

Legal Requirements for Data Trustees

Anja La Combe, Sven Kurrle, Julian Hoffmann and Patrick Weber

Ferdinand-Steinbeis Institute, Heilbronn, Germany

Anja.lacombe@ferdinand-steinbeis-institut.de

Sven.kurrle@ferdinand-steinbeis-institut.de

Julian.hoffmann@ferdinand-steinbeis-institut.de

Patrick.weber@ferdinand-steinbeis-institut.de

Abstract: The cooperative use of data in data ecosystems is central to realizing the potential of data-based value creation. Data trustees, neutral intermediaries between data providers and users, are intended to promote trust and legal clarity in accordance with the EU Data Governance Regulation. While the technical aspects of such models have been professionally researched, the legal requirements from a business perspective have largely been overlooked. This paper aims to shorten this research gap by examining (1) requirements companies place on the legal design of data trustee models and (2) legal forms used in practice. Based on twelve qualitative expert interviews 30 specific legal requirements were identified such as ensuring the legal independence of the data trustee, ownership of data or information, and the decision-making process. This paper contributes by conceptualizing legal requirements as a design dimension of data ecosystem governance and providing a structured requirement framework derived from empirical evidence.

Keywords: Data Trustee, Data Ecosystems, Legal, Requirements, Cooperative Use

1. Introduction

The cooperative use of data has become a key enabler of digital transformation. Corporate value creation increasingly relies on the generation, integration, and reuse of data rather than solely on physical products or traditional services (Gelhaar et al., 2021). However, realizing this potential often requires collaboration across organizational boundaries in so-called data ecosystems, where multiple actors combine complementary data, capabilities, and technologies to jointly create value (Oliveira & Lóscio, 2018).

Despite their innovation potential, data ecosystems face significant challenges. In particular, lack of trust and legal uncertainty remain key barriers (Cappiello et al., 2020; Fassnacht et al., 2023). Without mechanisms ensuring trustworthy and legally compliant data sharing, their potential often remains unrealized. In this context, data trustees have emerged as a governance mechanism, particularly in Europe, acting as neutral intermediaries between data providers and users while ensuring compliance with legal, ethical, and contractual requirements (Abel et al., 2023; Braud et al., 2021). In line with the European Data Governance Regulation (DGA), they operate in the interest of data subjects and providers and are characterized by a fiduciary role that distinguishes them from other intermediaries (European Parliament and Council, 2022).

Data trustee models can take different organizational and legal forms, including for-profit, non-profit, and governmental variants (Lipovetskaja et al., 2024). While initiatives such as GAIA-X highlight their growing relevance, they are often driven by technological and regulatory considerations, leaving the business perspective underexplored. It remains unclear which legal requirements companies consider necessary for data trustee models to create business value and be implemented in practice. Existing initiatives may fail when legal structures are overly complex or misaligned with organizational needs (Weber et al., 2022; Agdatahub, 2024).

Against this background, this paper addresses the following research questions:

RQ1: What legal requirements do companies expect for the design of data trustee models?

RQ2: Which legal organizational forms are used to implement data trustee models in practice?

To address these questions, we conducted 12 semi-structured expert interviews based on concrete use cases to elicit context-specific requirements. The findings were validated by a legal expert and complemented by a secondary analysis of existing initiatives.

From a theoretical perspective, legal requirements can be understood as design elements of governance structures in data ecosystems. While existing research focuses primarily on technical and organizational aspects, the legal dimension remains underexplored. By identifying and structuring legal requirements, this study contributes to the conceptualization of legal governance mechanisms as a design area for data trustee models.

2. Related Work and theoretical Background

This section introduces data ecosystems as the broader context, conceptualizes data trustees as a governance mechanism, and outlines the structure of data trustee models to derive the research gap.

