



15 Principles for the successful delivery of data sharing initiatives

Theme	Headline	Lesson
Theme 1: Set up for success	1. Focus on high-value outcome(s)	Clearly identify the problem(s) you are seeking to solve. Select use cases with high public value and retain focus, but design-in flexibility and extensibility for when new user bases / use cases / routes to market emerge.
	2. Embrace community and collaboration	Sustainable change is driven from the bottom up. Adopt and build a community motivated to effect that sustainable change via shared incentives and ongoing co-operation.
	3. Listen and learn	Build upon previous and complementary work.
	4. Build a business case	Sustainable change needs top-down support. Build a strong, evidence-based business case and a compelling narrative for high-level buy-in and funding.
	5. Contract flexibly	Implement outcomes-focused contracts that support flexibility.
	6. Embed security	Build in security from day one and in all aspects of delivery.
	7. Think sustainably	Design-in sustainability of process, operation and long-term funding, including consideration of ongoing liabilities and business models.
	8. Build empowered teams	Build a team with a clear shared vision and purpose, empowered and trusted to deliver the outcomes and resilient to change.
	9. Embed structure and governance	Design a robust programme structure with clear lines of communication and strong governance.
Theme 2: Execute	10. Develop frameworks to address data sharing barriers	Implement a robust legal framework to enable data sharing in the absence of legislation. Address questions of liability and concerns about data quality.
	11. Remember not all data is equal	Prioritise data according to value for the use case. Build in the flexibility – technically and philosophically – to deal with high variability in data maturity and quality.
	12. Be agile and iterate	Focus on user needs through constant two-way engagement and act on feedback; work in the open; start small, move fast and deliver value early. It is often better to deliver something useful sooner, than getting consumed trying to deliver a perfect product first time.
Theme 3: Entry to service	13. Remember scale and adoption	Balance delivery with scaling and adoption. The service must deliver value to users and users must have the skills to incorporate the service into their day-to-day work.
	14. Encourage innovation	Design a process for acknowledging and evaluating additional use cases: turn “No” into “Not yet”.
	15. Use regulation	Legislation will be required to maximise benefits. Understand what falls under updated guidance, regulation or legislation.



Appendix 1: Detailed considerations for the 15 principles

1. Focus on high-value outcome(s)

- a. Clearly identify the problem(s) you are seeking to solve.
- b. Select use cases with high public value and retain focus on them, but design-in flexibility and extensibility for when new user bases / use cases / routes to market emerge.
- c. Clarity on scope and use cases is likely to be critical for enabling data sharing.
- d. Ensure the purpose is clear, quantified and easy to understand.
- e. It is better to deliver something and expand from that foundation than try to deliver everything and fail to deliver at all.
- f. Communicate consistently and regularly to reinforce the focus and purpose for all stakeholders.
- g. Define your success criteria or what 'good' looks like.

2. Embrace community and collaboration

- a. Sustainable change is driven from the bottom up.
- b. Build and foster a community motivated to own and drive that sustainable change via shared incentives and ongoing co-operation. Be open with your plans and objectives.
- c. Engage early to ensure you understand the problem you are trying to solve and the role you need to play. Focus on building the long-term relationship rather than getting preoccupied with pushing organisations to meet KPIs.
- d. Engage often and, where possible, in person, to maintain support and enthusiasm and to stay attuned to changing priorities and challenges.
- e. Collaboration and communication should include constructive dialogue with those who disagree.
- f. Make an effort to consider community through an 'equity lens' to ensure that all those who may be affected by change are included in the dialogue, including those who are typically under-represented or forgotten.
- g. Real-life relatable stories help to shape the narrative.
- h. Focus on two-way engagement and seek continuous feedback to ensure the service is fit for purpose and adapts to changing needs and expectations, balancing differing priorities from different stakeholders in a transparent manner.
- i. Use varied channels and tailored communication methods to maintain continuous and meaningful engagement.
- j. Create spaces for innovative early adopters to communicate and learn from each other.
- k. If you come across useful people and projects, bring them in.
- l. Engagement can include taking risks, exposing weaknesses and testing ideas in unfamiliar and uncomfortable situations, but this is where innovation happens.
- m. Senior/C-suite support from across the user community is highly desirable. It can help to get convince additional stakeholders and influence across the board.



3. Listen and learn

- a. Build upon previous and complementary work, including exemplars from other disciplines, both at home and abroad.
- b. Share learnings as wide as possible, so all levels, all stakeholders, partners and suppliers can benefit and implement positive change.
- c. Try to talk to predecessors, pioneers and contemporaries rather than just reading papers – they are usually very happy to tell you what they learnt.
- d. Engage with and listen to the end users you are supporting. Do not second-guess their needs but validate your assumptions and do not lead them to an answer.
- e. Embrace different viewpoints and perspectives.

