



UNIVERSIDADE
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"DATA": A MULTIFACETED, MULTILAYERED ANALYSIS OF
THE CONCEPT OF DATA - A QUALITATIVE APPROACH

Dissertation to Universidade Católica Portuguesa to obtain
a Master's Degree in Psychology in Business and
Economics

By

Lukas Stratmann

Faculdade de Ciências Humanas da Universidade Católica
Portuguesa

September 2022



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Under the supervision of
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Acknowledgment

I owe this work to many people.

First and foremost, I would like to thank the Universidade Catolica Portuguesa and its professors who created this exciting course, and my supervisor Prof Daniel Fernandes, who gave me the opportunity to write about this topic. I would like to thank my parents who supported me wherever they could, and my girlfriend who encouraged me in the writing process. Furthermore, to all my friends, my entire family, and colleagues who have read this thesis or given inspiration for new arguments.

I would also like to take this opportunity to especially thank all the experts who, despite their busy schedules, took the time to conduct a very detailed interview with me and gave me a very open insight into their work, without which this work would never have had the depth and significance it does.

Abstract

Data is becoming ever more important in the modern world. Phrases such as “data-driven world” “data society” or “data economy” are common. However, when talking about data there is general confusion as to what this abstract concept refers to specifically and what it means for different perspectives, for companies as data users in contrast to private people or end-users. The purpose of this study was a multifaceted multilayered analysis of “data”. To have a better command on this topic and focus research, four aspects of particular relevance to data have been determined: the potentiality, the economical worth, arguments for the debate on the ownership and, the effects of the legal framework for data. These four aspects were guiding the author in determining the significance of data for two perspectives. This prompts the research question:

What is data to the end user and to companies, considering potential, legal, economic and proprietary aspects?

To answer the research question, a theoretical framework highlighting each of the four aspects, contrasting between companies and private persons, was established.

In an effort to not only have theoretical findings but rather real life practical statements an empirical qualitative study was constructed. Firstly a questionnaire consisting of 19 questions separated by four parts was designed, each part corresponding to one of the aspects. Next a diverse group of 15 participants was recruited and were asked for their expert opinions in regards to their companies’ perspectives and their perceived user perspective. Analysis was done with the help of MAXQDA software following the structured content analysis by Kuckartz (2018). Starkly contrasting viewpoints for aspects such as potential and legal framework could be identified, prevalent confusion and indifference about data for private people can be confirmed with this research. Additionally, recommendations were formulated on the basis of the expert interviews.

Keywords: Data, privacy, digital currency, ownership, legal framework

Resumo

Termos como "data-driven world", "data society" ou "data economy" são cada vez mais comuns. Com tudo, quando se fala de dados há uma confusão geral quanto ao que este conceito abstracto se refere especificamente a partir de diferentes perspectivas e com diferentes aspectos.

O objetivo deste estudo foi uma análise multicamadas de "dados". Para ter pesquisa focada, foram determinados quatro aspectos de particular relevância para os dados: o potencial, o valor económico, os argumentos para o debate sobre a propriedade e, os efeitos do quadro jurídico dos dados. Estes quatro aspectos orientaram o autor na determinação do significado dos dados em perspectivas. Isto suscita a questão da investigação:

O que são os dados para o utilizador final e para as empresas, considerando aspectos potenciais, jurídicos, económicos e de propriedade?

Para responder à pergunta de investigação, foi construído um quadro teórico destacando cada um dos quatro aspectos, contrastando empresas e pessoas privadas.

Com a intenção de não ter apenas conclusões teóricas, mas sim afirmações práticas da vida real, foi construído um estudo qualitativo empírico. Em primeiro lugar, foi construído um questionário constituído por 19 perguntas separadas por quatro partes, cada parte correspondendo a um dos aspectos. Em seguida, foi recrutado um grupo diversificado de 15 participantes, os quais foram questionados sobre as suas opiniões de especialistas no que diz respeito às perspectivas das suas empresas e à sua percepção da perspectiva do usuário. A análise foi feita com a ajuda do software MAXQDA, seguido da análise de Kuckartz, 2018. Pontos de vista muito contrastantes para os aspectos de potencial e de enquadramento legal puderam ser identificados. A discordância prevalecente e a indiferença sobre os dados para pessoas privadas também podem ser confirmadas com esta investigação. Além disso, as recomendações de ação foram formuladas com base nas entrevistas dos especialistas.

Palavras-chave: Dados, privacidade, moeda digital, propriedade, quadro legal

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I Introduction

We live in a “data-driven world”(Boehm, Grennan, Singla & Smaje, 2022), a “data society” (Bader & Kaiser, 2020; Pentland, 2013), “a data economy” (Elvy, 2017). Since the commercialization of the internet in the 19th century, data has changed the world. There are data-driven companies (Gourévitch, Fæste, Baltassis & Marx, 2017), and data-driven people (O'leary, 2021). According to Forbes Magazine, every single day roughly 2,5 quintillion bytes of data are being produced (Marr, 2018). Although data do not possess inherent intrinsic value, it has replaced other commodities such as gold and oil as the most valuable commodity in the world. It has been labeled as "new oil" (The Economist, 2017), an immensely valuable asset, and as “the new Gold of the digital world” (Hirsch, 2013). However, it is also important to consider that data is not only the most valuable but rather "(...)the globe's most valuable and vulnerable resource” (Allinson, 2021). Scandals such as the Cambridge Analytica Debacle have raised the grave consequences and detrimental effects of data mishandling on the general public. As data does represent significance and importance that goes beyond simple economical and monetary value, it raises questions of potential, of ownership, raises legal issues, and needs to be understood and critically analyzed as a multifaceted, multilayered concept. The intriguing interplay can be confusing, leading to the question at heart - what is data? A straightforward answer to this is: data is symbols, and information is processed symbols (Bellinger, Castro & Mills, 2004). Although in a completely different context, in the 1987 movie “Wall Street”, the character of Gordon Gecko notes: “The most valuable commodity I know of is information” (Wall Street, 1987). However, this only scratches the surface of a deep understanding of data. Data is a concept with multiple aspects and contrasting perspectives between companies and private persons, as data is all-encompassing and always has implications for more than one user perspective and most of the time more than one aspect.

For this context it is important to understand data as a multilayered asset, having potential, legal, proprietary, and economic aspects, contrasting between users and companies. Therefore the following questions will be touched upon: What aspects are known to companies and users, what significance do they place on it and what attitudes do they have towards it?

1.1 Problem Statement

It is difficult to grasp the concept of data in its totality.

What needs to be understood is that data has an importance that goes far from a singular aspect. For companies, data can be the basis for their business model, asset and cost, property, and/or burden. While for the user, data can be personal identity and privacy, it can also be of monetary value. It is necessary to see data in a multi-layered holistic analysis in order to find out which aspects are really significant for companies and users, and which aspects move them and influence their actions and thinking.

This dissertation aims to provide a multi-layered assessment of data use and protection. This is considered at the level of individuals and companies. The dissertation aims to critically examine companies' and users' sentiment towards data, their understanding of different aspects of data, their use cases, and derived advantages or disadvantages. For this, data will be evaluated according to four aspects, potential, legal, economic, and proprietary.

- Potential

Companies see huge potential in data. Companies constantly collect massive volumes of data from several sources because data is one of their most important assets. Four of the five most valuable companies today are tech companies, all dealing with data (Apple, Microsoft, Alphabet/Google, Amazon), highlighting the importance and significance companies place on data.

Data provides businesses with a greater understanding of target groups' wants, goals, and problems, as well as a clearer image of how products, services, and information may be personalized to them. Companies can identify new business prospects or interests by collecting personal data on a huge number of people in a large number of related areas (Molina-Solana et al., 2017). Moreso, personal data has become a key production variable for specific sorts of businesses (Spiekermann & Korunovska, 2017), and companies base their business models on data (Loebbecke & Picot, 2015). And billions of dollars are being spent each year to

acquire more data (Invisibly, 2021). For reasons explained above, data has become essential for companies (Almeida, Santos & Monteiro, 2020).

Although there is less obvious potential in data for users, the potential of data to end users is even greater than for companies. Personal data is often sensitive, private data about the user itself (Zainab & Kechadi, 2019), it is their personal information, a digital representation of themselves. Companies like the “BigTech” companies mentioned above have made people accustomed to sharing personal data in exchange for free service and access to their service or application. But in reality, users are not only sharing data but rather sharing their digital identities and exposing them on the internet. Any data users share online, starting from the name to email address, any piece of information that has a semantic meaning is personally identifying (Wang, et al., 2020). The more users share their data, their history, their likes and dislikes, the more complete companies’ digital picture of users becomes, and the more users lose their privacy and control over their personal data (Allen, 1999).

This thesis will explore what data is of particular interest to companies, what companies can do with different types of data, and what data represents to users.

- Economic

Economically, data has tremendous value for companies. Companies have based their entire business model on personal data. Monetization of personal data is the primary source of income for prominent data-driven companies. Data collection and sale are a huge part of the modern digital economy. It has value to them because data helps companies understand the customer they are trying to sell to, it helps them market their product and message more accurately and make more with. In some cases, even the company's valuation is directly linked to the number of users and the underlying value of user data.

It's not impossible that customers will recognize the value they provide, which may be significant (Molina-Solana et al., 2017), however for users, data does not have so clearly defined economic and monetary value.

Individuals are accustomed to providing personal information in exchange for free services. In an increasingly digital society, personal data has become something that we are willing to give up in exchange for convenience and free usage of services, such as YouTube and Instagram. Economic value for the user can be seen indirectly for example through discounts when signing up for a newsletter or other data collection methods. However, consumers are becoming increasingly conscious of the importance of the data they provide, even in routine interactions like a Google search (Birch et al., 2021).

This thesis will highlight how companies can make money from data, where companies have paid for in regards to data and explore approximations of data worth to companies. Moreover, this thesis will explore the economical implication for users for their data, where and how users have “spent” their data online, and give economical approximations about the worth of data from the user side.

- Proprietary

Both perspectives claim ownership over data. Companies see themselves as providers of infrastructures and databases that store the data and are delegated ownership over the data the moment the user shares it. Although companies can store the data, the consensus is that the users are still the rightful owners of their data, as it is their unique information that is being stored.

This thesis will explore arguments for both perspectives, companies ownership over data, and users ownership over data and go over the prevalent debate and legal context around this aspect

- Legally

Data protection and legal compliance to the protection regulations is a difficult topic. The purpose of all data protection is to protect the data of individuals and companies alike, harmonizing and standardizing international trade and securing data from fraudulent activities. Despite the purpose of protection, legal frameworks such as the European General Data Protection Regulation have been given mixed reviews. Different regulations have come to life, limiting companies in their activity and business.

For users data protection is more than simple protection of their data, rather it is protection and safekeeping of their digital identity and privacy. For those, some prevalent privacy theories are being highlighted and put in the context of the modern data economy.

This thesis will go over some of the legal frameworks existing within the data economy, highlight expert opinions on the legal framework as well as go over theories of privacy and their implications for users.

1.2. State of the Art in Science and Technology

The use of data and the increase in self-determination as to how data may be used by users is currently an active area of research, which is also reflected in various research grants. At the national and EU level, projects aimed at implementing a "Self-Sovereign Identity" (SSI) are currently being actively promoted. In contrast to these or similar approaches, this thesis does not aim at a specific technology to support users. Rather, this dissertation explores non-technical factors that are essential to a holistic understanding of data. Specifically, it considers the general, legal, proprietary, and economic implications of managing personal data.

The needs of users, companies, and service providers are sometimes contradictory and have to be reconciled (e.g., who has ownership over the data). This study aims to investigate the understanding of data within the four aspects of the potential of data, the economic value of data in different domains, the legal framework, and the ownership claims of different perspectives.

The project thus makes an important contribution to the privacy-friendly and secure use of sensitive data. It also extends the current discussion that a distinction must be made between data protection and data use in the interests of citizens.

From an economic perspective, the thesis supports important and necessary basic research to positively shape the existing data economy system in the long term and sustainably in the interest of data protection, the profitable use of data, and consumer security based on scientific findings.

1.3. Research Question

While there is now a great deal of scientific work on data, its use cases, applications or individual analysis of singular aspects, the holistic view of data from different perspectives, considering the multitude of aspects, is a rather unexplored area. Based on literature research and expert interviews, this master thesis aims to answer the following research question:

What is data to the end user and to companies, considering potential, legal, economic and proprietary aspects?

The individual aspects can be roughly linked to these questions:

- Potential: What signifies data for companies and users? What data are being collected? What can data do?
- Economically: How much is data worth to the companies? How much is data worth to the users themselves? What are companies paying for data? What do users get for their data?
- Proprietary: Who owns the data? Is the user owner over their data, or is it the company? Are users still self-determined with their data?
- Legally: What benefits and downsides are there to data protection, for companies and for users? Is my data protected? What legal framework influences data handling? What privacy implications does data have?

The answer to this research question is fundamental research necessary for future digital endeavors. For this purpose, a theoretical background is first developed, which illuminates the different aspects and explains different critical perspectives, both from companies and from the perceived perspective of users from the experts, on these aspects. In the further course of this thesis, a questionnaire will be designed with which experts and founders in data-driven companies will be interviewed. Finally, these expert interviews will be evaluated and linked to the theoretical background in order to analyze the most important factors of the individual aspects.

II Theoretical Framework

In order to explain the interrelationships in this topic area, basic concepts must first be defined and understood. In the following chapter, the most important concepts and terms will be defined based on the literature on data. This research will go over each of the areas of analysis, potential, legal, proprietary, and economic, subsequently highlighting first the user's perspective on the respective area and then contrasting it to the company's perspective. For this, an extensive, standardized, systematic review of the current literature was carried out. Additionally, the Web of Science and Google Scholar, and the European Commission's publication database were consulted to find further literature. The search results were selected according to relevance and popularity, using the snowball system, and findings were used to find more relevant sources. The results cover the main publications on the different themes, namely potential, legal, proprietary, and economic. The research also includes users' and companies' sentiments towards data, the ownership claims, the legal framework, and the economic considerations of data.