2.1 Data Ecosystems

Business ecosystems consist of economically independent actors combining complementary capabilities to create value (Moore, 1993). Following Adner (2017), this work adopts a cooperative value creation perspective in which value creation shapes partners, activities, and coordination. Transferred to the digital domain, data ecosystems are based on cross-organizational data exchange as a key driver of innovation (Oliveira & Lóscio, 2018). Despite their potential, many data ecosystems fail to generate economic value due to limited incentives, varying levels of maturity, and insufficient mechanisms for coordination and trust (Cappiello et al., 2020; Fassnacht et al., 2023). These challenges highlight the need for governance mechanisms that enable trustworthy and legally compliant data sharing across organizational boundaries, which has led to the emergence of data trustees (Braud et al., 2021).

2.2 Data Trustees

Data trustees have gained increasing attention as a response to these challenges (Lindner & Straub, 2023). They build on the concept of data intermediaries - neutral entities facilitating data exchange while addressing regulatory, technical, and trust-related barriers (Janssen & Singh, 2022; Schweihoff et al., 2024). Such intermediaries must comply with legal frameworks such as the Data Governance Act (DGA), ensuring neutrality, transparency, and data security (Carovano & Finck, 2023; European Parliament and of the Council, 2022; Richter, 2023).

Data trustees represent a specific type of intermediary characterized by fiduciary responsibility, managing data on behalf of providers in accordance with predefined governance rules (Janssen & Singh, 2022). Unlike other models such as data marketplaces or data pools, they are defined by their obligation to act in the best interest of data providers rather than by market-based incentives (Stachon et al., 2023).

2.3 Structure of a Data Trustee

A data trustee acts as a central intermediary between data providers and users, facilitating data exchange within defined governance structures (Abel et al., 2023). Operators may include public institutions, research organizations, or firms; this study focuses on company-led consortia (Lindner & Straub, 2023). Members typically act both as data providers and users, contributing and utilizing data to develop data-driven business models. External users may also access services as customers, supported by technology partners ("trust enablers") (Baars et al., 2021).

Despite growing interest, research has focused primarily on technical aspects such as infrastructure and security, while governance and organizational perspectives remain less developed (Rieder et al., 2025). In particular, the legal design of data trustees from a business perspective is underexplored (Fassnacht et al., 2023; Weber et al., 2022).

As a result, the legal requirements necessary to ensure trust, usability, and economic viability remain insufficiently understood, motivating the research questions of this study.

3. Research Design

This study follows an exploratory qualitative research design (Creswell & Creswell, 2018) to investigate the legal requirements of data trustee models from a business perspective. The design combines three sequential components: expert interviews to identify legal requirements, evaluation workshops with a legal expert to validate and operationalize them, and a secondary analysis of existing initiatives to examine legal organizational forms in practice. The findings from these components were subsequently compared and integrated. Figure 1 illustrates the research design.

