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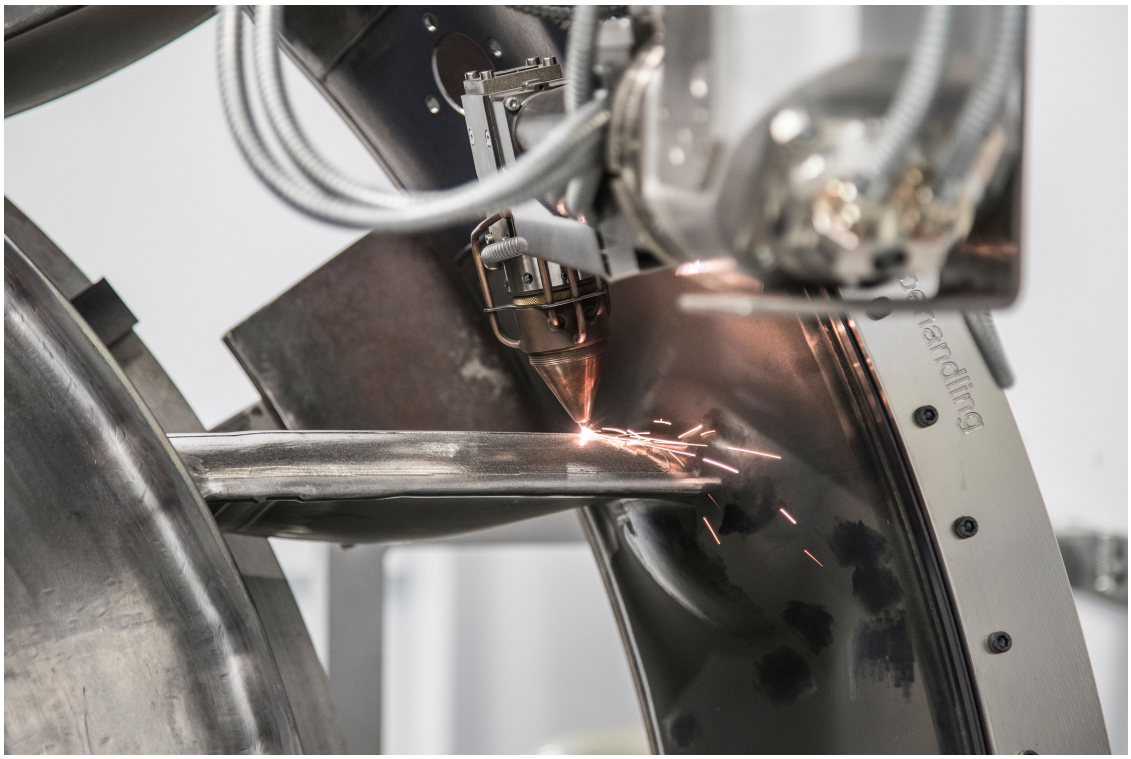

Data Governance to Support Business Needs

A Study with GKN Aerospace Engines

Bachelor thesis in Technology Management and Economics

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Abstract

Data governance is an increasingly relevant topic considering the growing global datasphere. Mishandling data can have risks in the form of leaking sensitive data and missed benefits from high data quality. Companies are struggling to implement successful data governance since it is hard to convey the value of data governance to chief executives, there is insufficient cooperation between business functions and IT functions, and there is a lack of data literacy.

The purpose of this study is to analyse how organisations can provide conditions for data governance initiatives to succeed.

A qualitative approach was used because of the complex nature of data governance. The data collected were both from a literature study, which resulted in a frame of reference, and an interview study with different experts. A majority of the interviewees were done at GKN Aerospace, also the idea-provider for this study. GKN Aerospace is currently looking for ways to improve their data governance.

The frame of reference includes scientific articles about data governance and its success factors, frameworks and taxonomies, change management, communication within organisations and portrayal of value, cross-functional collaboration as well as theory about Generative AI and external factors. Besides scientific articles, business reviews and consulting reports have been used to get the latest insights about the subject and also a more practical perspective from people working in the field.

The study has found that conveying the value of data governance to decision makers, increasing data literacy, encouraging change, and collaborating for data governance strategy formulation are all central for data governance initiatives to succeed. Conveying value should be done using KPIs, highlighting concrete use cases of data governance, and finally, employing a translator e.g. a Chief Data Officer. To increase data literacy and encourage change it is central to create a common vocabulary and understanding of data governance. Collaboration for data governance strategy formulation is enabled by decentralised data asset ownership for increased responsibility, a unified view of what data is strategically important, and a flexible data strategy that is business oriented.

Keywords: Data Governance, Data Literacy, Cross-functional collaboration, Business Oriented Data Governance, Artificial Intelligence

Sammanfattning

Data governance som ämne ökar i relevans med tanke på den växande datasfären. Hantering av data kan medföra risker såsom läckage av känslig data och missade möjligheter från hög datakvalitet. Företag har svårt att implementera lyckad data governance och eftersom det är svårt att förmedla värdet av data governance till chief executives, finns det för lite samarbete mellan business- och IT-funktioner. Dessutom finns det bristande data literacy.

Syftet med denna studie är att analysera hur organisationer kan skapa förutsättningar för data governance initiativ att lyckas.

På grund av komplexiteten av data governance valdes till denna studie en kvalitativ metod. Datan som samlades in var både från en litteraturstudie, som gav en referensram, och en intervjustudie där olika experter inom sina fält blev intervjuade. Majoriteten av intervjupersonerna jobbar på GKN Aerospace som också har formulerat idéen för den här studien. GKN Aerospace försöker i dagsläget förbättra sin data governance.

Referensramen inkluderar forskningsartiklar om data governance och dess framgångsfaktorer, frameworks och taxonomier, change management, kommunikation inom organisationer och förmedling av värde, cross-functional collaboration och dessutom teori kring generativ AI och externa faktorer. Förutom forskningsartiklar har även konsult-, och affärsrapporter använts för att få de senaste insikterna inom ämnet, och ett mer praktiskt perspektiv från folk som arbetar inom området.

Studien har hittat att förmedling av värdet med data governance till beslutsfattare, ökad data literacy, uppmuntran av förändring och samarbete med formulering av data governance strategi är centralt för framgång vid data governance initiativ. Förmedling av värde bör göras genom användande av KPI:er, use cases som belyser konkreta användningsområden för data governance och “translators” såsom en Chief Data Officer. För att förbättra data literacy och uppmuntra förändring är det centralt att skapa ett gemensamt vokabulär och en gemensam förståelse för data governance. Samarbete vid formulering av data governance strategi möjliggörs av decentraliserat data asset-ägande som ökar ansvar, ger en gemensam bild av vilken data som är strategiskt viktig och ger en flexibel strategi som är affärsorienterad.

Nyckelord: Data Governance, Data Literacy, Cross-functional collaboration, Business Oriented Data Governance, Artificial Intelligence

Preface

This study was conducted during the first half of 2024. It was performed by six students of the Industrial Engineering and Management program at Chalmers University, as their bachelor's thesis, concluding their bachelor's degree. It was conducted in collaboration with, and with support from, GKN Aerospace Engines and the department of Technology Management and Economics at Chalmers University of Technology.

The authors extend their sincerest thanks to all the interviewees, taking the time to support and lend their knowledge to this study. Without them it would not have been concluded. The authors also would like to emphasise the support and insights from representatives from the GKN Aerospace Engines organisation. Their personal experience with, and general knowledge of, data governance has been the backbone of this study. Finally, the authors are truly thankful for the guidance of project supervisor Dan Andersson, docent at the Supply and Operations Management division at Chalmers University of Technology. His feedback has kept the study on the right track, and has been paramount to the finished product.

Glossary

Chief Data Officer (CDO)	An executive responsible for company-wide data strategy.
Data assets	A collection of data intended to be used to create value in an organisation.
Data cataloguing	The process of organising and structure data.
Data governance initiative	An initiative that improves data quality by assigning a person or team responsibility for a specific data set.
Data lakes	A centralised system to store and process large amounts of raw data
Data lineage	The process of recording and visualising how data flows over time, where it originates from and where it is used.
Data literacy	The ability for someone to read, understand and utilise data in a meaningful way.
Data management	Processes related to collecting, storing and using data in an organisation.
Data Ownership vs Data Stewardship	A data owner is accountable for a data set and is responsible for strategic decisions, whilst a data steward is responsible for operational tasks such as maintenance the data.
Data quality	How well a data set is suited for its specific purpose and includes accuracy, completeness, reliability and consistency.
Data steward	A role in an organisation to ensure quality and usability of data in that organisation.
Generative artificial intelligence (GenAI)	AI models which can generate content such as text, images and videos.
Internal communication (IC)	The process of informing and influencing employees to align with company strategy.
Key Performance Indicator (KPI)	A KPI is a measurable value that indicates how a business performs compared to a set objective.
Metadata	Information describing data, not the concrete data itself.

Contents

1
Introduction

This introductory section includes background information that motivates the research subject as well as the purpose and research questions of this report. The section also includes a problem analysis explaining the relevance of the chosen research questions and delimitations explaining what boundaries of the research were made.

1.1 Background

Data enables businesses to make better informed decisions and as more data is collected, companies can benefit from data in different types of processes (Canorea, 2023). However, without proper data governance, the more *data assets* that are collected the more problems arise (Canorea, 2023). It can become impossible to track when data is created, where it comes from, and who uses it. This may result in poor *data quality* and a lack of trust in data that inhibits the utilisation of data (Canorea, 2023).

Stobierski (2021) defines data governance as "the frameworks, processes and practices an organization uses to formally manage its data assets". Data governance practices aim to optimise the utilisation of data by acting as a coordinating tool that connects departments, functions and people (Knight, 2023). It does this to increase the likelihood that the right data flows to the right place at the right time and is made possible by a set of technologies and rules on data practices (Knight, 2023). Stobierski (2021) also highlights some benefits of data governance. For example, it can help build confidence to make data driven decisions, increase efficiency within the organisation, make it easier to manage regulatory requirements and increase value to consumers (Stobierski, 2021).

The global datasphere, i.e how much data that exists globally, has been growing rapidly over the last years and is expected to continue growing (Reinsel et al., 2018). Not only has the amount of data increased in the past years, but also the annual spending on data governance software. The average from several market report estimations (Mordor, 2020.; Straits Research, 2021.; Allied Market Research, 2024; Markets & Markets, 2020) can be calculated to yield a market size of roughly 3.5 billion USD growing at a compounded annual growth rate of 21%. The market size results described above can be extrapolated from the market reports average compounded annual growth rate (CAGR) to the year 2030, yielding a market size of at least 10 billion USD, further motivating the relevance of the subject. The problems rising with growing amounts of data assets in combination with rising data governance spending makes data governance a relevant topic. Furthermore, by looking at Google Trends it can also be seen that the topic of data governance is

at its all time highest popularity (Google Trends, 2024).

***Figure 1.1**: Relative search score signifies a grade from 0-100 based on a comparison with peak popularity (100). The figure visualises how the search popularity for the phrase "data governance" has changed over time* (Google Trends, 2024).

There are risks associated with not having a proper data governance. There is a significant risk for data breaches that could lead to loss of revenue, reputational damage and legal costs (Jamroz, 2023). For instance, employees using personal devices at work poses a number of potential security issues including data leakage and data loss (Cybersecurity Insiders, 2021). According to Jamroz (2023) there is also the risk of failing to comply with regulations such as GDPR and consequently receiving fines when handling personal data improperly. However, the most significant risk with improper data governance is according to Jamroz (2023) the potential damages of inaccurate or incomplete data. Imprecise and vague data can lead to flawed decision making, inaccurate models and ultimately poor business outcomes (Jamroz, 2023). For example, a business may invest heavily in a marketing campaign based on faulty market research only for it to fail in meeting expectations and therefore wasting resources (Jamroz, 2023).

Furthermore, the world has become consumed by the opportunities of artificial intelligence (AI) and for it to succeed, data governance is essential (Verhulst & Schüür, 2023). According to Hillman (2023), AI models are dependent on the data they are trained on and cannot generate good outputs from bad input data. If the input data is of bad quality, the model will not perform well (Hillman, 2023). Furthermore, in an interview conducted by McKendrick (2023), Chada, who is the director of category management at Amazon Web Services, emphasises the problem that low quality data can have on AI models. Data governance can ensure data quality (Anandarajan & Jones, 2021). This makes data governance a relevant subject for organisations researching and training models on large

datasets. Gartner (2023a) predicts that by 2025, *generative artificial intelligence* (GenAI) will be used by 90% of companies worldwide. From the insights drawn from Gartner (2023a), Anandarajan & Jones (2021) and Hillman (2023), it becomes apparent that data governance could play a vital role in ensuring high quality and compliant input data for spreading GenAI and motivates the urgency of data governance for companies.

Data governance can be of importance to companies but it does not necessarily mean that a data governance strategy will have a positive impact. According to Gartner (2022) it is critical that data governance is linked to the overall business strategy if it is to be successful. Still, in a survey conducted by Gartner (2022) it was found that no matter if data governance initiatives are IT or business-led, they are falling short of expectations. 61% of the respondents said their objectives with *governance initiatives* included optimization of data analytics for business processes and operational efficiency, but only 42% of that group thought they were on track to meet that goal (Gartner, 2022).

The insights from Gartner (2022) and Gartner (2021) together with the risks associated with improper data governance motivates the importance of ensuring data governance initiatives succeed. The importance of proper data governance is further emphasised by the growing datasphere and the problems this can bring (Reinsel et al., 2018).

1.2 Purpose

The purpose of this study is to analyse how organisations can provide conditions for data governance initiatives to succeed.

1.3 Problem Analysis and Research Questions

Success of data governance initiatives depends on several aspects and in this section the subject is discussed and broken down into four research questions. The research questions are formed based on an initial analysis of relevant sources and are meant to provide comprehensive conditions for fulfilling the purpose of the report. The research questions are presented below, and motivated throughout the section.

How are companies currently working with data governance?
How can the value of data governance be concretized and conveyed to decision makers?
How can companies spread data governance literacy and encourage change?
How can technology and business divisions cooperate to form data governance strategies?

By answering the research questions stated above, the study aims to find ways to close the gap in understanding between business and technology people that will be identified in the sections below. It seems to be a critical factor for the inefficiency of data governance initiatives and by closing this gap, the study strives to enhance the understanding of how to provide conditions for data governance initiatives to succeed.

1.3.1 The current state of data governance

As described in the previous sections, data governance is vital for maximising efficiency and value from data. Petzold et al. (2020) explains that data of high quality and availability is crucial in order for corporations to run a business and to be innovative. Without effective data governance, Petzold et al. (2020) believes these acts will not be possible. Further, Petzold et al. (2020) states that most data governance programs are ineffective and that the lack of well structured programs leads to missed opportunities and a waste of resources. To understand how data governance programs can be successful and to explore the purpose of this report, it is important to first investigate how companies are working with data governance. Without a clear understanding about current problems, finding solutions will be difficult and therefore the following question needs to be asked:

How are companies currently working with data governance?

1.3.2 Conveying value to chief executives

Petzold et al. (2020) explains that the problem of data governance not being utilised often starts at the top with chief executives not recognizing its potential for value creation. Because of this, data governance programs end up as a set of policies executed by IT that are not widely followed, making the initiatives ineffective (Petzold et al., 2020). Petzold et al. (2020) also mentions that it is common that organisations try to use technology to solve the problem instead. However, while technological solutions can help, they are not a fix for all problems (Petzold et al., 2020).

It is challenging to determine the direct value of data governance and there are many examples of its indirect value (Petzold et al., 2020). Firms have been able to lower the cost of their data ecosystems by millions of dollars and enabled applications for analytics worth millions or billions of dollars (Petzold et al., 2020). However, the combination of having chief executives that do not recognize the value of data governance and that it is difficult to determine the direct value of it does not decrease the difficulty in reaching this result. Therefore, investigating how to make chief executives understand the value of data governance is of importance and leads to the question:

How can the value of data governance be concretized and conveyed to decision makers?

1.3.3 Data literacy and change management

Since data governance is a subset of IT governance and it only deals with data assets (Mehrotra, 2022), it is of relevance how IT and business functions collaborate. Redman and Sweeney (2013) bring up how the IT and business functions in companies have differing views. From IT's point of view, even if the business is technology centred, they are not understood and are not given enough mandate (Redman & Sweeney, 2013). Furthermore, the business' requests can be ambiguous and have unclear definitions and can therefore be difficult for IT to interpret (Lofstrom, 2018). However, from the business point of view, IT hinders innovation, underperforms and does not comprehend how the business works (Redman & Sweeney, 2013). The problem that often occurs, according to

Lofstrom (2018), is that the business function does not completely get their needs fulfilled or the technical solutions become too difficult for the business functions to handle. Due to these difficulties, the functions tend to not collaborate and independently create their own solutions (Lofstrom, 2018). It is possible these parallel solutions could affect the effectiveness of the relationship between business and IT strategy.

