Building Trust Through Data Foundations

A Call for a Data Governance Model to Support Trustworthy Data Sharing

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About the WSI

The Web Science Institute (WSI) co-ordinates the University of Southampton's (UoS) world-leading, interdisciplinary expertise in Web Science, to tackle the most pressing global challenges facing the World Wide Web and wider society today. Research lies at its heart, positioning it as a leader in Web Science knowledge and innovation and fuelling its extensive education, training, enterprise and impact activities. The WSI is also UoS's main point of contact with The Alan Turing Institute, the UK's national institute for Data Science and AI, of which UoS is a partner university.

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Executive Summary

This white paper sets out how to embody a Data Governance Model which builds trust, particularly when used with large group data sharing, within and between different organisations through the legal structure of a Data Foundation in the Channel Islands.

Audience

Different organisations often wish to share data but face significant issues and costs with regards to putting in place a suitable agreement, particularly one with a common group data governance framework that goes beyond a purely legal structure and includes, amongst other things, an ethical approach.

Typically, this audience's collective demands are to:

- Demonstrate how they protect privacy, comply with applicable laws, and have a common set of ethical principles
- Build brand values, trust and confidence in all activities undertaken within the data sharing and usage
- Help reduce costs in data sharing, management and usage
- Provide a mechanism for independent oversight and a common repeatable framework

Benefits

Key discrete advantages of this approach to meet their demands are:

- To inject **data governance best practice as early as possible** in the

data lifecycle (starting with data providers)
- **Organisational role-based measures** which deliver higher degrees of protection of privacy
- To be **agnostic to the infrastructure adopted for data sharing** and make it possible to cater for both centralised and decentralised architectures in order to be able to reduce as much as possible the number of data flows for each use case
- To enable a great **level of flexibility** in terms of who will be able to participate in each subproject of data usage

What if we could progress this?

By making data sharing more accessible there is an opportunity for greater participation in the market which has led to economists pointing to some welcome side effects, including:

- More **powerful productivity of organisations**, individuals and the economy by reducing resistance which makes it easier to reuse and connect data from different sources
- **Lessening overall production costs** for data-enabled products and services
- **Innovation** from combining data in new ways across organisations and traditional industry storehouses
- **Improving current products and services** for the benefit of all resulting in intensified competition and expanding economies

Challenge

We face a colossal challenge: how to manage the unprecedented amount of data now generated,[1] responsibly and sustainably, in ways that protect fundamental human rights, while taking advantage of innovative data-driven processes to generate tangible socio-cultural and economic benefits for citizens, the public sector and businesses alike.

Confronting this challenge is not easy, especially amid the personal data breaches and scandals that seem to be constantly in the news, and which continue to undermine overall trust in data sharing and re-usage models, e.g. Ashley Madison – inadequate data security systems;[2] Bounty (UK) – unlawful data sharing with third parties;[3] Cambridge Analytica – the invisible processing of personal data for political purposes;[4] and Project Nightingale – access to patient data without knowledge of doctors and patients.[5] Furthermore, in recent months, attempts to bring into play new structures to manage public trust such as Sidewalks Labs[6] (an Alphabet Inc. company[7]) have been under scrutiny. This smart city project in Canada, includes digital governance proposals and the creation of a civic data trust.

> **Sidewalk Labs, The Sidewalk Toronto Project.** In conjunction with Waterfront Toronto[8] and the local community, Sidewalk Labs propose to design and develop a 12-acre district in Toronto's Eastern Waterfront into a smart city. However, the proposal has faced significant criticism from some business leaders and the public with concerns over privacy.[9] There have been resignations from its guidance board, including Ann Cavoukian, former Information and Privacy Commissioner of Ontario,[10] and the Canadian Civil Liberties Association (CCLA)[11] has filed a legal challenge to bring an end to the current formation of the project citing such privacy concerns.[12] For instance, the affidavit provided by Sean McDonald, as part of the court documents, states that the data governance proposal *"lacks the clarity, completeness, or depth necessary to credibly protect the public's data or privacy"*.[13]

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[1] An estimated 2.5 quintillion bytes of data are currently created each day, and this number is predicted to increase dramatically in the coming years. For instance, reaching 175 zettabytes in 2025. For further examples see: Statista, Information created Globally 2010-2025. Retrieved from: https://www.statista.com/statistics/871513/worldwide-data-created/.

[2] For more information on the Ashley Madison data breach see: BBC News (Online). (2016 August 23). Poor security 'aided' Ashley Madison hack. Retrieved from: https://www.bbc.co.uk/news/technology-37170542.

[3] For more information on the Bounty (UK) personal data breach see: Information Commissioner's Office (ICO). Monetary Penalty Notice: Bounty (UK) Limited. Retrieved from: https://ico.org.uk/media/action-weve-taken/mpns/2614757/bounty-mpn-20190412.pdf.

[4] For more information on the Cambridge Analytica scandal see: The Guardian (Online). The Cambridge Analytical Files. Retrieved from: https://www.theguardian.com/news/series/cambridge-analytica-files. Also see: Information Commissioner's Office (ICO). (2018 July 11). Investigation into the use of data analytics in political campaigns: Investigation update. Retrieved from: https://ico.org.uk/media/action-weve-taken/2259371/investigation-into-data-analytics-for-political-purposes-update.pdf.

[5] For more information on Project Nightingale see: BBC News (Online). (2019 November 12). Project Nightingale: Google accesses trove of US patient data. Retrieved from: https://www.bbc.co.uk/news/technology-50388464.

[6] Sidewalk Labs website: https://www.sidewalklabs.com/.

[7] Note Alphabet Inc. is also the parent company of Google.

[8] Waterfront Toronto website: https://www.waterfrontoronto.ca/nbe/portal/waterfront/Home

[9] Deschamps, T. (2019 October 31). Google sister company agrees to scale back the controversial Toronto project. The Guardian (Online), Retrieved from: https://www.theguardian.com/cities/2019/oct/31/google-sidewalk-labs-toronto-neighbourhood-scale-back.

[10] Canon, G. (2018 October 23). 'City of surveillance': privacy expert quits Toronto's smart-city project. The Guardian (Online), Retrieved from: https://www.theguardian.com/world/2018/oct/23/toronto-smart-city-surveillance-ann-cavoukian-resigns-privacy.

[11] The Canadian Civil Liberties Association (CCLA) website: https://ccla.org/.

[12] For more information see: CBC News (Online). (2019 April 16). Canadian Civil Liberties Association files lawsuit over Sidewalk Labs project. Retrieved from: https://www.cbc.ca/news/canada/toronto/ccla-sidewalk-labs-lawsuit-1.5100184.

[13] Canadian Civil Liberties Association (CCLA). (2019 June 24). CCLA v. Waterfront Toronto, et. al: Public Court Documents To Date: Affidavit Sean McDonald. (p. 1). Retrieved from: https://ccla.org/quayside-project-application-documents/.

Response

Effective and appropriate data usage, sharing, and re-usage requires well-defined data governance roles and processes.[14] By data governance we mean an approach that aims to build prompt and on-going risk assessment and risk mitigation into the whole data lifecycle.[15] Given that personal data and non-personal data are not binary concepts, and data-related risks extend much further than privacy alone (e.g. intellectual property rights clearance and management, anti-competitive practices, contractual compliance and confidential data management), risk assessment and mitigation should also cover the entire data spectrum.

