit organisation, the Catapult works across government, industry and academia to shape smarter, more sustainable places. It helps translate policy into market action, ensuring innovation delivers public value.

Central to this mission is its Data & Digital practice, a multidisciplinary team driving work on data infrastructure, digital innovation and cyber-physical systems. From the Digital Twin Hub and CReDo, to Data Sharing Infrastructure, it is laying the groundwork for a more connected UK.

A cornerstone of this work is the convening power of the roundtables hosted at the House of Lords – strategic discussions that bring together leaders to explore how data and digital technologies can be deployed responsibly to unlock innovation. These working sessions offer a neutral space for dialogue, shaped by diverse perspectives and chaired by independent voices.

Connected Places Catapult convenes, curates and shares insights from these roundtables to inform policy, support SMEs and create the conditions for scalable, trusted innovation. By connecting policy intent with market engagement, it helps accelerate adoption, remove barriers and grow the market – benefiting places and people across the UK.

Get in touch

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Visit Connected Places Catapult website here

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APPENDIX 1

Organisations at the Roundtable

Arup
AtkinsRealis
Department for Business and Trade
Department for Science, Innovation and Technology
Department for Transport
Heriot Watt University
Icebreaker One
Innovate UK
Metis Digital
National Data Library, Department for Science Innovation and Technology
National Oceanography Centre
National Energy System Operator (NESO)
National Environment Research Council (NERC)
National Underground Asset Register (NUAR)
Open Data Institute (ODI)
Ordnance Survey (OS)
Sunderland City Council
UK Research and Innovation / Science and Technologies Facilities Council
University of Birmingham

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