4. Build a business case

- a. Sustainable change needs top-down support. Political sponsorship is key.
- b. Build a strong, easy to understand, evidence-based business case and a compelling narrative for high-level buy-in and funding. Make use of quantified benefits where possible and include social as well as economic value.
- c. Use your community to build and to drive the narrative as well.

5. Contract flexibly

- a. Implement outcomes-focused contracts that incentivise flexibility.
- b. Specify in tenders and contracts the culture you are looking to create and build this into scoring criteria and contract evaluation.
- c. Ensure that milestones and deliverables contain flexibility to allow for learning and evolving requirements, especially for elements that may be outside of direct control.
- d. Make efforts to avoid vendor lock-in and include this in contractual terms.
- e. It is never too early to consider matters related to project closure, wind-down and handover.
- f. Embrace any opportunity for two-way learning between yourself and your suppliers.

6. Embed security

- a. Build in security from day one and in all aspects of delivery and design.
- b. Aggregation of sensitive data gives rise to threats to physical and cyber-security, and to commercial confidentiality. Engage with stakeholder security teams and national security agencies concerned with physical and cyber security from day one and have honest discussions about those threats and proportionate mitigations.
- c. Instil a security-first mindset across all teams and stakeholders and reinforce this with regular communication and briefings.
- d. Create dedicated, specialist security roles and governance.
- e. Work on the principle of 'least privilege' and aim to provide exactly the right data and level of detail appropriate for a given role or task.
- f. Remember that the security-minded approach applies as much to process and personnel as it does to technology. The [UK National Protective Security Authority \(NPSA\) have published guidance for securing underground asset data](#) in conjunction with the National Underground Asset Register team and based on their involvement in the programme.



7. Think sustainably

- a. Design in sustainability of process, operation and funding, including consideration of ongoing liabilities and business models.
- b. Develop and communicate a clear future operating model early in the project and translate it into achievable milestones.
- c. Identify and secure funding for the long term to build confidence and ensure sustainability.
- d. Continuously test your emerging thinking models with your community, informally and formally and iterate often.
- e. Consider quantity of data storage and processing. Try to reduce it for the purpose of sustainability.
- f. Provide space for visionary and unconstrained thinking to foresee what a future could look like.
- g. Initiate a programme of future work that scopes next steps after the main delivery phase.

8. Build empowered teams

- a. Build a team with a clear shared vision and purpose, empowered to deliver the outcomes and resilient to change.
- b. Articulate a vision and invite team members to be part of delivering that vision.
- c. Encourage self-organising teams empowered to make decisions within defined thresholds.
- d. Encourage cross-team working and collaboration.
- e. Build a no-blame culture. Encourage junior team members to constructively challenge seniors and flag issues as they arise.
- f. Share successes as well as challenges. Celebrate colleagues who raise concerns and issues, especially around security, culture and delivery.
- g. Make sure the team and culture you have created is not lost after the programme. Create ways for everyone to remain in touch and continue to share the lessons learnt into the future.

9. Embed structure and governance

- a. Design a robust programme structure with clear lines of communication and strong governance.
- b. Establish and formalise mechanisms for cross-team communication and collaboration early on.
- c. Define clear terms of reference, decision thresholds and escalation routes for governance groups and formally document decisions and outcomes.
- d. Regularly review and adapt delivery structures to reflect change and to ensure effective integration and collaboration.
- e. Recognise the ambiguity that exists within the delivery environment. Instil robust risk management processes to explore the opportunities and threats.
- f. Recognise that this work is disruptive and cannot always be collaborative so it will require strong, resilient leadership.



10. Develop frameworks to address data sharing barriers

- a. Implement a robust legal framework to enable data sharing in the absence of legislation. Address questions of liability and concerns about data quality.
- b. Be clear about the scope and use cases for which data will be used.
- c. Design data sharing agreements that are consistent across all providers to avoid the complexity and overhead of bespoke arrangements.
- d. Consider the legitimacy and status of the organisation with which asset owners are counter-signing the data sharing agreements – trust and confidence is critical for data providers.
- e. Use data standards to support consistency across sectors, organisations and geographies.
- f. Standards should support the consistent and efficient exchange of data. Responsibility for data quality and maintenance should remain with data owners.
- g. Remove blockers to data sharing by embedding security into the project and communicating the nature and priority of security measures.
- h. Make it as easy as possible to participate and share data that adds value by providing simple, usable guidance, tools and services.