It is not enough to make data re-usage sound trustworthy on paper. We need to build on existing best practice for data governance that creates actual data sharing and re-usage environments, which are proven to be trustworthy via monitoring and oversight carried out through independent data stewardship. An organisation's belief in a data usage, sharing, and re-usage model as responsible (i.e. their trust in particular model) must be shaped through their evaluation of the perceived robustness of the data governance processes in practice. Trust can therefore only follow trustworthiness, and should never preempt it.

We believe the establishment of Data Foundations, via existing foundations laws enacted by the Channel Islands, is one pragmatic solution that has the potential to support data governance best practice. This approach will thus help to foster responsible and sustainable data usage, sharing, and re-usage, in a manner that aims to unlock

masses of closed and restricted data by incentivising organisations to share (more) data with a wider-range of external users.

We define a Data Foundation as: an entity incorporated under the Channel Islands' foundation laws, which supports responsible and sustainable non-personal and personal data usage, sharing, and re-usage by means of independent data stewardship.

The principal function of a Data Foundation therefore is to support its members (in particular, data providers and data users as well as individuals or data subjects) to use, share, and re-use data and metadata in a manner that is legally compliant, ethical, technically proficient, and ultimately realises the highest standards of excellence for data governance. Note more detailed information on Data Foundations and foundations law is provided in later sections of this white paper.

The Channel Islands.
The Bailiwicks of Jersey and Guernsey are self-governing dependencies of the British Crown, with their own elective legislature, administrative, fiscal and legal systems, and courts of law. The Channel Islands have full autonomy, except in the areas of international relations and defence, which are the responsibility of the UK. For the purposes of the white paper, it is also important to highlight the Channel Islands' long track record as providers of professional trust and corporate services.
The Channel Islands' data protection relationship with the EU is not affected by Brexit. After Brexit, the UK will become a third country causing some uncertainty particularly if the UK leaves the EU without an adequacy decision in place.[16] Jersey was granted an 'adequacy' decision in 2008 which enables the free flow of personal data from the EU member states and the European Economic Area (EEA) member countries. With the implementation of the European Union General Data Protection

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[14] For more information see: Stalla-Bourdillon, S. et al. (2019). Data protection by design: building the foundations of trustworthy data sharing. In Proceedings of Data for Policy Conference 2019. DOI: 10.5281/zenodo.3079895.

[15] I.e. from the initial collection or generation of data through to its archival and/or deletion.

[16] The European Commission has the power to determine, on the basis of Article 45 of Regulation (EU) 2016/679 whether a country outside the EU offers an adequate level of data protection. The effect of such a decision is that personal data can flow from the EU (and Norway, Liechtenstein and Iceland) to that third country without any further safeguard being necessary.

Regulation 2016/79 (GDPR) all 'adequate' decisions are to be reviewed.

Both Channel Islands' Governments have developed a good working relationship with the EU and do not anticipate there being any issues with this review. Importantly, they have a legislative track record as agile, innovator-friendly jurisdictions when it comes to the financial services and data protection spheres. Therefore, they could quickly leverage expertise within the government to provide support for the establishment of Data Foundations, if and to the extent that is necessary.

Our aim for this white paper, therefore, is to raise-awareness of the potential pivotal role Data Foundations could play in both the motivation and support for trustworthy sharing amongst (large) groups of organisations.

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Background

The demand for data continues to grow, as does awareness of the potential value to be unleashed from its (re-)usage. At the same time, so too does recognition of the increasing environmental impacts of its processing and storage. It is estimated that we will be producing 1.7MB of data per second for every person on Earth by 2020.[17] Often more than one copy of the same data is being stored, not only through backups but through duplication, as multiple organisations collect the same data.

Governments are releasing publicly funded data sets and many other institutions are opening up their information and calling for more to be done.

Yet in practice, there is often limited, or absence of, data sharing between organisations.[18] For instance, in 2012, it was estimated that we were analysing less than 0.5% of global data.[19] Furthermore, only a few entities have access to large amounts of data (e.g. platforms), and much of this data is currently restricted or closed.

Simultaneously, as we become increasingly more digitised, the very human issue of trust is raising its head above the parapet, in two key areas:

- First, a very small number of commercial companies hold some of the most extensive data sets on Earth, prompting regulators to question fair competition and trust.[20] Particularly as this creates information asymmetry which plays out into our economies and societies, acutely so when it comes to powerful artificial intelligence; and

- Second, people have a growing awareness that their information is extraordinarily valuable, and when aggregated it can influence the way the world works, in ways never imagined before. What is expected in terms of data strategy and management to create a fair society, and how the public can benefit from such data sets is in hot debate.

Working from the assumption that data usage or re-usage, when done responsibly, can benefit society, the whole challenge becomes how to make responsible and sustainable data sharing and re-usage a reality. What should be the pillars of data governance best practice and what could a concrete solution embedding data governance best practice look like? Our focus is therefore on how to make personal and non-personal data more accessible in a responsible and sustainable way. Importantly, it does not presuppose a frantic rush to artificial intelligence. It starts

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[17] Domo. (2019). Data Never Sleeps. Retrieved from: https://www.domo.com/solution/data-never-sleeps-6.

[18] Mattoli refers to this as the "data-pooling problem" - see Mattioli, M. (2017). The Data-Pooling Problem. Berkeley Technology Law Journal, 32(1), 179-236. Also refer to: Mehonic, A. (2018, October 3). Can Data Trusts be the backbone of our future AI ecosystem? The Alan Turing Institute Blog, Retrieved from: https://www.turing.ac.uk/; and Skelton, S. K. (2018, November 30). New forms of governance needed to safely and ethically unlock the value of data. ComputerWeekly.com, Retrieved from https://www.computerweekly.com.

[19] Burn-Murdoch, J. (2012 December 19). Study: less than 1% of the world's data is analysed, over 80% is unprotected. The Guardian (Online), Retrieved from: https://www.theguardian.com/news/datablog/2012/dec/19/big-

data-study-digital-universe-global-volume reporting on a Digital Universe Study carried out by the International Data Corporation (IDC).

[20] See e.g. Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services, OJ L 186, 11.7.2019, p. 57–79; and more generally the work of the Expert Group to the EU Observatory on the Online Platform Economy, Retrieved from: https://ec.europa.eu/digital-single-market/en/expert-group-eu-observatory-online-platform-economy. See also the Decision of the German Competition Regulatory Authority of 7 February 2019, (English translation), Retrieved from: https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5.

from the premise that a workable alternative to data monopolies or oligopolies is possible.

Current work

There are numerous models for data sharing and (re-)usage,[21] which can be divided into three main categories (Richter & Slowinski, 2019): "direct data exchange", "data pooling" and "data sharing platforms".[22] Some examples of data sharing models include data marketplaces,[23] open data platforms,[24] open innovation acceleration programmes,[25] data collaboratives,[26] personal information management systems (PIMs),[27] and data commons.[28]

Data trusts

In terms of data governance models, the data trust model has been receiving especially close attention since Hall & Pesenti[29] offered the following recommendation to the UK government in 2017:[30]

"To facilitate the sharing of data between organisations holding data and organisations looking to use data to develop AI, Government and industry should deliver a programme to develop Data Trusts – proven and trusted frameworks and agreements – to ensure exchanges are secure and mutually beneficial." – Hall & Pesenti, 2017

There is no one definition of the term data trust.[31] The Open Data Institute (ODI) defines the expression as: *" a legal structure that provides independent stewardship of data."*[32]

Following this recommendation (Hall & Pesenti, 2017), the ODI together with Office for Artificial Intelligence and Innovate UK ran three data trust pilots.[33] There are many types

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[21] For further information see: European Commission. Guidance on sharing private sector data in the European data economy [COM(2018) 232 final]. Commission Staff Working Document. Accompanying the document: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. (2018 April 25). Towards a common European data space. Retrieved from: https://ec.europa.eu/digital-single-market/en/guidance-private-sector-data-sharing.

