

Towards trusted data sharing: guidance and case studies

Data sharing checklist

The following checklist is taken from *Towards trusted data sharing: guidance and case studies*, published by Royal Academy of Engineering. The full publication can be read online at:

reports.raeng.org.uk/datasharing

Who is this for?

This checklist is aimed at organisations who have identified the opportunity to create value through sharing data, and are considering setting up arrangements for data sharing. These may be organisations that already hold data and see the value of sharing it more widely, organisations that would like access to others' data, or intermediaries who see the opportunity in facilitating data sharing.

What is its purpose?

The purpose of the checklist is to guide organisations through the main areas for consideration as they work towards a data-sharing solution. It draws on learning from a series of 10 data-sharing case studies.

What does it cover?

The checklist addresses business, technology, governance and people considerations, and covers eight areas for action.

The checklist



1. Define the opportunity



2. Identify the scope of data to be shared and how it will be used



3. Develop the business model that allows value to be generated and shared



4. Develop the model for data sharing and the partnership



5. Ensure that the right people are involved with appropriate skills and expertise



6. Identify the constraints, including legal and regulatory requirements, on how data is shared and used, and how these should be addressed



7. Identify the architectures and technologies needed to enable data sharing



8. Develop the mechanisms for good governance and oversight, to enable trusted data sharing



1. Define the opportunity

- Has a clear opportunity been defined? How will sharing data create value?
- Does the opportunity create an ecosystem of data sharing with a broad range of participants, or does it enable data sharing between a smaller, more tightly defined range of partners?
- Is the opportunity specific to a particular use, or does it enable a broad range of potential uses?
- Will sharing data allow one or more organisations to improve existing products and processes - for example, by adding a service dimension to products or improving the efficiency of processes - or to create completely new products and processes?
- Will data be monetised and traded, shared in a controlled way for mutual benefit, or made open for all to access?
- Are benefits tangible - for example, the development of a monetisable service - or intangible - for example, better informed decision-making?
- Have security risks been considered?
- Is the opportunity legal? Is it ethical?

2. Identify the scope of data to be shared and how it will be used

- What data needs to be shared to solve the problem? Who is sharing data and why?
- Where does data exist and where are there gaps? Are there many places from which to source this type of data or only one? How might this change over time?
- How will data be used, and what analytics will be applied?
- Will raw data, augmented data, derived data or a solution based on data be shared? The higher up in that pyramid, the greater the value, effort and risk.
- What metadata specifications and standards are needed?



3. Develop the business model that allows value to be generated and shared

- What are the conditions upon which the commercial value generated will be distributed? How are the benefits and costs shared?
- Will data be monetised and traded, or will value be generated in another way? Will there be an agreement to exchange data between parties, without any money changing hands?
- Where are costs and benefits incurred? Will the cost of collecting and curating data be incurred by a different part of an organisation or partnership from the part that benefits? Is there a shared understanding of the value of data across an organisation or between stakeholders?
- Have the costs of data acquisition, cleaning, integration and custodianship been assessed where relevant? Are the costs of technology acquisition and deployment known? Will the technology be developed in-house, through a cloud solution or as a hybrid solution?
- What business change is required for the organisations involved, including changes to the operating model? Where are existing activities disrupted, or existing revenues redirected?

4. Develop the model for data sharing and the partnership

- What will the model for data sharing be? For example, the model might involve data pooling between organisations, or a trusted intermediary, or the creation of an ecosystem with numerous roles, providing access to third parties.
- Are there existing trusted relationships and practices upon which data sharing can build?
- What is the nature of the partnership? Are partners from the public or private sector, or is there a mix? What are the various roles and responsibilities of participants? Where do intellectual property rights lie?
- What are the incentives for individual stakeholders to participate? Where the success of the data sharing model requires many participants, how can the ecosystem of participants be developed?

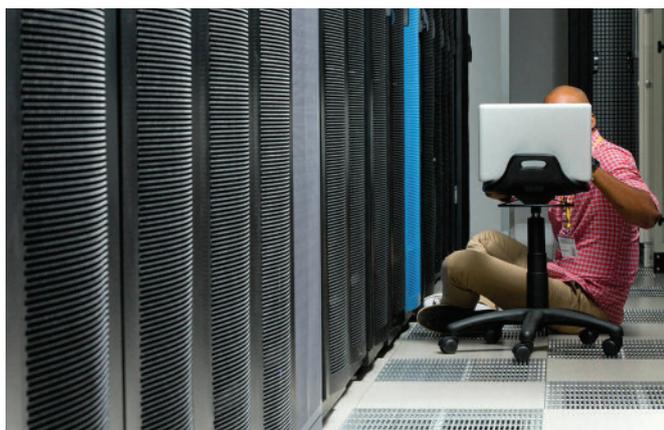


5. Ensure that the right people are involved with appropriate skills and expertise

- What skills do the different organisations bring to the partnership?
- What range of skills is required across business, technology, data management and analytics functions? Who will provide leadership across the partnership and within individual organisations?
- What elements of the project will be delivered in-house by the various partners and what will be outsourced? Will people be recruited as employees or contracted?
- How will individual organisations manage any change?
- What long-term support will be needed, and how will it be resourced?

6. Identify the constraints, including legal and regulatory requirements, and how these should be addressed

- How does the nature of the data and its use, and the partners involved, affect the principles around how data is shared?
- What are the regulatory, commercial or other constraints? What regulatory or security clearance is required?
- What are the contractual and intellectual property considerations? What are the rights associated with derived data sets?
- Can the various risks be adequately addressed, and if so how? In particular, how will security risks be addressed? What security model is required, for example privacy or provenance?
- How will data be shared and stored? How long will data be kept, and by who?



7. Identify the architectures and technologies needed to enable data sharing

- What architecture is appropriate? What is the processing model: will data be processed where it is stored or moved elsewhere to be processed?
- What platforms and other technologies will be required to create, store, transfer or process the data?
- What are the non-functional requirements for technology design, such as volume and growth rate, frequency of change, security needs, availability needs and performance needs? What timeliness of access is required, including real-time access?
- What technologies are available that allow data sharing in a controlled way? What technologies and methods enable effective data curation; for example, data tagging, standards, security or other methods?
- How do technologies help address commercial and regulatory constraints?
- How do the technologies help deliver the business model? How do the technologies affect the terms upon which the data is shared and what are the broader business implications?

8. Develop the mechanisms for good governance and oversight, to enable trusted data sharing

- What are the various stakeholders' roles and responsibilities?
- Who provides oversight?
- How are regulatory and legal requirements addressed through the governance mechanisms? What are the liabilities?
- What are the ethical issues that are raised and how can they be dealt with? Who is benefiting and who is taking on risks and liabilities? How can stakeholders relating to the data hold data-sharing participants to account?
- What needs to be included in any data-sharing agreements? How are agreements enforced?
- How is trust enabled?