According to a Data Governance Expert at GKN (2024), data governance can be a highly technical subject and is therefore naturally discussed on a technical level. The expert argues that data experts fill conferences with talks about new tools for data engineering and analysis, making the subject less inclusive for business functions. Meanwhile, data professionals are frustrated by the lack of understanding about the importance of data governance and quality from other departments (Data Governance Expert at GKN Aerospace, 2024). A common theme observed by Petzold et al. (2020), Gartner (2022) and Redman and Sweeney (2013) is that there is a gap between technology and business when it comes to their expertise and view on IT initiatives. This gap is similar to what the Data Governance Expert at GKN states and seems to be a critical factor for the inefficiency of data governance initiatives and thus, to bridge this gap, the following question is relevant to consider:

How can companies spread data governance literacy and encourage change?

1.3.4 Interdisciplinary collaboration for strategy formulation

Data Governance can be further problematized by including strategic considerations and Gartner (2022) mentions that data governance initiatives can start from both the IT-side or business-side. Dhasarathy et al. (2021) provides insights about how companies successfully adopt new technologies and bring technology and business closer together. According to Dhasarathy et al. (2021), McKinsey & Company's annual IT strategy survey revealed that new technology initiatives that targeted people and how competence was handled, provided the best results. Furthermore, it seems that the best performing companies have a stronger connection between business and technology, as this conclusion can be drawn from how they form their business and digital strategies which is described in Dhasarathy et al. (2021). The business and digital strategies are formed together at 56% of the companies that compete in the upper quartile of McKinsey & Company's IT performance metric but only 19% of the companies in the bottom quartile have taken this approach. This seems to speak for the importance of the connection between business and technology. From Dhasarathy et al. (2021) it becomes apparent that the interplay between business strategy and IT strategy is of significance. As data governance strategy is a subset of IT strategy (Mehrotra, 2022), the collaboration between IT functions and business functions to form data governance strategy also seems important.

The technical nature of the subject makes it easy to forget that the purpose of data governance is to support the business side of the company (Data Governance Expert at GKN Aerospace, 2024). When data governance initiatives start from the technical side it is common that they are not as successful as one would like (Data Governance Expert at GKN Aerospace, 2024). Despite this, Gartner (2021) states that it is common for organ-

isations to orient their data governance practices around data rather than business which makes it difficult for data professionals to have productive discussions with business leaders.

By discussing the sources in this section, it seems that how companies form their data governance strategy is important, but also how the business side and technology side cooperates strategically. It is not the purpose of this study to form strategies but instead the study will analyse how different departments can collaborate to form data governance strategies and therefore, the following question is asked:

How can technology and business divisions cooperate to form data governance strategies?

1.4 Delimitations

When examining the purpose of the report, the pure technical aspect of data governance is not evaluated. Therefore, insights that potentially could be made about technical applications data governance that are not included in this report. It could be argued that technology is a condition for data governance. However, after reading the literature and conducting interviews, data governance seems like more of an operational and strategic challenge rather than a technical one. Therefore, excluding the purely technical aspect of data governance will not lessen the relevance of this study.

2
Methodology

This section explains the methodological approach and how the data used in the study was collected and analysed. The interviewees used for the study are presented and motivated. Later method critique and ethical aspects relevant for the study are considered.

2.1 Methodological approach

The purpose of this report was broken down into research questions related to data governance and what conditions affect the success of data governance. By understanding how companies work, in combination with researching how data governance could be improved, this enabled conclusions to be drawn about how to apply improvements. From the conclusions made about their way of working and what could be improved, it was then possible to formulate generalised insights about data governance that could be applied at other companies.

Data governance is a complex subject and because of this, a qualitative research approach was chosen since this allowed a deeper understanding than what could be accomplished from just superficial observations. Taking part of personal observations from people with different perspectives made it possible to evaluate how the perceived knowledge gap between stakeholders could be bridged. This nuanced level of understanding using different perspectives was considered to not be achievable in a strictly quantitative study, lacking the perspective of more unquantifiable insights. A qualitative research approach also comes with the ability to adapt to circumstances that can occur during the research process (Patel & Davidson, 2019). It can also help to better put the problem into a bigger context and get a more holistic view of data governance (Patel & Davidson, 2019). The qualitative research approach allows for more open research questions but where the context is still fixed (Patel & Davidson, 2019). The research process alternates between literature study and empirics which makes the data and theory closely related (Patel & Davidson, 2019). With this method, a first interview round was conducted which gave the authors valuable insights that helped in developing the literature study. The insights from the literature study in turn helped with the empirical work, and insights from the interviews helped concretise the literature study.

2.2 Data collection

Below follows the two methods used to collect the data of this study, a literature study and an interview study, and a justification of the respondents as well as a presentation of

the focus company GKN Aerospace.

2.2.1 Literature study

To fulfil this study's purpose a literature study was performed where scientific journals and business articles about data governance were examined. Additionally more general theory about change management, value conveyance, cross-functional collaboration was studied. The literature study was essential to get a solid foundation of the data governance field but also to gain further understanding of organisational factors. These literature topics worked as tools that complimented the interviews in discussing the research questions and additionally allowed for conclusions to be drawn.

To conduct the literature study, specific databases were used to find relevant scientific articles. The three most used were Scopus, Google Scholar and Science Direct. Several databases were used to make sure that relevant material was not overlooked. The different sources of information appeared to have different strengths. For example, Google Scholar provided access to large amounts of literature while Scopus was useful since it allowed the researcher to filter depending on the amount of citations and specific keywords. The keywords used when searching for literature can be found in A.1 in the appendix.

Since the research subject was viewed as rapidly evolving and the present state of the subject is of most relevance, a delimitation in the time span studied was set. When performing the literature study, data governance sources newer than 2015 were primarily used, except a few well established data governance theories and frameworks. However, other topics covered, mentioned as more general theory earlier in this section, were in some cases older. The motivation for this was that, unlike data governance theories which are rapidly evolving, many organisational theories still relevant today, were developed many years ago. Furthermore, since the subject of data governance is relatively novel, not all information needed was found in scientific articles, therefore business reviews and consulting reports were analysed and used in the report. These articles and reviews gave a different perspective than scientific articles and allowed for insights to be gathered from experts with more practical experience of data governance implementation in businesses.

2.2.2 Interview study

Because of the complexity of the data governance subject, an interview study was performed which aligns with what Denscombe (2017) says is an appropriate situation to conduct an interview study. Denscombe (2017) explains that complex topics can be handled with an interview study since interviews can help understanding the topic more deeply and the way things work. Furthermore, the author states that conducting interviews in a research project is suitable when the researcher is in need of opinions and insights from actors with experience in the research field. The direct purpose of performing an interview study was to gather insights from individuals who are experts in data governance or whose work relates to the purpose of this study. Gaining a thorough understanding from the interviews could then enable a deeper discussion of the research questions.

Before the interviews were conducted, a set of initial base questions was formulated as a foundation for all interviews. These questions were based on an initial study of relevant literature and were then modified to better fit each respondent and their expertise and to satisfy the specific needs during that time. As more interviews were conducted, the base questions were further adjusted according to knowledge and insights gained from the interviews to get the most out of the remaining interviews. A set of interview questions for each different role respectively can be found in A.2. Furthermore, each interview enabled an open discussion letting the questioner ask follow-up questions when suitable as well as encouraging the respondents to speak freely and bring up undiscussed topics. This closely relates to semi-structured interviews which, as described by Denscombe (2017), lets the interviewer have an agenda on what should be asked, but is still flexible with the topics. The structure further opens up for the interviewee to express their thoughts and ideas (Denscombe, 2017).

The respondents were informed about the purpose of the research and why their contribution is important and how it will be used. This aligns with the methods Patel & Davidson (2019) use to motivate interviewees to participate. As soon as possible after an interview was conducted, the material from the interview was read through and initial notes were made. This was done to directly get an idea of whether the respondent understood the questions as intended. Two or three of the authors participated in the interviews where one was primarily responsible for taking notes and the others for asking questions. Having more than three participants was avoided to prevent the interviews from becoming disorganised. The duration of the interviews was flexible and the interviews lasted as long as either party felt was needed or during a set time of the respondent's choice. In addition to taking notes, some interviews were recorded with the permission of the respondent. The recordings were then later deleted when no further use was needed.

2.2.3 Interviewee selections

The inspiration for this study was brought to the authors by GKN Aerospace Engines. Therefore, the main part of the collected data was primarily gathered through interviews with employees of GKN Aerospace Engines.

GKN Aerospace Engines is a part of the global GKN Aerospace, which has locations in 12 different countries (GKN Aerospace, n.d.b). The global organisation is a tier one supplier of structural and rotating engine components in the aerospace sector. They supply, among other things, parts to the fighter aircraft Gripen (GKN Aerospace, n.d.a). GKN Aerospace Engines will hereby be referenced as only GKN.

GKN was viewed as a suitable study object for two reasons. Firstly, they are currently looking to improve their data governance practices (Data Governance Expert at GKN Aerospace, 2024). Because GKN is a provider of fighter aircraft parts it is reasonable to assume GKN handles a lot of sensitive data that is highly confidential and therefore how data governance is handled in the company is of relevance. Secondly, because of the company's part in an international structure while also having Swedish ties it is a good opportunity to gain insights into a large company acting on an international level.

The interview study was divided into four different parts depending on the interviewed respondents' roles as well as their relation to data governance. The different parts are later referred to as perspectives since the respondents give their own thoughts and insights on data governance. The four perspectives are presented as data professional, data user, strategy professional, and solution provider perspective. Data professionals are experts in the field of data analytics. Data users are people that use and rely on data daily and are heavily affected by data governance. The strategy professional perspective represents people that work with strategy implementation and have a strong expertise in how to formulate strategies. Solution providers are people that work at companies that sell data governance solutions and therefore have knowledge about important aspects of data governance initiatives.

The motivation and vision for the segmentation of the interview study was as follows. The data professionals provided insights about success factors for data governance initiatives, what can work and what is not useful. Data users were interviewed to receive the user perspective of data governance and how the employees are affected by data governance initiatives. Strategy professional perspectives gave insights about how to cooperate between disciplinaries, how to realise changes and lastly what is important to be able to formulate strategies. Solution providers possess information about data governance and factors that need to be taken into account when implementing data governance initiatives. Furthermore, the solution providers and one of the strategy respondents brought additional nuance. This is because the solution providers sell data governance solutions and the strategy professional is a management consultant with experience with data transformations. Thus they brought an external point of view not brought by other interviewees.

There were a total of eleven interviews conducted which are presented in Table 1. Neither name or job title, of any interviewee will be accessible to the reader, only a working description. This is due to the interviewees' wishes to be confidential in the report. The only exception made is that the respondents working at GKN can be distinguished from the rest in Table 1. The perspectives that each respondent covers are also presented in Table 1. Additionally, the insights provided by the respondents are to be seen as their own personal thoughts based on their experience and knowledge and should not be directly related to their companies.

Table 2.1: Presentation of the interviewed respondents. Interviewee 1-5 are individuals working at GKN and the interviewees higher than nr. 100 are outside of GKN.

ID	Working descriptions	Perspective	Date
1	Data Governance Expert at GKN working with data governance and have more than five years of data and analytics experience.	Data professional	27-02-24
2	Data Architect at GKN with more than five years of data and analytics experience currently working with data governance.	Data professional	03-04-24
3	Sustainability Manager at GKN working daily with large amounts of sustainability related data.	Data user	10-04-24
4	Data Executive at GKN with an interdisciplinary background currently working with data governance.	Strategy professional	15-04-24
5	Financial Planner at GKN handling large amounts of financial data	Data user	15-04-24
106	Data Governance Expert with several years of data governance experience, working at various companies around the world.	Data professional	28-02-24
107	Staff Data Engineer with 10 years of data and analytics experience, working with data governance in a large organisation.	Data professional	27-03-24
108	Data Executive with more than 10 years of data analytics experience.	Strategy professional	10-04-24
109	Principal Solution Architect at one of the largest data governance solution providers with technical and client experience.	Solution provider	16-04-24
110	Management Consultant and Senior Project Leader at a leading management consultancy with more than 5 years of experience and has advised several data transformations.	Strategy professional	17-04-24
111	Senior Solutions Engineer at one of the largest data governance solution provider, technical and client contact experience.	Solution provider	19-04-24

2.3 Data analysis

Qualitative data analysis often involves working with large amounts of information in different formats. To be able to manage the data, a common method is to make sure all sources of information are in text format (Patel & Davidson, 2019). This enables getting an overview of the material and also the possibility to compare and identify similarities and differences between different texts (Patel & Davidson, 2019).

In this project, the main type of data to analyse were notes of interviews. The material was compiled using the method by Patel & Davidson (2019) described above. Bits of raw data in the texts were then marked and labelled, to easier navigate through the information. According to Denscombe (2017), labelling the data and ordering it is vital in a qualitative study since it helps with keeping track of the origins of the information. In this study, it helped with knowing what was said when and by who. This further enabled more thorough comparisons of information and highlighting of relevant similarities and differences. After all interviews were conducted and the information analysed, the complete text material was read through to make sure no important aspects were missed.

2.4 Method critique

Regarding the qualitative data aspect of this study, Lincoln & Guba (1985)'s evaluation criteria presented by Cohen & Crabtree (2006) was used to analyse the trustworthiness of the method. Lincoln & Guba (1985) present four criteria:

- Credibility, which regards if the findings represent the truth.
- Transferability, shows if the findings can be applied in other contexts.
- Dependability, indicates if the method is replicable and the findings consistent.
- Confirmability, which relates to the neutrality of the findings.

The scientific articles used for the literature study are deemed credible and relevant because they have been peer-reviewed and are contemporary. This aligns with Lincoln & Guba (1985) who presents a process of letting external peers analyse the information, as a way to increase credibility. As mentioned in section 2.2.1, consulting reports and business reviews have also been used and the trustworthiness of these are lower than scientific articles. Consulting reports can be biassed to the agenda of the company which then goes against the criteria of confirmability. To counter this issue the these reports were thoroughly examined to minimise the risks of using biassed information. When examining business reviews, authors were checked to determine if they were knowledgeable about the subject.

Regarding the interview study, there could be some uncertainties with the collected data. First of all, since the interviewees express their personal thoughts and views it is difficult to check the credibility of their statements. Secondly, the interviewees could bias their

statements to align better with their personal or their company's opinion or benefit, thus impacting the confirmability. Third of all, it is not really possible to recreate the interviews and expect the interviewees to give the same answers as they did the first time, which affects the dependability. Hence, possibly slightly lowering the trustworthiness of the interview study in relation to Lincoln & Guba (1985) evaluation criteria. To make up for this, some specific actions in the interview process were taken. To begin with, each presented perspective in the result has at least two interviewees where their thoughts can be compared, which increases the credibility of the overall result. Furthermore, as described in 2.2.2, during each conducted interview in this thesis, one person was assigned to take notes and the minimum number of participants was always two. This mitigated the risk of misinterpretation and missing valuable information and thus ensured higher replicability and hence also dependability.

Lastly, the transferability (Lincoln & Guba, 1985) of this study has also been taken into account. As mentioned in 2.2.3, this study had a certain focus on GKN with several of the interviewees working at GKN. However, because people from other organisations have been interviewed and together with the literature laid the foundation of the discussion, the conclusions drawn are not necessarily only centred around GKN or this study. They are rather meant to cover a broader area and could be applicable in other contexts related to data governance, as well.

2.5 Ethical aspects

This study chose to describe its ethical considerations according to Diener & Crandall four principles that are mentioned in Bryman & Bell (2011, 128). They are whether there is: harm to participants, lack of informed consent, invasion of privacy or if deception is involved. However, since the question of invasion of privacy was covered in section 2.2.3 by keeping all interviewees anonymous it will not be described in this section.

GKN operates in a market often related to confidential information and supplies governments with engine parts. It is therefore important that no confidential information is expressed in this report since it could cause harm to GKN, who is a participant in this study. This was prevented by having a continuous dialogue with GKN about the contents of this report.

The focus of this study is on improving data governance, which can help prevent data leaks (Jamroz, 2023). This is certainly a positive ethical aspect of data governance since it could, for example, avoid personal data from being exposed. However, since data governance can improve transparency inside the company, which in itself is a good thing, if an intruder were to get into the systems it could be easier to find the supposed target (Data Executive at GKN, 2024). Therefore, this study about improving data governance could cause harm for participants who read and act on this report. The fact that data governance can help prevent data leaks counteracts this problem.