[22] Richter, H. & Slowinski, P.R. (2019). The data sharing economy: on the emergence of new intermediaries. International Review of Intellectual Property and Competition Law, 50(1), 4-29. DOI: https://doi.org/10.1007/s40319-018-00777-7.

[23] E.g. Dawex: https://www.dawex.com/en/.

[24] E.g. My NHS Open Data platform: https://opendata.nhs.uk/home.

[25] E.g. the Data Pitch open innovation programme: https://datapitch.eu/.

[26] For more information see: GovLab. Data Collaboratives. Retrieved from: http://datacollaboratives.org/; and Susha, I., Janssen, M. & Verhulst, S. 2017. Data Collaboratives as a New Frontier of Cross Sector Partnerships in the Age of Open Data: Taxonomy Development. In Proceedings of the 50th Hawaii International Conference on System Sciences, 2691–2700.

[27] E.g. Hub of All Things (HAT): https://www.hubofallthings.com/; Digi.me: https://digi.me/; and Mydex: https://mydex.org/. For further background information see: Loayza A. (2019 March 21). Personal information management systems: A new era for individual privacy?International Association of Privacy Professionals (iapp), Retrieved from: https://iapp.org/news/a/personal-

information-management-systems-a-new-era-for-individual-privacy/.

[28] E.g. National Cancer Institute: Genomic Data Commons: https://gdc.cancer.gov/about-data. For further background information see: Nesta. Four future scenarios: the personal data economy in 2035: Unlocking the value in data as a commons. Retrieved from: https://www.nesta.org.uk/feature/four-future-scenarios-personal-data-economy-2035/unlocking-the-value-in-data-as-a-commons/.

[29] Hall, W. & Pesenti, J. (2017 October 15). Growing the Artificial Intelligence Industry in the UK (Independent Review). Department for Digital, Culture, Media & Sport and Department for Business, Energy & Industrial Strategy, HM Government, (p. 46,) Retrieved from: https://www.gov.uk/government/publications/growing-the-artificial-intelligence-industry-in-the-uk.

[30] However note that the data trust is not a concept, e.g. see: Edwards, L. (2004). Reconstructing consumer privacy protection on-line: a modest proposal. International Review of Law Computers & Technology, 18(3), 313-344. DOI: https://doi.org/10.1080/1360086042000276762.

[31] For further information on the notion of the Data Trust, see: O'Hara, K. (2019). Data Trusts: Ethics, Architecture and Governance for Trustworthy Data Stewardship. Web Science Institute White Paper, Retrieved from https://eprints.soton.ac.uk/428276/.

[32] Hardinges, J. Defining a 'Data Trust'. Open Data Institute (ODI), Retrieved from: https://theodi.org/article/defining-a-data-trust/.

[33] For more information see: Open Data Institute (ODI). (2019). Data Trusts: Lessons learnt from three pilots. (p. 8). Retrieved from: https://theodi.org/article/odi-data-trusts-report/.

of data trusts. The ODI's data trust pilots centred on *"the initiation and use of data trusts by one or more organisational data holders – which may or may not include personal data – on the basis of different purposes and incentives"*,[34] rather than the wide remit of the civic data trust proposed by the Sidewalk Toronto project, or the bottom-up approach proposed by Delacroix & Lawrence (2019).[35]

The focus of this white paper is more aligned with the approach taken by Hall & Pesenti (2017) and the ODI's data trust pilots (2019).

We are trying to solve a practical problem that is emerging now for organisations: how can I share the data I have in a way that is responsible and sustainable as well as suitable for business needs?

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[34] ODI. (2019). Data Trusts: Lessons learnt from three pilots. (p. 8). Retrieved from: https://theodi.org/article/odi-data-trusts-report/.

[35] ODI. (2019). Data Trusts: Lessons learnt from three pilots. (p. 8). Also see: Delacroix, S. & Lawrence, N. (2019).

Disturbing the 'One Size Fits All' Approach to Data Governance: Bottom-Up Data Trusts. *International Data Privacy Law*, DOI: https://doi.org/10.1093/idpl/ipz014.

Why has no solution emerged yet?

There are various reasons why a solution has not yet emerged that fosters responsible data usage, sharing, and re-usage - in a manner that incentivises organisations to share (more) data, and which fairly represents all interests. In particular:

(1) Regulatory frameworks for privacy and data protection are complex

As privacy and data protection laws are made more comprehensive and enforcement arsenals are strengthened, it is becoming harder to convince compliance personnel and lawyers to test solutions and arrangements that do not fit neatly within existing categories. More thoughts should be given to the advantages of a heuristic approach to compliance, which should motivate organisations to try new solutions, rather than forcing the outsourcing of costly expert knowledge, which is often demotivating.

(2) The release-and-forget data sharing model

The choice of a legal structure[36] and related data-sharing arrangements have a direct impact upon the nature, number, and directions of data flows. It is therefore vital that the most appropriate legal structure for data usage, sharing, and re-usage is selected in the given circumstances.

In many instances, legal structures are based upon a release-and-forget model, i.e. where data providers release the data to an independent institution without further involvement, and the receiving institution takes complete control over the data accumulated within its remit. This release-and-forget model is not likely to be conducive

to best practice for data governance, for instance, it will be difficult for data providers to ensure the data user complies with re-usage restrictions, and anonymised data are not re-identified.

Data-sharing antipatterns should, therefore, be carefully studied and avoided prior to making decisions about which legal structure to adopt. By way of example, a data-sharing arrangement that would be built upon the ETL model (Extract, Transform, and Load data) would be in most cases highly problematic, as well as any data-sharing arrangement that would mandate the centralised hosting of raw data, or in some cases even perturbed data, in one place.

As previously mentioned, the data trust model has been receiving particularly close attention. The expression 'data trust' is used to describe what a responsible multi-party data-sharing solution could look like. Furthermore, 'data trust' is both utilised with and without reference to legal structure, i.e. a legal trust.

At least in common law countries, trusts are a well-known institution created to manage assets such as properties and money.[37] Logically the attention has thus been set upon the potential of this institution or institutions of a similar nature, with the intention to disconnect the data providers initially holding the data from the institution in charge of managing the data.

Limitations have been seen not only in terms of the focus of trustees on beneficiaries, the settlors not being involved in any subsequent decision making, the challenges with limiting the liability of trustees which may stifle market growth, but also that a trust is opaque and a more centralised model. Trusts may also prove difficult when working

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[36] E.g. multi-party contract or corporate structure.

[37] For further information see: McDonald S. (2019 March 5). Reclaiming Data Trusts: Large-scale data sharing is not the

only way — or even the most important way — to use data trusts in the public interest. Centre for International Governance Innovation (CIGI), Retrieved from: https://www.cigionline.org/articles/reclaiming-data-trusts.

internationally as they don't always exist in civil law jurisdictions or generate suspicions.

As the recent Nesta paper[38] explains:

"It's now over a decade since the first data trusts were set up as private initiatives in response to anxieties about abuse. These were important pioneers though none achieved much scale or traction." - Mulgan & Straub, 2019

Trustworthiness-by-design.
Decisions to share should be made dependent upon the setting up of controls at the data user's end. What is more, data sharing arrangements should be privacy-by-design future proof.[39] What this means in practice is that privacy-enhancing technologies should form a core layer of the infrastructure enabling data sharing.
A query-based approach to data sharing, which makes it possible to tailor the amount of shared data to the content of the queries formulated by data users and which does not require the involvement of intermediaries, is a better approach than a centralised model which would force the sharing prior to knowing the needs of the data users.