It is important to know that during the collection of data, namely the conduction of the expert interviews, important novel concepts also emerged and were mentioned by the experts. These statements, experiences, and considerations were also checked against the literature and then incorporated.

2.1 User

According to the Concise Oxford Dictionary a “User” is “a person who uses a particular commodity or service or a computer”, or in this research project, data.

It is important to understand that when considering this research there are two types of “Users”. The company as a user of data, and the private person as the end user of data.

In the following, these two perspectives are being highlighted and defined using the definitions provided in the “Designing Accounting Safeguards To Help Broaden Oversight and Regulations On Data”, called the “Dashboard Act”. This Act is a regulatory framework, introduced by U.S. Senators Mark Warner and Josh Hawley in 2019, designed to hold companies to greater responsibility when handling data.

2.1.1 Companies as Data Users

Companies are users of data, as data can prove a useful resource. The entity that has the most information will have a higher chance of success.

Three non-individual users of data have been identified.

- **Platforms:** Companies such as Youtube or Twitter are platforms for content creation. These companies use data for advertising purposes.
- **Criminals:** They “use” or much rather steal data for nefarious purposes such as identity theft, blackmail, and other types of fraudulent activity. The most common being selling the data.
- **Companies:** Data is used to better understand their target audience and adjust their business model, product or service, and messaging according to the data.

According to the Dashboard act “commercial data operator” means an entity acting in its capacity as a consumer online services provider or data broker”, in this research project “commercial data operators” will be referred to as “companies”.

Special attention has to be paid to companies, commonly referred to as “Data-Driven Companies”. As the name implies, this refers to companies using data as a main driver of decisions, with digital, data-based business models. For these types of companies, data plays an elevated role, in some cases the primary and decisive role.

2.1.2 Private Persons as Data Users

Generally “Users” are individuals, who share their data online, and, according to the Dashboard Act, ” the term “user” means an individual consumer who uses an online service designed for consumer use by a commercial data operator.”

Although there has been some criticism of calling people “users”, as expressed by Don Norman in his essay “Words Matter. Talk About People: Not Customers, Not Consumers, Not Users”, in an effort to streamline and make clear the difference between company and private person users of data, private people will be referred to as simply “Users” throughout this research project.

Interestingly in the previous iteration of the GDPR, private individuals have been referred to as “Data subjects”.

2.2 Data

The word “Data” is derived from the Latin word “datum”, meaning “a given”, data being the plural. It was first used in 1946 in the field of information technology, as “transmissible and storable computer information” (Harper, n.d.). Nowadays data can almost be used synonymously with “information”, being the smallest unit of factual information. Data encompasses much more than a binary code of zeros and ones. Data can be kept as bits or bytes in electronic memory, as numbers or text written down on paper, or as truths residing in someone’s mind. But since the middle of the 20th century, when computer science first emerged, the term that has mostly been used to describe information that is stored electronically or communicated is ‘data’ (Dalela, et al., 2021). In simple words, a computer’s storage or usage of data is described as information such as facts or numbers. Data is intangible, has only intrinsic and often misunderstood and easily misinterpreted value, however that data does possess value is undoubted. We have to consider what data companies and users possess and what this represents to them.

2.2.1 Company Data

Companies collect various data for different purposes. In the following an exemplified list of data interesting to the company is given:

- **Analytical Data:** This is data used for analytical purposes, such as search engine optimization, general process optimization, and marketing purposes.
- **Supply Chain & Inventory Data:** This is data used for supply chain management, ensuring a steady flow of goods and materials to keep the production running.
- **Product Data:** This is data about the product, such as price, the number of sales, and cost to produce.
- **Marketing Data:** This is data about advertisement campaigns, competitor research, and customer and website analytical data.
- **Employee Data:** This is data about employees of the company. This can be used to evaluate the efficiency of departments employee morale, or other employee measurements.

In this research project, however, the main focus is being placed on

- Customer Data: This is data about the customer. It can be the number of times a customer purchased a product, customer engagement with the company or brand, and most importantly any information stored about the customer in the company's database.

2.2.2 Users Data

The operating term in this research is "personal data." In the following a list of definitions of personal or user data is given

- The OECD Data Protection Guidelines

Define personal data as "any information belonging to an identified or identifiable individual" (Tikkinen-Piri et al., 2018).

- Guideline Definition according to Chua et al. (2021)

Personal information is classified in a variety of ways in the study literature. For example, Chua et al. (2021) popularised the classification of personal data, such as the use of social networking sites, into six categories: (1) information submitted to open records; (2) information voluntarily provided by customers; (3) Commission information, such as other people's opinions; (4) Unrelated data about a specific client, submitted by third parties; (5) Behavioral data, such as information on consumer behaviors while on the site, which may be used for specific advertising reasons; (6) Export data, practices obtained from personally disclosed data.

- GDPR

Personal data is defined by the GDPR as any data relating to a reputable or identifiable natural person (Politou et al., 2018). This includes any information that could be interpreted as direct or figurative evidence of a living person. When personal information may be used to re-identify a person even after it has been de-identified, encrypted, or pseudonymized, it is still considered personal information and is covered by the GDPR (Bennett & Raab, 2020). On the other hand, personal data is no longer regarded as personal data, if it has been made anonymous in a way that makes the subject unidentifiable or unrecognizable. Also,

data on organizations like institutions, foundations, and corporations is not protected by data privacy laws. What coincides with the attainment of legal ability, on the flip side, is the beginning and end of protection for natural people (Chander, Kaminski & McGeveran, 2020). Therefore, for information to be considered personal, it must be able to be linked to an identifiable or identified living individual.

- **Personal Data**

The particular categories of personal data, also known as sensitive personal data, which are extremely significant because they are subject to a greater level of protection, must be taken into account by all other types of personal data (Chander, Kaminski & McGeveran, 2020). These data include health, biometric and genetic information as well as political views, ethnic and racial origin, membership in a union, ideological or religious convictions, as well as individual person-specific information (Chander, Kaminski & McGeveran, 2020).

2.3 Potential of Data

Data has immense potential for both private people as well as companies.

As previously discussed, although data has no inherent value, its potential, application, and use cases cannot be doubted. Since the advent of the information goods sector, with movies, movies and other goods, this economic sector has experienced a meteoric rise to prominence, and it has “given rise to a new economy” (Economist, 2017). Data has different importance and potential for both private users and companies. It is important to highlight both and contrast them.

2.3.1 Potential of Data for Companies

Data provides companies with incredible value. A not exhaustive list of data’s potential for companies:

- **Better business decisions**

Companies can identify new business prospects or interests by collecting personal data on a huge number of people in a large number of related areas (Molina-Solana et al., 2017).

- Improving Customer Satisfaction

Businesses gather data in several ways, but the goal is to improve their understanding of their target audience regularly (Margulis, 2011). Collecting data enables marketers to adjust messages to certain cultural contexts, predict business or social trends and changes and make more money.

- Increase of Revenue and Profit

As previously discussed, data is the primary resource for business today. A lot of different companies utilize data and data collection to increase their growth and revenue. They make profits by selling data, or by using data to sell them to their customers again. The United States market serves as an example, where many companies known as data brokers engage in these types of transactions including the sale of personal data (Crain, 2018).

- Improve Company Processes

Data about inventory, for example, can help businesses make more informed decisions and in turn streamline their processes and reduce costs.

- Base of Business Model

In specific companies, data has become the key production variable (Spiekermann & Korunovska, 2017). Moreso data has disrupted existing business models and transformed them into modern, digitized ones based on data (Loebbecke & Picot, 2015).

- Cost

However, it would be foolish not to assume that data is only beneficial for businesses. Without being put to use, data is costly. Additionally, mishandling data can lead to fines and fees. In 2019 Facebook was sued for failing to protect the data of 30 million of its users (Mehrotra and White, 2019). Additionally, the Cambridge Analytica Debacle has shown the general population the dangers and damaging potential of data exploitation for the wrong reasons (Brown, 2020).

2.3.2 Potential of Data for Users

Data provides also massive potential for users, however less so economically.

- **Digital Identity**

Ultimately for private end users, their data are their digital identities, which are the sum of all digitally available information about an individual, according to John Rose, Olaf Rehse, and Björn Röber in 2012. Data is in essence, a digital representation of the user. This also has been underlined by governmental education programs such as the Brazilian program “seus dados são você”, in English “you are your data”, educating people about the importance of their data and the risks of carelessly sharing their personal data. In a more general sense, the digital identity is a component of their social identity (Ferrarini, Maupin & Hinojales, 2018). Arguments have been raised that the self-determination of digital identities should be considered a new human right (Pope et al., 2022).

- **User Privacy**

It is also important to consider that the more users share about themselves on the internet, the more they lose their privacy. This is an ever-increasing topic and cause for social concern. Between 2005 and 2011, Facebook changed its levels of disclosure and people's reaction showed that there was indeed a demand for more digital privacy (Stutzman, Gross & Acquisti, 2013). Digital privacy is often referred to as the privacy of all online information, in reality, it is most often concerned with all personal information that is shared over the internet (Electronic Frontier Foundation, 2022).

- **Source of Revenue**

For some individuals selling their personal data has become a source of revenue. This will be explained in chapter 2.4.3.

2.4 Data Economical Implications

In many circumstances, data would not be regarded as a resource because it is an intangible resource that is not recognized as a resource under today's accounting rules. From one perspective, monetary/financial value attribution is critical, but difficult to define. At its purest form data is information, and as such does not adhere to features of traditional

market systems, it is important to consider these characteristics when talking about economic implications of data:

- Experienced Good

The information market is one of the markets with a very low amount of transparency (Granados, Gupta & Kauffman, 2006). One only knows whether it is valuable or not when it is experienced.

- Cost of Producing

Information usually has a high fixed cost of production but a low, almost zero marginal cost of reproduction. This means that once the first copy exists, it costs nothing or close to nothing to make a second copy, which creates a lot of problems for the sale of information. It is required to price the information goods according to consumer value, not according to the production cost (Shapiro & Varian, 2009).

- Exclusion

While exclusion is not naturally a characteristic of information, it can be created artificially. However, once the information is out in the public, it is difficult to retake the information or to exclude anybody from it, and prevent individuals from using it (Varian, 1998).

Personal data is difficult to value since it is immaterial and is frequently acquired and utilized in ways that the data originator is unaware of. Individuals struggle to weigh in on perplexing privacy trade-offs, and personal data evaluation is regarded as "very ambiguous" (Politou et al., 2018).

Several researchers have tried to determine the worth of Personal Data, however, it has proven to be a difficult task (Acquisti et al., 2013; Kannan et al., 2018; Searls, 2012; Spiekermann & Korunovska, 2017).

Kannan et al. (2018) identify the many factors that can influence the value of data and convert them into quantitative metrics to assign a skeptical value to the data. The virtue of Kannan's method is that it is simple to get started with, especially if you want to add more components that can be quickly extended and improved with more data and settings. Similarly, Shapiro and Aneja (2019) look at the activity and revenue associated with the monetization of Americans' data in six areas: major web search engines, programs,

web-based entertainment venues, data brokers, credit card organizations, and the health data business. They found that the total revenue exceeded 78 billion USD.

Wessels et al. (2019) make a significant theoretical contribution by examining the importance people place on their personal information in a sensible, extremely accessible, and complete manner. According to Wessels et al. (2019), it makes sense to record members' willingness to share personal data in their field study, but due to the large scatter values and three unique clusters, it also remains quite individual. According to Spiekermann and Korunovska (2017), when users first engage with data marketplaces, privacy issues are less severe than expected, and privacy concerns largely affect data value. Understanding that data is a marketable resource is the single most compelling factor driving data willingness to pay. Furthermore, Spiekermann and Korunovska (2017) find that people develop psychological ownership of their data and hence value it more.

According to Gkatzelis et al. (2015), purchasers in sensitive data markets should address unbiased private data samples and compensate people accordingly based on the provider's privacy preference. Riederer et al. (2011) explore the sale of private data via an auction in which the data is either totally disguised or fully disclosed. In either scenario, the data is not immutable for the buyer and does not consider the value of the data owner's personal data privacy. Riederer et al. (2011) provide a theoretical framework for pricing, based on noisy query responses, to spread pricing among data owners, compensate them appropriately for their privacy shortcomings, and argue that privacy ratings are closely comparable to real data.

Researchers have recently examined elements that may influence personal disclosure behavior and the economic value of personal data (Kehr et al., 2015). Gender and age have been demonstrated to have an impact on disclosure attitudes and practices. In terms of privacy concerns and consequent disclosure practices, some studies have identified gender profiles: women, for example, are generally more protective of their online privacy. Individual comparisons can be tracked in addition to the economic evaluation of personal data (Campbell et al., 2015). Some people, for example, may not care about privacy and will give their data away for peanuts, while others will gladly pay a large sum. More recently, Panarello et al. (2018) proposed creating a realistic marketplace for personal data and charging people for it while taking their privacy and risk tolerance into account. The

behavior and roles of location sharing, as defined by the roles played by the beneficiaries of the share, why, unique circumstances, how information is used, and granularity of Information Exchange, have been the focus of research into the development of ubiquitous and unavoidable processing and human-machine communication (Guo et al., 2014). The study also underlines the need of looking at people's real behavior rather than attitudes expressed in surveys, because people's actual behavior often differs from what they claim they are.