An intention of the study is to optimise data governance, which in itself would not be

considered unethical. However, the effect data governance has on AI could be seen as an ethical aspect that could potentially cause harm. Biases can occur in AI models that can seriously affect the output (Chapman University, n.d.). For example, biases in healthcare AI models can amplify social inequalities (Igoe, 2021). This would be an ethical aspect to consider since improper data governance could cause harm to participants and readers. However, data governance would make AI models more trustworthy (Janssen et al., 2020), which mitigates this problem.

To make sure there is no lack of informed consent this study has been clear to organisations and interviewees who we are, what the purpose of this report is and in what context we are writing this report. This has been done both before and during the interviews.

According to Bryman & Bell (2011, 136), deception is when researchers present their research as something that it is not. There has been no trouble communicating the honest and full purpose of this report to the respondents since the report does not contain any sensitive information and this is how this study has avoided deceiving participants.

3
Frame of reference

This chapter presents the frame of reference, which focuses on topics such as data governance frameworks and taxonomies, change management, communication within organisations, conveying of value, cross-functional collaboration and externalities. The topics covered in this chapter are motivated individually in their respective sections.

3.1 Frameworks and taxonomy for data governance

Below three frameworks and a taxonomy used for data governance are presented. The frameworks give insights into the way organisations can successfully work with data governance. The idea behind presenting different frameworks is to illustrate that there are different tools companies can use for data governance. The frameworks are presented briefly and due to the delimitations, the technical parts of the frameworks are left out. The taxonomy provides clarity about data governance and aspects to take into consideration when working with the topic. The different frameworks are used to gain insights into what is important to consider for a data governance initiative. Several frameworks are used to present a more nuanced and well rounded view.

3.1.1 The DAMA Guide to The Data Management Body of Knowledge

The first studied framework is the DAMA Guide to The Data Management Body of Knowledge (DAMA-DMBOK) written by Mosley (2010). It provides guidance on numerous topics related to data management. Mosley (2010) explains how data governance is in a central position in the data management landscape and by influencing the other functions relating to data management, the data governance function steers how data assets are managed. Mosley (2010) defines the role of data governance as "high-level, executive *data stewardship*".

According to Mosley (2010), the best data governance is perpetually improving and in progress, but there is no one size fits all. The needs of a data governance initiative relate to specific organisational and cultural matters. However Mosley (2010) still finds various similarities between successful data governance initiatives and the author has defined eleven guiding principles for corporations implementing data governance. Among other things, these guidelines explain that the data management professionals and the business data stewards together are accountable for the data management. Furthermore, coworkers who are already knowledgeable and intrigued can be the optimal data stewards. In the

principles Mosley (2010) also emphasises the unique nature of every data governance initiative as well as how good data governance is signified by taking decisions together. The corporation's business strategy should be the starting point for the data strategy (Mosley, 2010).

3.1.2 Data Mesh

The amount of interest and investment by companies in big data and artificial intelligence has been growing (Machado et al., 2021). However, companies' satisfaction with these technologies have decreased at the same time according to Machado et al. (2021). They continue by stating that this fact shows that adopted data architectures, traditionally monolithic architectures, are not functioning as needed and are overloading data teams. Data mesh is a framework that aims to create a decentralised data architecture by organising data into domains and letting the domains manage themselves (Machado et al., 2021). Due to its focus on decentralised ownership, data mesh is a federated data governance framework (Dolhopolov et al., 2024). The ownership of the data should be distributed to the different business domains that can understand the data in their domain better according to data mesh principles (Machado et al., 2021).

3.1.3 Data Management Maturity Model

In the third framework studied, the Data Management Maturity Model (DMMM) developed by the CMMI Institute (2019), three major aspects regarding data governance are covered. These are governance management, business glossary and *metadata* management. For each aspect the framework presents a path for how to gradually increase the performance of data governance through different stages. What is done by the CMMI Institute (2019) is essentially to describe how to start implementing measures to improve data governance, as well as the path towards perfecting these measures. Below is a summary of the path to take according to the CMMI Institute (2019) regarding the three data governance topics covered in their framework:

Governance Management is the first aspect and should, according to the CMMI Institute (2019) make sure that the company's data is efficiently and properly handled and used by forming the conditions needed. These conditions regard the stewardship and ownership of data as well as the larger composition of the operations. The CMMI Institute describes achievements that should be met on each stage towards perfecting governance management. The achievements connected to the first stage focus on starting to use data governance in some capacity, as well as on a project basis implementing stewardship, ownership as well as accountability when it comes to data assets. The following stages subsequently increase the data governance requirements. According to the CMMI Institute (2019) the achievements in the final stage focus on continuous development and interacting with the industry as a whole, both by learning from other sources and best practices and providing the industry with insights from the own organisation.

The second aspect is Business Glossary and the CMMI Institute (2019) states that this aspect can help stakeholders find a mutual understanding for the vocabulary pertaining

data. This means that the specific words that are used have the same meaning to everyone involved. The achievements characterising the first stage in the development process are about formulating definitions and using the agreed upon business vocabulary when building logical data models. The CMMI Institute (2019) describes the improvements that should be made when working through the development stages. In the final stage, the achievements pertain, among other things, adding business rules to the glossary and using optimization techniques in the improvement work that is helped by the glossary. Also, the glossary is the same in all parts of the company that uses it.

The third aspect is metadata management and according to the CMMI Institute (2019) improving metadata management should be done to make sure data is used correctly while also making data sharing easier, mitigating risks and becoming more agile in reacting to altered business conditions. In the first stage, the CMMI Institute (2019) highlights the need for producing accessible documentation about metadata. In the last stage, among other things, the use of prediction models and root cause analysis to make improvements are highlighted.

3.1.4 Data Governance taxonomy

When implementing a successful data governance strategy there are essential considerations to be made and Al-Ruithe et al. (2018) have developed a data governance taxonomy that covers these considerations. Firstly, Al-Ruithe et al. (2018) consider a mapping of people in the organisation because they are heavily affected by how the data governance strategy is implemented. Therefore clear structures are needed, which refers to how data management is used as well as how data is administered. For instance, there should be a common solution to a recurring problem (Al-Ruithe et al., 2018). Furthermore, technology can allow automation of certain processes and makes governing of data easier (Al-Ruithe et al., 2018). Therefore, technology can be used to help introduce data governance practices and also act as a monitor mechanism (Al-Ruithe et al., 2018). Another controlling mechanism can be introducing *Key Performance Indicators* (KPIs) (Al-Ruithe et al., 2018).

A data governance strategy influences different parts of the organisation, and therefore it needs to be put in an "organisational context" (Al-Ruithe et al., 2018). Aligning the data governance with the overall strategy and how decisions are made. It is important that employees understand data governance functions, therefore leaders of an organisation need to be convinced to teach their employees. Al-Ruithe et al. (2018) also writes about the importance of change management that is required for data governance, a topic that will be further discussed in later chapters.

It is also important to consider juridical bits, which entails what is allowed to do and what has to be done (Al-Ruithe et al., 2018). When dealing with confidential information this aspect is even more important (Al-Ruithe et al., 2018).

3.2 Spreading data literacy in an organisation

As one of the research questions relates to spreading *data literacy* in the organisation it naturally becomes important to understand how to effectively develop this literacy. Therefore, this section will cover some strategies for developing literacy.

According to Brown (2021), data literacy is defined as: "the ability of a company's employees to understand and work with data to the appropriate degree". Brown (2021) emphasises the importance of data literacy and points to a survey by Goasduff (2020) that says poor data literacy is one of the top three barriers an organisation needs to overcome to build strong data teams. Furthermore, an Accenture survey (Accenture, 2020) showed that employees are not confident in their data literacy skills. By mentioning the surveys by Goasduff and Accenture, Brown (2021) motivates the importance of building data literacy.

There is no one way to develop data literacy in an organisation according to Brown (2021) but there are a few key things to consider. Businesses have spent a lot of time training people on technical tools that are not user friendly (Brown, 2021). Instead businesses should make the tools easier to use so that people can spend more time on data (Brown, 2021). Another important part of developing data literacy is to establish a common way of talking about data in the organisation in order to facilitate communication about data (Brown, 2021). In addition, having communication across the organisation and between employees can help individuals obtain skills and experiences that they can use in their own work (Sinitsyna et al. 2024).

Culture also plays a crucial role and should create an environment that rewards curiosity instead of punishing a lack of data literacy (Brown, 2021). Furthermore, an organisational culture that covers a high level of involvement, participation, and engagement will make employees more involved in initiatives (Piwowar-Sulej et al., 2023). It is also important to keep in mind that people respond differently to the same training, therefore it is important to consider your audience and tailor it accordingly (Brown, 2021). Some might prefer hands-on training whilst others prefer self-led courses (Brown, 2021).

Sinitsyna et al. (2024) state that learning can also be enhanced by encouraging interaction and collaborative work through effective internal communication (IC). Sinitsyna et al. (2024) refer to *IC* as sharing information between every stakeholder within an organisation. Learning can be enhanced by encouraging interaction and collaborative work through effective IC (Sinitsyna et al. 2024).

Additionally, Panetta (2021) highlights the importance of making the training sessions fun and to think outside the box. The author suggests focusing not only on presentations, but to also provide examples of more creative ways to teach, such as games and quizzes. Another suggestion from Panetta (2021) is to do data literacy proof-of-concept workshops. The idea is to identify where language gaps exist and have employees describe use cases in their own words, business or technical, which is supposed to help "raise awareness and understanding of literacy" (Panetta, 2021).

Furthermore, Brown (2021) states that it is very important to define key performance indicators (KPIs) and measure if data literacy initiatives are successful. Shoab (2022), shares this idea and states that it is crucial to constantly observe the performance of a new initiative and reform it according to employees' feedback.

3.3 Generative AI

As mentioned in 1.1 Gartner (2023a) predicts that generative AI will be used by 90% of all companies worldwide in the near future, thus creating an incentive for understanding how data governance affects AI in companies. How AI is affecting data governance is also studied.

According to Pulapaka et al. (2023), organisations are quickly moving to utilise generative artificial intelligence. However, to fully utilise generative artificial intelligence it is important that a robust data governance strategy is in place (Pulapaka et al., 2023). The models that power generative AI are only as good as the data quality they are trained on and since effective data governance is important for ensuring data quality, data governance becomes very important for generative AI (Pulapaka et al., 2023).

A survey on the Gartner Peer Community (2023) showed that conversational interfaces for analytics and generation of narratives are two of the most valuable areas of use for generative AI when looking forward 24 months. Cote (2021) explains that it is not enough to analyse data, how the story about the data is communicated is also important. This is known as data storytelling and is the ability to communicate insights about data using narratives and visualisations (Cote, 2021).

3.4 Conveying value

This section regards conveying value, both to chief executives and to employees, two aspects that have been identified as important components of data governance in section 1.3. The first aspect relates to research question two and the second aspect relates to research question three.

3.4.1 To chief executives

Gartner (2023b) explains that Chief Information Officers (CIOs) often have difficulties communicating IT value to business stakeholders. Creating use cases can be a way to express the business value of IT to executives (Gartner, 2023b). The purpose of use cases is to show either how IT is needed to run the ordinary business or how IT has helped change the business and created profit for it (Gartner, 2023b). Use cases express IT's contribution to the business by highlighting the effect on business objectives such as increased revenue, reduced costs or mitigated risks (Gartner, 2023b).

It is vital to understand how IT initiatives affect the business and set up KPIs to measure that impact (Gartner, 2023b). Executives have little interest in how technologies work

and their technical performance, thus creating KPIs measuring business value is essential when conveying IT value (Gartner, 2023b). Similarly, Brahm et al. (2018) explain that useless metrics that lack significance can lead to poor decision making and thus have a negative impact on the business.

Kenny (2020) writes about the importance of having KPIs that focus on what is actually important for the company. The author explains how the organisation's KPIs should be formulated with regard to the organisation's stakeholders and strategic goals rather than just being arbitrarily chosen programs. Carpi et al. (2017) also provide guidance on how to form metrics. According to the authors it is better to use real time indicators in some sense, and not evaluate performance using data that is lagging behind the actual workflow.

3.4.2 To employees

Piwowar-Sulej et al. (2023) explains that internal communication (IC) can help with implementing strategy across the organisation and that strategy will create value only when shared by all decision-makers. If employees are not aware of broader aims, due to inefficient communication channels, they will be less willing to adopt initiatives (Piwowar-Sulej et al., 2023). IC is a way to widen the understanding of these aims and thus increase the devotion to the organisation and increase the motivation of employees to take responsibility to reach organisational goals (Sinitsyna et al., 2024).

Davenport & Mittal (2020) argue that companies without a strong data culture have troubles progressing with data. In a survey by NewVantage Partner on large companies in the U.S., discussed by Davenport & Mittal (2020), it was found that the biggest challenges companies see, to becoming a data driven company, were "Cultural, organizational and process challenges" (Davenport & Mittal, 2020). Davenport & Mittal (2020) list several aids that can be used to solve data culture problems. Chief executives have a big part to play being the frontrunner for organisational change and the authors especially argue for the role a CDO can play in conveying the value and helping lead the change. Furthermore, the authors suggest using different programs to help transform an organisation. For example, tailor made education programs that target different employees in order for them to get the most out of the program. Another program that can help with convincing employees to be more data-driven is to showcase use cases. Employees that actually work with the data and can showcase the benefits. A third program to motivate employees to be more data driven is to reward those that are data driven (Davenport & Mittal, 2020).

3.5 Cross-functional collaboration

As mentioned in the problem analysis, a substantial problem within the field of data governance is that different departments have trouble collaborating. Therefore a thorough analysis of cross-functional collaboration follows to help understand problems with collaboration.

According to Appsierra (2024), data analytics and software development are closely related. It is therefore possible to argue that knowledge about how to improve data analytics practices can be drawn from software development. The rate of change in business and technology has led to many software features failing to meet user requirements (Lee & Xia, 2010). To combat this, agile approaches were proposed as a solution to improve the ability of a team to respond to fast changing requirements (Lee & Xia, 2010). More recently, as digital transformations bring new demands on technology and regulations, agile data governance has emerged as an interesting topic (PricewaterhouseCoopers, 2019). According to PricewaterhouseCoopers (2019), traditional data governance capabilities are not flexible enough to take on requirements from agile teams as digitalisation efforts shift to working with agile principles. PricewaterhouseCoopers (2019) argues that an approach to data governance that both adopts and supports agile principles will help data governance respond to changing requirements.

An important principle when working agile is team diversity (Lee & Xia, 2010). Diversity in this sense means to which extent team members have different functional backgrounds, skills and expertise (Lee & Xia, 2010). The authors state that diversity in teams increases the ability to engage in complex problems and makes it easier for teams to understand the context behind changes in requirements. However, Lee & Xia (2010) also state that working in cross-functional teams can lead to conflicts and costly communication, hampering cooperation.

Moreover, agile methods include working in cross-functional teams and using unofficial communication (Kuusinen et al., 2017). The authors have observed that using agile methods can help transfer knowledge between team members within large organisations (Kuusinen et al., 2017). Other findings from the authors include that formal communication is not as effective as informal and that these communication types should be regular to have the best effect (Kuusinen et al., 2017).

3.6 Change management

Introducing data governance on a larger scale in an organisation includes changes in how the employees perform their work. One example is, as stated in 3.5, that introducing cross-functional teams can bring company cultural change. The sections below describe how organisational change can be challenging both on an individual and organisational level. Frameworks that exist to help implement change are also discussed. Since data governance initiatives often involve change, change management can be a support in making the initiatives successful.

3.6.1 Change on an individual level

According to Erwin and Garman (2010), there are three dimensions of resistance to organisational change which are behavioural, cognitive and affective dimensions of change. The behavioural dimension refers to how an individual reacts to organisational change, and an example of such a behaviour is the individual doing the minimum required instead of actively cooperating to implement the change (Erwin & Garman, 2010). Regarding the

cognitive dimension, Erwin and Garman (2010) describe it as what an individual thinks about the change, for example what the value of the change could be and how it could affect the individual's department or organisation. Negative reactions to change could in the perspective of the cognitive dimension lead to a lack of commitment (Erwin & Garman, 2010). The affective dimension of change involves which feelings an individual could experience when being part of an organisational change (Erwin & Garman, 2010). Negative reactions to the change in this dimension could be anxiety or stress (Erwin & Garman, 2010).

