

WHO OWNS OUR

DATA

INFRASTRUCTURE

Data is the raw material that will help us meet 21st century challenges: to reduce friction in our economy, increase our sustainability and create opportunities to innovate.



How

do we

lay the

foundations

for the web

of data?

Our data infrastructure is as important as our physical infrastructure.

A strong data infrastructure will reduce friction in the economy, increase interoperability and collaboration, efficiency and productivity in public and private sectors, nationally and internationally.

Having the right conditions for data will benefit everyone. It will reduce transaction costs, increase sustainability, grow supply chains and inform citizens. A coherent data infrastructure should be a baseline condition for a healthy, progressive society, and a competitive global economy.

The Web has connected us in ways we couldn't have imagined. With it, countries can respond quickly to the needs of citizens, target resources and trade exports and services. It has brought countless communities together to share ideas, innovate and compete in global markets.

Like our rail infrastructure, many different groups had to come together and coordinate their services to get the best out of the Web. Some see data as the “new oil”: fuelling economic growth and improved services; some see it as a means of building trust in more transparent governments; some see the impact of the web over the next 25 years dwarfing its impact over the past 25. But data assets don't just appear. We don't ‘discover’ them and extract their value. We create data. We maintain it. Sharing it helps us increase its value.

Data is essential to a well-functioning society: data about sectors like transport, energy, education or health, and data that provides the connective tissue of place, such as maps and addresses. Like transport, data helps you to get to where you need to be: whether that's a new discovery or insight, a better service or simply more informed about the community you live in.

Governments, businesses and communities plan essential physical infrastructure carefully – our highways, electricity lines, water courses and broadband connections. We should treat data in the same way. **We need to plan and create data infrastructures.**

What data do you need today to build international services?

Who owns the information we need to improve services for our communities?

When creating a data infrastructure, we must ask some important questions: What does privacy mean? What data can reasonably be sold for profit, and which should be a public good and available to everyone? How can we make the most of data, while reducing the digital divide?

How has ownership of data shaped our future?

Data has been at the heart of government for centuries. In Mycenaean Greece (1600 BC to 1100 BC), scribes recorded administrative data using a script that we now call Linear B. At the time, that data was controlled by the state and accessible to few.

The ways we collect, maintain and share data have changed and expanded as technologies and societal habits have been transformed.

Data is still collected deliberately for things like surveys and censuses. But data is also created as a byproduct of services, whether public or private, from education to telecommunications. **In a digitised world, all our products and services generate data that is useful for someone.**

Like our physical infrastructure, important data might be owned and managed by a range of groups.

In some countries, the government owns and manages access to essential physical infrastructure. In others, this might be shared with companies, who might own toll roads, planes or rail transport. In this mixed model, governments set policies and regulate to ensure its public infrastructure supports its citizens.

The aim of a data infrastructure is to make important data as accessible and widely used as possible.

A data infrastructure helps us identify data essential to how society functions, so we can keep it high quality and available so groups can use it in positive ways.

Organisations today – whether governments or companies – can hold a treasure trove of data. This is valuable to them: it informs how they work. But just like some physical infrastructure, that data can be valuable to wider communities too.

For example, aggregated mobile phone data reveals how crowds grow, shrink and shift. Phone companies use it position radio masts. But if made accessible, retailers can use it to plan where and when to open their stores. Governments can use it to plan emergency responses, and charities can use it to target their interventions.

In some cases, valuable data like this might be sold. Selling data is lucrative for public, private and non-profit sectors. In other cases, companies and governments may choose to make data open, for anyone to access, use and share, to unlock more value and bring wider societal benefits. **Granting access and assigning licenses to data is up to its owner.**

Who?

Who owns
the information
we need to improve
services for
our communities?

How do we define a 'data infrastructure'?



Where physical infrastructure – like transport, energy and health – keeps us fed, warm and well, a **data infrastructure keeps us informed**.

A data infrastructure identifies data that underpins important services, products and research. It **helps society to function better** by making that data more accessible and better governed under a strategic framework.