2.4.1 Information Asymmetries in Data Markets

An important thing to consider when talking about the economical implications for data is the predominant information asymmetries in the market. In contract theory and economics asymmetric information refers to the state or situation in a contractual agreement for an economic transaction where one party has more superior information than the other one (Auronen, 2013). The difficulty in estimating the value of data raises various questions about the transparency of personal data market prices (Flyverbom et al., 2019). The issue is that users most of the time are unaware of how their data is used, what data is being used, and where their information will end up. There exist substantial differences in the information available, when comparing data-driven companies and the end-users. Although information asymmetries are not uncommon in other markets, the data markets are especially predominant and of grave effect because of the volume of data processing and the crucial importance for companies and users alike. Data-driven companies often employ a business model based on collection and monetization of users' data. As a result, users find themselves in a potentially vulnerable position and are at the mercy of data-driven companies. There is no guarantee that the price reflects the "intrinsic" value of the data, regardless of whether a stable price for personal data is found or the market for personal data is liquid (Pham & Castro, 2019). Although personal data transactions between corporations used to be done in secret, the internet has opened up new fields of commerce and increased the availability of price data (Niranjanamurthy et al., 2013) but still, almost all asset markets have experienced instances of mispricing in the past, some of which lasted for years.

2.4.2 Data Economical Implications for Companies

As previously discussed, data has much more economic and monetary worth for companies than it does for end-users. There is no universally agreed formula for determining the value of personal data at the moment. The importance of demonstrating value varies by market segment (MIQ, 2021). In the following a few methods of approximation are presented

- Ad Income

The worth of personal data can be estimated using Google ad income; in 2001, each client brought Google roughly £1.45 in advertising revenue, while nearly two decades later, this price has increased by 1,800 percent to £26 per customer (MIQ, 2021).

- Company Acquisitions

Another approximation of estimating the worth of personal data to companies is to calculate how much companies paid when acquiring another company. In 2016 Microsoft acquired LinkedIn, which at that time had a user base of 400million for 26billion USD (Microsoft News Center, 2016). Following this logic, one user was worth an estimate of 65 USD to Microsoft. Of course, this value is dependent on the potential earnings from the user, the industry the company operates in, and the richness of information about the user. However, it is safe to assume that the valuation and user base of a company is deeply intertwined. To further underline this, Elon Musks' proposed acquisition of Twitter in a deal worth 44 billion USD, was shelved apparently due to the high number of fake profiles or bots that diminish the valuation of the company (Dang, 2022).

- Costs of Data Breaches

Turning this around, it is also interesting to consider what companies paid when users' privacy was breached. When in 2015 Comcast published the private information of 75000 users, they had to pay a settlement of more than 33 million USD, as it was a direct breach of their users' contract and a violation of users' privacy and confidentiality. This can be broken down to roughly 100 USD for each user (Glikman & Glady, 2022).

2.4.3 Data Economical Implication for Users

It is evident that the value of data to data-driven companies is far removed from the value of individual private users, as the prevalent business model continues to be one of free service access in return for commercial usage of the data. What is growing now is the tendency of the market to monetize data. The number of data exchange facilities and brokers is growing (Liu, et al., 2020). Individuals are accustomed to providing personal information in exchange for free services. With this problems such as the ownership paradigm, data hoarding, data ownership laws, the distribution of responsibilities, and technology have emerged. Each of these concerns raises a variety of factors that affect judgments about data ownership. The power of the consumer today is greater than ever, despite the prevalent information asymmetries in the market. Data does possess economical value even to the end-users. Even though Information asymmetries are prevalent in the information market this did not stop users to estimate their data in monetary and economic terms. In the following, a few approximations of users' value in economic terms are presented.

- A-bite-of-me

This is the name of a Kickstarter campaign by Federico Zannier. In 2013 he sold his entire internet activity and information to anybody willing to invest. The project had the description: “I’ve data mined myself. I’ve violated my own privacy. Now I am selling it all. But how much am I worth?” This included his internet history, location, app logs, and more. The project garnered 213 supporters and generated 2733 USD on Kickstarter (Zannier, 2013).

- Digital Currency

In international currency transactions, people trade cash products and services. However, in today's data economy, people pay with their data, and their privacy (Elvy, 2017). This might be a quick, easy and convenient transaction, however, companies have started to capitalize and exploit this. They give their customers satisfactory and convenient services in exchange for their data.

"If you don't pay for the product, you are the product" is a common saying on the internet, and there is a lot of truth to this argument (Invisibly, 2021). Many online service providers offer their services for “free” but in reality users “pay” by handing over their data. Users exchange their data and personal information for use

of services, discounts, or simple convenience, and sacrifice in return their privacy for it (Gómez-Barroso & Feijóo-González, 2013).

As Viviane Reding, European Commissioner for Justice noted at the 2012 proposal for a new General Data Protection Regulation (GDPR): “Personal data is in today’s world the currency of the digital market. And like any currency it has to be stable and it has to be trustworthy.” (Reding, 2012).

This is a paradox of using personalized services to address the difficulties of personal information leakage and privacy destruction (Zhu et al., 2020). In the face of such a contradiction, the e-commerce model envisions providing customers with greater benefits than the risks that companies may bring by misusing data (Mun et al., 2014). The typical interests as a trade-off for personal data disclosure are generally detailed in letters on customer personal data protection and consent. This reasoning stems from the privacy analysis hypothesis's inception (Zhu et al., 2020). This hypothetical system urges people to weigh the expense of disclosing personal information against the potential benefits of receiving service quickly and for free.

- Valuing Privacy

In a 2019 study by Winegar and Sunstein the value of data privacy to end-users was studied. In a survey consisting of 2416 Americans, the median user was only willing to pay only 5 USD to keep their data private, while demanding 80 USD to grant someone access to their personal data (Winegar & Sunstein, 2019).

- Data Dividend

In America in 2019 California's governor Gavin Newsome called for “Data Dividends” (Daniels, 2019), to give back end-users a share of the profit companies make with users' data. The website “<https://www.datadividendproject.com/>” “advertises with the slogan: “Get privacy and get paid”. This touches upon the fundamental issues people have with information asymmetries and could compensate them.

- Source of Revenue

There are ways for end users to capitalize on your personal data. Service providers such as DataCoup, Monetha, or UpVoice pay users for sharing their personal data preferences or internet activity online.

- **Costs of Protection**

It is interesting to notice that few people are prepared to pay an additional cost to secure their personal data, even though many strongly oppose companies utilizing it. The internet has also seen the emergence of several businesses that offer to secure the data. These alternatives, in contrast to businesses like Facebook or Google that profit from the data through their advertising services are frequently fee-based for obvious financial reasons (Liu, et al., 2020). For instance, Zoho, a service similar to Google Docs, or a Gmail alternative being provided by FastMail. But up to this point, these services have not really been a success.

2.5 Data Ownership

The term "data ownership" describes both the ownership over data, but also personal accountability for the data. Ownership involves not just control but also certain rights, like the ability to access, create, modify and sell, or remove data (Loshin, 2002). According to Techopedia, data ownership has been defined as the “act of having legal rights and complete control over a single piece or set of data elements. It defines and provides information about the rightful owner of data assets and the acquisition, use, and distribution policy implemented by the data owner.” (“What is Data Ownership? - Definition from Techopedia”, n.d.). The discussion about ownership of data, (Amirault, 2019) whether the company or user owns the data and has custody over the data can quickly become an emotional debate. Although companies store data in their data infrastructure, the common consensus is that the user still “owns their” personal data.

2.5.1 Companies as Data Owners

Legally speaking, by the time the user voluntarily discloses their information, which can be private or even confidential, to the company they automatically grant the recipient certain rights and permissions, effectively relinquishing rights of ownership. People have justified concerns and opinions about how their data, their personal information, and identity should be handled, which companies should honor. The GDPR sought to formalize some obligations, responsibilities, rights, and privileges connected to data ownership and data stewardship when it went into effect in 2018. However, the body of law is ambiguous in several ways and subject to interpretation by the companies.

2.5.2 User as Data Owner

Many platforms regard their consumers as data makers rather than people and are convinced that they own the data because it is created on their platform. This ideology is incompatible with people's right to own their data, to know what data has been collected about them and how it is used, and to move or delete that data as they see fit. In 2019 Senator John Kennedy introduced the "Own Your Own Data Act" which states that "each individual owns and has an exclusive property right in the data that individual generates on the internet" (GovTrack.us, 2022). To this date, this debate has not been settled.

2.6 Data Protection

Many countries regulate the use of personal data and data transfer between places (Mun et al., 2014). However, personal data protection laws are changing dramatically from one region to the next, and even from one country to the next (Goodman & Flaxman, 2017).

A collection of data security principles centered on data protection law often deals with rights and obligations such as data minimization, authorized use, limiting for reasons, and informed consent (Lyon, 2013). In the e-commerce plan, the paradox of using personalized services to meet the issues of personal information leakage and privacy loss is unavoidable. In letters on customer personal data protection and self-disclosure, the typical interests as a trade-off for personal data disclosure are generally detailed (Fleming et al., 2021). Bonneau & Preibusch (2010) claim that privacy protections can minimize the amount of information about economic operators available on the market. After that, severe privacy protection can be both economically unproductive and redistributive, since it can prevent market indicators of useful factors like expected distribution, reward, and the actual cost from being available. Williams et al. (2018) essentially claim that withholding personal data shifts costs from one party to another: for example, employers that fail to thoroughly screen job candidates may wind up suffering the cost of hiring unsuitable employees. Legislative measures to safeguard privacy by regulating businesses' actions, according to this viewpoint, might result in disadvantages, higher business expenses, and eventually undermine economic well-being. Acquisti (2010) believes that cooperation between customers and companies interested in protecting their data will lead to an equilibrium in

free-market transactions without transaction costs, in which the strongest obtaining data from interested professionals or masking it, would be the only way to truly achieve their goals — a fundamental task that is independent of privacy rights or access rights to shopper data.

2.6.1 Data Protection for Companies

Following the rapid evolution of the digital world, national (GDPR), European (eIDAS), and global regulations (such as CCPA) have sprung into life to regulate data handling and protection. These regulations aim to establish and harmonize rules for the processing of personal data and protect personal data and digital identities - both for public companies and private users. In reality, these regulations have heavily limited and hindered companies with some experts, such as Boris Feldman, one of the most experienced and senior lawyers in Silicon Valley, even claiming that the GDPR was “pointless” (Benrath, 2022).

The punishment for illegal conduct and breaking these frameworks can have detrimental effects, as in South Africa according to the POPIA, illegal collecting, processing, or selling of data can be severely punished in some cases even with jail time.

- Sentiment towards GDPR

Boris Feldman is not the only one to voice his concerns about the success of the GDPR. Civil groups such as the NOYB, the European Center for Digital Rights even settled a law case against delays in consent complaints (noyb, 2022). There are also other problems such as enforcement gaps and a vague and difficult interpretation of the framework (Brinnen & Westman, 2019).

According to Nast, 2022: “While GDPR has immeasurably improved the privacy rights of millions inside and outside of Europe, it hasn’t stamped out the worst problems.”

2.6.2 Data Protection for Users

In the European Union, privacy and the right to an autonomous life, the control of information about yourself is a fundamental right. The European Charter of Fundamental Rights, Article 8 of the European Convention of Human Rights, and Article 12 of the

Universal Declaration of Human Rights all recognize the right to privacy and a private life (Article 7). Whereas privacy is recognized as a universal human right, data protection is not yet at the same level. Protecting individual information stored in computer databases is known as informational privacy. The classic or traditional theories of privacy have a tendency to associate privacy with ideas like non-interference (with one's decisions), non-invasion (into one's space), and having control over/restricting access to one's personal information (Zwitter & Gstrein, 2020). The formal economic study focuses mainly on privacy as the concealment of personal information - an information imbalance – among the many varied elements of privacy (Acquisti et al., 2016).

Westin's (1968) privacy theory is concerned with how people secure themselves by limiting others' access to them temporarily. A key element of Westin's theory is "to control, edit, manage, and erase information about [individuals] and determine when, how, and to what degree information is shared to others."

Recent technology improvements pose significant privacy concerns, given the ability of the Internet to display more intrusive tactics (Flyverbom et al., 2019). Tracking and auditing consumers through cookies, browsing activity, and traffic organization, tracking data about an individual's location, fraud, collecting exact location data, sending unsolicited messages, recording numbers including IDs, and more are examples of unnecessary disruptions. As a result, frameworks that enable privacy protection and control, hide private data that only a few individuals have access to, or at the very least assuage privacy concerns for online customers through clear privacy policy declarations are urgently needed (Davenport et al., 2012). On the other hand, technologies such as SSI technology and decentral blockchains have enabled users to somewhat regain control, sovereignty, and ownership over their data.

- Sentiment towards GDPR

Interestingly the GDPR is not only received well. On the European Citizens' Initiative Forum, on the website of the European Union, (europa.eu), posts can be found such as "The GDPR is Annoying and Ineffective", Reddit, one of the biggest social news aggregators is full of posts complaining about GDPR or other data protection framework that is "annoying", and even Forbes Magazine posted an article titled "Why Data Privacy Legislation Won't Save Your Customers From Online Risk" (Olson, 2022).

Up until now, data has been a confusing and singularly analyzed topic. This thesis will fill this research gap by answering the present research question:

What is data to the end user and to companies, considering potential, legal, economic and proprietary aspects?

III Methodology

The purpose of this master thesis was a multilayered analysis of data, from a potential, legal, proprietary, and economic perspective, from the two perspectives of user and company perspectives. To construct a sophisticated analysis, first, a theoretical background for understanding these topics was developed. On the background of these theoretical findings, expert interviews were constructed and conducted to collect data qualitatively. Finally, the interviews were analyzed with MAXQDA.

3.1 Research Approach

The plan and procedure that consists of the steps of broad assumptions to detailed methods of data collection, analysis, and interpretation, is called the research approach (Opoku, Ahmed & Akotia, 2016). The nature of the research problem that is being addressed is taken into consideration to decide the research approach. There are two main types of research approaches; an inductive approach and a deductive approach. When following the inductive approach, the researcher starts with specific observations and measures and then moves on to detecting patterns and themes in the data (Opoku, Ahmed, and Akotia, 2016). On the other hand, when following the deductive approach, past studies and theories are studied by the researcher, and hypotheses are formulated that emerge from those theories (Opoku, Ahmed & Akotia, 2016).

This study is a mixed approach of both the inductive and deductive approach, as aspects were deductively deduced from the research question and resulting aspects, while specific arguments and elements of these aspects were inductively explored and differentiated.