A framework that can be used to help individuals adjust to change is ADKAR. According to the ADKAR model, when implementing change it is important that every individual fully accepts and commits to the change (Angtyan, 2019). The ADKAR model looks at how people at an individual level experience change and it does this on five levels: Awareness, Desire, Knowledge, Ability and Reinforcement (Hiatt, 2006). According to Hiatt (2006), employees need to be aware of why the change is implemented. Desire is about the individual's personal motivation to stand behind the change. Hiatt (2006) further states that if the individual has the motivation to change, the person needs to have the right set of skills and experience. In other words, the employee needs knowledge about how the change can be implemented. Ability is if the individual can actually do the change. Lastly, reinforcement covers the essential parts to preserve the transformation (Hiatt, 2006). With this model, management can see what step a specific employee has troubles with (Angtyan, 2019). If the change cannot be done because an individual does not have the right desire, that individual needs to be, to a greater extent, supervised and encouraged (Angtyan, 2019).

3.6.2 Change on an organisational level

Mento et al. (2002) have identified 12 steps to successfully introduce a business transformation. The article combines theoretical frameworks such as Jick's tactical ten-step model for implementing change, Kotter's strategic eight-step model for transforming organisations and General Electric's seven-step change acceleration process model. In addition, the authors analysed a real case of how a large company in the defence industry has managed a transformation. The frameworks combined with the case study were used by Mento et al. (2002) to draw conclusions on change management.
Mento et al. (2002)'s steps to successfully introduce a business transformation are presented below:

1. Figure out what the required change is and what circumstances are present
2. Understand which personnel are instrumental in the change and what they will do and who will be affected by change project
3. Create a clear picture of the company and the possibility that the change can be completed. Failure of past initiatives can indicate future resistance and it could be hard to make major changes at once, instead smaller changes where everyone can participate is preferable
4. Establish a strategy that includes obligations but also what the change should accomplish

5. Get the right support from influential employees in that can get the project attention
6. Prepare the recipients, the affected employees for change
7. Implement the change, by combining it with the culture at the moment
8. Appoint a team that will lead the change. A group can do this better than an individual leader since they together have more experience and abilities. Diversification in the team members can help create this range of abilities
9. Motivating employees by generating many "small wins", important if the project is done over a long time since motivation can decline
10. Continuous communication to mitigate confusion and increase understanding and engagement
11. Evaluate how the project advances, e.g. with metrics that monitor important areas
12. Learn from past experience. This can help the project not make the same mistakes again

3.7 External factors

Although it is apparent that large parts of the responsibility for data governance success lies within the organisation boundaries, a part of data governance success is beyond the typical organisations control, namely through regulations. There are multiple costs associated with regulations with the most relevant and quantifiable being compliance costs carried by companies and organisations complying with the regulation (OECD, 2014). The issue of compliance costs are further nuanced when considering that several regulations are vague and contradictory (Ruohonen & Mickelsson, 2023). An additional complicating factor is the rapid advancement of technology, especially AI and machine learning, e.g. algorithms that de-anonymize and re-identification of data subjects (Ruohonen & Mickelsson, 2023). In the European Union these issues are regulated within the Data Governance Act (DGA) and questions about enforcement have historically been raised about GDPR (Gentile & Lynskey, 2022). Enforcement concerns are now also being raised on the DGA (Ruohonen & Mickelsson, 2023).

4

Results

This chapter presents the qualitative data from the eleven interviews. The interviews conducted have been divided into four perspectives, motivated in the method chapter, with respective results from each perspective presented below.

4.1 Data professional perspective

This section deals with the interviewed data professionals' views on data governance in general, problems that may occur when working with data governance and success factors according to the interviewees. There were four interviewees from this perspective, two of them being from GKN. The interviewees from GKN were a Data Governance Expert (1) and a Data Architect (2), both with more than five years of data and analytics experience. Outside of GKN, the interviewees were another Data Governance Expert (106) and a Staff Data Engineer (107) both with several years of data and analytics experience. All of the interviewees work with data governance in large organisations.

4.1.1 Data governance overview

Several interviewees agree on what the definition of data governance is and why data governance plays an important role in an organisation. The Data Governance Expert at GKN describes it as a way of working with data and assuring its quality, ownership, availability and accessibility throughout the organisation (1). The same interviewee further elaborates that data governance aims to enable the possibility of accessing the right data, at the right time, with the right quality (1). The Staff Data Engineer from another company, also mentions quality as a key factor but adds that *data cataloguing* and observability are closely connected to data governance as well (107). The Data Architect at GKN explains that data governance is often associated with administration and bureaucratics and thus has a touch of boredom around it (2). The same interviewee sees it as a way of helping people with their daily work by providing data, and further points out the need for transparency in the organisation in order to provide better help with more accurate data (2). A similar view is shared by a Data Governance Expert who says that data governance exists to sort out general issues with data and to help people manage their data by setting up standards and policies (106).

The use of data governance is not the same in every organisation however, but can rather differ in many ways. The Data Architect at GKN mentions that differences exist between

both companies and industries (2). According to the interviewee, organisations have different outlooks on data governance in general and different strategies for data governance (2). Some are working reactively and implementing data governance only when needed, while others are more innovative and try to utilise the benefits of data governance (2). A second data professional, the Data Governance Expert at GKN explains that data governance has its roots from a technical side but that it is currently generally moving towards being more oriented around the operations of an organisation (1). The interviewee elaborates that the origins of the data governance in an organisation can affect the strategies around it (1). For instance, if it originates from operations, decisions will be made with an operations perspective (1). The Data Governance Expert from a different company, states that the way data governance is applied in an organisation is generally the same even though the actual data varies (106). However, the processes around it will not always be the same according to the interviewee who in addition mentions that some organisations have structured data while others can have unstructured data and differences in data governance will occur based on the type of data (106). Structured data is found in normal database tables and unstructured data can be things such as videos or streams (106). The Staff Data Engineer at another company mentions that the implementation and use of data governance depends on the maturity of the organisation (107). The maturity affects which data governance tools are being used, but also how literate the people in the organisation are (107). The interviewee explains that the more mature an organisation is, the more literate its people will be and the more long term initiatives can be taken due to an increase in support from executives (107). Literate refers to how much knowledge about the subject an employee possesses.

4.1.2 Problems when working with data governance

The Data Governance Expert at GKN describes three obstacles preventing data governance excellence (1). These are lack of clear mandates and ownership, lack of operational knowledge and lack of technical ability. According to the Data Architect at GKN, people who are not data professionals lack knowledge of data and data governance, and that is sometimes even the case for data professionals (2). Additionally, the Data Governance Expert from another company explained that there is a knowledge gap between different stakeholders and that the interviewee believes that this is caused by lacking data literacy throughout the organisation (106). With that being said, the Staff Data Engineer from another company believes that in a more data mature organisation, people are more knowledgeable (107).

Another problem, described by the Staff Data Engineer, is that it is difficult to show concrete monetary results from data governance (107). This is explained by the interviewee to be because intangible things such as data quality cannot be translated to savings and data governance does not show direct value (107). The interviewee further states that long term value is often overshadowed by short term gains (107). People care more about getting data, than data quality and governance (107). The problem with conveying value is also talked about by the Data Governance Expert from another company who explains that since there is no clear return on investment from the start, there is no budget for data governance and few people are assigned to the data governance function (106). A third

interviewee, the Data Architect at GKN also has a similar take and describes it as hard to convey the value of data governance (2). The interviewee believes that all executives think data governance is good, but that there is an obstacle in the start of initiatives where ownership and descriptions needs to be defined (2). According to the interviewee, data governance can be motivated by highlighting potential fines resulting from handling sensitive data in an improper way but the interviewee thinks this is a boring metric (2).

Several data professional interviewees reflects on problems regarding how data governance strategy is formulated. A Data Governance Expert believes that many companies formulate the data governance strategy as an afterthought after the business strategy is already done (106). The interviewee further explains that for the most part the data governance strategy is not connected to business needs because the business strategy is not completed or is not shared in enough detail with the data governance team (106). The Data Architect at GKN explains how data governance initiatives generally are executed from the tech-side focusing on technical solutions (2). However, according to the interviewee, complex solutions are rarely needed (2). The interviewee further states that the business side often does not communicate in a way that is understood by technical users, they cannot convey what they need even though they know what it is (2). Starting from the tech side brings problems because the initiative is not grounded in what the business needs which leads to advanced technology that may not be used, according to the Data Governance Expert at GKN (1).

4.1.3 Insights about way of working

Regarding using frameworks to successfully implement a data governance strategy, the opinions diverge. One of the interviewees, a Data Governance Expert suggests that frameworks, such as DAMA, can help with the data quality (106). However, other interviewees question the usefulness since general frameworks are too technical (107, 2). According to a Staff Data Engineer, frameworks are only useful for technical personnel (107). The Data Architect at GKN suggests that formal frameworks lack the human aspect, but they could be used as an inspiration tool for the data governance strategy (2). Instead of using a framework to get a better understanding of the organisation, a Data Governance Expert argues that a survey done at an organisation could help map out how people use data (106).

A problem discussed in 4.1.2 is how to convey the value of data governance. The Data Architect at GKN argues that before conveying the value of data governance, the value of a data-driven organisation needs to be understood (2). Several data professionals agree that usually, regulations are the only thing that makes chief executives interested in adhering to data governance initiatives. Otherwise, one can point at cost efficiencies that can be made with data governance (2). The data professionals are united in that metrics are useful but for different purposes and in different cases. A Data Governance Expert (106) argues that KPIs can be used to make employees more invested in data governance initiatives and creating responsibility for data governance. This is done by including data governance KPIs in the employees yearly evaluation. The Data Architect thinks KPIs could be useful but more so the more mature an organisation is (2). At GKN, the in-

terviewee sees data governance more as a tool in the daily work than something they want to measure. The Staff Data Engineer, not at GKN, uses different metrics because it is hard to concretize data governance and metrics can then be useful to convey the value (107). The Data Architect at GKN talks about metrics more related to the data created (2).

Getting the right support for a data program is essential to get attention and can help convince other employees to do certain things, according to a Data Governance Expert (106). To convince executives to act as a sponsor, the interviewee argues that appointing a CDO can help, by acting as a link between the CEO and data governance. Furthermore, according to the interviewee, use cases are very good to convey value. Showing an actual benefit that has occurred because of data governance could make it more interesting and doing this several times will further increase the interest in data governance (106).

An important factor when implementing data governance, that was discussed by some interviewees, is involvement. The Data Architect at GKN (2) and a Data Governance Expert (106) believe that pushing regulations or requirements on employees is not beneficial. Instead, involvement of different employees and taking more people on the journey is needed. The Data Governance Expert argues that setting up standards is important and to create these standards, employees need to take part in the creation (106). This also goes for convincing the value to the business side and by using the thoughts from the business, it will be easier to reach consensus (106). The interviewee also proposes a system for creating involvement to break down data governance in small areas and then introduce one at a time in the organisation, this needs to be done practically so it does not become tedious (106).

As described in the problem discussion, data governance is a highly technical subject which makes it hard for non-tech employees to fully understand its use and advantages. Therefore, to implement a successful data governance strategy, it is important to spread literacy. How to spread literacy varies between the interviewees, but a common theme is education. A Data Architect at GKN states that not everyone in an organisation needs to be fully literate about data governance, however they allow everyone access to material and information that could help with the understanding (2). The interviewee also mentioned how they work with developing data literacy, namely by creating frameworks and definitions that allow people to learn (2). The interviewee says while education is very important, motivating and supporting employees is also needed (2). The Staff Data Engineer says that business persons need to be literate in the sense that they at least understand data quality (107). The interviewee also states that the business team has to be able to take ownership of the data and therefore need to be literate and one way one to spread literacy is with use cases, where the use cases can showcase how one can make data driven decisions (107).

Another common theme is to simplify processes. A Data Governance Expert explains making processes as simple as possible, meaning that no documentation should be needed to know how to handle a situation which could also be achieved through automation (106). Another interviewee, the Staff Data Engineer talks about using different user interfaces for different stakeholders, which can help with understanding (107). The interviewee

suggests making data applications more user friendly can be important for business users since it is not necessary for them to grasp tools and technologies that are being used (107).

A Data Governance Expert advocates for the business side to be the driver in data governance initiatives and this is because it will be easier to understand what data is needed and of what quality (106). The Data Architect at GKN also thinks the business side should be the driver but technical persons need to be allowed to innovate and test new ideas (2). The Staff Data Engineer argues it is essential to work in cross-functional teams when working with data governance and many different people need to be involved, including business people (107). On the other hand, the interviewee is hesitant towards the idea of working in agile teams, the interviewee argues this may not grow the skills of the business person and that the business person rather just let the data professional do all data related things. Instead, another way to spread literacy that the interviewee believes is effective is spreading data governance literacy through newsletters and workshops (107).

The interviewees are not fully convinced of the role generative AI could play. The Data Architect at GKN (2) and a Data Governance Expert (106) sees it as a tool that could help with literacy but interviewee 106 argues there is a downside that a chatbot would use old data. The Staff Data Engineer does not think generative AI at the moment has the capability to be useful but perhaps in a few years (107).

4.2 Data user perspective

Below, the interviewed data users' perspectives on how data is used and how data governance affects their work are presented. It is also described how data users would prefer to work with data governance and their view on strategy. Two employees at GKN were interviewed, a Sustainability Manager (3) and a Financial Controller (5). These two interviewees both handle large amounts of data in their daily work and they are reliant on that the data they use is of good quality and well managed. The interviewees have therefore been involved in data governance initiatives in order to start working more with data which has given them insights in how initiatives should be tailored to fit their needs.

4.2.1 How data is being used

The interviewees gave insights into how non data professionals are in contact with data. The Sustainability manager at GKN works a lot with data and the interviewee spends a lot of time looking through and analysing data as part of their role within sustainability and outlines the importance of data for sustainability departments (3). One of the main reasons for the significance of data within sustainability is the reporting obligations for delivering sustainability metrics such as energy consumption and waste (3). The interviewee further explains that data makes it possible to understand where you are at and makes it possible to measure impact and progress and data has made it possible to express sustainability in numbers (3).

Another interviewee, the Financial Planner at GKN uses data in their daily work, providing an additional work case (5). The interviewee uses different types of data such as

production hours, number of employees and various financial key figures and the data is then used in different processes and work activities such as accounting, creating forecasts, budgeting and other future planning tasks (5).

4.2.2 The impact of data governance on data users

There are a couple of reasons why data governance is important for a data user. The Sustainability Manager at GKN states that transparency, traceability and an indication of data quality is important for establishing trust in data (3). The Financial Planner at GKN also mentions the importance of having trustful data and that in order to use data properly, one must have a clear understanding of what that data is (5). Additionally, the interviewee explains the difficulties with identifying mistakes or errors in the data if the user does not have knowledge of it (5). This is due to having to retrace where the data originates from to see if it matches in different reports and try to understand where the error occurs (5).

The Financial Planner at GKN believes that the most important effect of data governance is that the data available can be of higher quality (5). This can then ensure the user that the data is correct and trustworthy and thus, relieve the user of having to look into possible data mistakes themselves (5). The other data user interviewed shares similar insights of how data governance can impact data users (3). The interviewee brings up the earlier mentioned discussion about how transparency, traceability and data quality makes the data trustworthy. The Sustainability Manager at GKN states that data governance builds trust in data by making it transparent, traceable and indicating data quality which allows an organisation to make data driven decisions (3). In the past people did not care as much about the number that was reported, as long as it was reported (3). Now more thought is put into the number and where it came from which makes data governance more important (3). In addition to making data transparent and traceable, data governance can help by giving structure and a common language when talking about data in a company which helps create a common understanding (3). The interviewee also gives suggestions on what would help create more trust in data, eliminating human error where possible and automating the communication between systems is preferred (3).

The Sustainability Manager expects sustainability auditing to increase in the future, making the correctness of the data more important in the future (3). The increasing regulation also makes it so companies need to publish more data about sustainability and it is important to make sure that data is correct, otherwise it can have a negative impact on the company financially through penalties (3). A related argument is made on finance by the Financial Planner who states that the correctness of the data is crucial for financial planning (5).