A data infrastructure is **built up of data from different groups** – this data can be closed, shared between specific organisations, or openly licensed; it can be owned by governments, businesses and non-profits alike.

A data infrastructure helps us to recognise data that **has social, environmental and economic value**, and make that data as available and useable as possible to realise that value.

Some countries are already planning their data infrastructures. In 2012, the Danish government outlined its [Roadmap for Basic Registries](#) – data it considered essential to services across sectors. In the UK, the government has been leading discussions of a [National Information Infrastructure \(NII\)](#) since 2013.

We need to consider data infrastructure locally, nationally and globally:

Local Data Infrastructure

At a local level, data infrastructure helps **make cities smarter** by informing citizens, communities and local government decision makers.

National Data Infrastructure

At a national level, data infrastructure helps countries **build economic, social and environmental resilience**. Government and companies deliver services and develop products their citizens need. Transparency strengthens democratic engagement and accountability.

Global Data Infrastructure

At a global level, data infrastructure helps us respond to global challenges. It helps us **monitor multinational organisations**, and agree on comparative statistics that help us **measure the progress of international policies**.

Open data is key to our data infrastructure: globally, nationally and locally.

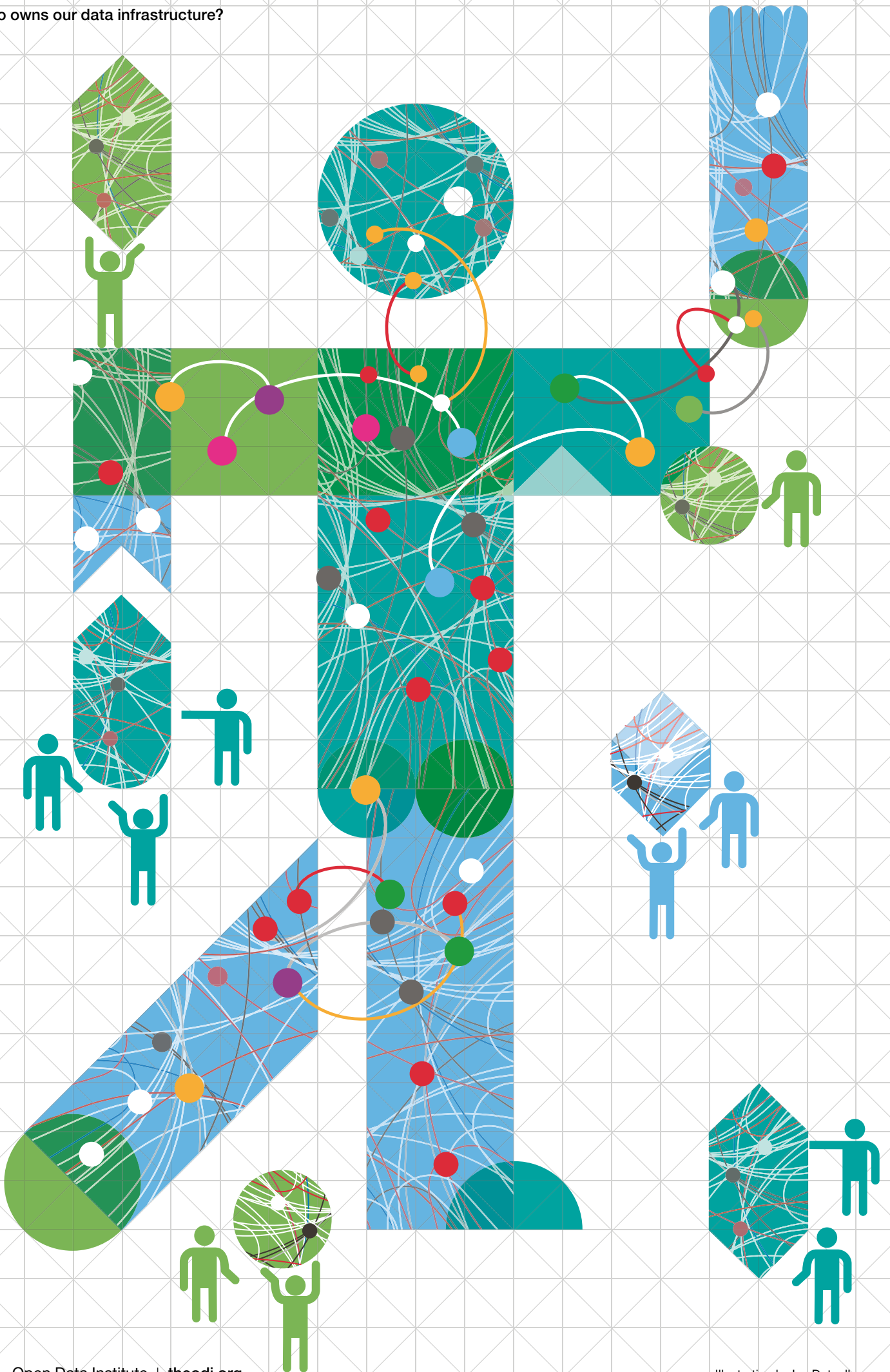


As part of defining a data infrastructure we will need to ensure that important data is accessible and widely used. How?

Making data open: published under a licence for anyone to access, use and share.

Making data accessible: with policies or regulations that promote accessibility, even if for a fee.

Taking responsibility: to ensure organisations managing data infrastructure incorporate accessibility and reuse into practice.



What do we expect from organisations that manage our data?

Our trust in organisations that own data assets can depend on the kind of data they collect, their reasons for collecting it and the kind of organisation they are.

When we consider data fundamental to a functioning society, what should we expect of those who own and manage it?

Having explored diverse information holders – government departments, non-profits, private companies and charities – some basic criteria emerge that can shape the governance of any core data asset:

Long-term sustainability – funding, governance support and purpose should be continuous, suggesting it has stability and is able to manage the data in the long-term.

A perceived authority – the entity should be considered a credible, authoritative source of the data it manages.