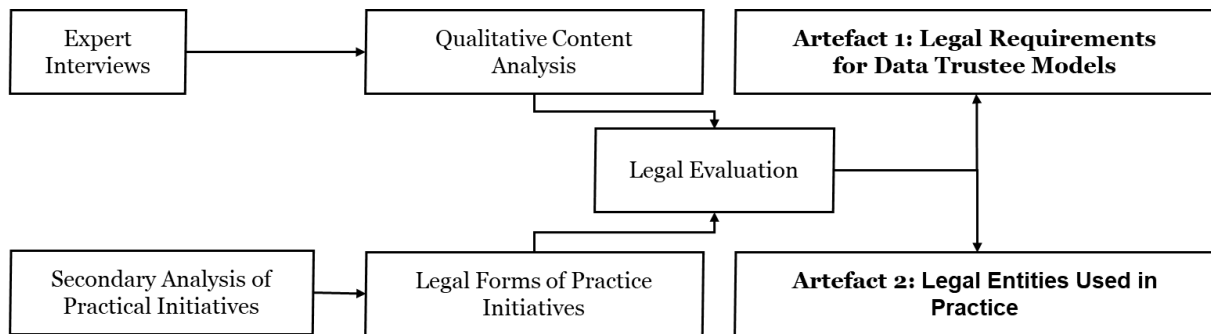


Figure 1: Research Design

3.1 Data Collection

3.1.1 Expert Interviews

We conducted 12 semi-structured expert interviews until theoretical saturation was reached, i.e., no substantially new insights emerged during iterative coding. In line with qualitative research standards, saturation was considered achieved when additional data confirmed existing patterns rather than generating new conceptual insights (Creswell & Creswell, 2018). Although the sample is limited in quantitative terms, qualitative research prioritizes depth and heterogeneity over size. The selected interviewees represented different industries, organizational sizes, and roles within data ecosystems, supporting the identification of robust and transferable requirement categories. All interviewees operated within the German legal context, which reflects the relevance of European regulations such as the Data Governance Act, but also limits generalizability. Interviews were structured around concrete data ecosystem use cases to elicit context-specific legal requirements. Conducted between November 2023 and February 2024, they lasted 60–90 minutes and took place either on-site or via video conference. A semi-structured guide with 13 questions was adapted to each interviewee. All interviews were conducted by two researchers, recorded, transcribed, and manually revised. Table 1 provides an overview of the participants.

Table 1: Participants of the Interviews

#	Interviewee Position	Organization	Employees
1	Technical Sales for Industrial Applications	Manufacturer of Electrical Switching Devices	50-249
2	Deputy Head of Stakeholder Representation	Association for Cooperative Organizations	1.000-9.999
3	Head of Project Management	Company for Renewable Energy Solutions	10-49
4	Chief Executive Officer (Managing Director)	Industry Association for Trade and Services	10-49
5	CEO/Co-Founder	Research Institution for Industrial Mathematics	10-49
6	Chief Executive Officer	Technology Startup Focused on AI and Finance	10-49
7	Executive Leadership	Trade Representation for Industrial Products	10-49
8	Executive Leadership	Consulting Firm for IT and Information Systems	10-49
9	Vice President – Global Head of Industrial and Energy Products	Testing and Certification Service Provider	10.000+
10	Chief Executive Officer	Provider of Efficiency Solutions for Businesses	1-9
11	Head of Product Management	Manufacturer of Sensors and Automation Technology	1.000-9.999
12	Senior Advisor for Data-Driven Business Models	Software Provider for Tax Consulting and Financial Services	1.000-9.999

3.1.2 Analysis of Existing Initiatives

A secondary analysis of existing data trustee initiatives was conducted to examine legal organizational forms in practice. The analysis started with the IDSA Data Space Radar and was extended through snowball sampling. For each initiative, legal form, sector, geographical location, and development stage were identified through a structured review of publicly available sources, including official websites, reports, and documentation.

3.1.3 Workshops

Two workshops with a legal expert specializing in data protection and regulation were conducted in August and December 2024. Their purpose was to evaluate the requirement *derived from the interviews and to assess their applicability across legal entities. The workshops were documented through photo protocols and observation notes and analyzed using qualitative content analysis (Mayring, 2014). They served to validate and operationalize the interview findings.*

3.2 Data Analysis

The 12 interview transcripts were analyzed in MaxQDA using a structured deductive–inductive coding approach, based on Mayring's qualitative content analysis (Mayring, 2014). Initial categories were derived from existing conceptualizations of data trustee structures, while subcategories were developed inductively from the empirical material. To ensure consistency, a consensual coding approach was applied: one researcher conducted the initial coding, which was then reviewed and iteratively discussed with a second researcher. An overview of the coding scheme is provided in the appendix.

The workshop results were integrated as an additional legal perspective, mapping interview-derived requirements to potential legal documents and frameworks. The secondary analysis of initiatives combined qualitative coding with quantitative counts of legal forms, sectors, locations, and lifecycle stages. Finally, the study triangulated the interview findings with the secondary analysis to identify consistencies, discrepancies, and broader patterns. Through this process, 30 legal requirements were derived and iteratively refined into a coherent solution space for the legal design of data trustee models..

4. Findings

The identified requirements should not be understood as an isolated list of legal conditions, but as interrelated design elements shaping the governance of data trustee models. In this sense, they represent a conceptual framework for the legal design of data ecosystems and extend existing governance literature by specifying its legal dimension from a business perspective.