3.2 Research Design

The overall strategy that is chosen for integrating the different study components logically and clearly, is referred to as research design (Mishra & Alok, 2017). There are three main types of research; namely quantitative research, qualitative research, and mixed research which involves both. Quantitative research has been referred to as research, which aims to look at as many different cases as possible, which are evaluated statistically. Oftentimes it is used to test existing theories in a deductive manner. Qualitative research,

on the other hand, focuses on examining the cases studied in as much detail as possible. Here already existing theories are tested in an inductive manner.

In this study, a qualitative study was done by the researcher as data was collected qualitatively through expert interviews, with as much detail to the cases as possible.

3.2 Data Collection Method

Data collection is the process of gathering and measuring information about variables of interest in an accepted and systematic style that allows the research questions posed to be answered, hypotheses to be tested, and results to be examined (Clandinin, Cave & Berendonk, 2017).

Primary data collection methods include interviews, oral histories, questionnaires and surveys, focus groups, records and documents, and observations (Clandinin, Cave & Berendonk, 2017). On the other hand, books, government records, personal sources, websites, newspapers, and magazines are some of the secondary sources for data collection. For this study, both primary data collection methods were used by collecting data from interviews, as well as secondary data collection, which was used by conducting research.

3.3 Justification for Research Method

The research method employed for this master thesis was a qualitative expert interview, with semi-structured open and closed-ended questions to address the research guiding questions. Due to the general complexity of the topic and holistic approach of the topic, a literature review alone was deemed not sufficient, but rather experts had to be consulted.

The qualitative approach was chosen because of the flexible application of the method, and the openness of the approach which makes it possible to discover new, previously unknown facts, as was necessary for this research topic. The qualitative approaches are more interpretative and focus on subject-related understanding (Lamnek 2006). Instead of a large number of cases, qualitative research is characterized by a stronger subject-relatedness and detail. To avoid standardized research instruments, qualitative research prefers direct access to the subjects concerned (e.g. via personal interviews). Another feature of qualitative

research lies in the data evaluation, which is typically interpretative. The assumption is that the objects of investigation are assigned subjective intentions from the outset, which means that different meanings can always emerge for different actors (Mayring 2002).

Expert interviews were chosen because of the direct personal interaction with knowledgeable subjects, as their experience working in, can gain valuable insights into the topic of the research question.

The interviews were conducted in a semi-structured manner, as this allowed both the experts and the author to ask questions to clarify any ambiguities (Hussy et al., 2013), which is not possible in quantitative studies. They also allowed new ideas to emerge and possibly deviate from the path of a strictly structured interview process. Nevertheless, due to the semi-structured nature of the data collection, the analysis was made easy, as questions always corresponded to the research questions and different aspects that were derived from the questions guiding the research.

Additionally, there is a high content validity due to a non-predetermined approach and deeper information content, which is also not given in quantitative studies such as surveys.

A quantitative online survey was not considered sufficient, since the target group of this survey would have most likely been only the end-users themselves, thus covering only one perspective and it could not be guaranteed that respondents of the questionnaire would possess the necessary multi-layered knowledge to answer all of the relevant aspects. And the answers could not be discussed in detail. Thus this approach would not have been representative and meaningful.

3.4 Sample

In the following criteria for the selection of the interviewed experts, the chosen sample size and sampling technique will be explained as well as the experts themselves will be described.

3.4.1 Inclusion and Exclusion Criteria

Inclusion criteria have been defined as the characteristics that the research subject must possess to participate in the study. Whereas exclusion criteria have been defined as characteristics of a subject that could potentially interfere with the success of the study

(Worthington & Bodie, 2017). Criteria for this study were expert knowledge on the research subject, working in companies that deal with data.

In this study, only experts with sufficient knowledge about all relevant aspects of data were considered.

3.4.2 Sample Size

Sample size has been referred to as the number of participants in a study (Goldberg, et al., 2017). For the study to be expressive and meaningful the sample size has to fulfill the concept of saturation. Saturation describes the point where incoming data yields little or no new information (Guest, Bunce & Johnson, 2006; Guest & MacQueen, 2008). Coenen et al. (2011) and others have concurred that the number of qualitative interviews for saturation is 6-12 interviews. In this study, 18 participants were involved who were interviewed by the researcher. However, after conducting the interviews, 15 were selected to be included in this study. Three interviews were excluded as it was felt that they did not provide additional value, industry or data use case was already represented in the study and opinions were exhaustive. Hence, the sample size for this study is 15, as data from secondary sources were also consulted.

3.4.3 Description of Sample

The sample consisted of the experts listed below. The partners supported the project by providing expert knowledge and opinions on the implementation of digital business processes based on personal data. To make statistical inferences and estimate characteristics of the whole population, the technique of selecting individual members or a subset of the population is called sampling (Cuervo-Cazurra, et al., 2017).

The technique of non-random sampling has been followed in this research study because the research only selected participants from the expanded network of the author and were contacted via email, LinkedIn, or personal contact.

The participants were selected to be from as many different industries as possible and have differentiated data use cases. The experts were working in data-driven companies or employed in data-based projects and were involved in strategic business planning and operational business actions.

In general, it was tried to focus on CEOs, senior job positions, and data protection officers of differentiated companies.

The use case/use cases data were chosen so that there are as many different use cases as possible that are in direct contrast to each other. This was done because currently these areas have hardly been illuminated from a research perspective. Thus, there is a high innovation content in the project.

The goal of the thesis is to investigate different industries or data usage in a holistic approach and thus not to draw conclusions that only work under specific conditions of one industry, but rather that can be generalized.

This resulted in a diverse sample consisting of many different kinds of experts from many different companies ranging from start-up to established market players, from data protection spokesperson to advocates for less data protection from different nations. In the following a short description for each expert will be given:

Expert 1:

Founder and Owner of multiple startups disrupting traditional businesses, heavily focused on Web3, applications of blockchain, NFTs, and the digital ownership of data.

Expert 2:

Branch Manager of a private bank with a focus on advising private clients. The focus here is on working closely with my customers and their highly sensitive data. He has also personally experienced cyberattacks and looked after customers who have lost their digital identity after a cyberattack.

Expert 3:

Self-employed working at one of the biggest advertising agencies in Germany. Supervision of many projects even before data protection. Company internal contact person for data handling and protection.

Expert 4:

Head of a franchise subsidiary for one of the leading global car rental businesses. It was exciting to observe that this expert only has operational handling of data and not an administrative one, as this is regulated by the head office.

Expert 5:

Product manager and senior consultant for one of the largest consulting firms in the world. Leader of a cross-functional and cross-national team comprised of internal and external contractors. Sensitive handling of personal but also company data across borders and restrictions is his focus.

Expert 6:

Digital Protection officer at an international NGO tasked with informing about data protection and promoting digital self-determination. Having an expert in the field of data protection was enormously beneficial.

Expert 7:

Head of acquisition for one of the fastest growing technology-driven e-commerce companies. This expert is responsible for the acquisition of companies. Distribution of rights and roles, who has access to what data plays a big role here.

Expert 8:

Owner of a language school. Many different people from different backgrounds come together at the expert's facility. Since it is a government educational institution, special data protection requirements and communication with government institutions play a role here again.

Expert 9:

Product owner of a digital service provider that deals with the digitalization of processes in the banking industry. Special banking requirements and the focus on digital transformation in a conservative industry are worth mentioning here.

Expert 10:

Operator of one of the largest restaurant brokerage platforms in Germany. Here, different data from end users, data providers, and businesses come together. Bringing together different foci and interests is a challenge for this expert.

Expert 11:

Hospital Manager & Chief Medical Officer of one of the largest hospitals in the state. The data-friendly handling of patients and the requirements of data protection are the topic here.

Expert 12:

Founder & Managing Director of an e-commerce company. Responsible for the global market research, competitor and product analyses action formulation. In this position and with this responsibility, expert 3 is dependent on data and always interested in acquiring more, newer or up-to-date data.

Expert 13:

CEO of a supraregional advertisement company, specialized in guerilla marketing. Awarded several times for campaign realization, and excellence in the conscious and responsible handling of data.

Expert 14:

CEO of an international company involved in the commercial distribution of imported goods. Cross-border trade involving several legislations is the focus here.

Expert 15:

CEO and owner of an international company that used to do large-scale data acquisition in the past, but has had to adapt its business model since the data protection regulation.

3.5 Consent, Anonymity, and Ethical Implications

Prior to the conduction of this study, experts were informed about the aim and purpose of this study, as informed consent was taken. Moreover, the academic and scientific background of the research project being a thesis for the completion of a degree in Psychology in Business and Economics at the Universidade Catolica Portuguesa was also explained before the interview conduction. Participants had the right of opting out of the study at any given point in time. To protect the identity of the interview partners all data was kept strictly confidential and were made anonymous. The data collected was used for research purposes only.

Instead, experts will be represented by a numerical classification. The confidentiality of the participants has also been maintained as their information has been hidden from everyone else. Participation was informed, voluntary and safe for the research subjects (Clandinin, Cave & Berendonk, 2017). As for academic secondary sources, it was made sure that reliable sources were consulted, or information had been verified otherwise.

3.6 Questionnaire Construction

The development of the interview guide was done based on the driving research questions for each of the aspects, derived from the literature review.

It was structured into four parts, each according to one of the aspects of the research questions, as diverse experts from varying industries were recruited to participate in this research, it was aimed that every expert can contribute to the research questions and reflect critically on the answers. Every question can be directly linked to one of the four aspects, and the whole interview guide was constructed to critically engage with benefits as well as downsides of the relevant aspects.

The first part of the interview was to explore the potential of data for companies and what the relevant experts thought about private end-users. This was done by asking about the importance of data for the company and the end user respectively, by asking what data represents within the company and to the user, as well as gaining an understanding of the importance, significance, and value the experts place on data, as well as the perceived importance end-users place on data in the eyes of the experts. This information was fundamental for the further course of the interview, because through this an understanding

of the meaning of data, was worked out. Building on these questions and initial understanding, the further course of the interviews was used to gain a sophisticated multi-layered view of data.

In the second part of the interview, the statements on data protection and the legal framework are collected. This is also done from the company's point of view and the experts are asked for their opinion of the users' point of view. Questions for this aspect concerned the importance of data protection laws for the companies, of benefits and downsides of the data protection regulations for the company, what impact data protection had for companies, and to what degree this influenced processes within the company. Experts were also asked for their opinion on what users thought of data protection regulations, and expert opinion as to how users perceive data protection, benefits as well as downsides. This was done to place data within its legal context, as well as to gain an understanding of the perception of data protection laws for companies and users, whether it can be seen as a beneficial success or a failure.

Part three of the interview guide deals with data ownership.

Here, questions are asked about the assessment of the ownership claims of companies and users. The aim here is to find out whether different experts or different industries and users have different views of ownership over the data, as well as experts' opinions on what users think about data ownership. The background to this is that there are recent developments in technology and in the legal situation that are making users increasingly aware of and demanding digital self-determination and thus the right to ownership. These questions added value and insights into the ownership debate and were aimed at understanding the consensus prevalent into who owns data.

In part four of the interview, the experts were asked about economic valuation according to the monetary value of the data, for their company as well as what they perceived users value of their data. This was done firstly by asking questions as to whether the company acquired data or had any expenditure for their data. Next questions were directed to value data within the company, and if users perceived a monetary value in their data. The aim was to generate an understanding of the valuation of data and the value that companies associate with their data.

The interview guide contained 19 questions, which were divided into four sections. This resulted in a time frame of 25 to 50 minutes per interview. The interviews were conducted individually on different days via Zoom or Microsoft Teams meetings. The transcription of the recorded conversations as well took place in the following days. As the interviews were conducted in different languages, they were also transcribed on the same day as the transcription. Both the interview guide with the questions and the translated transcripts can be found in the annex.

3.7 Data Analysis

Data research analysis is the process of reducing data to a story and interpreting it to derive insights (Daniel & Harland, 2017). It has also been called a time-consuming, messy but creative process through which the collected data is given structure and meaning (Rossman & Marshall, 1999). To enable a successful analysis of the interviews, the interviews were recorded using the integrated recording functions of online meetings. These recordings were then used to create transcripts of the interviews, which can be found in the appendix (B-P). As some of the interviews were conducted in German, the interviews had to be translated or otherwise prepared for analysis. The prepared transcripts were then uploaded into MAXQDA software, for analysis and interpretation. The analysis follows the structure of Kuckartz (2018) as explained in chapter 3.7. For both qualitative and mixed data analysis, MAXQDA is one of the leading software in the world.

3.8 Process of the Structured Content Analysis

In the following, the procedure of the content structuring qualitative analysis according to Udo Kuckartz (2018) utilizing the MAXQDA software is presented, which allows for a clear structure and an overview of complex data sets. According to Schreier, 2014:

"The core of the content-structuring approach is to use the material to identify and conceptualize selected aspects and to describe it systematically with regard to the aspects (...). These aspects also form the structure of the different themes and are explained as categories of the code system" (Schreier, 2014, p. 6, translated into english by Lukas Stratmann).

An alternative approach to qualitative content analysis is the approach of Mayring (2015), which tries to abstract, generalize, but also reduce complex statements in several steps. However, it was felt that the complexity of this topic should not be reduced.

