Businesses are trying to unlock the value of data. When used well, data can benefit businesses in a variety of ways. It can improve decision making, grow markets and drive innovation.

Our work with businesses of all sizes and across a variety of sectors has highlighted some challenges.

There is a lack of clarity about how sharing and using data can directly deliver business benefits. Increasing concerns around privacy mean companies need to be seen to be trustworthy when it comes to data, and without the necessary skills, businesses can struggle to use data.

**This Data Toolkit for Business is designed to help businesses overcome these barriers and includes:**

- Data Skills Framework
- Data Ecosystem Mapping
- Data Ethics Canvas
- Private Sector Case Studies showing the value of sharing data

These tools can help to map out a data ecosystem, identify skill gaps, and support the ethical use of data.

For more information visit theodi.org/tools. To let us know what you think, get in touch at info@theodi.org
Unlocking the value of data for businesses

Using data well can help to drive business innovation. Businesses can use data to create new products and services, but can unlock even more value by opening and sharing data.

The case studies in this booklet show seven ways businesses are creating value by sharing data:

- Securely sharing operational data to enable benchmarking and insights, helping to reduce costs and increase safety
- Driving supply chain optimisation by sharing more information across suppliers and distributors
- Engaging in open innovation with researchers and startups
- Improving market reach by sharing data on existing products and services
- Building trust with consumers and other stakeholders
- Turning regulated data sharing into an opportunity to innovate and build new business ecosystems
- Addressing sector challenges by working with partners to build markets, apply new technologies and adapt to a changing world

Our research shows that to take advantage of these opportunities, businesses need to understand their data ecosystems, develop internal data skills programmes and ensure they are working with data in a trustworthy way.
The Data Spectrum

- **Internal access**: Employment contract + policies, Sales reports
- **Named access**: Explicitly assigned by contract, Driving licences
- **Group-based access**: Via authentication, Medical research
- **Public access**: Licence that limits use, Twitter feed
- **Anyone**: Open licence, Bus timetable

- Small / Medium / Big data
- Personal / Commercial / Government data
Open and shared data

Data exists on a spectrum, from closed data to shared data to open data.

Data that is shared or made open presents huge opportunities for the private sector – for example, combining datasets can enable new insights. When data is made more accessible it can be used to create new products and services, improve decision making and drive open innovation.

We must make data infrastructure as open as possible, while at the same time protecting people’s privacy, commercial confidentiality and national security. The important thing is how data is licensed.
The tools and how to use them

The ODI’s Data Toolkit for Business is a set of collaborative tools that will help businesses unlock the value of data.

The toolkit includes:

The **Data Skills Framework**, to help your business develop an effective balance of data skills needed to work with data.

The guide to **Data Ecosystem Mapping**, helping you to understand how value flows through your business ecosystem, and to plan the technical and organisational relationships needed to make the most of data held by you and other organisations.

The **Data Ethics Canvas**, to help you identify and mitigate potential ethical issues when collecting, using and sharing data.

This booklet also contains **case studies** demonstrating how companies are already successfully sharing and using data. These insights can be used to inform your own plans and priorities.

The tools can be used to stimulate conversation in a group setting – such as a team meeting, project review or workshop – or more directly to inform changes at an individual level.
The Data Skills Framework breaks down the complex landscape of data skills into the sets of skills required by different people in an organisation. It illustrates how technical data skills must be balanced with skills that enable data innovation.

Businesses like Arup, Deutsche Bank and Co-op are using the framework to inform their data literacy programmes, identify skill gaps and clarify the best places to invest in learning and capacity development.

Read more about how the Data Skills Framework solves problems for our partners [theodi.org/diverseskills](http://theodi.org/diverseskills)
Data Ecosystem Mapping

The process of mapping a data ecosystem helps to identify and plan the technical and organisational relationships needed to innovate with data.

This tool illustrates the flow of data and value through your business ecosystem. An ecosystem map can help you identify stakeholders and opportunities to increase access to data.

We have used ecosystem mapping to help develop sector programmes and support data sharing initiatives in telecoms, banking and agriculture.
This tool helps you to identify potential ethical issues associated with a data project or activity. Use this to ensure that ethical – and legal – use of data is considered from the very beginning of your project, and throughout.