The findings are presented in two parts. First, the interview results identify legal requirements for data trustee models. Second, the secondary analysis examines the legal entities used in practice and compares them with the interview findings.

4.1 Findings Regarding Legal Requirements

Based on the expert interviews, 30 requirements were identified across different use cases. These requirements relate to the legal structures needed to implement data trustee-based business models. They are not mutually exclusive but form a solution space from which organizations can derive application-specific legal arrangements.

To add analytical depth, we also considered how frequently requirements were mentioned across interviews. Frequency is not interpreted as a proxy for importance, but as an indication of how broadly a requirement is shared across use cases and organizational contexts. Some requirements are widely shared, while others are highly context-specific but still critical in particular business models. Requirements with no directly traceable subfunction in the coded interview material are marked with 0 and should be interpreted as derived from complementary legal or conceptual analysis rather than from the interview coding. No ranking is therefore applied.

Table 2: Findings from the Interviews

#	Requirement	Description	
1	Authorization to process data	Regulations governing the conditions under which data may be processed and the purposes for which it may be processed.	6
2	Balancing of interests	Ensuring that the interests of all parties involved are adequately balanced.	5
3	Body of the data trustee	Definition of the composition and tasks of the bodies of the data trustee.	7
4	Commitment and long-term security	Guarantee of long-term security and reliability for all parties involved.	4
5	Compliance with legal requirements	Ensuring compliance with all relevant legal requirements.	4
6	Confidentiality agreements	Provide for confidentiality agreements to protect sensitive data and information.	0*
7	Cooperative objectives	Binding definition of the common objectives of the partners involved.	5
8	Data anonymization	Establishment of data anonymization as a requirement for processing.	0*
9	Data collection requirements	Definition of the requirements for data collection.	9
10	Data quality requirements	Binding requirements for the quality of the data provided.	10
11	Data transfer requirements	Binding definition of the conditions and standards for data transfer.	9
12	Decision-making powers of the institutions	Definition of the decision-making powers of the data trustee.	7
13	Decision-making process	Binding regulation of the decision-making process within the data trustee. Definition of members' co-determination rights in relation to important decisions.	6
14	Distribution of revenues	Regulations on the distribution of revenues generated by the data trustee.	5
15	Ensuring the legal independence of the data trustee	Ensuring that the data trustee can act independently from a legal perspective.	2
16	Integration of new members	Establishing the conditions and process for integrating new members.	9
17	Integration of external partners	Clear regulation of the integration of external partners into the data trustee.	2
18	Liability regulations	Clear regulation of the liability of the parties involved for errors and damages.	0*
19	Ownership of data/information	Clear regulation of ownership of provided and generated data and information.	10
20	Participation in value growth	Contractual regulation of members' participation in the value growth of the data trust.	5
21	Payment for data trustee services	Contractual agreement on payment for data trustee services.	0*
22	Protection against damage caused by partners	Regulations that protect the data trustee and its members from damage caused by other partners.	3
23	Regulations for missing data	Regulations for dealing with missing or incomplete data.	4
24	Regulations on capital contributions	Binding definition of the type and amount of capital contributions by members.	2

#	Requirement	Description	
25	Regulations on cost distribution	Binding definition of the distribution of costs incurred among the parties involved.	5
26	Regulations on IP rights	Clear definition of the regulations on intellectual property rights (IP rights).	0*
27	Regulations on the distribution of shares	Clear regulation of the distribution of shares in the data trustee model.	0*
28	Regulations on the use of data/information in relation to third parties	Definition of which data and information may be passed on to third parties.	6
29	Service level agreements	Establishing Service level agreement (SLA) on the quality and availability of services.	4
30	Termination and withdrawal rights	Clear regulation of the rights to terminate and withdraw from the data trustee.	0*

Selected examples illustrate the diversity and practical relevance of the requirements. Commitment and long-term security were described as especially important in early-stage collaborations, where trust is initially built through personal relationships before being formalized legally. Compliance with legal requirements was highlighted as essential, particularly regarding GDPR and sector-specific regulation. Cooperative objectives were framed as a need to enable broad data exchange with minimal contractual overhead. In technical use cases, data collection and transfer requirements were especially prominent, for example regarding sensor configuration, quality assurance, and continuous or event-driven data flows. Economic design issues also varied across cases, especially regarding participation in value growth and the distribution of shares. Finally, several interviewees emphasized mechanisms to protect against damage caused by partners and to handle missing data in a transparent and traceable way.