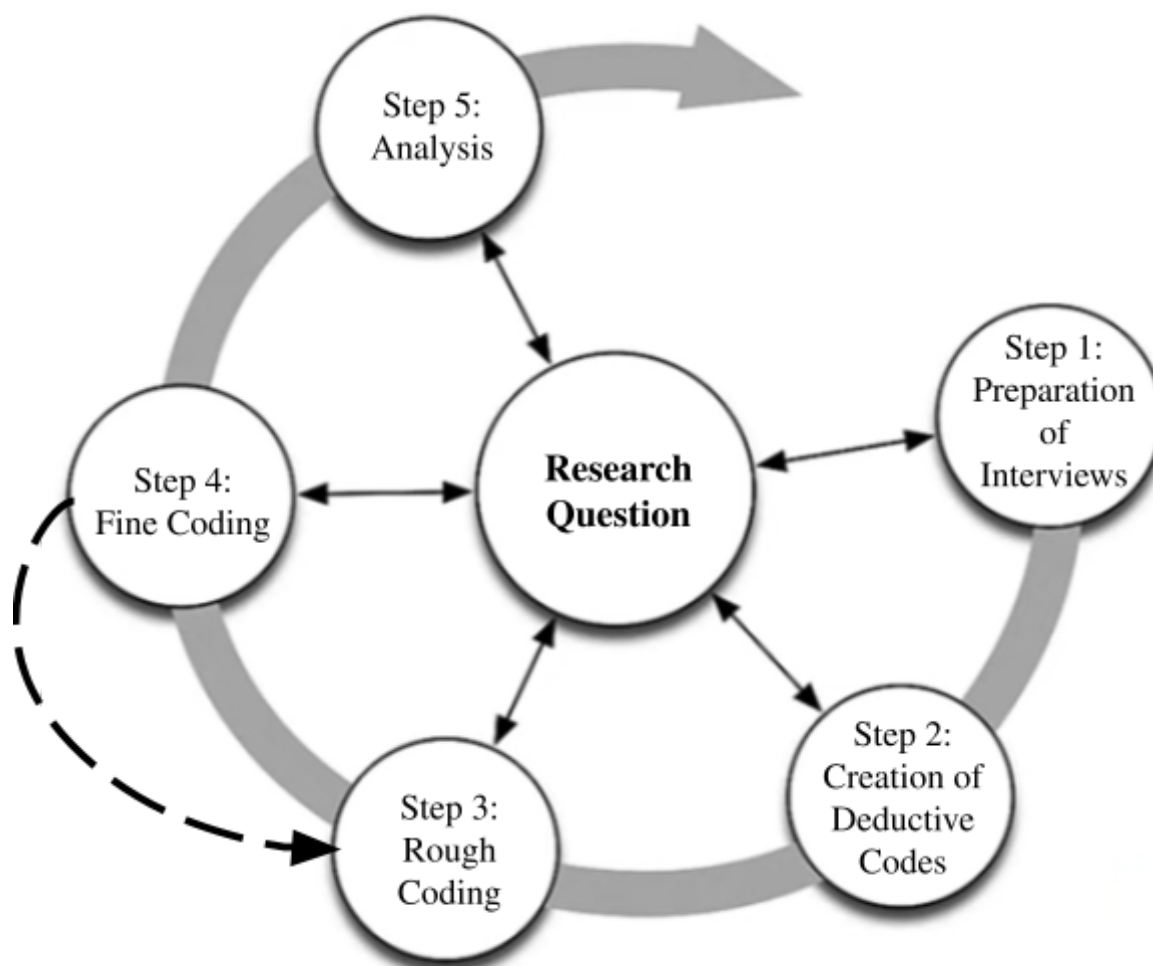


Figure 1: General process of a content structuring analysis in style of Udo Kuckartz (2018)

In the following, the coding process and structured qualitative content analysis according to Kuckartz (2018) are described.

At the center of the whole project is the research question. In this case, the project started with specific research or inquiry guiding questions "What is data to the end user and to companies, considering potential, legal, economic and proprietary aspects?" The research questions guide the whole process and structure the flow.

Step 1: Preparation of the Interviews

The first step is the preparation, initial examination and exploration of the collected interviews. This serves the familiarization with the content. Here the first thoughts were marked, e.g. theoretical or content wise anomalies of the statements were highlighted. This step took place during the conduction of the interviews, during the transcription and translation of the interviews.

Step 2: Creation of Deductive Codes

In this step the initial deductive codes were generated. Each of the relevant aspects of the research question was generated as code and named accordingly in MAXQDA. With these deductively generated codes, the rough coding took place, all the interviews were evaluated and segments were assigned to these deductive codes based on the aspects of the research question. Since this research project is content-based and not a formal or evaluation structuring, the codes represent the content aspects (potential, legal, economic, and ownership).

Step 3: Rough Coding

The interviews were coded, meaning that all interviews were evaluated for statements and text segments relevant to the deductively created codes, and then assigned to a code named after one of the aspects. In the case of this research project, an relatively structured interview was presented. Each aspect and each perspective were given individual questions and parts in the questionnaire. Subsequently, the coding according to the aspects was made easy. It was taken care that each coded segment contained one statement, at least one sentence but as long as necessary to understand. The coding system based on the research question gave the interviews a structure that made it easy to access coded segments corresponding to the relevant aspects.

Step 4: Fine Coding

All the previously assigned and coded segments relevant to the aspects were sequentially reevaluated and inductive codes and subcodes were determined on the basis of the content

of the segments to further differentiate statements and arguments raised by experts in the interviews. Each time a new relevant statement was raised within the coded segments, a new inductively code was generated, named according to the finding, and assigned to the segment. Thus the segments of the deductive codes were further differentiated and re-coded according to the new inductively generated codes and subcodes. These inductively generated codes in MAXQDA are an operationalization of the research question. It should be noted that for segments to be assigned a code it did not necessarily have to contain the specific keyword, but rather a meaningful context was sufficient for coding. This resulted in a differentiated deductive inductive code system that had a direct relation to the research guiding questions.

Finally, codes can be merged, further differentiated, and further considered for the code system. This step can and should be repeated until no further new codes can be created, and the list of arguments is exhausted. In this step, the last uncertainties in the coding can be cleared up and the entire coding system can be checked again for fit to the research guiding questions.

Step 5: Analysis and Interpretation

The analysis was done with the help of MAXQDA, to conduct frequency, similarity, and code-based analysis. Finally, the results were interpreted, documented, and reported.

IV Results

4.1 Hierarchical Coding System

As a basis for the analysis, a coding system was first developed, as mentioned in the previous chapter, which assigns statements within the transcripts that can contribute to answering the research question. On the first level of the hierarchy are the perspectives, perceived user perspective, and company perspective, for visual aid, the two perspectives have been displayed on different figures (Figure 2 and 3 respectively). On the second level of the model, for each of the perspectives are the aspects mentioned in the research question. The lower levels are the inductively generated codes and subcodes. With further tools of MAXQDA, the frequencies of keywords and their relations to each other were displayed in the following course of the analysis.

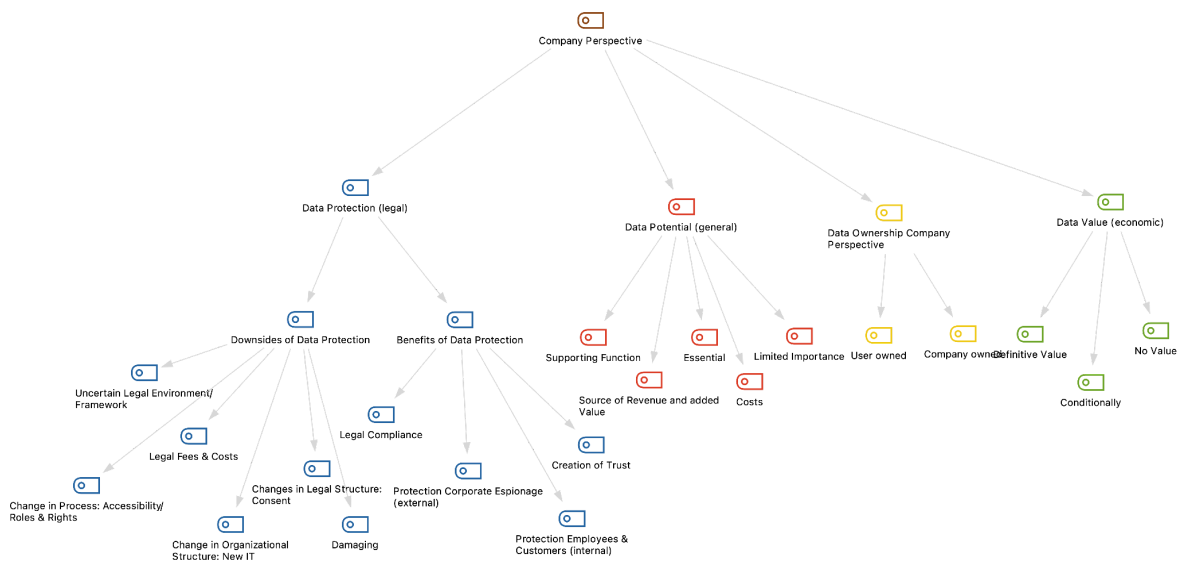


Figure 2: *Hierarchical Code-Subcode Model: Company Perspective*

For Company perspective:

Blue marked are codes relevant to the category Data Protection. Data Protection is divided into two codes, “Downsides of Data Protection”, with the inductively generated subcodes of “Uncertain Legal Environment/Framework”, “Changes in Process: Accessibility/ Roles & Rights”, “Legal Fees & Costs”, “Change in Organizational Structure: New IT”, “Changes in Legal Structure: Consent” and “Damaging”. The other meta code is “Benefits

of Data Protection” with the inductively generated subcodes of “Legal Compliance”, “Protection Corporate Espionage (external)”, “Protection of Employees & Customers (internal)” and “Creation of Trust”.

Red marked are codes that are relevant for the deductively generated category Data Potential. This is differentiated by the inductively generated subcodes of “Supporting Function”, “Source of Revenue and added Value”, “Essential”, “Costs” and “Limited Importance”.

Yellow marked are codes that are relevant for the deductively generated category “Data Ownership”. This is differentiated by the inductively generated subcodes of “User owned” and “Company owned”.

Green marked codes are relevant to the category Data Value. This category has three inductively generated subcodes of “Indirect Economic Value”, “Economic Value” and “No Value”.

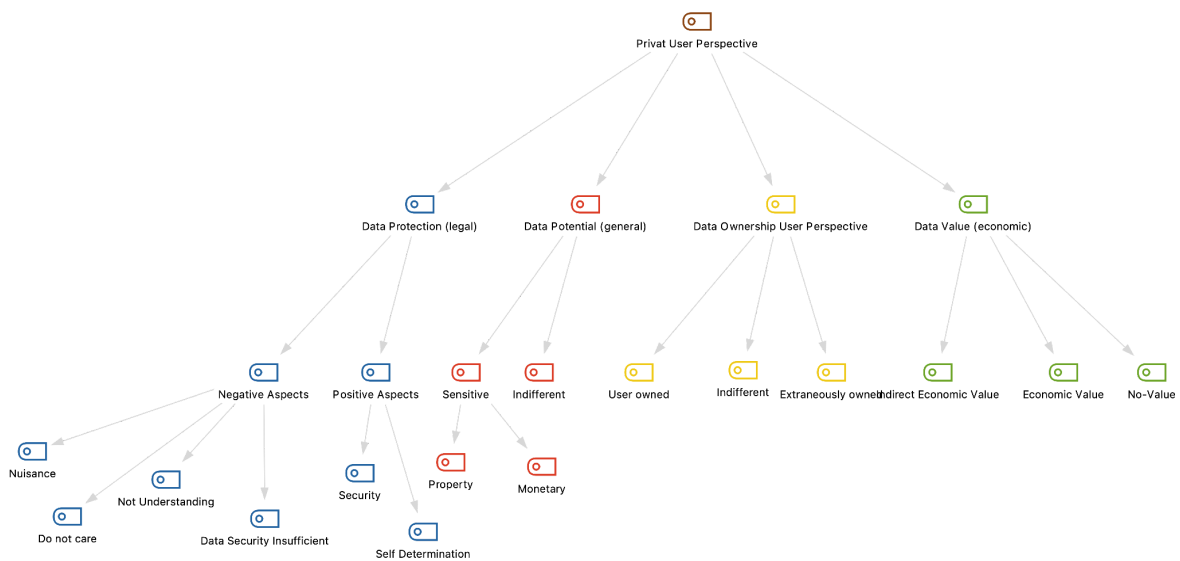


Figure 3: Hierarchical Code-Subcode Model: Companies perceived User Perspective

For the User perspective:

Blue marked are codes relevant to the category Data Protection. Data Protection is divided into two codes, “Positive Aspects”, with the inductively generated subcodes of “Security” and “Self Determination”. The other meta code relevant to this category is “Negative

Aspects”, which included the inductively generated subcodes of “Nuisance”, “Do not Care”, “Not Understanding”, and “Data Security Insufficient”.

Red marked are codes that are relevant for the deductively generated category Data Potential. This is split into two inductively generated codes “Indifferent” and “Sensitive”, whereby “Sensitive” is further differentiated by the inductively generated subcodes of “Property” and “Monetary”.

Yellow marked are codes that are relevant for the category Data Ownership. This category has three inductively generated codes “User owned”, “Indifferent” and “Extraneously owned”.

Green marked codes are relevant to the category Data Value. This category has three inductively generated subcodes of “Indirect Economic Value”, “Economic Value” and “No Value”.

For better understanding, a code memo was generated for each code. Each code receives a definition, how the author describes the code in its own words, how one uses the code and which meaning it has, and what it represents. Also, an anchor or coding example was added to each code, for which an example was taken from the coded material that represents the code particularly well. This was done to ensure transparency to subsequent researchers as to how the code was used. In addition, a description of how the code was generated, whether deductive or inductive, was included in the code memo.

These listings can be found in the codebook, in appendix Q.

4.2 Qualitative Content Analysis

In this section of the thesis, the answers of the experts interviewed according to the deductive codes are summarized, put into context and special conspicuous are elaborated. As is the case for all qualitative analysis the content analysis is more than a purely descriptive presentation of the results, but rather results have to be interpreted for a sophisticated analysis. The analysis will follow the structure of the aspects mentioned in the interview, instead of the order of the theoretical framework. In the following first the perspective of the company is presented, and subsequently, the perceived user perspective is analyzed.