A range of companies have used the Data Ethics Canvas. For example, Co-op now uses the Data Ethics Canvas to evaluate and assess ethical practices relating to data collection, sharing and use in its projects.

Read how Co-op is using the Data Ethics Canvas coop.uk/2T61z23
Common challenges and how the tools can help

Businesses face common challenges when accessing, using and sharing data – from a lack of clarity around the benefits of sharing data, or a lack of skills needed to assess and unlock value, to concerns about potential ethical issues.

**It can be difficult to know where to start.** The case studies in this booklet – and on the ODI website – show how other businesses have realised the value and impact of opening and sharing data.

**There can be concerns about ethics and the risks of sharing data.** The Data Ethics Canvas helps to identify and address the ethical implications of collecting, using and sharing data.

**There is a need for new skills.** The Data Skills Framework can help identify which data skills might be missing in a team or organisation, and help support development of balanced data literacy programmes.

**It can be hard to know where data is and how it creates value.** The guide to Data Ecosystem Mapping can help you navigate your data ecosystem, and can help you identify opportunities to create more value.

To find out more about the ODI’s work supporting the private sector, visit [theodi.org/datasharing](http://theodi.org/datasharing)

If you would like to work with us, or discuss these tools in more detail, get in touch at bizdev@theodi.org
Business ecosystems comprise networks of organisations working together to deliver products and services. They include suppliers, business partners, customers, regulators, researchers and innovators.

Data informs, enables and streamlines business transactions across these communities. Developing an understanding of these ecosystems can help clarify how the flow of data can create value.

In the illustrations below we explore some examples of how data flows across different parts of a business ecosystem. Our case studies include real-life examples of how data flows in existing ecosystems.

Which elements of your own data ecosystem could be improved or extended? And what additional value might you create through the ethical, trustworthy sharing of data?

1. The flow of data between businesses and their customers is core to any data ecosystem. We create, exchange and share data when we register as a customer, use services, or buy and sell products.
2. Delivering products and services requires efficient supply chains. Data enables closer collaboration between businesses, their suppliers, manufacturers and distributors.

3. Ethical sharing of data with researchers can help unlock insights for businesses and deliver wider social benefits.
4. Sharing data allows businesses to collaborate with startups and innovators. Open innovation can produce insights such as process improvements or recommendations for new products and services.

5. Regulatory oversight helps ensure that business ecosystems remain fair and open.
Who can use the toolkit?

The ODI’s Data Toolkit for Business aims to help anyone who wants to unlock the value of data for their business.

It can be used to plan a data ecosystem to enable innovation, help product teams identify ethical issues, and inform the design of a data skills programme.

The toolkit can help people from across your business, including those who fit the following profiles. We suggest sharing these tools with them as a way of getting feedback and exploring their expertise.

**Product Managers**
Creating valuable products requires in-depth understanding of the business ecosystem and how data is accessed, used and shared. Product Managers can use this insight to map data ecosystems, identify learning needs and operationalise data ethics.

**Data Protection Officers**
Helping an organisation comply with its legal, ethical and contractual obligations requires a complete picture of how data is being accessed, used and shared.

**Data Governance Leads**
Building a culture where data is treated like an asset requires investing in skills and developing an understanding of how data flows through the business.

**Learning and Development Leads**
A balanced data skills programme will recognise the need for people in roles across an organisation to develop new competencies and skills.

**C-Suite Leaders (Chief Data Officers, Chief Technology Officers, Chief Information Officers etc)**
Data strategy needs to deliver value for a business through data-enabled innovation, while building a strong data culture.
ODI Data Ecosystem Mapping workshop with CABI, 2019
Image source: Martin Parr, Director, Data & Services, Digital Development, CABI
In this case study we look at how HiLo Maritime Risk Management supports shipping companies to operate more safely by providing safety recommendations based on insights from the wider industry.
Benchmarking and insights: key findings

1. The ability to compare data on operations, performance, finances and a range of other indicators including salaries, diversity and safety practices, allows companies to benchmark themselves and so make better decisions about how they operate.