4.2.3 Data users´ thoughts on ways of working with data governance

The Sustainability Manager at GKN does not have a lot of experience with data governance since it is quite a new topic and believes that most people are new to the concept (3). At first when the interviewee started learning about data governance it was important to first develop an understanding about data governance (3). The interviewee also men-

tions how sustainability and data governance both work a lot with change management and that it is important to make people understand the benefit of it (3). It is important to introduce data governance incrementally for people to start working with data governance and that people need to understand why they should learn something new before they start learning it, they need to see what is in it for them and are not going to care if it is more work without any benefit for them (3). The Financial Planner at GKN also emphasises the importance of conveying the benefits and value of data governance to motivate employees to adapt to initiatives (5). The Sustainability Manager also acknowledges that change can be difficult and that it is important to focus on change management and one way that could work would be to integrate the change into things people are already doing (3). According to the interviewee, it is important to make data governance a natural part of the world for people (3). Agile principles, and more concretely being very problem focused, could help when starting to work with data governance since it could help deliver what is wanted in an incremental way (3). When discussing data literacy, the Sustainability Manager mentions that it is important to have a multi channel strategy for spreading literacy in an organisation (3). When it comes to selling the concept of data governance the interviewee suggests that personal communication and team meetings are effective and that the message should be made personal and tailored to the receiving team (3). For training in data governance the interviewee states that the more interactive the training is, the better and that the training material has to engage the people (3).

The Financial Planner also mentions that working in cross-functional teams can be beneficial when working with data governance since data users can learn about the subject from data professionals (5). At the same time, data professionals can get insights about how the data users work (5). The interviewee also states that it would be preferred to both try integrating data governance in the ordinary work tasks but also have dedicated data governance projects led by a data professional when working with data governance initiatives (5).

When trying to spread knowledge about technical details to non-technical people, one interviewee, the Financial Planner states that it is important to have patience with each employee (5). The interviewee also mentions that verbal communication often is more effective than to just post information on an intranet page for example (5).

When asked about generative AI and data governance, the Sustainability Manager explains how generative AI has the potential to lower the threshold to interact with data (3). For example, generative AI could make it easier to populate data catalogues and interact with data governance tools (3). The interviewee thinks generative AI will mostly benefit non data professionals to interact with tools. The Financial Planner agrees that generative AI could facilitate the use of technical tools, but the flaws of the AI models could make the tools and the data associated with them less credible (5).

4.2.4 Data users view on strategy

The Financial Planner states that in their experience, business and data analytics teams do not currently work together strategically (5). However, the interviewee further discusses

the possibilities of strategic cooperation in the future and the possible benefits that could derive (5). It is important to meet the crucial needs of all actors involved, which will be easier to achieve if the strategies are formulated together by both sides (5). A case was explained by the interviewee where a finance division was in need of a solution to some issue and then successfully worked together with data analytics to solve the problem (5). Furthermore, after becoming more literate in and gaining a better understanding of data governance in general, the interviewee is more open for further strategic collaboration (5).

From a sustainability point of view, the Sustainability Manager at GKN says that the goal is to intertwine data governance and sustainability strategies and that every team should know how to work with data governance (3). You do not want separate strategy bubbles, instead what is desirable is to have a strategy for sustainable business (3). The interviewee thinks the same would be good for data governance and that at first it would be important to create the proper foundations for data governance and integrate it with the rest of the business (3). After the foundation is laid, it is important to have a decentralised data governance strategy and that it all depends on the level of data maturity of the company. A company cannot start off with a decentralised strategy but a centralised model can help guide, inspire and get people on board (3). Successively, people can start taking more responsibility and the organisation can move to a more decentralised model for data governance (3).

4.3 Strategy professional perspective

The following section includes the perspectives of people working with developing strategy on the strategic value of data governance. It is also reasoned about change management and how to bridge the gap between stakeholders. There are three interviewees, a Data Executive (4) from GKN with an interdisciplinary background, one Data Executive not from GKN (108) with more than 10 years of experience within data analytics, and one Senior Project Leader at a leading management consultancy (110) with more than 5 years of experience and knowledge of leading several data transformations.

4.3.1 Strategic value of data governance and executive involvement

One aspect that the interviewees emphasised is how the way of working should be business oriented (4, 108, 110). One interviewee explains that data creation by the business, a process or an employee doing something. Everybody needs to be trained with this thinking, and nowadays people are detached from the data, according to a Data Executive (108). The Data Executive at GKN describes how they are more business centric than the typical engineers working with data governance technology (4). The interviewee explains how the tools created should have areas of use, not only be interesting, putting value creation first and the Management Consultant also emphasised the importance of user friendly software (4). Furthermore, the Data Executive at GKN describes the data governance strategy as a training program for the company as an organism, that is not constant, but evolving (4). Regarding training, the other Data Executive thinks one should distinguish between employees and the interviewee advocates for personalised training depending on the person (108).

The Management Consultant points out that it is crucial that the strategy is flexible and adaptable when business needs changes due to unforeseen external factors (110). The same interviewee echoes other respondents opinions on a unified data governance strategy that is aligned with business needs. The interviewee takes this further by describing some critical parts of a data strategy, such as a unified view as a company on what data is important, what data is not important and what data to proactively collect. The interviewee has numerous experiences where a lack of a data strategy has led to proactively collecting non-critical data has led to great quantities of *data lineage*. Once it is established what data is critical for key processes, clear ownership in business functions needs to be established (110). A Data Executive reflects on *data ownership* as the main conflict between business and data analytics divisions (108). This interviewee states that it is important for data ownership to be where the data is best understood, in the business where it is created, whilst the business does not want to own and have responsibility for the data they create (108). Another factor, not mentioned by other interviewees, is that the Management Consultant places great emphasis on incorporating scenarios in the data strategy where different scenarios would mean different data needs and demands (110). Regarding using frameworks to establish a structure for data governance, a Data Executive (108) explains that frameworks like DAMA are very technical, but there exists more user friendly frameworks such as DCAM that can be used to track work and get a better understanding of the situation of the organisation. The interviewee also mentions that banks, because they are subject to a lot of regulations, are at the forefront of data governance. Therefore, according to the interviewee, it could be of good use to look at what frameworks are used by the banks. Similarly to how banks are at the forefront of data governance, a Data Executive (108) explains that the US and the UK are ahead of the rest of the world in the topic.

A Data Executive describes how executives are not involved in data governance as long as there are no risks or something fails and do not see the monetary upside (108). Further, the interviewee explains that when issues arise such as bad data quality, people start paying attention. People usually understand that data quality is important but there also needs to be metrics that show data governance is needed for that (108). The interviewee lists a few different KPIs related to data governance. First one is to track performance, which includes tracking cost efficiencies, data value delivered and data quality. Another type of KPI is data quality risk management, which means what risks there are with the data (108). These could be useful to get projects approved and to obtain resources from c-level executives (108). Also, companies need to track formatting of data and how it is stored, which is important for data scientists (108). The Data Executive at GKN, describes the executives' involvement as differing a lot, and also says how it depends on how willing people are to admit when they are not knowledgeable about a subject (4). A third interviewee, the Management Consultant, echoes the issues around leaders not prioritising data governance due to lack of concrete knowledge (110). To convey this value and communicate effectively to leaders and executives it is needed to bring concrete examples of how data governance can increase long-term business value (110). The interviewee gave several such examples, e.g. reduction of number of IT-systems, better data access, more explicit and decentralised ownership and higher data quality (110).

4.3.2 Change management in data governance

According to the Management Consultant, when implementing change it is important to lead the change (110). This means to coordinate efforts and create a sense of urgency and an appetite for change as well as encouraging teams to think bigger. Employees need to be engaged and have confidence that leaders know what to do. The interviewee also talks about getting a strong sponsor that can aid with the change. Furthermore, change management includes setting ambitious goals that can be achieved (110). To reach these goals, the interviewee states that it is important with continuous follow-ups that investigate certain metrics, e.g. operational KPIs or financial key figures. A Data Executive shares similar thoughts, and views KPIs as essential to be able to convey value (108). The Management Consultant argues that within data governance, this is difficult since there are few relevant KPIs (110). Another important aspect that the interviewee argues for is to coordinate processes which will require regular dialogue (110).

Insights into data governance success, and way of working was given by the Data Executive at GKN (4). The interviewee explains how their organisation utilises thoughtful questions to stakeholders to nudge them into wanting help with data governance (4). Although the interviewee views regulatory compliance as the easiest motivator, the interviewee describes how data governance needs to be made more appealing (4). By asking questions about data verification and if stakeholders want help and be educated in data governance, one can try to create drive from the stakeholders themselves, according to the interviewee (4). The interviewee argues that lecturing people about a certain way of working is not beneficial and instead leaders should be open and advocate for collaboration (4). The interviewee also communicates that the interviewee's own personal experience is that it matters who you approach about data governance initiatives, it matters if that person is an early adopter (4). The interviewee explains that you can locate someone curious and add value to them (4). A Data Executive highlights the importance of involvement of the stakeholder, which creates responsibilities (108). This will, according to the interviewee, help people understand what they need to do (108). The Data Executive at GKN views the data governance professionals as data coaches and emphasises the needs of the coaching and the difference between helping someone and telling them what they need to do (4). The interviewee explains that people do not want data ownership if they are not comfortable in that position and explains that with data ownership comes a need to understand the data. Therefore guiding people in their data ownership journey mitigates the process, according to the interviewee (4). People could also learn from each other, according to a Data Executive (108). The interviewee argues for the part personalised journals could play and that people dealing with data should journal their process and then share their insights with colleagues, which can allow them to learn from actual experiences (108). Learning from others could also be done through working in cross-functional teams and for instance in a data project having a business person in the team (108). The Data Executive argues that cross-functional teams are necessary when working with data governance initiatives (108). Since data governance is a team effort, it has to be cross-functional in order to work well because otherwise it can create friction that hinders data governance initiatives (108). Lastly, the Data Executive also advocates for promoting career paths between business and data teams which in turn can increase the level of data literacy (108).

According to the Data Executive at GKN another aspect to consider is the difference between business people and data people and that in general, the interviewee expresses how business people think that everyone is interested in business and data people think everyone is interested in technology (4). Because of this, the Data Executive explains that "translators" who are knowledgeable in both areas may be needed to bridge the gap. A translator can, for example, be in a position as *Chief Data Officer*, as described by the interviewee (4). The other Data Executive also describes that people who are not data professionals are not data literate and that data governance is not known to the majority (108). Data governance is not seen as interesting, according to the interviewee who described that people find AI more fascinating (108).

4.4 Solution provider perspective

The section below presents the thoughts on data governance of the interviewed solution providers. It is described how the solution providers reasons about cross functionality, use cases, success factors, literacy and technology. The two interviewees are from two of the largest data governance solution providers and have the roles of Principal Solution Architect (109) and Senior Solutions Engineer (111). These roles are technical but also consist of client contact to help design and implement the data governance solution for the client. They give a holistic external perspective, not possible from an internal employee such as the data governance professionals or data users and are also more specialised on data governance specifically than the interviewees in section 4.3.

4.4.1 Data governance overview

The Principal Solution Architect thinks that data governance was a phenomenon that grew from the realisation that data quality was low and that data now had become a strategic asset (109). The Principal Solution Architect represents this growth by saying that: "Data was considered a secondary citizen but it has now become a first citizen, something strategically important for companies.". Another interviewee from a different data governance solution provider, the Senior Solutions Engineer says that data governance is about knowing the answer to key questions about data assets (111). These questions are; Is the data safe to use? What policies apply? Who is the owner and steward of the data asset? Who can I reach out to when using the data? Do I know in which context to use the data in? (111)

4.4.2 Cross functionality in data governance initiatives

When asked about cross functionality in data governance initiatives, the Principal Solution Architect thinks that it is normal that technical people talk and think about data governance but it is business people who are affected by it (109). According to the same interviewee, technical people define technical specifications and then build a system for themselves and present it for the business, but it is often not at all what the business functions want (109). To combat these situations with clients, the interviewee always asks for involvement from the clients business functions to ensure creation of the right technical solution that actually meets business needs. Without cross functionality in the

client team, the data governance initiative is far more likely to fail and if the client is unwilling to provide a diverse team, the interviewee thinks that initiative is doomed to fail (109). The Senior Solutions Engineer from a different data governance solution provider explained that they do not enforce cross-functionality when planning and implementing a data governance initiative (111). The reasons given was that the type of solution needed for different clients is so different that no such general rule of thumb could be followed (111). The interviewee explained that depending on if the client is a division at a company, a global conglomerate, a company on a local market different solutions apply, it can happen that cross-functionality does not make any sense if the initiatives use case is for within a particular company division (111).

4.4.3 Use cases as a mean to convey the value of data governance

The Principal Solution Architect thinks that the concept of use cases are critical for data governance initiatives to succeed (109). According to the interviewee there are dramatic differences in the use case between business people and engineers for data governance initiatives (109). The same interviewee points out that the concept of use cases is something that is closely related to the importance of cross-functionality within the client team (109). In a majority of cases engineers are looking for technical solutions for technical people such as implementation of a data catalogue and *data lineage* (109). Business people are more inclined to demand functionality than think about the technical solution where functionality could according to the Principal Solution Architect be security, policies, glossaries (109). The interviewee points out that it is important to break the data governance initiative down into use cases and include a person from the business function and without this cross-functionality and use case breakdown, the failure rate will be high (109). Senior Solutions Engineer the other data governance solution provider agreed on the importance of understanding the client use case (111). The interviewee broke down the users into three types, tech people, business people and governance users (111). Additionally the interviewee brought the perspective that the use case for the client differs dramatically depending on geographical spread, industry, company structure and regulatory environment (111). An example given by the interviewee was that a large company with a geographically segmented company structure needs many custom solutions for each geography (111). When asked about data ownership and if it should be decentralised to business functions, the interviewee developed this reasoning by mentioning the concept of data mesh, an architectural framework for decentralised data asset ownership (111).

4.4.4 Conveying value of data governance

According to the Principal Solution Architect, there is a need to justify the value of the data governance project, top to bottom (109). A constant refreshing of what value the data governance initiative brings is crucial (109). The interviewee stresses that costs and efficiencies are not the only values to be gained from a successful data governance initiative, often more indirect factors are valuable such as customer experiences, process improvement and increased sustainability. Additionally, the interviewee thinks that another key insight when it comes to conveying value to their customers is to understand

that executives take a holistic viewpoint, not only a business or technical viewpoint. The Principal Solution Architect also makes clear that sometimes the board and executives do not understand these values (109).

The Senior Solutions Engineer mentions that there are KPIs which CDOs are measured by (111). These KPIs can be monitored using technical data governance solutions and the KPIs can then, according to the interviewee, be compared to market benchmarks to convey the value of data governance by showing the current performance compared to other market competitors. The interviewee also explains that executives often do not know to what extent their *data management* lacks, and these KPIs can highlight the flaws (111). The same interviewee also emphasises the risks associated with insufficient data governance such as accidentally using outdated data or using data in a way that violates regulations and to avoid these things, data governance plays an important role (111).

Depending on the overall data governance literacy and maturity different levels of executive support will be needed for successful data governance initiatives (109). According to the Principal Solution Architect some clients have done their homework and know their methodology and understand data governance and in these cases initiatives are easier to implement (109). The interviewee points out that it is crucial to have the blessings from the executives and the board to have support when conceiving and ultimately starting a data governance initiative. With top level support combined with informative sales processes there exists conditions so that the organisation can understand data governance on a sufficient level (109).

4.4.5 Data Governance literacy

Data literacy means according to the Principal Solution Architect you should be able to read, understand and know how to use relevant glossary and software (109). Governance is more on how to govern your data based on aspects like quality and security and the interviewee thinks data governance helps data literacy, when you assign glossaries and definitions to technical assets you help people apply it to their use case (109). Providing definitions and information on where the data is located and what the data definitions are facilitating data literacy (109). Data governance and services help us build data literacy for the client, and the interviewee sees this process as increasing data literacy through data governance (109). The Senior Solutions Engineer highlights the difficulty to work with people and therefore the difficulty in applying theory (111). For the most part it is not the technical functionality that is the problem, but rather to get people to understand their accountability and responsibility (111).

4.4.6 AI and technology

According to the Principal Solutions Architect it has been increasingly clear that feeding various AI models with low quality data yields low quality output (109). The interviewee explains that they think that data governance can help AI initiatives, e.g. Machine Learning (ML), Large Language Models (LLMI), Generative AI (genAI), with data quality and integrity of the data (109). The right data at the highest quality should end up in the data

so that the model works the best. Additionally, the interviewee states that making sure that sensitive data like GDPR is not input into a LLM and that data governance is crucial for classifying the data based on relevant regulations. Data users and business people will then be able to accurately feed the AI model with compliant data. (109)

The Principal Solution Architect thinks that the technology stack chosen for the data governance is important in many ways, it affects the timeframe of the implementation, scale of project and usability through the interface (109). Since data governance is a compliment for the business people, it is crucial that the technology works seamlessly for non-engineers, otherwise the technology will not be used (109). The Senior Solutions Engineer explains that the technical solution in most cases is not the problem, but rather to get people to understand their responsibilities regarding data and why they need data governance (111). The Principal Solution Architect views this as in many situations data governance technology solutions are nice-to-have for the business people and it therefore need to work in an issue-free way, setting higher demands on other products that are more need-to-have (109).