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[38] Mulgan, G. & Straub, V. (2019 February 21). The new ecosystem of trust: How data trusts, collaboratives and coops can help govern data for the maximum public benefit. Nesta, Retrieved from: https://www.nesta.org.uk/blog/new-ecosystem-trust/.

[39] The General Data Protection Regulation (GDPR) is the first legislative instrument to introduce a legally-binding requirement for data protection by design and by default through Article 25.

What is our solution and what could it look like?

We now outline what our solution could look like by:

a) presenting our six fundamental components for any data governance model; and

b) mapping these components onto the key requirements of foundations law in the Channel Islands.

Six fundamental components for any data governance model

(1) A comprehensive rulebook

A data governance model must have a comprehensive rulebook for the usage, sharing, and re-usage of personal and non-personal data, including a robust ethical framework, which should be made publicly available. This rulebook should:

- Go beyond privacy and data protection compliance and set forth both substantial and process-related safeguards for the whole lifecycle of the data to be shared and (re-)used, that considers the entire data spectrum.
- Clearly state the objectives of the data sharing and (re-)usage activities to be conducted by the participants, identify key roles and set workflows and safeguards for decision-making relating to data usage, sharing, and re-usage.
- Be made publicly available for obvious reasons of transparency and accountability.

> **The data spectrum.**
> It is important to note that there is no necessary connection between the type of data (or legal rights) at stake and the type of corporate structure underlying the data sharing solution. In fact what we observe is that rights to use or control personal data and rights to protect intellectual properties can overlap. In addition, what could be characterised as non-personal data in one party's hands can become personal data in another party's hands. Said otherwise non-personal data can also lead to privacy risks. A better solution is therefore to start with a data governance approach (rather than a purely legalistic approach) and build risk assessment and risk mitigation into the whole data lifecycle, as early as possible and maintain the effort over time.[40]

(2) An independent governance body

A data governance model must have a strong, independent governance body comprised of independent data stewards with interdisciplinary expertise. The data steward role should be at the core of any data governance model and oversee the decision-making body. This independent governance body should:

- Help to set up data-sharing arrangements and workflows between key actors.
- Inform decision-making related to data usage, sharing, and re-usage, and systematically monitor data sharing and data usage practices.
- Be involved in risk assessment and effective threat modelling. In high risk situations, independent data stewards should be given a whistle-blower role.
- Commission external roles where appropriate and the necessary authorisation is in place, such as external auditors, to complement their assessment.

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[40] While synthetic data is often presented as the holy grail, which would suddenly make restrictions upon data usage irrelevant, this belief is erroneous. Synthetic data should also be located on the data spectrum, as synthetisation is still the result of a tradeoff between utility and privacy.

> **Technical infrastructure decisions.**
> Note that the decision to set up a particular technical infrastructure between parties is an important one, as it will impact key requirements such as data minimisation, integrity and confidentiality, transparency and accountability.

(3) An inclusive decision-making body

A data governance model must have a decision-making body that engages participants (in particular data providers) and represents the interests of data subjects. This inclusive decision-making body should:

- Implement standardised processes that provide meaningful representation of data subjects' interests.
- Involve data providers in such processes so that they are kept in the loop and adapt their practices over time.

(4) A standardised process for flexible membership

A data governance model must have a standardised process to enable relative flexibility in its membership so that:

- The structure can smoothly grow overtime without exaggerated (legal) costs.
- The risks of harm arising through anti-competitive practices are mitigated, e.g. organisations are not excluded from joining a data governance model without reasonable justification.[41]

(5) A trust-enhancing technical and organisational infrastructure

It is crucial to distinguish between the sharing of data, which should happen through a trust-enhancing technical and organisational infrastructure, and the creation of the legal structure (e.g. through contracts, or the incorporation of a new legal entity). The creation of the legal structure should not automatically lead to data sharing. Data flows should only be triggered once the particularities of each use case are known. Importantly, there is no fundamental opposition between what some have called *"the technological model"*[42] and the legal model for data sharing.

On the contrary, we suggest that the building of the data governance model, including the selection and refinement of the legal structure, should be informed by current data sharing technological capabilities.

A data governance model must therefore rely upon a trust-enhancing technical and organisational infrastructure, which should:

- Be able to reduce unnecessary data movements.
- Tailor the amount of data to specific and legitimate purposes and action the sharing once these purposes have been identified.
- Monitor queries.
- Ensure confidentiality through e.g. role-based and purpose-based access control, de-identification solutions including noise injection, multiplication of layers (through federated learning or the "student-teacher" approach), and/or secure multi-party computation depending upon use case.
- Ensure a high level of accountability through e.g. decentralised solutions such as distributed ledgers or more simply standardised access to data.
- Provide a level of data security that is adapted to both the sensitivity of the

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[41] For further background information see: Vestager, M. (2016 September 29). Speech on Big Data and Competition: EDPS-BEUC Conference on Big Data, Brussels. European Commission, Retrieved from:

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/big-data-and-competition_en.

[42] Reed, C., BPE Solicitors & Pinsent Masons. (2019). Data trusts: legal and governance considerations. (p. 19). Retrieved from: http://theodi.org/article/data-trusts-legal-report/.

data, and the purpose(s) for its usage, sharing, and re-usage.

PETs.
Note there are a variety of solutions capable of embedding privacy safeguards. For instance, the following list provides a few examples of privacy-enhancing technologies (PETs): masking, generalisation and differential privacy, data virtualisation, distributed ledger technologies, secure multiparty computation, and federated learning. The strength of PETs varies however - a distinction therefore is sometimes drawn between hard and soft PETs. This is to capture the idea that not all PETs offer formal, mathematical guarantees. Soft PETs should thus be combined with other solutions to achieve a higher level of protection.

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(6) A well-regulated legal structure

A data governance model must have a well-regulated legal structure, which should:

- Represent all stakeholders in decision-making processes, e.g. to give data providers – from start-ups to multinational companies – and data subjects rights and opportunities to voice their opinions regardless of their nature, size, or number.
- Provide effective authoritative oversight.
- Have a mature compliance and enforcement function.

- Be able to manage and examine escalated complaints with recourse to the Courts if required.

Data foundations

In 2019, there are currently *"over 200 active foundations"* in Jersey[43] and 96 in Guernsey.[44] Foundations can be established for various reasons, from wealth management and philanthropy to commercial use.[45] We believe that foundations law also provides an existing legal framework on which responsible and sustainable data usage, sharing, and re-usage can be built. In other words, we believe Data Foundations have the potential to act as a springboard for data governance best practices and the diffusion of a repeatable framework. In the words of Hall & Pesenti:[46]

"Standardised, repeatable terms for access to data would unlock value in many sectors, making possible many applications which are not economical today." – Hall & Pesenti, 2017

(Data) Foundations Law, The Channel Islands.
In 2009, the Bailiwick of Jersey adopted the Foundations (Jersey) Law 2009 ("F(J)L"),[47] which introduced the foundation as a new legal entity distinct from corporations and trusts.[48] Later, the Bailiwick of Guernsey adopted the Foundations (Guernsey) Law, 2012 ("F(G)L").[49] These laws were enacted because it was perceived that foundations

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[43] Aldridge, N. (2019 November 28). Jersey: Jersey Foundations - Reflections On Their First 10 Years. Mondaq, Retrieved from: http://www.mondaq.com/jersey/x/869220/wealth+management/Jersey+Foundations+Reflections+On+Their+First+10+Years.