2. Benchmarking requires a critical mass of data to be available from across a sector in order to provide good insights. Sharing comparative data across a sector in ways that build trust underpins a company’s ability to successfully benchmark and analyse its performance.

3. HiLo is a joint-industry initiative that supports sharing of safety and accident data in the maritime sector. By analysing the aggregated data it is able to provide individual insights to the companies contributing data.

4. HiLo has helped to save lives and money: to date it has reduced lifeboat accidents by 72%, engine room fires by 65% and bunker spills by 25%.

5. Independent organisations are important in enabling sector-wide benchmarking. Acting as a trusted data intermediary they provide a secure means for companies to share and create value from data.

Find out more about how HiLo Risk Management is providing benchmarking and insights through increased access to data in the full case study at theodi.org/datasharing
In this case study we look at how Airbus shares engineering data on its aeroplane components with supply-chain partners to improve the efficiency and accuracy of its product design.
Supply chain optimisation: key findings

1. **Sharing data across the supply chain is a growing trend** and a key part of Industry 4.0.

2. **Sharing trusted data allows aerospace manufacturing to become much more efficient** — design processes that used to require weeks to complete can now be completed in a matter of hours.

3. Airbus teamed up with its supply-chain partners to develop a **proof-of-concept data sharing platform within the collaborative research project APROCONE**. The aim was to increase supply-chain efficiency and reduce aircraft development costs for manufacturers like Airbus.

4. **Creating a secure and efficient means to share data** has helped companies like Airbus engage with new technology providers and researchers to support innovation as well as optimise supply chains.

5. **Improvements in supply-chain optimisation** are leading to more environmentally friendly outcomes with the intent to reduce the industry’s carbon footprint.

Find out more about how Airbus is pursuing supply-chain optimisation through increasing access to data in the full case study at [theodi.org/datasharing](http://theodi.org/datasharing)
In this case study, we look at how an EU-funded open innovation programme, Data Pitch, has allowed Greiner Packaging International GmbH (GPI) to share data with logistics intelligence company, OBUU.
Open innovation: key findings

1. **Open innovation allows companies to apply external ideas and technology** to help address challenges. Sharing data is an essential part of effective collaboration between businesses.

2. **Sharing operational data provides the necessary insights into business challenges**, allowing collaborators to analyse and use that data to deliver better insights and demonstrate the value of new technologies.

3. Greiner Packaging International (GPI) shared data with logistics intelligence company OBUU via the Data Pitch programme, to help monitor the **resilience and efficiency of its supply chain**.

4. By applying its technology to a range of indicators supplied by GPI, OBUU was able to identify a potential **reduction of fixed asset investment of around 35%**, resulting in a significant cost saving.

5. The Data Pitch programme includes a variety of similar case studies that demonstrate how **sharing data can create economic benefits** for both data providers and users.

Find out more about how data providers in the Data Pitch open innovation programme benefit from increasing access to data in the full case study at theodi.org/datasharing
In this case study we look at how, to reach new customers, UK leisure operator **Everyone Active** shares data about its available products and how to purchase them.
Improving market reach: key findings

1. **Sharing data about products and services is an increasingly important** part of sales and marketing, enabling businesses to improve their market reach.

2. **Third parties use reference data about products and services** to create search engines and recommendation tools that can help new audiences and communities find relevant products and services.

3. **To reach new audiences, Everyone Active has been publishing standardised open data** about opportunities to be physically active, for example, the time and location of fitness classes or swimming lessons.

4. **Publishing this ‘opportunity data’ openly is growing the economic value** of the leisure and activity sector by increasing sales of underused products and supporting underserved communities.

5. **Everyone Active has so far seen an increase of almost 11,500 customers** from its partnership with data aggregator MoveGB. Of this group, 95% had never been a Everyone Active member, and 36% had not previously used an Everyone Active service.

Find out more about how Everyone Active is improving market reach through increasing access to data in the full case study at [theodi.org/datasharing](http://theodi.org/datasharing)
Case study: Building trust

In this case study we look at how the global agriculture business Syngenta publishes open data to demonstrate its commitment to being a more trustworthy organisation in the agriculture sector.
Building trust: key findings

1. Businesses are increasingly sharing data as a means of demonstrating that they are operating in a trustworthy way.

2. Although data sharing with regulators and the government is commonplace for businesses in regulated industries, making data available openly to potential consumers and partners is helping organisations build trust across the wider ecosystem.