The analysis also revealed inherent tensions between requirements. A central trade-off exists between flexibility and legal certainty: some interviewees favored lean and adaptable structures, while others stressed formalized and robust legal frameworks. A second tension concerns participation and decision-making, ranging from equal voting rights to proportional influence based on investment or data contribution. A third trade-off lies between data accessibility and data protection, as business value depends on data use while compliance limits unrestricted sharing. Finally, interviewees highlighted a balance between simplicity and completeness of legal design: streamlined arrangements reduce complexity, but more comprehensive frameworks may be necessary to address liability, governance, and long-term stability. These tensions show that the requirements form a design space rather than a single optimal model.

4.1.1 Evaluation of Legal Requirements

To assess the practical applicability of the identified requirements, a subsequent evaluation step was conducted. This evaluation does not introduce a separate set of findings, but operationalizes the interview-based requirements in the context of legal system design. The workshops with the legal expert therefore translated the identified requirements into concrete legal design elements.

The evaluation showed that early-stage collaboration can often be supported by letters of intent and confidentiality agreements, but these instruments are insufficient for scalable long-term cooperation. The workshops resulted in eight document clusters forming the basis of a modular legal framework: pre-contractual letters of intent and confidentiality agreements, organizational competencies and statutes, membership and partner agreements, contractual bases for data processing, data storage and IT security regulations, access and usage provisions, documentation and audit obligations, and compliance, risk, and ethics guidelines. The analysis further showed that legal requirements are generally transferable across different legal forms, but always require context-specific implementation. In addition, the distinction between for-profit and non-profit trustees has important implications for governance and scaling. Overall, the findings suggest that robust data trustee models require a modular and phase-oriented document system rather than a single legal form.

4.2 Findings Regarding Legal Entities

The secondary analysis covered 57 data trustee initiatives identified through the IDSA Data Space Radar and extended via snowball sampling. For each initiative, information on legal form, sector, geographical location, and development stage was collected from publicly available sources. Due to space limitations, the full list is not included in the paper but can be provided on request.

Geographically, most initiatives were located in Germany (18), Austria (12), and the Netherlands (10), with others in Belgium, China, Finland, France, Ireland, Italy, Norway, and Switzerland. Sector-wise, initiatives were mainly cross-sectoral (12), followed by mobility (7), energy (6), manufacturing (5), green deal projects (5), and supply chain logistics (3), with additional cases in agriculture, health, smart cities, sports, and tourism. Regarding lifecycle stage, the majority were in initiation (30), pilot (13), or scaling (10), with 2 unclassified. Legal forms were dominated by registered associations (22) and foundations (11), while six initiatives operated as hybrid forms, six as public-law corporations, and four as private limited liability companies.

4.2.1 Evaluation of Legal Entities

Comparison with the interview findings shows that bilateral contracts are common in early-stage data collaborations but become limiting as cooperation scales. Interviewees therefore emphasized the need for flexible legal structures combined with governance mechanisms that allow adaptation over time. At the same time, the analysis revealed a gap between existing practice and business preferences: while many current initiatives rely on non-profit-oriented forms such as associations and foundations, the interviews indicate a stronger preference for economically oriented legal forms in industry. In addition, the findings suggest that large-scale ecosystem initiatives require broad, standardized legal infrastructures, whereas smaller consortia benefit from leaner and more use-case-specific legal arrangements.

5. Implications

This study conceptualizes legal requirements as design elements of governance structures in data ecosystems, providing a foundation for systematically analyzing and comparing different data trustee configurations.