[44] See: Guernsey Registry. (2019). Quarterly Register Statistics: Foundations - Q3 2019. Retrieved from: http://www.guernseyregistry.com/article/171438/Quarterly-Register-Statistics-2019.

[45] For more information also see: Edwards, S. et al. (2015). Jersey: Jersey foundations - current use. Trust & Trustees, 21(6), 667–673. DOI: https://doi.org/10.1093/tandt/ttv058; and, Howard, Z. (2016). Jersey foundations: from flexibility to philanthropy. Trusts & Trustees, 22(6), 676–680.DOI: https://doi.org/10.1093/tandt/ttw051. Also for eight examples of use in practice see: Dobbyn, R. et al. (2018 October 2018). Jersey: The Uses Of Jersey Foundations. Mondaq, Retrieved from:

http://www.mondaq.com/article.asp?article_id=744752&type=mondaqai&r=4&t=5.

[46] Hall, W. & Pesenti, J. (2017 October 15). Growing the Artificial Intelligence Industry in the UK (Independent Review). Department for Digital, Culture, Media & Sport and Department for Business, Energy & Industrial Strategy, HM Government, (p.45,) Retrieved from: https://www.gov.uk/government/publications/growing-the-artificial-intelligence-industry-in-the-uk.

[47] The Foundations (Jersey) Law 2009 ("F(J)L"). Retrieved from: https://www.jerseylaw.je/laws/revised/PDFs/13.265.pdf.

[48] Carey Olsen (6 January 2015). Jersey foundations. Retrieved from: https://www.careyolsen.com/briefings/jersey-foundations1.

[49] The Foundations (Guernsey) Law, 2012 ("F(G)L"). Retrieved from: http://www.guernseylegalresources.gg/article/105209/Foundations-Guernsey-Law-2012.

would add flexibility to the Channel Islands' financial service offering, and would be particularly attractive to those based in civil law jurisdictions.[50]

Both Islands are politically stable and have strong, mature, and active financial services regulators who are responsible for the regulation, supervision and development of the industry in the Islands. Each Island also has a registrar, and they share an ombudsman whose primary role is to resolve complaints about the industry. Furthermore, codes of practice for foundation service providers are explicitly defined.[51]

Key Requirements in Brief

(a) Registration

- **Foundations are required to fulfil certain obligations prior to forming.** A process which is overseen by the registrar.[52]
- **The registrar acts as a gatekeeper in that they can refuse to register a foundation if specific criteria are not met.** The registration may be refused if there is no satisfaction that the proposed objects are lawful, or its name is considered to be misleading or otherwise undesirable.[53]
- **Each approved foundation is entered on to the register that is available for public inspection,[54] and receives a registration number.[55]**

Grounds for refusal.
As the registrar is able to refuse registration on certain grounds, this proactive mechanism would help to prevent the legitimisation of rogue data-sharing structures.

(b) A charter

- **Foundations must have a charter.[56]** For a Jersey foundation, a copy of the proposed charter must be provided to the registrar as part of a potential foundation's application for incorporation.[57] For a Guernsey foundation, a copy of the charter is filed with the registrar.[58]
- **The charter must contain mandatory information.** For a Jersey foundation, the charter must specify its name, objects, endowment (as applicable), winding up, and term.[59] For a Guernsey foundation, the charter must specify its name, purpose, initial capital, duration (as applicable if an event occurs which may terminate the foundation), and a declaration that the founder wishes the councillors to comply with the charter.[60]
- **The charter may provide other information.** For a Jersey foundation, the charter may also provide the names and its first council members,[61] plus any other matters such as process for charter amendment, and provisions which must or may be

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[50] For more information see Carey Olsen (6 January 2015). Jersey foundations. Retrieved from: https://www.careyolsen.com/briefings/jersey-foundations1.

[51] Guernsey Financial Services Commission. (2013 September 2). Code of Practice: Foundation Service Providers. Retrieved from: https://www.gfsc.gg/sites/default/files/Code%20of%20Practice %20-%20Foundation%20Service%20Providers_0.pdf; and, Jersey Financial Services Commission. (2019 June 1). Code of Practice for Trust Company Business:. Retrieved from: https://www.jerseyfsc.org/media/2640/20190322-tcb-code.pdf.

[52] Articles 2 and 39-42, F(J)L; Schedule 1, paragraphs 1-10, F(G)L.

[53] Article 27(1), F(J)L.

[54] Article 40, F(J)L; Schedule 1, paragraph 4, F(G)L.

[55] Article 42, F(J)L; Schedule 1, paragraph 7(4)(b) of F(G)L.

[56] Article 3, F(J)L; As part of its constitution - Section 1(b), F(G)L.

[57] Article 2(3)(a), F(J)L.

[58] See: Schedule 1, paragraph 4, F(G)L; and, Ogier. (2013 January 9). Guernsey Foundations. Retrieved from: https://www.ogier.com/publications/guernsey-foundations.

[59] Articles 3-10, F(J)L.

[60] Section 4(1), F(G)L.

[61] Article 6, F(J)L.

included in the regulations.[62] For a Guernsey foundation, the charter may also provide matters otherwise required or permitted in the rules, or as the founder deems fit.[63]

- **For a Jersey foundation, the charter is publicly available.** A charter must be included on the register kept by the registrar, which is made available for public inspection.[64] This openness increases transparency especially for those foundations who wish to operate with clear accountability towards the public.

- **For a Guernsey foundation, Part A of the Register is part of public records of the Island of Guernsey.**[65] Part A of the Register comprises the name and registration number of the foundation, the name and addresses of the councillors and the guardian (if applicable), and details of the registered office.[66]

- **Charters can be amended (subject to specific conditions).** Where a Jersey foundation wishes to amend its charter, it must notify the registrar.[67] Any amendment must be in accordance with its charter or regulations, or an order by the Royal Court.[68] Where a Guernsey foundation wishes to amend its charter, any amendment must be in accordance with its charter, an order by the Royal Court or permitted by

the registrar.[69] Also note that, under certain conditions, the purpose of a Guernsey foundation can be amended.[70]

Agreement on operational matters prior to any data being shared.
Given the charter requires certain information (e.g. objects, term, and winding up), the purpose of the data sharing can be determined prior to registration. Furthermore, there would be agreement on a number of operational matters prior to any data being provided to a Data Foundation – including data standards, structures, infrastructure, and the basis on which a Data Foundation will cease, prior to any data sharing taking place.
Commitment to initial data governance promises.
The charter amendment procedures would allow for clarity and could be used to avoid initial data governance promises being broken later on.

(c) A guardian

- **For a Jersey foundation, it is mandatory to have a guardian.**[71] The principal purpose for the role of guardian is to oversee the functions of the council,[72] such as supervising the achievement of the objects by calling the council of members to account.[73] Guardians can be given further discretionary powers to *"approve or disapprove any specified actions of its council."*[74] The role of guardian can be assumed by an independent person, founder, qualified person, or corporate entity.[75] A person cannot

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[62] Article 10, F(J)L.

[63] Section 4(2), F(G)L.

[64] Article 40, F(J)L.

[65] Schedule 1, paragraph 4(3), F(G)L.

[66] Schedule 1, paragraph 4(2)(a), F(G)L; for more information also see: Ogier. (2013 January 9). Guernsey Foundations. Retrieved from: https://www.ogier.com/publications/guernsey-foundations, which states: *"However, importantly, the information provided to the Registrar is not all publicly available, as, whilst the charter and declarations must be filed, they will not be publicly available (save for in certain situations, such as criminal investigations)."*

[67] Article 38, F(J)L.