11. Remember not all data is equal

- a. Prioritise data according to value for the use case.
- b. Talk to practitioners and users of different types to understand what data is important to them.
- c. Build in the flexibility – technically and philosophically – to deal with high variability in data maturity and quality, including how data is visualised.
- d. Provide tools, frameworks and guidance to motivate and incrementally increase quality and maturity across the board.
- e. Iteratively and collaboratively develop and adopt a common language to drive consistency, support data quality improvement and maximise the geographic and cross-sector reach of the service, for example through standardised models.
- f. Transparency about data quality and currency is often more important than the data quality / currency itself.
- g. Not all important data is in geospatial or vector form. Provision needs to be made to deal appropriately with legacy data.
- h. Spatial data whose location may have been captured relative to above ground landmarks and features should be displayed against a contextual background, which allows accurate portrayal of relative positions, implicitly or explicitly.
- i. Prioritise engagement with data providers based on the value of their data to users and influence on successful delivery. Develop tailored engagement strategies for providers of high-value data.



12. Be agile and iterate

- a. Focus on user needs and act on feedback.
- b. Engage frequently with users and seek continuous feedback to ensure the service is fit for purpose and adapts to changing needs and expectations.
- c. Work in the open. Be transparent about what you are working on now, next and later. Be open about learnings, missteps and changes of direction. Work together with the community of users to set the direction of travel.
- d. Start small and move fast. Build something, get feedback and improve it, rather than perfecting something that may not fulfil user needs. Deliver value early and often by continually testing iterations with stakeholders.
- e. Prioritise delivery based on value for the use cases and impact (positive and negative) on the community of stakeholders.
- f. Policy frameworks should be developed in collaboration with digital delivery teams to ensure they meet and evolve with system and its user's needs.
- g. The agile and iterative approach should extend beyond initial delivery and continue to apply to ongoing enhancements in the operational phase.

13. Remember scale and adoption

- a. Balance delivery with scaling and adoption.
- b. Focus on user needs and make your service easy to interact with – as a consumer and a provider of data.
- c. Encourage adoption of the service while you are still delivering the product – full value is delivered by full adoption and scale.
- d. Identify advocates, influencers and champions within the community and enlist their help to drive enthusiasm and adoption.
- e. Plan how and when to scale - users/roles, geographically, sectors and use cases.
- f. Give users time to test – builds trust and confidence, and improves quality
- g. There is likely to be an explicit period of transition from delivery to operation and this needs to be planned, communicated and managed as such.

14. Encourage innovation

- a. Design a process for acknowledging and evaluating additional use cases: turn 'No' into 'Not yet'.
- b. The community is a great source of ideas for future uses and additional value. Encourage this mindset and value contributions by acknowledging, recording and assessing them, while maintaining focus on delivery of priority use cases.
- c. Instigate events and forums to discover, discuss and explore ideas for future uses and added value.
- d. Consider writing your key lessons learnt down and share as widely as you can through webinars, conferences as a client as well as by suppliers.



15. Use regulation

- a. Legislation will be required to maximise benefits.
- b. Understand what falls under updated guidance, regulation or legislation
- c. An enthusiastic community is the key to getting started and driving towards the finish line, but legislation and regulation is likely to be required for full benefits to be realised.
- d. Legislation can be a positive enabler for participation, providing clarity to organisations and allowing them to clearly articulate requirements to senior management.



Appendix 2: Delegations involved in developing the principles

- **United Kingdom**
 - Department for Science, Innovation and Technology
 - Department for the Economy (Northern Ireland Executive)
 - Transport Scotland
 - Greater London Authority
- **Denmark**
 - Agency for Climate Data
- **Finland**
 - Finnish Transport and Communications Agency
- **Flanders, Belgium**
 - Athumi
- **Germany**
 - Bundesweites Informationssystem für Leitungsrecherchen (BIL)
- **Moldova**
 - Agency of Geodesy, Cartography and Cadastre
- **Netherlands**
 - Kadaster
 - Department of Digital Economy, Ministry of Economic Affairs
- **Norway**
 - Ministry of Local Government and Regional Development
 - Norwegian Communications Authority
 - Norwegian Mapping Authority
- **Ontario, Canada**
 - Ontario One Call
- **Singapore**
 - Singapore Land Authority
 - Urban Redevelopment Authority
- **Spain**
 - Inkolan
- **Tallinn, Estonia**
 - Tallinn Strategic Management Office
- **Wellington, New Zealand**
 - Wellington City Council