The results show that unclear legal frameworks remain a key barrier to realizing the potential of data ecosystems (Cappiello et al., 2020; Gelhaar et al., 2021). By identifying and structuring legal requirements from a business perspective, this study clarifies how legal frameworks can be designed to support data-based value creation. The findings highlight that effective legal structures must be tailored to specific use cases rather than applying overly complex or generic solutions.

In addition, the analysis of existing initiatives reveals how current legal entities are implemented and where gaps between practice and business requirements exist. Combining interview findings and secondary analysis, the study proposes a conceptual approach in which legal requirements are implemented through both the institutional form of the data trustee and supplementary bilateral agreements. This combination enables flexibility while maintaining enforceability.

From a practical perspective, the study provides structured guidance for organizations developing data trustee models. By identifying relevant legal requirements, it supports the design of use-case-specific legal frameworks and facilitates collaboration with legal departments. The approach helps organizations determine which aspects should be embedded in core legal structures and which can be addressed through supplementary agreements, thereby reducing complexity and improving decision-making. Overall, the findings contribute to the operationalization of data trustee models and support the implementation of data ecosystems in practice.

6. Further Research and Limitations

Future research should examine how legal requirements evolve across the lifecycle of data trustee models and how they can be implemented in different legal entities. In particular, further work could identify which legal forms best combine flexibility, enforceability, and governance at different stages.

The findings also highlight the diversity of data trustee models. While large-scale initiatives aim to create broad, standardized ecosystems, smaller consortia focus on specific use cases. Future research should therefore develop classifications of different data trustee types and their legal, organizational, and technical requirements.

In addition, further work should explore how requirements can be systematically clustered and mapped to appropriate legal instruments. Reference architectures such as the Industrial Internet Reference Architecture (IIRA) may provide useful guidance. Another relevant direction is the analysis of transformation paths between legal forms to ensure adaptability over time.

This study is limited by its exploratory design and the small sample size of 12 interviews. All participants operate within the German legal context, which restricts generalizability. Moreover, qualitative content analysis involves interpretive judgments, although reliability was enhanced through collaborative coding by two researchers

Ethics Declaration

Ethical clearance was not required for the research.

AI Declaration

Generative AI was used for the translation and linguistic revision.