5
Discussion

In this chapter, the findings of the literature study and the interview study are compared and analysed to create a discussion about the subject. The chapter is divided into five parts where the first four parts reflect one of the research questions each, and the fifth part discusses the connection between the former parts but also the key findings from this study.

5.1 How are companies currently working with data governance?

From the interviews conducted, the study aims to clarify how companies currently utilise data governance. This includes both how the work is done but also what problems arise regarding the effectiveness and success of initiatives.

5.1.1 Way of working

As described in 4.1.1, the Data Architect at GKN (2) communicates that there are differences between how data governance is implemented both between companies and industries. This is similar to how the Senior Solutions Engineer expresses their thoughts on use cases, mentioned in section 4.4.3 (111). The interviewee's view is that use cases for the client differs dramatically depending on geographical spread, industry, company structure and regulatory environment. A Data Governance Expert (106) reflects on how the utilisation of data governance is usually the same but the data differs, as does the processes around it. The Data Governance Expert at GKN concludes that where the data governance originated in the organisation may affect the strategies around the data (1). Another view brought by the Staff Data Engineer is that the maturity of the organisation also matters (107). Thus, it seems that several factors together affect the implementation of data governance such as industry, type of data, source of origin and data maturity.

The data professionals in 4.1.1 also reflect on how they define data governance. These statements bring some insight into what parts of data governance they value and what the purpose of data governance is. The Data Governance Expert at GKN highlights assuring data quality, ownership, availability and accessibility (1). The interviewee (1), as well as the Management Consultant (110), also communicate how data governance should enable access to the right data, at the right time with the right quality. The focus on quality is shared by the Staff Data Engineer (107) who, in addition, sees connections with data cataloguing. Senior Solutions Engineer also shares the viewpoint that it has become impor-

tant to ensure compliant, high quality, accessible and transparent data. Data governance is often associated with administration and bureaucratics according to the Data Architect (2). However they see it more as providing data to help people in their work. Focus on helping people is reiterated by a Data Governance Expert who thinks data governance is supposed to help people manage their data and sort out general data issues (106). From these insights provided by data professionals it seems that there is a prominent supporting mindset when working with data governance. Making sure data quality is good and that the organisation's management and distribution of data is viable seems central.

The views of the interviewees appear to align well with how data governance is described by other sources of information. In 1.1, Knight (2023) conveys how data governance aims to increase the probability that the right data flows to the right place at the right time. This reads very similar to the communication expressed by the Data Governance Expert at GKN (1), about the right data at the right time with the right quality. In McKendrick (2023) presented in 1.1 the importance of data quality for AI models is described. Anandarajan & Jones (2021), also in 1.1, describe how data governance can ensure data quality. Both data users interviewed (3, 5), also discuss the importance of data quality, as stated in 4.2.2. Thus, data quality seems to be of importance in data governance, both when reviewing literature, and the conducted interviews. The relevance of data quality appears natural, as only so much can be done with bad data. Another thing that seems to be of importance in data governance is helping data users with their data problems. Interestingly enough, this perspective comes primarily from the data professionals interviewed, and not as much from the gathered literature. It appears as if the data professionals understand the importance of fostering knowledge and helping the data users.

There are, as explained in section 3.1, several data governance frameworks. The view on these frameworks and to what extent they are being used differ between the interviewees. Two interviewees, Data Governance Expert (106) and Data Executive (108), argue that for example the DAMA and DCAM can be useful when working with data governance, whilst the Data Architect (2) and the Staff Data Engineer (107) are not as positive and believe the frameworks are to technical. Therefore there is not a common understanding about the value frameworks can bring.

5.1.2 Current problems

From both interviews and literature, it appears that current data governance practices offer numerous upsides, but that there also exist problems with the current way of working. One of the problems that several interviewees bring up in some manner is that there is a lack of data literacy. The lack of operational knowledge, lack of technical ability as stated by the Data Governance Expert at GKN (1), and lack of data literacy as stated by the Data Architect (2) and the Data Executive (108) speaks to this. This is also in line with literature, as Brown (2021) explains, motivated by a survey by Goasduff (2020), that poor data literacy is one of the largest barriers for organisations to build strong data teams. It seems reasonable that unknowledgeable stakeholders hinders the efficiency of data governance initiatives and decisions taken.

On the subject of conveying value, the Staff Data Engineer (107) also states the difficulty of conveying direct value from data governance as a problem. The interviewee further explains how short term gains often overshadows long term value. The difficulty of conveying value is reiterated by two other interviewees, the Data Architect (2) and a Data Governance Expert (106). The Data Executive (108) explains that the business function does not see the monetary upside of data governance initiatives, but rather only starts to care when something fails. The Senior Solution Engineer (111) gives the additional view that many Chief Data Officers (CDO) do not know the magnitude and the diffusion of problems related to data quality. Therefore the first natural step to convey the value of data governance is to highlight the current problems with data quality and data ownership and what consequences eventual shortcomings will bring.

Having problems conveying concrete value seems to be a consistent theme for the data professionals interviewed. This observation fits with what Petzold et al. (2020) discuss, which is described in 1.3. Petzold et al. (2020) explain how the potential for value creation is often not acknowledged by chief executives. Further, Petzold et al. (2020) claim that data governance has many examples of indirect value but it is difficult to determine direct value. The Data Architect (2), the Staff Data Engineer (107) and the Data Executive (108) say similar things on the hardships of determining and then conveying direct value, but this point of view is not entirely unanimous with the Senior Solutions Engineer's (111) opinion. The interviewee (111) mentions that there are KPIs to measure the CDO performance that is linked to direct business value, a topic further discussed in section 5.2.1. Despite this small discrepancy between the interviewees, the issue of conveying value, discussed by Petzold et al. (2020), seems to also be present in the work of the interviewed data professionals. Because data governance is not directly connected to the company's customers or revenue, it appears reasonable that a stakeholder not knowledgeable in the area may have trouble seeing concrete return on investment.

Another problem that interviewed data professionals communicate concerns how the data governance strategy is formulated. The Data Architect at GKN (2) and both Data Governance Experts (1, 106) in 4.1.2 describe a disconnection between the business and the technical function. One of the Data Governance Experts (106) explains how the data governance strategy at companies often is an afterthought after the business strategy is already done and the Principal Solution Architect (109) and the Management Consultant (110) express opinions that data governance initiatives should be business driven. The Management Consultant (110) further develops this line of thought by clearly stating that in general, there are very few initiatives that should be IT driven since there will become redundancies and disconnections from the business strategy. The Data Architect at GKN describes how data governance initiatives generally start from the technical side, focusing on technical solutions although complex solutions rarely are required (2). The interviewee also argues how communication from the business side is often not understood by the technical functions, leading to hardship in communicating what is required (2). Similar views are presented by the Data Governance Expert at GKN who states that initiatives from the tech functions misses a starting point in business needs leading to over-engineering that may not even be needed (1). From this it can be concluded that data governance initiative should be business driven, a discussion that is continued in section

5.4. This conclusion is also motivated by Dhasarathy et al. (2021), described in 1.3, where the best performing evaluated companies had a stronger connection between business and technology. Further, Dhasarathy et al. (2021) reportings show that, of the researched sample, a majority of the companies in the upper quantile of the chosen performance metric, formed their business and digital strategies together.

5.2 How can the value of data governance be concretized and conveyed to decision makers?

According to the interviewees from the strategy professional perspective, data professional perspective and solution provider perspective it can be difficult to express the benefits of data governance initiatives in monetary terms or direct value (4, 106, 107, 109). Furthermore, Petzold et al. (2020) state that top level executives do not recognize the value of data governance. The combination of the difficulty of expressing the value and decision makers' unsupportiveness of such initiatives creates a situation where effective communication and conveying of value to executives is vital. Analysing the literature from chapter 3, and results from chapter 4, three main areas of improvement have been identified, namely using KPIs, having a translator role and usage of practical examples and use cases.

5.2.1 The role of KPI:s

That KPIs are important when conveying the value of a data governance initiative is agreed upon by the data professionals, strategy professionals and solutions providers (2, 106, 107, 108, 109, 110, 111) as well as Al-Ruithe et al. (2018) and Gartner (2023b). However, they motivate the importance of KPIs differently. The interviewed Management Consultant (110) and Al-Ruithe et al. (2018) emphasise KPIs as a controlling mechanism and the Management Consultant specifically says that KPIs can be used to follow up and evaluate initiatives, something that was mentioned in the context of change management. Gartner (2023b) argues with some similarity, namely that KPIs are used to better understand the initiative's impact on business. Brahm et al. (2018) take this argumentation further by stating that useless metrics that lack significance have a negative impact on the business as a consequence of poor decision making. Furthermore, Data Governance Expert (106) explains that KPIs could make people more invested in the field and the Data Architect at GKN (2) expresses the opinion that KPIs are to a greater extent useful the more mature the organisation is. From these results and observations from literature, it seems that the more mature an organisation is the more KPIs are used, and vice versa, the more KPIs are used both in value conveying purposes and in follow up and evaluation purposes, the more mature the organisation becomes from a data usage and analytics standpoint.

The Senior Solutions Engineer mentions KPIs in combination with benchmarks on Chief Data Officer (CDO) performance as a means to convey value to executives and sell data governance software (111). The first step when conveying the value of data governance to decision makers is, according to the Senior Solutions Engineer (111), to understand the

magnitude and diffusion of the problems and the consequences if the problems are left unaddressed. This is not entirely dissimilar from how a Data Executive (108) describes how involvement in data governance is low as long as there are no risks or failures and that it is only when there are issues such as bad data quality data governance gets attention. According to the interviewee (108), people understand that data quality is important but miss that data governance is a facilitator for data quality, an idea also supported by the data user perspective (3, 5). The Sustainability Manager at GKN explains that the focus on data quality has increased and that data governance can increase data quality, for example through making data transparent, traceable and introducing structure (3). The Data Executive (108) further argues for the use of KPIs within data quality management, showing what risks there are with the data, an idea similar with the Senior Solutions Engineer (111) thoughts on showing the magnitude, diffusion and consequences of current problems. Additionally, the Data Executive (108) explains that these KPIs could be useful to get projects approved and to obtain resources from executives. Scenario planning is according to Management Consultant (110) a great general tool to deal with risks within strategy. It can then be argued that KPIs in combination with thoughtful scenario planning with complete return on investment analysis on KPIs is a relevant approach for conveying value to decision makers.

KPIs are also closely related to the topic of change management, a concept further explained by the Management Consultant (110). According to the interviewee, goal setting is central in change management and to have continuous follow ups that measure against KPIs related to the goal. This is also supported by a Data Executive (108) that KPIs are essential for value conveying. The problem is however not trivial, since two interviewees (2, 110) have commented on the difficulties in defining and using effective KPIs within the field of data governance and how it demands a mature organisation.

5.2.2 Translator role for more efficient communication

The interviews with data users at GKN made it clear that data users tend to not have a full understanding of what data governance is and why it is important. Similar problem formulations have not been uncommon from the three other perspectives in chapter 4. In section 3.2, Sinitsyna et al. (2024) argue the importance of collaboration between teams for effective communication and several interviewees express the importance of cross functionality. In addition, Mento et al. (2002) suggest that support for business transformations should come from someone that has influence in the company who can help the project get attention and also acknowledges that it can be difficult to get involvement from a high level officer. These observations give the Data Executive's at GKN (4) idea of a translator role between data engineers, data users and executives additional merit. Davenport & Mittal (2020) suggest that a CDO can act as a translator and help lead the change for a more data driven organisation, especially if the CEO is not entirely convinced, or has the capacity to contribute to conveying the value the data governance initiative brings. Not only the above literature but also a Data Governance Expert (106) believe that a CDO is essential for convincing employees and executives to act as initiative sponsors. It has therefore become increasingly clear that a CDO as a translator and main driving force of initiatives is needed for the data governance initiative to be successful.

5.2.3 Practical examples and the importance of explaining use cases

The Principal Solution Architect (109) gives an example on what is important when conveying the value of data governance to executives and decision makers, namely that of refreshing what value the data governance initiative brings. This is not contradictory with how the Management Consultant (110) describes conveying value to decision makers and executives. However, the interviewee (110) gives additional detail by stressing the importance of giving practical business oriented examples of how the data governance initiative unlocks business value, e.g. through reduction of IT-systems, reduction of fines and becoming a more data driven organisation. This is similarly shared by Gartner (2023b) who states that value can be conveyed by describing the initiative's impact in terms of business objectives. Hence, from these observations it seems crucial, when conveying value to executives, to clearly state what benefits a data governance initiative can bring.

Davenport & Mittal (2020) argue for the role use cases can have when conveying value in an organisation. This is also something that several interviewees agree on. A Data Governance Expert (106) sees use cases as a valuable tool by showing actual benefits. The interviewed Principal Solution Architect (109) argues that business and technical people have different priorities. To combat this, the Principal Solution Architect (109) proposes that the data governance initiative needs to be cross-functional and to have use cases which include business people. The business employee can then act as a bridge between different departments, use cases can be a way of communicating around the technical subject of data governance without exceptional data governance literacy and technical terms (109). The interviewees' thoughts on a business person acting as a bridge between departments is similar to the idea of a translator, discussed in section 5.2.2, giving the concept of such a role additional merit.

5.3 How can companies spread data governance literacy and encourage change?

For data governance to be utilised in an organisation, it is important that employees possess a level of understanding about the subject. As discussed in 5.1.2, several interviewees have noted a lack of knowledge on the subject within organisations. Furthermore, as described in 3.2, Goasduff (2020) believes that data literacy is in the top three obstacles that an organisation who wants to build strong data teams needs to overcome. This motivates the need to spread data literacy to counter misunderstandings, and strengthen collaboration between stakeholders. Furthermore, to be successful with any transformation and to encourage people to develop a literacy about data governance it is important to create support for the initiatives and to manage the change required.

5.3.1 Literacy

Both the results from the interviews and the literature study highlights some key factors for developing data literacy in an organisation. A common theme throughout the study was that there does not seem to be one single way to develop data literacy which was expressed explicitly by the literature and different interviewees proposed different methods.

One aspect that Brown (2021) and the interviewed Data Architect (2) highlight is the importance of establishing a common way of talking about data in the organisation by creating frameworks and definitions. The interviewed Principal Solution Architect (109) also highlights how assigning business glossaries and definitions help develop literacy and also stated how providing the definitions is a part of data governance. If providing definitions falls under the duties of data governance, it could be argued that being better at data governance and delivering these definitions may help spread literacy which in turn would help data governance. The topic of business glossaries is also covered by the CMMI Institute (2019) data maturity model. According to the institute, having a business glossary is important for enabling stakeholders to find a common understanding and vocabulary when it comes to data governance and analytics. Without a common vocabulary surrounding data governance, it is logical that it would be more difficult for employees to communicate and develop literacy about data governance in the organisation.

There are other aspects worth considering when developing literacy. Culture is brought up by Brown (2021) in section 3.2 as important and that it should contribute to an environment that rewards curiosity instead of punishing a lack of data literacy. This is agreed upon by the interviewed Data Executive at GKN (4) who says that it is better to be open for collaboration and not try to lecture people about how to work correctly with data governance. The interviewed Sustainability Manager at GKN (3) also mentions culture and argues that people who have been doing the same thing for 20 years could be more opposed to change. How to approach employees about data governance literacy and initiatives is covered in depth in section 5.3.2.

Several interviewees, both data professionals and strategy professionals, explain that people will require different approaches to literacy. The Data Architect at GKN (2) states that not all employees need the same level of literacy and a Data Executive (108) mentions that people have varying starting points for developing data literacy. For this reason, the Data Executive (108) advocates for personalised training depending on the person. Brown (2021) states a need to tailor training to the audience since people respond differently to the same method. Davenport & Mittal (2020) also argue for tailor made education programs that target different employees. As a result of people having different areas of responsibility and prior knowledge, it is logical that they should be met with different approaches to literacy. Because of this, it could be argued that a multi-channel strategy for spreading literacy in an organisation is necessary, as the interviewed Sustainability Manager at GKN (3) mentioned.

As discussed in section 5.2.3, use cases are a valuable component in conveying the value of data governance to decision makers and the interviewed Staff Data Engineer (107) broadens this view by explaining that use cases can spread literacy and show how data driven decisions can be made. Panetta (2021) shares a similar view and states that having workshops where there are language gaps between employees and letting them discuss use cases and familiarise themselves with the language can help with data literacy.

Learning from colleagues can also be an approach, as a Data Executive (108) explains.