4.2.1 Company Perspective

4.2.1.1 Data Potential

Table 1: *Code Relation Table: Data Potential Company Perspective*

Interview	Essential	Source of Revenue and added Value	Supporting Function	Limited Importance	Costs	Sum
Interview 1	1	3	2	0	2	8
Interview 2	2	0	1	0	1	4
Interview 3	2	0	3	0	0	5
Interview 4	0	0	0	2	1	3
Interview 5	1	3	1	0	1	6
Interview 6	0	1	5	0	0	6
Interview 7	1	1	2	0	0	4
Interview 8	0	1	2	0	0	3
Interview 9	2	1	1	0	1	5
Interview 10	1	1	1	0	1	4
Interview 11	2	0	2	0	1	5
Interview 12	1	1	1	0	1	4
Interview 13	1	1	1	0	0	3
Interview 14	0	2	0	0	1	3
Interview 15	0	0	0	0	1	1
Sum	14	15	22	2	11	64

This category was covered by questions 1-4 in the interview guide.

For the category "Potential of Data"(64) the codes Essential (14), Source of Revenue and Added Value (15); Supporting Function(22), Limited Importance(2) and Costs(11) were found. "Supporting Function" is the most common code (22). Next "Source of Revenue" is coded with 15 entries, closely followed by "Essential" with 14.

It can be seen that the potential of data is considered something positive and significant.

However, at the same time, it can be observed that this view does not apply to all experts interviewed. Interviews 4,14, and 15 do not see the supporting function, however expert 14

considers it as “Source of Revenue “. Deviating from this, 4 is the only expert who sees only a “Limited Importance” and points out that:

“For me, data has very limited importance because I always have this data temporarily. That is, I record the data, I store it in our system, and after the rental process is completed, I personally, as an operational entity, no longer have access to it.” (Interview 4, item 13).

This view is formulated based on his data use case, because this expert works only operationally with the data, not administratively.

Data as a “Cost” was coded 11 times and named by 10 of the experts. Another highlight of the finding is that expert 15 sees data solely as “Costs”, with no additional coding, which is surprising as all other experts have marked data at least as “Supporting Function”, “Data do indeed play a big role for us, but it is because of their costs to us.” (Interview 15, item 22).

4.2.1.2 Data Protection legal

- [01] Benefits/Protection Corporate Espionage (external)
- [02] Benefits/Protection Employees & Customers (internal)
- [03] Benefits/Legal Compliance
- [04] Benefits/Creation of Trust
- [05] Downsides/Damaging
- [06] Downside/Legal Fees & Costs
- [07] Downsides/Uncertain Legal Environment/Framework
- [08] Downsides/Change in Process: Accessibility/Roles & Rights
- [09] Downsides/Change in Organizational Structure: New IT
- [10] Downsides/Changes in Legal Structure: Consent

Table 2: Code Relation Table: Data Protection Company Perspective

Interview	[01]	[02]	[03]	[04]	[05]	[06]	[07]	[08]	[09]	[10]	Sum
Interview 1	1	0	1	1	0	0	1	0	0	1	5
Interview 2	1	1	1	0	0	0	3	0	0	2	8
Interview 3	1	2	0	0	0	1	0	0	1	0	5
Interview 4	2	1	0	0	1	1	2	1	1	0	9
Interview 5	2	1	0	2	0	1	3	3	2	1	15
Interview 6	2	2	1	3	1	2	5	0	0	1	17
Interview 7	2	1	3	1	0	0	0	1	2	0	10
Interview 8	0	1	4	0	0	0	0	0	0	1	6
Interview 9	0	0	2	0	0	2	1	0	1	0	6
Interview 10	1	0	2	1	0	2	1	2	0	2	11
Interview 11	0	0	0	1	3	0	1	3	3	1	12
Interview 12	1	1	0	1	1	0	2	0	0	1	7
Interview 13	2	0	1	1	0	0	0	2	1	0	7
Interview 14	0	0	0	0	2	2	0	2	1	1	8
Interview 15	0	0	0	1	0	2	0	0	1	1	5
Sum	15	10	15	12	8	13	19	14	13	12	131

This category was captured by questions 7-10 in the interview guide.

For the category Data Protection (127), the codes “Benefits of Data Protection” (52) and “Downsides of Data Protection” (75) were deductively developed, and further subcodes were inductively assigned to the two codes.

For Benefits of Data Protection the subcodes “Protection Corporate Espionage (external)” (15), “Protection Employees & Customers (internal)” (10), “Legal Compliance”(15), and “Creation of Trust” (12) were found.

For Downsides of Data Protection the subcodes “Damaging” (8), “Legal Fees & Costs” (13), “Uncertain Legal Environment/ Framework” (19), “Change in Process: Accessibility/ Roles & Rights” (14), “Change in Organizational Structure: New IT” (11) and “Change in Legal Structure: Consent” (10) were found.

It is striking that Downsides of Data Protection are mentioned almost 50% more than Benefits of Data protection for companies. Also, it can be observed that more inductive subcodes could be generated for Downsides (6) than for Benefits (4).

Another important point is that expert 14 does not recognize any benefits of data protection and experts 11 and 15 only see data protection as a creation of trust for users. Expert 9, on the other hand, sees data protection only as a compliance benefit.

The most important benefit with the most mentions from different experts is Protection Corporate Espionage (external) with 15 codes and was mentioned by 10 experts.

Expert 8 does not have as many points of contact with data protection "*Yes, of course, I treat my customers' data with care, as required by law. And yes, that's actually more or less everything.*" (Interview 8, item 29). For this person, compliance is most important and is mentioned a total of 4 times.

Expert 7 depends on the correctness and accuracy of the data from external sources and therefore data protection and especially the positive aspects are very important for him "*It's crucial to do it and is also mandatory to do it*" (Interview 7, item 45).

The downsides of data protection is a much-complicated subject for the experts, as is demonstrated by the number of inductively generated codes necessary for downsides, which are two more than for the benefits. Additionally, where it can be said that the inductively generated codes for benefits of data protection are somewhat related, the codes for downsides of data protection vary a lot.

The most important downside of data protection is "Uncertain Legal Environment /Framework" with 19 codes, mentioned by 9 of the experts.

It can be observed that expert 1 only mentions one downside of data protection, which is justified by the fact that the expert works in a small company that does not yet have such large requirements and contacts with data protection.

"So smaller the company, the protection is high, big company the protection is low, I think." (Interview 1, item 33)"

Expert 4 sees many downsides in data protection, which can be explained by the fact that he has recently had personal negative experiences with data protection, namely there was a cyber attack in his company: "*with the cyber attack that we have now suffered from*" (Interview 4, item 19).

Expert 5 also sees many negative aspects in data protection, which can be explained by the fact that the person works in an international company that deals with highly confidential data. When asked about the importance of data protection this was his answer:

“Very, very important, we have very, very, many confidential data that we cannot display that we cannot put out there. And we need to manage internally. If we don't do that correctly, that represents a big risk to the business.” (Interview 5, item 29)

Expert 10 also sees many different codes (4) and multiple mentions in 3 categories, because, in the industry this expert operates, there are special data protection requirements, as they also advertise with the data, which entails extra regularities

“We have to document everything, when the user comes to the site, what type of data we store, how we store it, where we store it, and how long we store it, so that's the biggest difficulty. And then we have to ask for consent. Which of course we need, also because of the advertising background.” (Interview 10, item 42)"

and therefore also sees many negative aspects.

Expert 6 is a data protection officer who is concerned a great deal with the subject matter; the expert sees 8 positive and 9 negative aspects, which is a sign of a very differentiated and critically reflective opinion. This is a testament to her standing as an expert in this category. In particular, their points on "Uncertain Legal Environment" are highlighted with 5 codes, because the expert places special care to a general understanding of the legal rules and is not sure if they are correctly interpreted and applied by private persons and companies.

“We have people from different backgrounds, not just law, not just technical background. So how do we get everyone on the same page to understand the spirit of the law and apply it in any test” (Interview 6, item 49).

Expert 14 bluntly expresses his opinion that his company tries to meet the minimum requirements of data protection, but feels disadvantaged by data protection because he sees that other companies completely disregard data protection and thus gain an advantage.

“Data protection is an annoying obstacle. Of course, we have to comply with data protection, we comply with the minimum requirements. There are companies, our competitors, that don't comply or comply less with data protection, don't get caught and can make a lot more money.” (Interview 14, item 32)

Expert 11 has his unique view on data protection. His opinion is to be considered in the context that he is a clinic manager working in the health sector.

“I am a victim of data protection. A common saying in healthcare is 'death through data protection.” (Interview 11, item 29) His position is extreme and strongly differentiated from the others. He only sees a single positive aspect of data protection *“But I can understand that this may make some patients feel safer.* (Interview 11, item 37)" and this only conjunctively.

To conclude, it can be said that all the experts interviewed see both positive and negative aspects. Overall, however, the codes show more negative aspects than positive aspects, both in absolute and quantitative terms.

4.2.1.3 Data Ownership

Table 3: Code Relation Table: Data Ownership Company Perspective

Interview	User owned	Company owned	Sum
Interview 1	1	0	1
Interview 2	1	0	1
Interview 3	1	0	1
Interview 4	1	1	2
Interview 5	1	0	1
Interview 6	1	0	1
Interview 7	0	1	1
Interview 8	0	1	1
Interview 9	1	0	1
Interview 10	0	1	1
Interview 11	1	0	1
Interview 12	1	0	1
Interview 13	1	0	1
Interview 14	0	1	1
Interview 15	1	0	1
Sum	11	5	16

This category was captured by questions 14-16 in the interview guide.

The codes “User owned” (11) and “Company Owned” (5) were assigned to the category “Data Ownership” (16). It is noteworthy that the clear majority, more than twice as many of the respondents, consider the user to be the owner of his data.

It is particularly noteworthy that expert 4 answered a question not directly related to ownership as follows:

"my agency partner who sits on the data, who owns the data, who secures the data, and so I have to live with what I'm provided." (Interview 4, item 14" But when asked specifically about ownership, he changes his mind and said the following:

"(the user) is still the owner. So that's your data and he can decide independently to whom he transfers it and not and for what period of time as well." (Interview 4, item 72)

It is important to note that in addition to expert 4, 4 other experts are of the opinion that the data belongs to the company. The experts who hold this opinion are 7,8, 10 and 14. "That data he stores in our system technically belongs to us." (Interview 10, item 77)".

Here a split between the two opinions can be felt, although the majority of experts still see users as owners of their data.

4.2.1.4 Data Value

Table 4: Code Relation Table :Data Value Company Perspective

Interview	No Value	Definitive Value	Conditionally	Sum
Interview 1	0	0	1	1
Interview 2	0	1	0	1
Interview 3	0	1	0	1
Interview 4	0	1	0	1
Interview 5	0	1	0	1
Interview 6	0	1	0	1
Interview 7	0	1	0	1
Interview 8	0	1	1	2
Interview 9	1	0	0	1
Interview 10	0	1	0	1
Interview 11	0	0	1	1
Interview 12	0	1	0	1
Interview 13	0	1	0	1
Interview 14	0	1	0	1
Interview 15	0	1	0	1
Sum	1	12	3	16

The data value category was captured by question 18 in the interview guide.

The codes "No value" (1), "Definitive value" (12) and "Conditionally" (3) are assigned to the category "Data Value" (16). Most of the participating experts (12), stated that their data had "Definitive Value" as expert 13 confirms: "They definitely have a monetary value to us." (Interview 13, item 84). 3 experts stated that it had "Conditional" value. Experts 1, 8 and 11 see conditional value in their data, either associated with a reprocessing, enhancing

the data in a future step, “*So there is a later benefit in the end that the terms and conditions can simply be designed better and you lose less money or can use more money precisely.*” (Interview 8, item 81) or only in connection with people “*Conditionally, we are dependent on data, without data we are incapacitated, but data per se has no value for us - not without a patient.*” (Interview 11, item 77). Only one of the participating experts denied that data had value for their company. Expert 9 was unsure and asked for a definition in the interview. He then denied the monetary value of data for his company. “*Okay, no.*” (Interview 9, item 84). This may be due to the fact that he expected a different definition of monetary value or did not understand the given definition.

4.1.2 Perceived User Perspective

In the following the codes and answers given by the experts on the perceived user perspective are analyzed.

4.1.2.1 Data Potential

Table 5: Code Relation Table: Data Potential Perceived User Perspective

Interview	Sensitive	Sensitive/ Property	Sensitive/ Monetary	Indifferent	Sum
Interview 1	3	1	0	3	7
Interview 2	2	1	0	2	5
Interview 3	4	0	0	1	5
Interview 4	1	1	0	2	4
Interview 5	1	1	1	0	3
Interview 6	1	3	0	0	4
Interview 7	2	0	0	0	2
Interview 8	0	0	0	2	2
Interview 9	2	1	0	0	3
Interview 10	0	0	0	1	1
Interview 11	1	0	0	2	3
Interview 12	2	0	1	0	3
Interview 13	2	0	0	0	2
Interview 14	0	0	0	3	3
Interview 15	2	0	1	0	3
Sum	23	8	3	16	50

This category was captured by questions 5 and 6.

The codes “Sensitive” (23) and “Indifferent” (16) were found for the category “Data Potential” (50). For Sensitive, the subcodes “Property” (8) and “Monetary” (3) were inductively created.

It can be seen that the vast majority of companies think that users perceive their data as sensitive and very important.

Experts 8, 10 and 14 express that users are indifferent to their data.

The special context in the education field, its handling of young people and in group constellations of classes, from expert 8 can lead users not to think about possible consequences and share it outright, which could explain his statement. *“I will say that most people, at least in the context that I work with, share a lot of data, especially in groups.”* (Interview 8, item 25)

Expert 10 thinks users consider their information to be *“background information.”* (Interview 10, item 30)

And expert 14 expresses his own personal experience in the health care sector:

“Completely indifferent. That's what we've learned from 15 years of professional experience. They don't care.” (Interview 14, item 28).

On the other hand, there are experts such as Expert 2, who has a specific case where users information were stolen and as a result of this fraudulent action users are now more aware, more careful, and as a result claim more ownership:

“I now have a customer, for example, who has already had his identity stolen, a complete one. That is of course highly sensitive and he feels like he should claim more ownership over it.” (Interview 2, item 25).