[68] Article 38(5), F(J)L.

[69] Section 4(3), F(G)L.

[70] Section 8, F(G)L.

[71] Article 13, F(J)L.

[72] For instance, Article 14(4), F(J)L states: *"The guardian of a foundation must take such steps as are reasonable in all the circumstances to ensure that the council of the foundation carries out its functions."*

[73] Article 14(5), F(J)L.

[74] Article 14(6), F(J)L.

[75] Article 14, F(J)L; Ogier. (2017 January 16). Jersey and Guernsey Foundations: What they are and how they are used.

assume the role of guardian as well as council member for a foundation, unless they are a founder or qualified member.[76]

- **For a Guernsey foundation, it is obligatory for a foundation to have a Guardian where there is a purpose in respect of which there are no beneficiaries, there are disenfranchised beneficiaries, or where the charter requires this role**.[77] Section 19(2), F(G)L states: *"The guardian has a duty to the founder and the beneficiaries to act in good faith and en bon père de famille – (a) to enforce the Constitution and the purpose, and (b) in the exercise of his functions."* The role of guardian can be assumed by an independent person, founder or body corporate.[78] A person cannot assume the role of guardian as well as councillor for a foundation.[79]

The role of the guardian is a unique requirement in the Channel Islands, and is peculiar to these types of structures.

An independent data steward.
The role of the guardian is a unique requirement in the Channel Islands, and is peculiar to these types of structures. Interpreted in a data governance model this role forms a critical element in providing the independent data steward.[80]
Preference for limited liability.
It is likely that the role of guardian within a Data Foundation would require an interdisciplinary skill set - combining technology, data protection, and other legal knowledge. Given this skill set is unlikely

to be found in one person alone, a limited liability option would be preferable in order to give experts an incentive to take on the role.

(d) Regulations or rules

- **For a Jersey foundation, it is mandatory to have regulations.**[81] These regulations must "establish a council" and set out its decision-making processes and "functions", as well as the *"appointment, retirement, removal and remuneration"* of its members ("if any").[82] The regulations must also specify the appointment, retirement, removal and functions of the guardian.[83]
- **For a Guernsey foundation, it is mandatory to have rules.**[84] These rules must: *"prescribe the functions of the Council"*, *"detail the procedures for the appointment, resignation and removal of councillors and any guardian"* and *"if the councillors or guardian are to be remunerated."*[85] The rules may also include other information, such as *"any person's powers in relation to the foundation"*.[86]

Need for code of conduct.
Given that regulations and rules are not necessarily available for public inspection, a specific code of conduct for Data Foundations would provide a means to inform the council and guardian of good practice for data governance. In particular, the ethical behaviours and standards driving actions which would be expected by a Data Foundation. This code would set out the core principles, practices and responsibilities that guide all conduct

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Retrieved from: https://www.ogier.com/publications/jersey-and-guernsey-foundations-what-they-are-and-how-they-are-used.

[76] Article 14(3), F(J)L.

[77] Section 10(1), F(G)L.

[78] Section 10(3), F(G)L.

[79] Article Section 10(6), F(G)L that states: *"The appointment of a person as guardian has no effect if the person is a Councillor of the foundation."*

[80] For further information on the role of the guardian see: Carey Olsen. (2015 January 6). Jersey foundations. Retrieved

from: https://www.careyolsen.com/briefings/jersey-foundations1.

[81] Article 11, F(J)L.

[82] Article 12, F(J)L.

[83] Articles 13(2)(b) and 14, F(J)L.

[84] As part of its constitution - Section 3(1)(b), F(G)L.

[85] Section 5(1), F(G)L.

[86] For more information see: Section 5(2), F(G)L.

undertaken as part of a Data Foundation. It would further specify the functions of the council, and the extent to which these are to be exercised in conjunction with other third parties – e.g. expert monitors who may be required to check adherence. The adoption of the code of conduct would help to prevent flimsy governance models that harm not only Data Foundations, but the societies and economies in which they operate.

(e) Council

- **Foundations must have a council.**[87] For a Jersey foundation, the council is required to "administer" its assets and "carry out its objects"[88] with one or more members.[89] The member(s) of the council must act in accordance with the charter and regulations, as well as "honestly", "in good faith" and with reasonable "care, diligence and skill".[90] For a Guernsey foundation, the council is required to ensure "accurate accounting records"[91] and must comply with "Foundation Officials"[92] with two or more councillors (unless its constitution specifies a single councillor).[93]

- **There must be procedures in place for the appointment, resignation or removal of council members or councillors.**[94]

Data providers and data users as part of the council.
Given a foundation does not segregate between legal and beneficial ownership,[95] data providers and data users may sit as council members or councillors. In fact, it could be that both roles are vested in one member or councillor. Whilst collectively responsible, data providers would remain connected to decision-making regarding the rights to the data they make available to the Data Foundation.

Flexible membership.
Furthermore, as Data Foundations may need to change the members of its council, (e.g. as new data providers wish to join), this flexibility is an important part of the governance process, and can be codified during the initial formation of the Data Foundation.

(f) Endowment

- **For a Jersey foundation, the foundation exists from the moment it is registered whether or not it has any endowment at the time.**[96] If it starts with an initial endowment then this must be specified in the charter,[97] as well as any further endowments.[98]

- **For a Guernsey foundation, the creation of a foundation involves an initial endowment.**[99] Further endowments to the foundation can be made where permitted by its constitution[100] However, note that Carey Olsen[101] highlight that *"there is*

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[87] Section 9(1), F(G)L.

[88] Article 20, F(J)L.

[89] Article 21(1), F(J)L.

[90] Article 22, F(J)L.

[91] Section 4(b), F(G)L.

[92] Section 4(c), F(G)L.

[93] Section 9(2), F(G)L; see Carey Olsen. (2017 March 23). Guernsey foundations. Retrieved from: https://www.careyolsen.com/briefings/foundations-in-guernsey.

[94] See: Article 12(1)(b), F(J)L; and Sections 15 and 17, F(G)L.

[95] E.g. as might be seen in a trust structure, because the foundation owns its assets – see: Carey Olsen. (2019 March 29). Trusts vs. Foundations: What are the deciding factors? Retrieved from: https://www.careyolsen.com/articles/trusts-vs-foundations-what-are-deciding-factors.

[96] I.e. Article 7(1), F(J)L states: *"A foundation need not have an initial endowment."*

[97] Article 7(2), F(J)L.

[98] Article 7(3), F(J)L states: *"If, after the incorporation of a foundation, the foundation may be further endowed, this must be stated in its charter."* Also, see Article 19, F(J)L on further endowment of a foundation.

[99] Section 1(a), F(G)L. Also note that the term endowment is defined by Section 52(2)(k), F(G)L as *"the dedicating of property to a foundation"*.

[100] Section 2(3), F(G)L.

[101] Carey Olsen. (2017 March 23). Guernsey foundations. Retrieved from: https://www.careyolsen.com/briefings/foundations-in-guernsey.

no minimum" level set for this initial endowment.

> **Data would not have to be provided all at once.**
> In our opinion, these endowment requirements would offer flexibility for Data Foundations in that: all data to be used, shared and re-used across the lifecycle of a Data Foundation would not have to be provided all at once. Especially, as in some cases, not all data would be collected or generated at the point of initial creation for a Data Foundation – e.g. real-time data and data as part of on-going longitudinal studies. This also supports flexible membership – e.g. new data providers who join a Data Foundation later on in its lifecycle to share further datasets.