The argument is that sharing personal journals that map the process of working with data governance between employees can help with learning. The interviewee (108) also highlights how promoting interdisciplinary career paths and working in cross-functional teams can increase the rate of knowledge transfer, which both data users (3, 5) also mention. Kuusinen et al. (2017) share the notion that adopting agile principles like cross-functional collaboration can help transfer knowledge. However, Lee & Xia (2010) highlight that working in cross-functional teams can lead to conflicts and hamper cooperation. Furthermore, the Staff Data Engineer (107) is hesitant towards the effectiveness of developing literacy when working in cross-functional teams. The interviewee (107) argues that it may not grow the skills of the business person since the data professional may do all the data related work. Instead the interviewee (107) proposes newsletters and workshops, similarly to Panetta (2021). Moreover, the Data Architect (2) argues that cross-functional collaboration to develop data governance literacy is only necessary when working offensively with data governance instead of defensively. The claims by the Staff Data Engineer (107), the Data Architect (2) and Lee & Xia (2010) question the effectiveness of working in cross-functional teams. However, both interviewees are data professionals and in contrast the data users are very positive about the idea. For example, the Financial Planner (5) is positive towards working in cross-functional teams since the data user can learn from the data professional whilst the data professional can learn from the data user's work at the same time. The interviewee (5) also mentions that it is important to have patience with each employee and that verbal communication often is more effective, contradicting the suggestion for newsletters by the Staff Data Engineer (107). Kuusinen et al., (2017) also argue that informal communication is more effective than formal, once again contradicting the suggestion for newsletters. This contradiction between data professionals and data users and literature hints at a need for more understanding between the two perspectives.

Working in cross-functional teams seems to have potential to increase the spread of data governance literacy. However, it may not be guaranteed to have this effect and to succeed it is important to manage how the teams collaborate within the team, especially since more understanding between users and professionals may be necessary. It is also important to consider if the organisation is working offensively with data governance when deciding if working cross-functionally is favourable. Furthermore, learning from each other could perhaps result in a snowball effect where people developing data literacy then spread the knowledge to colleagues.

In a more general sense, it is agreed by both literature and the interviewees that it is crucial to make developing data governance literacy a rewarding and engaging process. Panetta (2021) highlights the importance of this and suggests finding more creative ways to teach, for example by using games and quizzes. The Sustainability Manager (3) expresses similar thoughts and mentions that the training material has to engage people and the more interactive the training is, the better.

5.3.2 How to encourage change

Having methods and a strategy for developing data literacy is of importance. However, both the literature and the interviewees from all perspectives agree that it does not matter

if the methods for spreading literacy are good if employees are not willing to adapt to new ways of working. For example, the Data Architect (2) states that although education is important, motivating and supporting employees is also needed and the Sustainability Manager (3) mentions that change can be difficult and that it is important to focus on change management and make people understand the benefit of data governance.

To encourage change there are a couple of methods highlighted by the literature and the interviewees. Piwowar-Sulej et al. (2023) communicate how internal communication (IC) is helpful when implementing strategy across an organisation. The authors explain how employees that do not understand the purpose of the implementation are not as willing to accept the change. Similarly, the Sustainability Manager (3) states that people need to understand why they should learn something new before learning it and that employees will not make an effort if there is no benefit for them. The Financial Planner (5) also emphasises the importance of making employees understand the benefits and value of data governance to motivate them to adapt and learn. The importance of how the employees think about the value of an initiative is supported by Erwin and Garman (2010). They explain that negative reactions could lead to a lack of commitment. It is interesting to see the different interview groups focusing on different aspects, although it could perhaps be expected. Whilst the data users highlight the importance of understanding the benefit for them, the data experts and strategy experts were focusing more on introducing KPIs to make employees more invested in data governance initiatives (interviewees 106, 110, 108). As discussed in section 5.2.1, KPIs are important for conveying the value to decision makers and Data Governance Expert (106) argues that it could make employees more invested in the data governance initiative, an idea also supported by Brown (2021). The point could be made that more invested employees are more likely to develop adequate data literacy, bringing further importance for well defined and implemented KPIs.

Although the interview groups are focusing on different aspects all agree that highlighting the benefit and engaging employees is crucial. The ADKAR model, described by Hiatt (2006), also explains that in order to implement a change, it is important that every individual commits to the change. Hiatt (2006) describes that the ADKAR model highlights that employees need to understand the background of the change, similarly to Piwowar-Sulej et al. (2023) as stated above. Furthermore, it is important that individuals have the motivation to change, the right set of skills and the right experience (Hiatt, 2006). The interviewees provide specific ways of approaching employees and selling the concept of data governance. First of all, from a data professional perspective, the Data Architect (2) and the Data Governance Expert (106) believe pushing requirements on employees is a bad idea. Instead, as described by a strategy professional, people should be involved in the process which can help them understand what they need to do according to the Data Governance Executive (108). The Data Governance Expert (106) further argues that setting up standards is important and that if business employees take part in the creation of these it will be easier to convince them of the value and reach a consensus. The Data Users share a similar view and both the Sustainability Manager (3) and the Financial Planner (5) mention that it would be a good idea to integrate data governance in the ordinary work tasks of employees. According to the Sustainability Manager (3), working with agile principles or more concretely being very problem focused could help when starting to

work with data governance. The interviewee (3) also mentions that it is very important to introduce data governance incrementally and argues that being very problem focused can help with that. When it comes to selling the concept of data governance the Sustainability Manager (3) states that personal communication and team meetings are effective and that it is important to tailor the message to the receiving team and make it personal.

The data professionals also focus on other aspects such as the importance of having the right support for initiatives. Mento et al. (2002) support this claim and suggest that the support should come from someone that has influence in the company who can help the project get attention. However, Mento et al. (2002) also acknowledge that it can be difficult to get involvement from chief executives. A Data Governance Expert (106) highlights this and suggests that appointing a Chief Data Officer (CDO) can help. As discussed in section 5.2.2, this CDO can act as a translator and be the main driving force behind initiatives, encouraging change. Davenport & Mittal (2020) agree with the interviewees and argue that a CDO can be appointed and play a crucial role in conveying value to employees and leading the change.

A method to make employees understand the benefit that is brought up by both data professionals and strategy professionals is to highlight use cases. Data Governance Expert (106) mentions how use cases are good for conveying value and that people should be shown benefits that were a result of data governance since it would make the topic more interesting for business people. Additionally, by starting with a use case that brings concrete value to users, the users may get a less overwhelming and positive introduction to data governance, according to the Data Governance Expert (106). The interviewee (106) argues that doing this continuously will increase the interest in data governance. From the strategy professional perspective, a Data Executive at GKN (4), shares a similar view and mentioned how it is crucial for every tool to have a purpose. The interviewee (4) argues that if the concept is simplified and data governance broken down into its use cases, it will be easier to get employees on board. Both solution provider interviewees agree with the strategy professional. The Principal Solution Architect (109) points out the importance of breaking down data governance initiatives into use cases and Senior Solutions Engineer (111) agrees that it is important to understand the client use case.

The importance of a CDO and notion of use cases from the solution provider interviewees resonates well with what the Management Consultant (110) mentions from a strategy professional perspective. According to the interviewee (110), it is important to lead the change when implementing it and to have a strong sponsor that can aid the initiative. To lead the change means to coordinate efforts and create a sense of urgency for the initiative by setting ambitious goals that can be achieved. The Management Consultant (110) states that employees need to be engaged and have confidence that leaders know what they are doing. While conducting the transformation, resistance can occur that needs to be dealt with to foster new insights (Mento et al. 2002). Keeping motivation high is important and generating small wins can help with this (Mento et al. 2002).

Another strategy professional, the Data Executive at GKN (4), has other thoughts on how to engage and encourage employees. The interviewee (4) explains how thoughtful ques-

tions can be utilised to nudge stakeholders into wanting to work with governance. For example, by asking questions about data verification and if stakeholders want to become educated in data governance, one can try to create drive from the stakeholders themselves, according to the interviewee (4). The Data Executive (4) also mentions as an example, that people do not want data ownership if they are not comfortable in that position. Therefore, the interviewee (4) argues that guiding people through their data ownership journey mitigates the resistance.

5.3.3 Software and generative artificial intelligence

Although not discussed in detail in the literature, the importance of user friendliness in data governance has been emphasised by some of the literature and several of the interviewees from all four perspectives. Brown (2021) states that businesses have spent a lot of time training people on technical tools that are not user friendly and that businesses should make the tools more user friendly instead. For example, the Staff Data Engineer (107) from the data professional perspective, discusses increasing the user-friendliness in applications. The Management Consultant (110) from the strategy creator perspective discusses the importance of user-friendly software. The Principal Solution Architect (109) from the solution provider perspective states that it is crucial that technology works seamlessly for non-engineers and the Sustainability Manager (3) from the data user perspective emphasises lowering the threshold for working with data.

There were a couple of proposed ways to lower the threshold for working with data. One data professional with more than 10 years of experience in the field, the Staff Data Engineer (107), mentions how different user interfaces for data governance applications, depending on how literate people are, could be used to increase the user friendliness. Another data professional, a Data Governance Expert (106), focuses more on simplifying processes to eliminate the need for documentation by utilising automation. In a way, crafting simpler user interfaces and automating processes with software does not help develop literacy in an organisation. Instead, it simply lowers the amount of literacy required for working with data governance. Thus, there seems to be two strategies regarding data literacy, either lowering literacy requirements or increasing data literacy.

Exposure to statements of the potential of generative AI is something the authors of this study have become familiar with as it fills the headlines of today's newspapers and social media. For this reason, the expectation was that the interest and usage of generative AI within data governance would be high. However, although the literature in section 3.3 seemed to be convinced of the power of generative AI, the interviewees were not as excited. The Gartner survey paints a picture that almost all IT and data and analytics leaders are convinced and about to start using generative AI in their organisation to support the data and analytics function (Gartner Peer Community, 2023). Meanwhile, none of the interviewees are as sure about how and if it is going to be used for data governance.

As for the interviewees' thoughts on how generative AI could be useful, there are a couple of ideas. The data professionals are not fully convinced of the role of generative AI but Data Architect (2) and Data Governance Expert (106) think it could help with literacy in

the organisation. By abstracting technical details away by providing, for example, a conversational interface as the Gartner survey (Gartner Peer Community, 2023) suggested in section 3.3, perhaps the threshold for how data literate one needs to be in order to work with data governance could be lowered. This idea is shared by both the data user interviewees (3, 5), who explain that generative AI has the potential to lower the threshold to interact with data governance tools. However, the Financial Planner at GKN (5) mentions how the flaws in the models could make the tools associated with them less credible. The Staff Data Engineer (107), who is a data professional, does not think generative AI could be useful yet but perhaps in the future. The solution providers (109, 111) are more focused on how data governance can help AI initiatives which could make sense given their point of view, focusing on this could help generate sales. To conclude, data users are more focused on how AI can help them whilst solution providers focus more on how data governance can help generative AI.

The discrepancy between the literature and interviewees is also interesting. The authors of this study found it surprising that the interviewees were not more optimistic about generative AI given recent developments. It is possible that the literature and articles are not grounded in real world situations and more research about the actual use cases for generative AI is needed. This idea was strengthened when none of the interviewees expressed that technology is the main challenge with data governance. It made it seem like data governance is more of a strategic question than a technical challenge. It could also be that the geographic locations of the companies from which people were interviewed in general are not as mature when it comes to data and analytics. A Data Executive (108), mentions that the rest of the world is behind the UK and US which could explain why the hype is not reflected in northern europe. However, it could also be due to chance and therefore further research would be needed to understand geographical discrepancies in more detail.

Another idea to consider even though the interviewees are not fully convinced of generative artificial intelligence (GenAI) is how GenAI potentially could help people work with data governance. Since data governance empowers GenAI and improves the models according to, for example, the solution provider interviewees (109, 111) and Pulapaka et al., (2023) in section 3.3, using GenAI to improve the data governance function could potentially create a positive loop effect. Better data governance could enable better GenAI models which could improve data governance and so forth.

5.4 How can technology and business divisions cooperate to form data governance strategies?

Data governance is a way to manage data as a strategic asset (109) and from the literature and the four perspectives, different considerations for cooperation to form data governance strategies have emerged. For example, the use of technical and theoretical frameworks such as DAMA, reactive or proactive data governance strategy, i.e. acting when regulatory pressures emerge or proactively utilising the benefits of data governance (1, 2) and decentralised or centralised data ownership. This section can, although not formulate complete theory, contribute with nuances to the theory of how to cooperate to

form data governance strategy.

5.4.1 Business strategy as the starting point for data governance strategy

Firstly, from the data professional perspective, a Data Governance Expert (106) explains that many companies form their data governance strategy as an afterthought from the business strategy. From the same perspective, a Data Architect at GKN (2) states that it is not uncommon for complex IT driven solutions to be implemented, something that is problematic according to a Data Governance Expert (1) since the initiative is not grounded in what the business needs. The importance of initiatives not being IT driven, but rather business driven is further supported by interviewees from the strategy creator perspective, namely Management Consultant (110) and the Data Executive at GKN (4). The Data Executive (4) describes that they at GKN are more business centric than typical engineers within data governance. Both interviewees from the solution provider perspective (109, 111) similarly argue that data governance initiatives must be driven by business needs. More specifically, the Principal Solution Architect (109) states that engineers often build systems for themselves without coordinating with what the business functions want. Mosley (2010) explains that the company's data strategy should take its starting point from the business strategy and Al-Ruithe et al. (2018) state that data governance strategy needs to be put in an "organisational context" and be aligned with the overall strategy. The data user perspective also seems to acknowledge the importance of business needs. The Sustainability Manager (3), states that data governance needs to be integrated in the business strategy. The interviewee further explains that a strategy should at first be centralised to get people to follow.

With the discussion above in mind, a data governance strategy should be driven by business needs, for example regulatory pressures or need for increased data quality. To facilitate business driven data governance strategy the argument made for a translator role in previous sections such as a CDO, could be made stronger, as there is a need for leadership in the implementation of a new strategy, something that was discussed in section 5.3.2 on encouraging change.

The use of data governance frameworks can be analysed from a data governance strategy point of view. Two interviewees from the data professional perspective question the use of general frameworks since they risk becoming too technical (2, 107) and that they could only be used by technical personnel (107). It could then be said that this would directly counteract the implementation of a business oriented strategy. A Data Executive (108) adds nuance to these opinions by stating that there are more user friendly frameworks such as DCAM and that if implementing frameworks, analysing how companies in heavily regulated industries, e.g. banks, are working with frameworks is a good idea. The Data Architect at GKN (2) argues that formal frameworks can be useful for inspiration for the data governance strategy, but lack the human aspect. It can then be said that lacking the human aspect, e.g. literacy facilitation, incorporating elements of change management and helping to convey value are critical shortcomings for a data governance framework. According to a Senior Solutions Engineer, Data Mesh is an architectural framework that

can enable decentralised data asset ownership and place data responsibility at the business function (111). The concept of decentralised data asset ownership has been found to be central in data governance strategy and will be further discussed in section 5.4.3. Dolhopolov et al. (2024) explain that the main purpose of the data mesh architecture is the removal of barriers between analytical and operations teams to increase value extracted from data assets. Although a novel framework, just recently emerging, this study argues that data mesh stands as a possible general data governance framework providing both decentralised ownership of data and bridging barriers for increased value creation from data. By decentralising the ownership of data and transferring it to the business function, data mesh could also open up for more collaboration when forming data governance strategies.

5.4.2 Cross functionality to enable data governance strategy

The Principal Solution Architect (109) from the solution provider perspective explains how they actively enforce cross-functionality for their clients with the purpose of never missing the value the initiative brings for the business. Lee & Xia (2010) further state the importance of cross-functionality and that diverse teams can better solve complex problems. Strategy is a complex problem and it could be argued that cooperating in cross-functional teams can enable better strategy formulation. The usefulness of cross-functionally is emphasised by the Staff Data Engineer (107) and the Data Executive (108), who state that data governance needs to be done in cross-functional teams to avoid friction between different departments. Combining the literature with these reflections gives the notion that working cross-functional with a clear business driven agenda increases the likelihood of successful data governance initiatives. Since working in cross-functional teams can reduce the amount of friction between departments according to a Data Executive (108), cross-functionality can have a positive effect on strategic collaboration surrounding data governance. Other departments will also be more literate about data governance, as explained in 5.3, which could also be argued to facilitate strategic collaboration.