Expert 6 says that after the Cambridge Analytica Conflict or Netflix documentary like "The social dilemma" more awareness has been raised for data property

“I think after the Cambridge Analytica conflict like we have more awareness raising, and we had more perception, especially after the Netflix documentary, social dilemma” (Interview 6, item 37). But also due to governmental intervention programs such as "Your Data is you", with the goal of educating the general populous on the significance of data, the perception shifted.

"in my country there was this whole campaign actually called your data is you" (Interview 6, item 25).

There are also experts such as expert 15 who express that there are users who see data as "increasingly monetarily valuable" (Interview 15, item 38). Moreover, he also mentioned that "there are now solutions that reward users directly with money for their data. So beyond paid responses to surveys." (Interview 15, item 99). This finding is of particular interest as in this gravity this statement is unique.

Generally, experts claim that it is very user dependent if and how much users value their data, but due to public perception, governmental interventions or personal experience, this sentiment might shift towards a general consensus of an increasing perception of the potential of data.

4.1.2.2 Data Protection

Table 6: Code Relation Table: Data Protection Perceived User Perspective

Interview	Positive Aspects/Security	Positive Aspects/Self Determination	Negative Aspects/Not Understanding	Negative Aspects/Data Security Insufficient	Negative Aspects/Do not care	Negative Aspects/Nuisance	Sum
Interview 1	2	0	0	0	0	2	4
Interview 2	2	0	0	0	1	1	4
Interview 3	1	0	1	0	0	1	3
Interview 4	1	0	1	0	2	1	5
Interview 5	2	0	1	0	0	1	4
Interview 6	1	3	1	1	0	0	6
Interview 7	1	0	0	0	1	1	3
Interview 8	2	0	0	0	0	1	3
Interview 9	2	0	0	0	1	1	4
Interview 10	1	0	0	1	1	0	3
Interview 11	1	0	0	0	1	1	3
Interview 12	1	1	0	0	0	2	4
Interview 13	2	0	0	1	0	1	4
Interview 14	0	0	1	0	0	0	1
Interview 15	1	0	0	0	0	0	1
Sum	20	4	5	3	7	13	52

The category was captured by questions 11-13.

For the category “Data Protection” (52) the codes “Positive Aspects” (24) with the subcodes “Security” (20) and “Self Determination” (4) were inductively discovered. “Negative Aspects” (28) were inductively detected with the subcodes “Not Understanding” (5) “Data Security Insufficient” (3) “Do not care” (7) and “Nuisance” (13).

It is noticeable that Negative Aspects of Data Protection are mentioned more frequently than Positive Aspects of Data Protection for users. Also, it can be observed that more subcodes for negative (4) than for positive (2) were found.

As expected, the companies believe that users see the main advantage in security, this is represented by 20 coded segments in Security. All but 14 experts mentioned the security aspect as something positive.

What is interesting to observe is that expert 14 does not seem to believe in data protection. This person thinks that the user does not see any positive in data protection, even more, he thinks that companies disregard data protection.

"Nothing has changed for the user. If we're honest, the big Internet octopuses just keep collecting their data. They just do it illegally now." (Interview 14, item 69)"

All but experts 6, 10, 14 and 15 think that the user sees data protection as a nuisance. As expert 12 says *"it also makes some things for the user really extremely much more complex. I say every homepage I visit, I have to accept some terms. That's annoying, but it's just little things."* (Interview 12, item 46)

A particularly interesting finding is that there are both 6 experts who think that the user is indifferent to data protection, but there are also 3 experts who think that the user feels that data protection is inadequate *"I still feel like my data is not 100% protected."* (Interview 13, item 56)

Overall, the experts assume that users see more negative aspects of data protection than positive ones.

4.1.2.3 Data Ownership

Table 7: Code Relation Table: Data Ownership Perceived User Perspective

Interview	Indifferent	User owned	Extraneously owned	Sum
Interview 1	0	1	0	1
Interview 2	0	1	1	2
Interview 3	1	1	0	2
Interview 4	0	1	0	1
Interview 5	0	2	0	2
Interview 6	0	1	0	1
Interview 7	0	1	0	1
Interview 8	1	0	0	1
Interview 9	0	1	0	1
Interview 10	0	2	1	3
Interview 11	1	2	0	3
Interview 12	0	1	0	1
Interview 13	0	1	0	1
Interview 14	1	0	0	1
Interview 15	0	1	0	1
Sum	4	16	2	22

The category was captured by question 17.

For the category “Data Ownership user perspective” (22) the codes “Indifferent” (4), “User owned” (16) and “Extraneously owned” (2) have been discovered inductively.

About 3/4 of the respondents believed that users see themselves as owners of their data.

Only experts 3, 8, 11 and 14 believe that users are indifferent to the ownership of their data.

“I think the end user, the normal general end user, doesn't give it that much thought.” (Interview 3, item 65)

Expert 2 and 10 think that users also believe their data is extraneously owned or that some of the users think that their data is extraneously owned.

“Very few say it is the right of the company to be able to do what they want I believe. There are very few” (Interview 2, item 73).

4.1.2.4 Data Value

Table 8: Code Relation Table Data Value Perceived User Perspective

Interview	Indirect Economic Value	Economic Value	No-Value	Sum
Interview 1	1	1	0	2
Interview 2	1	1	0	2
Interview 3	1	0	0	1
Interview 4	0	0	1	1
Interview 5	1	1	0	2
Interview 6	2	0	0	2
Interview 7	0	0	1	1
Interview 8	1	0	0	1
Interview 9	0	1	0	1
Interview 10	1	0	1	2
Interview 11	0	0	1	1
Interview 12	1	0	0	1
Interview 13	1	0	0	1
Interview 14	1	0	0	1
Interview 15	0	1	0	1
Sum	11	5	4	20

The category was captured by question 19.

For the category “Data Value (economic)” (20) the codes “Indirect Economic Value” (12) “Economic value” (5) and “No Value” (4) were inductively discovered.

Half of the coded codes were assigned indirect economic value. Among the experts' statements, the arguments of discount, convenience and a general time relief frequently came up for an exchange of the data.

“Anytime you went by a marketplace, they asked for your ID, and you gave it and then you had a big discount, so everyone gave it but there was no finance, there was no purpose, nobody knew the purpose exactly of what was being done.” (Interview 6, item 25)

Only the experts 4, 7 10 and 11 believe that the data has no value for the user:

“they definitely don't see a monetary value in the data.” (Interview 10, item 34).

Experts 1, 2, 5, 9 and 15 believe that the user sees that his data also has economic value.

“There can be monetary values behind it. It can. I can give out my data and get money back in pennies or a point system.” (Interview 9, item 88).

This category has very diverse and contradictory statements among the experts. No clear singular conclusion can be drawn from this range of answers.

4.2 Statistical Analysis

In the following the statistical analysis of word and code frequency, allocation of category-codes and the similarity matrix will be presented

4.2.1 Word and Code Frequency

In the following two word frequencies are highlighted, as well as the code frequencies that are going to be presented (Appendix R).

The first operative word is “data” with a frequency of 1059, which resembles 3,15% of all documents, it is the second ranked word (after “the”) and can be found in all documents.

The second operative word is “protection”, with a frequency of 199, which resembles 0,59% of all documents, it is the 32nd ranked word and can be found in all documents.

The most frequent code was “Security” with a total of 14 mentions, which represents 93,3% of all documents. Subsequent codes were “User owned” with 13 mentions and “Definitive Value” with 12 mentions.

In Appendix S the visual tool of words clouds was used to depict the operating words. The bigger the size in the depiction, the more frequent and significant it was for the documents. The colors correspond to the assigned colors of the codes.

4.2.2 Allocation of Categories

Table 9: *Number and Percent of Code Allocations*

Colour	Perspective	Category	Cod. Seg. (all documents)	Cod. Seg. (active documents)	Documents
●	Company Perspective	Data Protection (legal)	131	35,30	15
●	Company Perspective	Data Ownership Company Perspective	16	4,31	15
●	Company Perspective	Data Value (economic)	16	4,31	15
●	Company Perspective	Data Potential (general)	64	17,25	15
●	Privat User Perspective	Data Protection (legal)	52	14,01	15
●	Privat User Perspective	Data Ownership User Perspective	22	5,92	15
●	Privat User Perspective	Data Value (economic)	20	5,39	15
●	Privat User Perspective	Data Potential (general)	50	13,47	15

Another tool of the analysis software was used to create an overview of the distribution and frequency of the codes on the transcripts (documents). This is shown in Table 9. Based on this evaluation, it can be seen how often the respective codes were assigned, what proportion (in percent) this frequency represents of the total sum of assigned codes, and in how many of the total of fifteen transcripts the code occurs.

This shows that, from the company perspective, data protection (legal) was the point most frequently addressed by the experts. With 131 of the total of 371 codes assigned to text sections, "Data Protection (legal)" accounted for 35.3%. The second most frequently

addressed category was "Data Potential (general)" from Company Perspective. This was addressed 64 times and accounts for 17.25%. The third most frequently addressed category was "Data Protection" from Private User Perspective, with 52 codes, accounting for 14.01%. "Data Potential" from Private User Perspective is in fourth place with 50 codes and 13.47%.

Next comes "Data Ownership" from Private User Perspective, with 22 coes (5.92%), followed closely by "Data Value (economic)" from Private User Perspective, with 20 codes (5.29%). "Data Ownership" and "Data Value" from Company Perspective are both in last place which both have 16 codes, which is equivalent to 4.31%.

The 8 categories were used a total of 371 times over the 15 interviews. Based on the coding, it can be seen that data protection is an extremely important topic for experts, which accounts for almost 50% of all codings if you add together User and Company Perspective.

4.2.3 Similarity Matrix for the Interviews

Table 10: *Similarity Matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1,00	0,85	0,68	0,62	0,79	0,74	0,66	0,72	0,79	0,70	0,77	0,81	0,77	0,57	0,68
2	0,85	1,00	0,74	0,72	0,77	0,72	0,68	0,70	0,77	0,72	0,70	0,79	0,70	0,55	0,66
3	0,68	0,74	1,00	0,77	0,77	0,68	0,72	0,70	0,72	0,55	0,70	0,70	0,74	0,68	0,74
4	0,62	0,72	0,77	1,00	0,74	0,62	0,74	0,55	0,74	0,66	0,72	0,64	0,64	0,66	0,64
5	0,79	0,77	0,77	0,74	1,00	0,79	0,70	0,60	0,74	0,66	0,68	0,85	0,77	0,62	0,72
6	0,74	0,72	0,68	0,62	0,79	1,00	0,66	0,68	0,66	0,70	0,55	0,81	0,77	0,62	0,64
7	0,66	0,68	0,72	0,74	0,70	0,66	1,00	0,72	0,70	0,74	0,72	0,72	0,85	0,62	0,64
8	0,72	0,70	0,70	0,55	0,60	0,68	0,72	1,00	0,60	0,68	0,66	0,70	0,70	0,77	0,57
9	0,79	0,77	0,72	0,74	0,74	0,66	0,70	0,60	1,00	0,62	0,72	0,68	0,72	0,57	0,72
10	0,70	0,72	0,55	0,66	0,66	0,70	0,74	0,68	0,62	1,00	0,68	0,68	0,72	0,70	0,60
11	0,77	0,70	0,70	0,72	0,68	0,55	0,72	0,66	0,72	0,68	1,00	0,70	0,70	0,60	0,66
12	0,81	0,79	0,70	0,64	0,85	0,81	0,72	0,70	0,68	0,68	0,70	1,00	0,79	0,60	0,74
13	0,77	0,70	0,74	0,64	0,77	0,77	0,85	0,70	0,72	0,72	0,70	0,79	1,00	0,64	0,70
14	0,57	0,55	0,68	0,66	0,62	0,62	0,62	0,77	0,57	0,70	0,60	0,60	0,64	1,00	0,72
15	0,68	0,66	0,74	0,64	0,72	0,64	0,64	0,57	0,72	0,60	0,66	0,74	0,70	0,72	1,00

After the transcripts were coded using MAXQDA, a similarity matrix was created. This visualizes the similarity of the interviews conducted in terms of the occurrence and

frequency of the codes used in the individual interviews (Table 10). The calculation basis for the similarity measures can be found in the MAXQDA 2022 manual on page 554ff. "Color shading", which is turned on by default, helps with the interpretation of the cells, which can take on a value from 0 (no similarity at all) to 1 (identical) in a similarity matrix: The darker the green, the more similar the two documents are with respect to the selected codes." (MAXQDA, 2022) It should be noted, however, that the strongest green marks the highest value per column. On the basis of the similarity matrix, it can be read that there is a basic agreement between the codes used and their frequency between the respective interviews, as can be seen by the predominantly green matrix. The highest levels of agreement are found between the coded text portions of the transcripts of Interview 1 and Interview 2 (0.85), Interview 5 and Interview 12 (0.85), Interview 7 and Interview 13 (0.85).

The least similarity is between Interview 1 and Interview 14 (0.57), Interview 2 and Interview 14 (0.55), Interview 3 and Interview 10 (0.55), Interview 4 and Interview 8 (0.55), Interview 6 and Interview 11 (0.55).

Based on this similarity matrix of 0.55 to 0.85, it can thus be concluded that the initial situation of the interviewees is basically comparable, as the interviews all roughly followed the same structure of questions. However, the differentiated statements of the various experts lead to a change in similarity. While the interviews of expert 1 and 2 for example are predominantly green, marking a high similarity to other experts, the interviews of experts 10, 15 and 15 show only little relation to other interviews, testifying differentiated or opposing opinions in relation to other participants.

V Discussion

This thesis critically highlighted data usage and protection and collected differentiated perceptions, opinions, and attitudes of experts in data industries. These statements are contrasted against perceived users' opinions.