3. Publishing open data on sustainability commitments is a key aspect of Syngenta’s open approach to business. Syngenta publishes a range of datasets on its progress towards sustainability goals and also shares wider research data to promote transparency and trustworthiness.

4. Promoting an open and transparent approach has provided reputational benefits and a competitive advantage for Syngenta. This has increased understanding of the company’s data among Syngenta’s employees, helped it build connections in adjacent sectors and engage with its supply chain partners better.

5. Syngenta promoting an open and trustworthy brand is helping others in the sector to share data, providing a virtuous cycle of increased understanding of biochemical research and improved economic and environmental outcomes.

Find out more about how Syngenta is building trust through increasing access to data in the full case study at theodi.org/datasharing
In this case study we look at how Barclays plc, a British multinational investment bank and financial services company, shares data both for regulatory purposes and more widely for its business.
Benefits of regulated sharing: key findings

1. **Sharing data is a legal requirement in some industries.** Regulators can require businesses to share data with them, with other companies or with the public.

2. Beyond being a legal requirement, **regulated data sharing often creates benefits** for the organisations that share the data, as well as for others in their industry, and for consumers.

3. Barclays shares data in accordance with the Second Payment Services Directive (PSD2) and open banking regulations, which **allows banking customers to get more out of personal data.**

4. **Barclays saw the benefits of being a leader in open banking** early and, to better serve its customers, provided account aggregation services before most other banks.

5. **Barclays also engaged in an open innovation initiative** to produce innovative new services by bringing new talent and ideas into its data ecosystem.

Find out more about how Barclays benefits from increasing access to data through open banking in the full case study at [theodi.org/datasharing](http://theodi.org/datasharing)
In this case study we look at how smart energy management software company, PassivSystems is working with Open Climate Fix, a not-for-profit research and development lab that focuses on using computers to tackle climate change.
Addressing sector challenges: key findings

1. **Businesses in any sector face challenges** which cannot be solved by a single organisation working alone. Collaboration within the sector, often through increasing access to data, is key to solving these challenges.

2. **Individually, companies often don’t have all the data necessary to address a problem.** Working together to collect, share and use data can help to grow markets, improve decision making and adapt to changing environments.

3. **PassivSystems is sharing data with Open Climate Fix to help tackle a major challenge** in the UK energy sector around balancing the supply and demand of electricity in the face of a shift towards renewable energy.

4. Better forecasting for solar energy generation would help electricity and gas utility companies like National Grid to balance the supply and demand of electricity in the UK in a **more efficient, cost effective and environmentally friendly** way.

5. **Improvements in forecasting** will also help energy suppliers and companies like PassivSystems to provide customers with better and more affordable products and services.

Find out more about how PassivSystems is addressing sector challenges through increasing access to data in the full case study at [theodi.org/datasharing](http://theodi.org/datasharing)
Training with the ODI’s Datopolis board game at the ODI Summit 2019, theodi.org/datopolis
The ODI learning programme provides data literacy for everyone.

We offer online, blended and face-to-face courses designed to help your organisation use data as part of its everyday language.

Data is everywhere and affects every decision we make.

We want people to use data to make better decisions and be protected from any harmful impacts.

Discover our range of courses at theodi.org/training, or get in touch to discuss opportunities for bespoke training for your organisation.

theodi.org/training
theodi.org/tools
training@theodi.org
The Data Toolkit for Business was created by the Open Data Institute, as part of its innovation programme, funded by Innovate UK.

The toolkit includes:

Data Skills Framework
Data Ecosystem Mapping
Data Ethics Canvas
Private Sector Case Studies showing the value of sharing data

The tools are likely to be iterated upon as the tools are used.

You can find all the tools and resources at theodi.org/tools

If you would like to discuss the Data Toolkit for Business, or how we can help you to use the tools, contact info@theodi.org

You can find out more about our work at theodi.org

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The Open Data Institute works with companies and governments to build an open, trustworthy data ecosystem

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