Transparency – the entity should be transparent about where the data comes from and how it is processed and managed. It should have mechanisms in place that enable stakeholders to ask questions about the data (e.g. for public sector organisations, via FOI laws).

Openness – the entity should be open to participation and responsive to requests from all users: both internal and external to the organisation, both direct and indirect customers, and for known and novel uses. It should be proactive in opening up information about how it works with everyone and make the data as accessible as possible.

Commitment to the availability of data – this will be particularly important where the entity holds a monopoly over that type of information, which confers the power to withhold access, distort competition or neglect data quality. The entity should be incentivised to maintain and continue to provide access to high-quality data, using standards and formats that ensure ongoing availability. This might be a financial incentive (revenue generating), a mandate to provide access (via legislation, for example), regulation or a social purpose.

Agility – in the data context, ‘agility’ has two meanings. The entity should be able to adapt its data management to a changing social and technological context, and meet evolving user needs. It should also be able to update the data quickly, including in response to external feedback.



What do you think?

Who do you think should own data infrastructure, globally, nationally and locally?

If we lay the foundations for a global data infrastructure, we can address the ethics and safeguards for how this kind of data should be governed.

There are lots of questions to be explored. We want to start a conversation about who the stakeholders are at different levels, from policy to business, and what their priorities should be.

What do you think? We're interested in your feedback. You could:

- write a blogpost and share the link with us, or pitch it for the ODI website
- raise the issue in your local data networks and tell us how it is received
- suggest which questions about data infrastructures should be addressed first

You can email policy@theodi.org or tweet us at [@ODIHQ](https://twitter.com/ODIHQ).

The Open Data Institute: Knowledge for everyone

The ODI is an independent non-profit organisation, bringing together government, industry and academia to realise the benefits of open data. The ODI helps people unlock supply and demand for open data, and share this value with everyone, by:

providing support to entrepreneurs
working with open data

delivering open data training to
people and government

recognising and rewarding best practices
with open data

connecting data reusers with
data publishers

creating and sharing research on
the impact of open data

spreading open data best-practices
across the world

You can learn more about
the ODI at theodi.org