References

- Abel, R., Appelt, D., Smoleń, A., & Kraemer, P. 2023. "Datentreuhänder, Datenvermittlungsdienste und Gaia-X," *White Paper* (<https://gaia-x-hub.de/wp-content/uploads/2024/02/WP-GX-Datentreuhaender.pdf>, accessed August 29, 2025).
- Adner, R. 2017, "Ecosystem as structure: An actionable construct for strategy," *Journal of Management* (43:1), pp. 39–58.
- Agdatahub 2024, "Agdatahub applies for bankruptcy proceedings," (<https://agdatahub.eu/en/agdatahub-procedure-collective-liquidation/>, accessed August 29, 2025).
- Baars, H., Tank, A., Weber, P., Kemper, H.-G., Lasi, H., & Pedell, B. (2021). Cooperative Approaches to Data Sharing and Analysis for Industrial Internet of Things Ecosystems. *Applied Sciences*, 11(16), Article 7547.
- Braud, A., Fromentoux, G., Radier, B., & Le Grand, O. 2021, "The road to European digital sovereignty with Gaia-X and IDSA," *IEEE Network* (35:2), pp. 4–5.
- Cappiello, C., Gal, A., Jarke, M., & Rehof, J. 2020, "Data ecosystems: sovereign data exchange among organizations," *Dagstuhl Seminar 19391*.
- Carovano, G., & Finck, M. 2023, "Regulating data intermediaries: The impact of the Data Governance Act on the EU's data economy," *Computer Law & Security Review* (50).
- Creswell, J. W., & Creswell, J. D. 2018, "Research design: Qualitative, quantitative, and mixed methods approaches." European Parliament and of the Council 2022, "European data governance and amending Regulation (EU) 2018/1724 (Data Governance Act) (2022 & rev. L 152/1)."
- Fassnacht, M., Benz, C., Heinz, D., Leimstoll, J., & Satzger, G. 2023, "Barriers to data sharing among private sector organizations," *Proceedings of the Hawaii International Conference on System Sciences (HICSS)*.
- Gelhaar, J., Gürpınar, T., Henkel, M., & Otto, B. 2021, "Towards a taxonomy of incentive mechanisms for data sharing in data ecosystems," *Proceedings of the Pacific Asia Conference on Information Systems (PACIS)*.
- International Data Spaces Association 2025, "DATA SPACE RADAR," (<https://internationaldataspaces.org/adopt/data-space-radar/>, accessed August 29, 2025).
- Janssen, H. & Singh, J. 2022, "Data intermediary," *Internet Policy Review* (11:1).
- Lindner, M., & Straub, S. 2023, "Datentreuhänderschaft. Status Quo und Entwicklungsperspektiven: Kurzstudie im Auftrag des Bundesministeriums für Wirtschaft und Klimaschutz von der Begleitforschung zum -Technologieprogramm „Smarte Datenwirtschaft,"" (https://www.iit-berlin.de/wp-content/uploads/2023/02/SDW_Datentreuhand.pdf, accessed August 29, 2025).
- Lipovetskaja, A., Ciftci, S. A., Schweihoff, J., Janiesch, C., & Möller, F. 2024, "Business Model Types for Data Trustees," *Proceedings of Wirtschaftsinformatik*.
- Mayring, P. 2014, "Qualitative content analysis: theoretical foundation, basic procedures and software solution."
- Moore, J. F. 1993, "Predators and Prey: A New Ecology of Competition," *Harvard Business Review*, (71:3), pp. 75–86.
- Oliveira, M. I. S., & Lóscio, B. F. 2018, "What is a data ecosystem?" *Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age*.
- Richter, H. 2023, "Looking at the Data Governance Act and Beyond: How to Better Integrate Data Intermediaries in the Market Order for Data Sharing," *GRUR International* (72:5), pp. 458–470.
- Rieder, F., et al. (2025). SMEs aiming to operate as data trusts: A reference architecture. In *Proceedings of PACIS 2025*. https://aisel.aisnet.org/pacis2025/dig_plat/di/5
- Schweihoff, J., Lipovetskaja, A., Jussen-Lengersdorf, I., & Möller, F. 2024, "Stuck in the middle with you: Conceptualizing data intermediaries and data intermediation services," *Electronic Markets*, (34:1).
- Stachon, M., Möller, F., Guggenberger, T., Tomczyk, M., & Henning, J.-L. 2023, "UNDERSTANDING DATA TRUSTS," *Proceedings of the European Conference on Information Systems*.

Weber, P., Werling, M., Tank, A., & Baars, H. 2022, "Institutionalisierung digitaler Ökosysteme in der Rechtsform einer Genossenschaft: Case Study im produzierenden Kontext," *HMD Praxis Der Wirtschaftsinformatik* (59:5), pp. 1353–1365.