(g) Purpose and beneficiaries

- **A foundation can be established for any purpose: charitable, non-charitable, or a mixture of both.**[102] Note that a Jersey and Guernsey foundation cannot carry out any commercial activities except those necessary for and/or incidental to its purpose.[103] This restriction should be seen as a useful safeguard to ensure the foundation actually pursues its purposes and its purposes only, even if income is generated on the way for sustainability reasons.
- **A foundation is not required to have beneficiaries.**[104] Note that where a Guernsey foundation does have

beneficiaries, these are placed into two categories: (1) enfranchised beneficiaries,[105] and (2) disenfranchised beneficiaries.[106]

> **Data subjects as possible beneficiaries.**
> It is feasible that beneficiaries could be data subjects and/or one or more groups from the wider community. While beneficiaries have more limited rights in a foundation than in a trust,[107] this issue is not necessarily a concern as long as other mechanisms can be utilised to provide meaningful involvement for data subjects and other interested groups. Furthermore, given the likelihood a Data Foundation would involve the processing of personal data, data subjects must be empowered to exercise their rights under data protection law.
> **Meaningful involvement in practice.**
> Where the purpose of the Data Foundation would necessitate strong engagement with individuals and/or interested groups, a representative body may be asked to appoint a member to the council. This council member would be able to actively consult on and guide decision-making through the entire lifecycle of the Data Foundation - the regulations would set out how this would work in practice.

Mapping the six fundamental components to foundation law

We now show how these key legal requirements (established by foundations law in the Channel Islands) relate to the six fundamental components necessary for any

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[102] See: Article 5(2)(b), F(J)L; and Section 7, F(G)L.

[103] See: Article 30(3)(b), F(J)L; and Section 7, F(G)L.

[104] A beneficiary is defined by Article 1(1), F(J)L as:
""beneficiary", in respect of a foundation that has the provision of a benefit to a person or to a class of persons as its objects or as one of its objects, means a person who is or is a member of a class of persons that – [/] (a) is specified in the charter of the foundation; or [/] (b) has been determined in accordance with the charter or regulations of the foundation, [/] for the purpose of those objects or that object." E.g. Section 10(a), F(G)L. Note that where a Jersey foundation does have beneficiaries, they have a number of "relatively limited rights". Bedell Cristin. (2019 May 17). Jersey Foundations. Retrieved from: https://www.bedellcristin.com/insights/briefings/jersey-foundations/; also see Article 25, F(J)L.

[105] See: Section 32, F(G)L.

[106] Note Section 33, F(G)L states:*"[s]ubject to the terms of the Constitution, a disenfranchised beneficiary is not entitled to any information about the foundation."* The use of these, as well as Article 26, F(J)L ("Foundations not obliged to provide information"), would need careful thought in the overall governance of a Data Foundation, and would also be dependent on its purpose and data. For instance, mandatory transparency requirements could form part of the charter and/or regulations/rules of the Data Foundation.

[107] For further information see: Carey Olsen. (2019 March 29). Trusts vs. Foundations: What are the deciding factors? Retrieved from: https://www.careyolsen.com/articles/trusts-vs-foundations-what-are-deciding-factors and Powell, M. (2014 February 1). What's the difference between a foundation and a trust? Hawksford, Retrieved from: https://www.hawksford.com/knowledge-hub/2014/foundations-vs-trusts.

data governance model via the following table:

Mapping the six fundamental components of data governance models to key, existing foundations law requirements	
Six fundamental components	**Related provisions of Channel Islands foundations legislation**
1. A comprehensive rulebook for the usage, sharing, and re-usage of personal and non-personal data, which identifies objectives, roles and workflows. This rulebook must also encompass a robust ethical framework - and be made publicly available.	**A foundation must have a charter**, which must contain certain mandatory information (e.g. name, purpose or objects) and other discretionary information. For a Jersey foundation, the charter is available for public inspection.[108] **A foundation must also have a set of comprehensive regulations or rules**, e.g. to set out the functions of the council.
2. A strong, independent governance body comprised of independent data stewards with interdisciplinary expertise.	A foundation must have a council. Furthermore, **the role of guardian is mandatory for all Jersey foundations, and obligatory for some Guernsey foundations**.[109] The guardian is responsible for ensuring that the council carries out its functions properly.
3. An inclusive decision-making body that engages participants (in particular data providers) and represents the interests of data subjects.	**The council is responsible for administering the foundation's assets and carrying out its objects/purpose.** For instance, council membership as part of a Data Foundation could be open to a variety of stakeholders, including representatives of data subjects. In addition, **while a foundation does not need to have beneficiaries, its purpose**

Mapping the six fundamental components of data governance models to key, existing foundations law requirements	
Six fundamental components	**Related provisions of Channel Islands foundations legislation**
	can be to benefit a class of persons, e.g. data subjects.
4. A standardised process to enable flexible membership.	**The charter can be amended subject to legislative requirements.** A Data Foundation therefore could amend its charter to include additional members.
5. A trust-enhancing technical and organisational infrastructure.	**A Jersey foundation does not need to have an initial endowment** to be incorporated. A Data Foundation therefore could operate without requiring the physical transfer of data to its system. **For a Guernsey foundation, there is no minimum level prescribed for this initial endowment**.
6. A well-regulated legal structure with effective authoritative oversight and a mature compliance and enforcement function coupled with complaint mechanisms.	**Foundations are regulated entities** under both Jersey and Guernsey foundation laws. E.g. the registrar can refuse incorporation for a Jersey foundation if the objects are unlawful.

The following diagram provides a high-level, visual overview of how key roles (e.g. guardian) and fundamental principles (e.g. arising from the charter and regulations/rules)

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[108] Again, note that Section 33, F(G)L ("disenfranchised beneficiaries") or Article 26, F(J)L ("Foundations not obliged to provide information"), would need careful thought in the overall governance of a Data Foundation, and would also be dependent on its purpose and data. For instance, mandatory transparency requirements could form part of the charter and/or regulations/rules of the Data Foundation.

[109] As previously stated,, in the Bailiwick of Jersey this role is mandatory, in the Bailiwick of Guernsey this occurs when a Foundation has either disenfranchised beneficiaries or only a purpose with no individual beneficiaries. For further information see eg.: AFR Advocates. Guernsey Foundations. Retrieved from: http://www.afradvocates.com/Assets-F2CMS/TDN2185-AFR-Article-Foundations-V2.pdf.

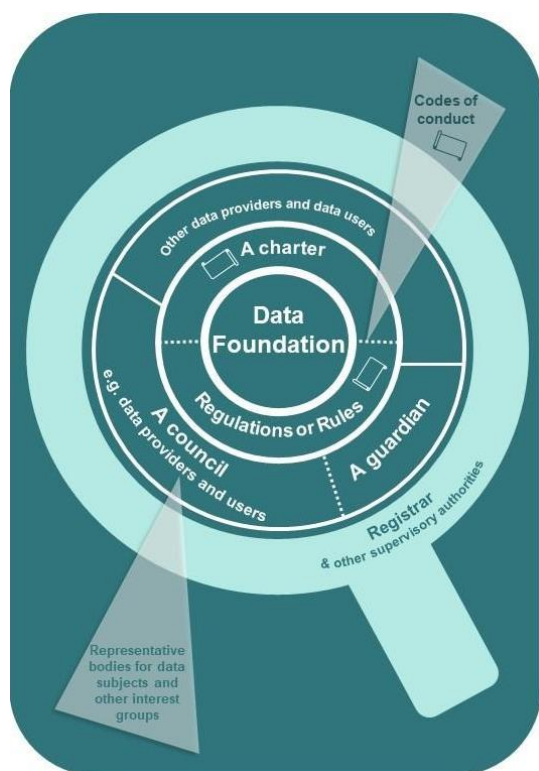are likely to be configured as part of a Data Foundation:

Figure 1:Data Foundation overview

What are the limitations of this approach?