5.4.3 Decentralised ownership in business function drive responsibility

According to the CMMI institute, efficient data stewardship is linked to the idea of clear data responsibility and ownership (The CMMI Institute, 2019). The viewpoint of CMMI Institute is supported by numerous interviewees from all four perspectives. Interviewees (1, 2, 3, 5, 110, 111) point at a demand for clear data ownership on how they want data to be transparent, traceable, want high data quality and want the data to be trustworthy. The Staff Data Engineer (107), a Data Executive (108), the Management Consultant (110) and the Senior Solution Engineer (111) also emphasise how the ownership is best placed in the business functions, not on a sidelined support function. The recent emergence of data mesh as a federated data governance framework also reinforces the idea of decentralised ownership of data assets (Machado et al., 2021). The idea of ownership is also brought up by Mosley (2010) whose data governance success guidelines state that it is important to have clear and accountable data stewards. To implement decentralised ownership and

stewardship of data it is naturally important that data users are confident and capable with the given responsibility. Sustainability Manager (3) comments on how a decentralised strategy is possible with the right leadership and with a centralised starting point, which speaks to the idea that decentralised data ownership is practically reinforceable.

With the previous paragraph as a backdrop, it is reasonable to believe that a decentralised ownership of data by business functions who understand their data is the most optimal way to think about data asset ownership in a data governance strategy. As a consequence of implementing decentralised ownership of data assets there will be an increase in general governance needs (The CMMI Institute, 2019). For additional governance needs to be met, wider spread data literacy and practical knowledge of how to use data are key facilitating factors, a topic discussed above in section 5.3. It is possible to argue that decentralised ownership of data assets is a way to cooperate across business divisons since it creates involvement across all functions.

5.4.4 Strategically important data and flexibility in the data governance strategy

Another phenomenon that is facilitated by higher levels of data literacy is a unified idea on what data is strategically important. Management Consultant (110) presses proactively collecting strategically important data and actively avoiding to collect unimportant data and that this process must be unified through the company. As seen in section 5.3, the collection of data in this way is facilitated by excellent data governance in turn facilitated by data literacy, common data definitions and a common data glossary.

When formulating their data governance strategy, companies could unlock value in remaining flexible in the data governance strategy. The study has seen that scenario planning on what data is important and will become important in the future could be a means to achieve this flexibility. Scenario planning was introduced by the Management Consultant (110), with the strategy professional perspective, and fits well with the Senior Solutions Engineer's (111) reflections on how different clients have varying requirements depending on the characteristics of the client organisation. The interviewee (111) explains that they help their clients to think in scenarios, by asking questions, e.g.: What are the consequences of an audit? How do we ensure data asset ownership if we have a mass lay off? And, can we expand the idea of scenario planning into including the regulatory development, not only the developing business demand for data?

It could be argued that the regulatory environment described by Ruohonen & Mickelsson (2023) increases the need for flexibility and scenario planning. Ruohonen & Mickelsson (2023) describe a vague and contradictory regulatory environment that is additionally complicated by questionable law enforcement, exemplified by Gentile & Lynskey (2022) description of lacking GDPR law enforcement. The complexity, vagueness and doubts on law enforcement of the regulatory environment in combination with rapidly advancing technology puts extra weight on a flexible data governance strategy to ensure compliance and use of modern technologies. Mosley (2010) presents ideas related to scenario planning, namely that every organisation has its own situation. Scenario planning needs co-

operation between several business divisions such as finance, operations, and leadership and therefore it can be proposed that scenario planning is a way to cooperate between business divisions to form flexible data governance strategies.

The last key contribution regarding the formulation of a data governance strategy is around the issue of leadership and executive involvement and support. The involvement of leadership in strategy formulation is however well covered in literature such as Azhar et al. (2013) and this topic was further treated from a perspective of conveying value to executives and leaders in section 5.2.

5.5 Discussion summary

The previous sections in chapter 5 have highlighted the problems organisations are facing when working with data governance. These are not contained to one aspect of implementing data governance, but rather encapsulate the entire process. The value of data governance initiatives has to be measured, concretized and conveyed to decision makers to gain support for initiatives. Data users and other stakeholders need to acquire a reasonable level of data literacy to be engaged in initiatives and it is important that they want to be engaged, or the impact of data governance will be limited. Furthermore, the data governance strategy cannot be disconnected from the rest of the organisational goals and overarching strategy. The way to face these problems and work towards data governance success is presented in Figure 5.1.

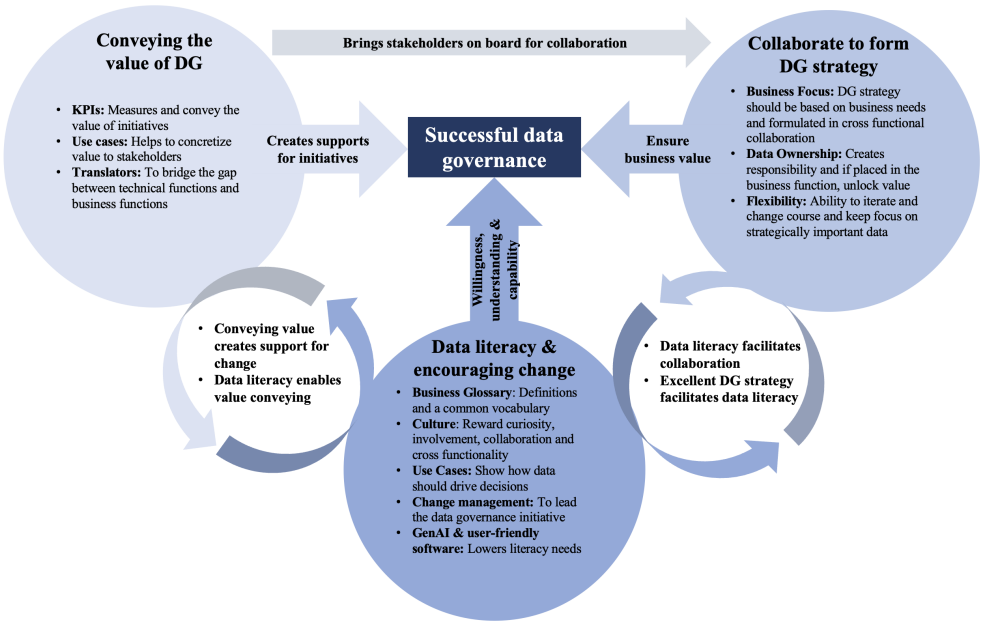

Figure 5.1: *The three facilitators for data governance and their corresponding complementary effects*

Section 5.2 discussed conveying value to decision makers by utilising: KPIs, use cases and translator roles. Together they can act as complements to each other to get chief executive support for initiatives. KPIs can be used to measure different forms of value from data governance in order to concretize and convey the value of it. Use cases can showcase concrete improvements made possible by data governance. Translators can bridge the gap between disciplines and competences, making sure the value is understood.

Section 5.3 discussed how to develop data literacy by using a business glossary to establish a common vocabulary and way of communicating, learning by working cross functional and making the development of data governance literacy a rewarding and engaging process. Lastly, generative AI could lower the threshold for the level of data literacy employees have to reach. Section 5.3 also discussed how to encourage change. It is important that people understand why they would benefit from the change for them to be engaged and use cases can be utilised to showcase the benefit of change to employees. Furthermore, finding a sponsor that can support initiatives is necessary since they can help attract attention and be the main driving force of the change.

Section 5.4 discussed how data governance initiatives should contribute value for the organisation and that the data governance strategy should be business oriented. To achieve this, cross-functional collaboration, the translator role and data literacy are all key facilitators as discussed in 5.4. Furthermore, it is important to create responsibility for data through decentralised data ownership where stakeholders are knowledgeable about the data. Transferring ownership out into the business can open up for more collaboration when forming data governance strategies.

The study has found synergies between the topics discussed in sections 5.2, 5.3, 5.4 and

they are discussed below and visualised in figure 5.1. In 5.3.2 it was found that employees are less willing to change if they do not understand the purpose for the change. There is logic in assuming that chief executives do not want to support initiatives that they do not understand. Therefore, spreading data literacy can facilitate the process of conveying value to chief executives since they will have a better understanding of data governance, as seen in Figure 5.1. When discussing literacy in 5.3.1, the importance of getting the right support with influence for initiatives is highlighted. By understanding how to convey the value of data governance initiatives to executives, it seems logical that finding the right support for initiatives will be easier. In 5.4 it is discussed that data ownership should be transferred out into the business. However, transferring data ownership puts responsibility on the new data owners which probably requires a higher degree of data literacy. Therefore, spreading data literacy in an organisation could be a prerequisite for transferring data ownership out into the business. Additionally, when a business oriented data governance strategy, formed in collaboration between business and technology stakeholders as discussed in 5.4, is in place it could become easier for the organisation to spread data literacy since the organisation will have a unified view on what people need to know about data governance. Since the data governance strategies are supposed to be formed together with other business functions, as discussed in 5.4, being able to convey the value of data governance to the decision makers in those functions could facilitate the creation of business oriented data governance strategies.

6

Conclusions and future research

In this chapter, insights regarding the different research questions are tied together to fulfil the overarching purpose of this report. The purpose of this study, as stated in 1.2, is to analyse how organisations can provide conditions for data governance initiatives to succeed. In addition to the conclusions, this section also contains suggestions for future research. These are topics that seem to be of value but could not be included in this study because of constraints, or interesting research that falls outside of, but adjacent to, the purpose of this report.

6.1 Conclusions

An overarching pattern has emerged through the discussion, namely that all actions proposed have been for the purpose of concretizing data governance, making it more accessible and simplified. This is the case when conveying value to a decision maker, spreading data literacy in the organisation, encouraging employees to change or creating a unified view on data governance strategy.

From the discussion in 5.5 it can be concluded that excelling in one area, while lacking in another, may provide subpar conditions for data governance. It is not enough to be great at conveying value to decision makers if you cannot encourage your employees, help them develop data literacy and formulate a data governance strategy that is rooted in the business. Without responsibility and ownership of data assets in the organisation the value of the data diminishes and data quality erodes. Likewise, it is not enough to have excellent data literacy programs if you do not get support from decision makers and it does not matter if the data governance strategy is formulated with the business at its core if none of the other capabilities are present. All of these aspects are intertwined and rely on each other to be effective. Therefore, it is relevant to understand how to excel in all of these areas.

In conclusion, there is no one part alone that enables data governance success. Instead several different aspects complement each other, and together give comprehensive conditions for data governance success. When the three areas visualised in Figure 5.1 are simultaneously managed properly, they complement each other to enable an organisation to successfully implement data governance in a manner that makes it an asset for the organisation.

6.2 Future research

This study has gathered and discussed information regarding data governance from several sources with different perspectives. However, data governance is a contemporary subject that is still evolving and there have been constraints both with regard to time and capacity on this study. Because of this there are a number of areas that the authors believe should be explored further.

One aspect that should be taken into further consideration is the different perspective on data governance that data professionals and data users have. By gathering information from a larger number of data users and data professionals, for example by using a questionnaire, it may be possible to formulate a more general understanding of businesses' data needs and how improvements regarding data governance can assist them. Similarly, working with many different organisations was not possible in this study because of the constraints. By looking into various organisations with different levels of data maturity it may be possible to find insights about how the data maturity of a company affects data governance which was not covered in this report.

Another aspect that, given the purpose of this study, only briefly was evaluated is the impact of generative AI on data governance. Since the literature and the interviewees seemed to have very different views on the significance of generative AI it was difficult to draw conclusions. Why this discrepancy between literature and interviewees in northern Europe exists is something this study could only speculate about but it would be interesting for further research in order to understand why companies in northern Europe are hesitant towards generative AI, if they are. Furthermore, the rapid advance of generative artificial intelligence and the potential expressed by the literature makes it interesting to research how generative AI will impact data governance practices in the future.

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A

Appendix 1 - Keywords used for the literature study

- **Data governance related keywords:** data, data governance, data analytics, data analytics risks, data management, data steward, data governance literacy, data literacy, strategy, data strategy risk, data governance framework, generative AI, data governance and generative AI, data mesh
- **Other organisational related keywords:** Change management, individual change, organisational change, conveying value, KPIs, communication, cross-functional collaboration

The words above have been combined in various ways to get relevant results.

B

Appendix 2 - Interview questions

Interviewee questions - Data Professionals

How are companies currently working with data governance?

- Does it differ between companies/industries?
- What technologies and tools are important for effective data governance?
- Would you say there are technology gaps, meaning there are technologies that would help but are not available?
  - More user friendly applications?
- How are data governance projects normally executed?
  - they start from the technology side or are they centred around business demand?
  - Are the teams working on data governance solutions cross-functional or not? Is it possible to work in cross-functional teams, or are they too different?
- What is your opinion on frameworks such as DAMA?
- What is needed for successful data governance initiatives?

How can the value of data governance be concretised and conveyed to decision makers?

- How are chief executives involved in data governance? Are they normally advocates for it?
- What do top-level management think about data governance? Is it important to have the right support for becoming a data driven organisation?
- How can the highest level stakeholders be affected to understand data governance?
- How is the value of data governance conveyed to decision makers normally?
- Is it important to define relevant metrics to be able to measure the impact of data governance initiatives?
- What are the most commonly used metrics and why are they important?
- How can data governance initiatives be measured and what is the most important to decision makers?

How can companies spread data governance literacy across the organisation?

- Are people who are not data professionals literate when it comes to data and data governance?
- How do people without a background in data and data governance develop this literacy?
- One idea we have encountered is for data governance to learn from software engineering and work more in cross-functional and/or agile teams. Do you think this could help spread data literacy in the organisation?

- Do you think it is important for people to learn about data governance frameworks? Is it more important for data professionals than people without a data background?

How can technology and business divisions cooperate to form data governance strategies?

- What are the main conflicts between the two?
- How do business divisions and data analytics work together to form data governance strategies?
- Could generative AI be utilised to close the gap by creating applications that would allow non-technical stakeholders to work with data governance and analytics?

Interviewee questions - Data Users

How do you work with data and how familiar are you with data governance?

- Is there information or knowledge you need to know to confidently be able to use data in your daily work?
- Do you have access to this information when you use data?
- What is your level of understanding about data governance?
- What is the most important things that data governance
- What are the most important things that data governance should provide for sustainability and business users?

How can companies spread data governance literacy across the organisation?

- Is your experience that people who are not data professionals but still work with data are literate when it comes to data and data governance?
- How do people without a background in data and data governance develop this literacy?
- One idea we have encountered is for data governance to learn from software engineering and work more in cross-functional and/or agile teams. Do you think this could help spread data literacy in the organisation?
- How important is culture when implementing change? Would it require a big change to work more with data governance in the organisation.

How can technology and business divisions cooperate to form data governance strategies?

- How do business divisions and data analytics work together?
- When forming data governance and analytics strategies, how do business and data cooperate?
- How involved is your department when developing data governance strategies?

General questions

- Do you have any opinion how Generative AI could be used to make it easier for non-data-professionals to interact with data governance tools?
- How would you like data governance initiatives to be made to suit you the best?

Interviewee questions - Strategy

Change management

- How can change be implemented on an organisational level?

- How can change be implemented on an individual level?
- When companies are about to implement data governance and a data strategy, we have noticed that the IT solution is often specified without input from business functions, resulting in the wrong focus. An often complicated technical solution that business functions do not have the knowledge to use.
- Is this a situation that you have seen and what can be done about it?

How are companies currently working with data governance?

- How are data governance/analytics projects normally executed?
- How are chief executives involved in data governance? Are they normally advocates for it?

How can the value of data governance be concretized and conveyed to decision makers?

- Is it important to define relevant metrics to be able to measure the impact of data governance initiatives?
- How important is company culture management for data governance and analytics?

How can companies spread data governance literacy across the organisation?

- Are people who are not data professionals literate when it comes to data and data governance?
- How knowledgeable are executives that impact the formulation of data governance?
- How knowledgeable do they need to be to make informed decisions? What knowledge do they need?
- How do people without a background in data and data governance develop this literacy?

How can technology and business divisions cooperate to form data governance strategies?

- How do business divisions and data analytics work together to form data governance strategies? Do they work together?
- What are the main conflicts between the two?

Interviewee questions - Solutions provider

What are the main issues/obstacles you face when trying to help customers implement your data governance software/framework? E.g. :

- Lack of technical knowledge?
- Lack of motivation/need for data governance?
- Can it be solved through great change management?

Is cross functional teams something you advocate - bringing in both business and engineering/tech perspectives? “bridging the gap” ?

Data governance is a term/word that is negatively associated with, e.g. with bureaucracy, regulation, prevention and compliance How do you view this?

- Business value beyond compliance?

Can you elaborate on how unlock business value through data governance - with the backdrop of previous discussion e.g.:

- More data driven org.
- Ai
- Data quality

How do you approach conveying the value of data governance?

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