Appendix

Coding Process and Scheme

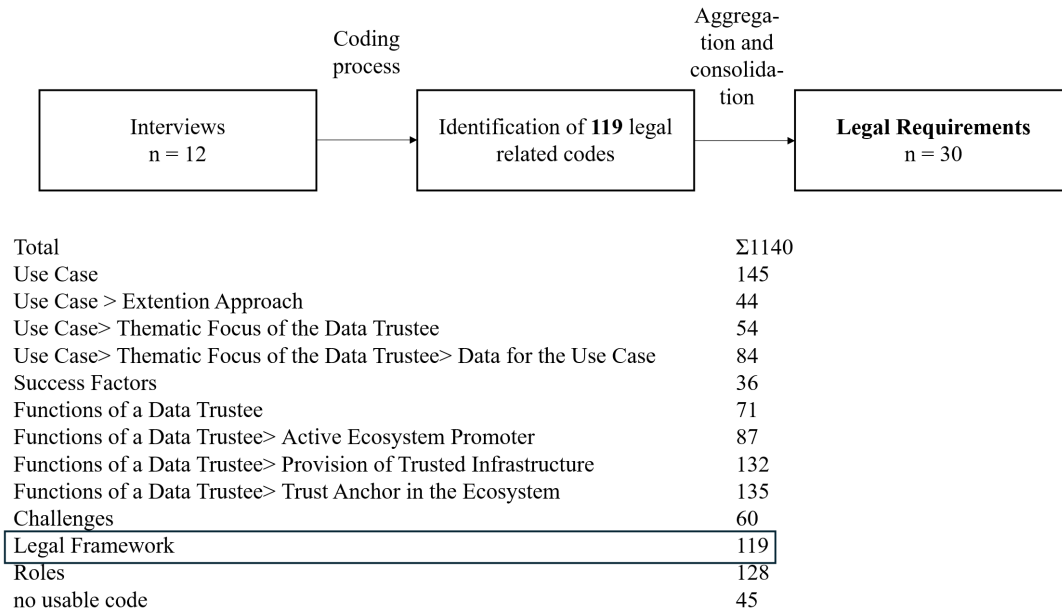


Figure 2: Coding Process

Table 3: Coding Scheme (see following page)

Governance & Legal		Organizational		Data-related		Economic		Contractual	
Balancing of interests Body of the data trustee Commitment and long-term security	Access Rights Management	Cooperative objectives	Development Roadmap for the Ecosystem	Data collection requirements	Standardized Data Collection	Ownership of data/information	Ensuring Data Sovereignty	Regulations on IP rights	(not explicitly coded in interview)
	Framework for Data Processing		Specification and Delineation of the Use Case		Transparency of Data Collection		Framework for Data Storage	Regulations on the distribution of s	(not explicitly coded in interview)
	Fair Distribution of Benefits		Ecosystem Initiator		Monitoring of Data Sources		Data Immutability	Regulations on the use of data/info	Access Rights Management
	Balancing Contributions and Benefits		Establishing Guidelines for the Ecosystem	Data quality requirements	Data Quality Assurance		Enabler for Digital Sovereignty		Neutral Partner Selection
	Neutral leadership of the Ecosystem	Decision-making powers of the institutions	Neutral leadership of the Ecosystem		Data Plausibility Checks	Participation in value growth	Enabler for Value Creation	Service level agreements	Integration of External Data Sources
	Defining Roles in the Ecosystem		Leadership of the Ecosystem		Enablement for Technical Evaluations		Utilization of Aggregated Data	Provision of Cloud Infrastructure	Monitoring of Infrastructure
	Leadership of the Ecosystem		Defining Roles in the Ecosystem		Domain Competence for Data Integration		Development of Aggregated Data	Termination and withdrawal rights	(not explicitly coded in interview)
	Ensuring Stability/Resilience of the Ecosystem	Decision-making process	Establishing Guidelines for the Ecosystem	Data transfer requirements	Standardized Data Transmission	Payment for data trustee services	Development of Aggregated Dashboard	Liability regulations	(not explicitly coded in interview)
	Continuity of the Ecosystem Facilitator		Fair Distribution of Benefits		Conceptual Framework for Data Exchange	Protection against damage caused by	Ensuring Stability/Resilience of the Ecosystem		(not directly identifiable in subnucleic
	Monitoring of Infrastructure	Distribution of revenues	Creation of a Basis for the Evaluation of Contributions	Data anonymization	(not explicitly mentioned in subnucleics; conceptually related to data governance)	Regulations on capital contributions	Resilience in Disruption Scenarios		
Compliance with legal requirements Confidentiality agreements	Ensuring Legal Compliance		Ensuring Legal Independence of Partners	Regulations for missing data	Data Plausibility Checks	Balancing Contributions and Benefits	Creation of a Basis for the Evaluation of Contributions		
	Compliance with Regulatory Requirements	Ensuring the legal independence of the data	Incorporation of Additional Trust Sources		Monitoring of Data Sources	Regulations on cost distribution	Fair Distribution of Benefits		
	(not directly captured in interview coding; derived conceptually)	Integration of external partners	Neutral Partner Selection				Balancing Contributions and Benefits		
			Integration of External Data Sources						
		Integration of new members	Member Management						
			Support for Members						
			Neutral Partner Selection						