There is no silver bullet for responsible and sustainable data usage, sharing, and re-usage. We recognise our approach may not be suitable for all types of data sharing situations, e.g. in some cases where data are shared on a one-off or *ad hoc* basis. We further appreciate that there may be simpler and cheaper ways to achieve data sharing such as through multi-party data sharing

agreements or even data sharing arrangements that are not necessarily binding.

The added value of our approach is to better incentivise organisations to share (more) closed and restricted data with a wider range of users through independent data stewardship that covers the whole data lifecycle.

Furthermore, it is not only about responsible data sharing, but sustainable data sharing. Therefore, for (large) groups of data providers and users, often with divergent interests and a need for representation in the decision-making process, we consider Data Foundations to be the ideal way forward.

The true test of Data Foundations will not only be the inception of the legal tool but also in the practice of their everyday work. The principal function of a Data Foundation is to support its members (in particular, data providers and data users) to use, and manage data and metadata in a manner that is legally compliant, ethical, technically proficient, and ultimately realises the highest standards of excellence for data governance.

The council's work is to meet the combined challenge of ensuring the protection of individuals' privacy and to unlock significant potential from data insights, and virtual asset safeguarding. They must achieve this to release the value of data and the wider societal benefits that flow from greater data usage, sharing, and re-usage.

Conclusion

Incentivising organisations to unlock their growing accumulation of data and share this with others – in ways that protect fundamental human rights as well as take advantage of innovative data-driven processes – is a huge undertaking. In this white paper, we suggest the Data Foundation model is one potential way to support data governance best practice and thus help to foster responsible and sustainable data usage, sharing and re-usage.

The main advantages of our approach are:

- Data Foundations embed the six fundamental components required for any good data governance model:
    (1) A comprehensive rulebook – e.g. through its charter and regulations, which could usefully be complemented by a code of conduct to strengthen transparency and encourage homogeneity of practices across data trusts.
    (2) An independent governance body – e.g. via its guardian.
    (3) An inclusive decision-making body – e.g. the council.
    (4) A standardised process to enable flexible membership – e.g. this can be provided in the charter and regulations or rules.
    (5) A trust-enhancing technical and organisational infrastructure – e.g. the Data Foundation does not need an initial endowment under Jersey law.
    (6) A well-regulated legal structure – e.g. the Data Foundation must be accepted for incorporation.
- Data Foundations have a ready-made independent data steward in the role of the guardian, which is a unique requirement in the Channel Islands.
- The foundation is a distinct and separate legal construct from corporations and trusts.
- Data Foundations would leverage existing legislation, building on established precedent and be able to make an impact right here, right now.
- This approach would actively seek to minimise the risks of personal data breaches and other non-compliant data-related activities by building data usage, sharing and re-usage environments that are trustworthy-by-design.
- Given the extent of legal obligations placed on the Data Foundation, this approach would require robust data governance both in principle (e.g. through its charter and regulations/rules) and in practice (e.g. registration and oversight). It would therefore aim to avoid situations like Sidewalk Toronto and its controversial data governance proposals.[110]
- If data were more accessible in a safe and ethical way there is potential to increase productivity, lower production costs, increase innovation and power new data-driven products and services.

With any nascent legal innovation, and its subsequent early real-world utilisation, only time and experience in use allows for builds up a substantial body of knowledge. This will be key to adjust and align the solution as feedback appears to inform the approach. It is therefore important to recognise the limitations today. Realistically, excellence in

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[110] E.g. see: Canadian Civil Liberties Association (CCLA). (2019 June 24). CCLA v. Waterfront Toronto, et. al: Public Court Documents To Date: Affidavit Sean McDonald. Retrieved from: https://ccla.org/quayside-project-application-documents/.

ethical data governance does not appear magically on the advent of a well structured legal tool, no matter how much good practice it invokes. It is the operational practice of the Data Foundation that shapes the institution. The proof will come through repeatable, successful use in the real-world.

Next steps

While understanding the underlying theory of responsible data usage, sharing, and re-usage is vital, there are currently a considerable number of thought-pieces introducing models and ideas with a high degree of uncertainty and ambiguity without a real understanding of how these data sharing mechanisms actually work in practice. We believe it is easier to critique an approach by using a working model.

We aim therefore to create a prototype Data Foundation as a real-world example of how such a data governance model could work in practice.

This prototype would involve working with existing data providers and data users to share and re-use data as part of a case study.

As a foundation has a legal personality they may engage in contracts. This is useful, particularly as some Data Foundations may wish to build shared tools or infrastructure as part of their data management arrangements.

In addition, third parties and perhaps additional data users will find it much simpler to contract with one entity, the Data Foundation, rather than negotiating individual agreements with each data provider who sits on the council of the foundation.[111] It goes deeper than this, as foundations - with their separate legal personality - may be preferential in that they can meet due diligence and appraisal requirements, making their purpose and membership clear right from the start.

Through our research we have found potential prototypes coming forward from several sectors such as health, smart cities, hospitality, finance, and also large international initiatives such as the achievement in meeting one or more of the 17 Sustainable Development Goals (SDGs).[112] All have expressed an urgency to use responsible data sharing practices in order to increase their impact. The raised awareness that there is potential in a model that creates a legal option to increase responsible data sharing is quickening. We expect more to come forward as a result of this paper. The prioritisation of projects for best use cases and prototype(s) is the next step.

We hope that the lessons learnt from this prototype will show the extent to which Data Foundations address privacy concerns, ensure accountability and build trust and confidence in data sharing and re-usage. It will further inform modifications to our approach, including our Data Foundations handbook and code of conduct. Ultimately, we hope that this prototype will act as a springboard for other responsible and sustainable data-sharing initiatives.

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Glossary

For the purposes of this white paper, we define the following terms as follows:

Council member/Councillor. A legal person[113] who sits on the council for a specified foundation. The principal responsibility of the council is to administer the foundation's assets and carry out its objects. A council member/councillor shall carry out their duties both lawfully and ethically.

Data Foundation. An entity incorporated under the Channel Islands' foundation laws, which supports responsible and sustainable non-personal and personal data usage, sharing, and re-usage by means of independent data stewardship.

Data provider. A legal person who enters into a specified data governance framework, and makes available personal and/or non-personal data for (re-)usage by one or more data users. A data provider could act as a council member/councillor for a Data Foundation.

Data steward. An independent expert in data governance. An appointed individual acting on behalf of a specified data governance framework – who is responsible for supporting its members (in particular, data providers and data users) to share, manage and use data and metadata in a manner that is legally compliant, ethical, technically proficient, and ultimately realises the highest standards of excellence for data governance.

Data subject. A living individual who is the subject of personal data. A member from an organisation who represents the interests of data subjects could act as a council member/councillor for a Data Foundation, and/or data subjects could be made beneficiaries.

Data user. A legal person who enters into a specified data governance framework, and (re-)uses available personal and/or non-personal data. A data user can also be a data provider, and they could act as a council member/councillor for a Data Foundation.

Guardian. A legal person, who is independent from the council and who oversees the administration of a foundation to ensure it achieves its purposes in accordance with its charter and regulations/rules. It can, for example, be granted the power to veto council's decisions. Interpreted in a data governance model this role forms a critical element in providing the independent data steward.

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[113] A legal person referring to a human or non-human entity, which is treated as a person for limited legal purposes.