For this 15 experts from different industries with different responsibilities and data use cases, were interviewed. The experts are working for data-driven companies in positions ranging from CEO to project lead, with company sizes ranging from regional SME to internationally operating companies. These experts were asked about their view on data according to the four aspects of the research question and what they thought the users' perspective on data is. The experts' statements are discussed first, followed by those of the users' perspective.

For this purpose, the discussion will go over each of the four aspects mentioned in the research questions that were explored in the theoretical framework, upon which the questionnaire was constructed. The aim of this thesis was a multi layered analysis of data according to the two perspectives, one of the company and the other of the end-user

5.1 Company Perspective

The initial part of the questionnaire dealt with the general potential of data. The literature review showed that companies measure immense potential to data (c.f. Almeida, Santos & Monteiro, 2020), which can be confirmed with the expert interviews, as almost all of them mentioned it positively. “Data Potential” was the second highest coded aspect, with “Supporting function”(22) having the second highest number of coded segments out of all codes. Although data were mentioned as essential or crucial, the individual coded segments and statements are not as powerfully eloquent, as literature research suggested, with none of the experts labeling it as the single most important commodity to business as the economist did. A reason for this can be the selection of participants for this study, who are not working for internet giants or companies traded on the stock market. In general, not as many unique inductive codes could be created based on the statements of the experts. This is a testament to the fact that experts' answers were not as diverse, and differentiated to

each other. One possible reason for this might be that experts had a one-dimensional understanding of data which can be interpreted as having a one-dimensional or superficial understanding of data.

The second part of the questionnaire dealt with the economic data value. Here the experts confirmed the literature as well. Experts do see value in data, however, statements are confined and not as expressive. There are not as many inductive differentiated statements for this aspect (3), as can be seen in the hierarchical code-subcode model. Additionally quantitatively not as many codes were assigned to this aspect as opposed to others, with “Data Value”(16) in fact being tied for the second lowest number of coded segments for all aspects. This was surprising as especially the economic, and monetary value to companies was a focal point in many academic studies. Moreover, most of the interviewed experts work for data-driven companies, with data being their primary resource - this was not reflected by the statements given in the interview. Arguably one reason for this could be that experts assumed this aspect was too obvious to mention explicitly, or did not want to mention the monetary value within the scope of a master thesis. Surprisingly, none of the experts mentioned that his/her company buys personal data.

The third aspect mentioned in the research question was data ownership. Contrary to the author's beliefs, but in accordance with the regulatory framework, at the moment users voluntarily store their data on companies databases, and they relinquish ownership over their data. This aspect had the tied-lowest number of codes with 16 segments. Companies have an understanding that this data does in fact belong to them, with 5 out of the 15 experts stating that user data is owned by the company. Interesting to note is the answer from expert 4, when casually talking about ownership that his company owns users data, but when prompted explicitly, and when talking to an end-user, that "*(the user) is still the owner.*" (Interview 4, item 72). This can almost be seen as compliance to user perspective when specifically asked about it, but having a different understanding when talking in a company environment.

The final and most controversial aspect according to the experts was the legal framework of data protection, with it being mentioned the most (131). In the hierarchical coding system, the highest number of differentiated inductively generated subcodes can be found for data protection (10), whereas “Downsides” was the most coded element of the whole coding

system (79). This can be confirmed by the general consensus of experts, and even literature research with Boris Feldman labeling GDPR as “pointless” (Benrath, 2022), and experts of this study labeling it as “annoying obstacle” (Interview 14, item 32). It was felt that when talking about data protection, experts gave the most emotional response, arguments ranged from annoying, to costly and effortful, limiting companies' operationality to even potentially damaging. Experts felt like they had to comply with too many regulations, and that the government was “*fighting for a right that people do not demand.*” (Interview 11, item 57). The specialized expert, the data protection officer, specifically mentioned difficulties in interpretation and a missing standardized approach to data protection across different legislations. One argument of particular gravity and comprehensibility is that of the medical doctor: 'death through data protection'. This entails that data protection does not save digital life, but rather “kills” real ones. The underlying beneficial purpose of the legal framework, namely the protection of data and security against cyber attacks had, at least in this group of experts, a subordinated and minor role, and was noticeably less mentioned and subsequently coded (52).

A conclusion from this finding can be that the beneficial purpose of data protection is not conveyed by the legal authority sufficiently and elements have to be reworked. The legal regulation of data protection is relatively new, with the current GDPR becoming enforceable in 2018, however, the information technology sector is changing and evolving so fast-paced that it is felt that current regulations have become outdated and regulators have to catch up with modern data protection demands and needs. The findings from the literature can be confirmed, namely that the GDPR is limiting companies in their operationality.

5.2 End-User Perspective

Following the same structure, firstly the data potential is discussed. Data potential had the second highest amount of coded segments within the user perspective (50). For this aspect, the literature review and expert statements did differ somewhat, as the literature suggested that users are becoming ever more digitally self-determined, and that data can be considered their digital identity and representation of themselves. However, in the expert interviews only two inductive codes “Property”(8) and “Monetary”(3), could be created to

confirm this, with a significantly higher number of codes being assigned to the contrasting code “Indifferent” (16). It is interesting to see in what context the “Property”-codes were assigned, as they almost always had a personal relation or specific background to it. Noteworthy was that when there had been cyber security threats that data was seen as “property”, while most of the coded segments for “property” came from expert 6, who specifically deals with and educates people on the potential of their data. During the course of this research, it was discovered that there are a multitude of projects and initiatives trying to make people more aware of the potential of their data, however, this was also not reflected in the statements given by the experts. An argument to support the lack of coded segments that highlight this perspective is that users were not interviewed directly, but rather experts were asked about their perceived user perspective. However, one could also assume that end-users simply do not see the potential of data and understand it as something insignificant, or are confused.

The second aspect is the data value. Contrary to data potential, data value had the least amount of coded segments of all aspects in the user perspective (20). More than half of the coded segments are mentioned as “Indirect Economic Value”. This is supported by the literature, which suggests that users utilize their data indirectly as a digital currency to gain discounts or other conveniences (Gómez-Barroso & Feijóo-González, 2013). Five segments were assigned to “Economic Value”, which can be seen in the trend of emerging solutions that aim to monetize users for their data directly. Noteworthy is that four experts do not see economic value in the data of the users, either because data exchange was mandatory by the company, or experts were limited to the view that data only brings economic value to companies.

The third aspect deals with data ownership. Here experts were almost in unison, with 16 out of the 22 coded segments being assigned to “User owned”. This shows that companies do realize that users want to own their own data, or at least the experts themselves felt like they owned their data. Noteworthy is that here as well there are some coded segments for “Indifference” about ownership, and 2 coded segments stating that data is owned extraneously. This was surprising as the literature suggests (c.f Amirault, 2019) that there is an emotional debate going on, while this study suggests that the user is not as involved in the debate as one might think. Again, an argument could be that only company experts

were selected to be interviewed, and conclusions about the user perspective could only be drawn on the basis of the company experts.

The final and most controversial aspect is data protection, just as it was for companies. This aspect had the highest number of coded segments (52), as well as the highest number of inductive subcodes (6), as can be seen in the hierarchical code model. While the positive aspects (24) were mentioned a lot in the interviews, the subcode “Security” was the highest subcode for the user perspective. This has to be seen in the context that benefits of data protection for end-users were specifically asked for. 28 segments were assigned to the negative aspects, outweighing the positive, as well as double (4) the number of inductive subcodes created to express all diverse arguments raised by experts. Interestingly, according to the experts, users mostly see data protection as a nuisance, some are indifferent about it, and in the worst cases do not understand it. However, there are users according to the experts who critically engage with data protection, and those for which the regulatory framework established by data protection is not sufficient.

5.3 Limitations

The most striking limitation of this study is the limited perspective and focus of the expert interviews, as no survey specific for end-users was conducted. Although each of these experts is also an end-user, a user survey could have enabled a two-sided understanding of this research topic. Although the number of experts interviewed meets the requirements of saturation and is valuable and expressive for the evaluation, further research from different industries, data use cases or comparable countries would have enriched the statistical evaluation even more. Not every single existing industry and use cases was interviewed exhaustively, but rather only those that were available in the extended network of the researcher.

Finally, the framework of the master thesis did not permit to cover all aspects relevant to the research question, therefore, the focus was placed on the four most relevant aspects: potential, legal, economic and legal, to gain a holistic understanding of data.

5.4 Conclusion

The present study pointed out that a lot of misunderstanding is happening around data.

Ideally, only non-personalized pieces of information (attributes) of data should be usable, the original data originator always remains the owner of his data, never violates privacy and the process is transparent to the users. There are already technical solutions that allow users to handle their data in a self-determined way, while these data can still be used in modern business models.

Here it is important that for the companies/institutions the process is not a cost, but rather a cost reduction, and that the person can transparently manage their data. This is technological already feasible, however, the government needs to play a more active role in promoting and educating these solutions.

Despite the great importance of data demonstrated by the literature review, this research study showed that for users and companies alike data is an abstract concept that needs more studies and explanation. Given the transformative nature of the data society we live in today, governments will need to take a more proactive role. A set of norms, policies, processes, and obligations surrounding legal implications of privacy, data ownership, and data potential should be followed by this. The purpose of data protection is to safeguard individual as well as company data. However, data protection places partly unfulfillable demands on companies, with costly requirements and resource-intensive specifications. For the users, data protection was mentioned to secure data, but do not go far enough, lacking in aspects such as digital self-determination. In reality, there is a dichotomy, the regulations are overdoing for the companies, and underdoing for users real interests.

To conclude, general education on the importance of data, and the implications of what data represents have to be promoted while real solutions have to be formulated, for both companies and users alike.

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VII Annex

Appendix A: Questionnaire

This expert interview is part of a research project which aims to better understand the significance of data.

This is done by highlighting different perspectives:

- from a legal perspective (GDPR and industry-specific)*
- from an economic perspective (what value or "price" does the data have from the individual perspective of the user and the market)*
- from a sovereignty perspective (person as data originator and of the company).*

It is being carried out as part of a master's thesis in Psychology in Business and Economics, at the Universidade Católica Portuguesa, oriented by Prof Daniel Fernandes.

Completing the interview will take approximately 30-40minutes of your time.

Please answer as honestly as possible. All answers will be kept strictly confidential and anonymous. This means that there will be no way to link your responses to your identity. The data collected will be used for research purposes only.

In this research, you will answer as an expert of your company and industry. Additionally, questions as to the perceived perspective of the end-user or private person will be asked.

For the context of this project, Personal data will be defined as "any information that relates to an identified or identifiable living individual."

Personal data consists of many different attributes of a data subject, often starting with his or her name, address, and city of residence. Other common attributes are date of birth, gender, marital status, profession, bank account numbers, etc.

Attributes or properties are generally considered to be a feature, characteristic, information detail, etc., associated with a concrete object/data subject.

Questions:

H1: Data Potential

1) Define what data you need.

2) Define what attributes you need.

3) "data is now considered to be the globe's most valuable and vulnerable resource"
(roboticnews, 2021)

What is the importance of data to your business?

4) How do you (company) look at data?

5) What do you think is the importance of data for the user himself?

6) How do users look at the data?

H2: Data protection

7) What is the importance of data protection for your company?

8) What do you see as challenges in complying with data protection for your company?

9) What are the benefits of data protection compliance for your company?

10) Has the GDPR changed their customer communication/relationship?

11) What do you think is the importance of data protection for the user?

12) What do you think the user also sees as challenges/disadvantages in complying with data protection?

13) What benefits do you think the user sees in complying with data protection?

H3: Ownership

14)What is the origin of their data/how do you get the data?

15)Are there any expenses for data acquisition?

16)Do you understand the user as a producer or owner with respect to their data?

17)How do you think the user sees themselves?

H4: Economic value

18)Does data have a monetary value for your company? Please Define.

19)What do you think users get out of giving out their data?

Appendix B: Expert 1 Interview

Interviewer

The questionnaire is structured into four parts, starting now with the first the significance of data, define what data you need in your company.

Expert 1

I need market size, I need market participants. I need revenue. I need, like numbers like I need the units. I need trends. So I need context to organisation. And I need to know I think those are the most important ones, like who am I selling to who and who am I competing to? And what's the future projection in this case.

Expert 1

And in the aspect of who are you talking to? Can you define what attributes of the person you would need?

Expert 1

Okay, so you want customer data? This is why you are asking. So yeah, it depends on the product that you're selling. And if it's a service or product it is based on location, so highly depends, but I would need to know, What's the age group? What's the activity of this target group if it's an engaged shopper, not engaged shopper if it's likely to respond to online ads or not? And if it's someone that likes a specific niche that I'm selling, so this is very important. Yeah, I think those are the most important things. So age and niche interest.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 1

Everything I do, like data, is everything I do many things, just because of data, even if it means losing money, just because I want to know how it works. Because without data you can never optimize. And the goal of a business is to optimize profits in this case. So yes, without data, there is no optimization of profit, Simple.

Interviewer

I think you kind of answered this already, but how would your company look at data? So is it a commodity to be marketed? Is data cost or is data a source of profit?

Expert 1

Yeah, it's a cost. But in the long run, it will be more profit. Because we need to spend money to get data usually. It's really rarely the case that you don't have to spend to get data example for this is like if you get a viral video on YouTube or something free, that's free to cost, free to create and then generates a lot of leads. So if you have this situation it's very good data is kind of free. If you don't have like 99 percent of us, you will need to spend a lot of money, gathering data getting leads, seeing what works and what does not work, and trying to interpolate everything and trying to figure out, what's the best price point with this data? What's the best way to market? What's the best product to launch? So yeah, data is costly, but gives profits in the long run.

Interviewer

And what do you think is the importance of data for the user himself?

Expert 1

Transparency, because the user needs to know why we need to know about them. Otherwise, they don't like the brands. And the company. Obviously, you know, Facebook, Amazon, the controversies, right. So a lot of user data in these big companies, even Apple. So I think data privacy, governance, and hence so without, they are kind of opposites. So to have the maximum amount of data, you cannot have the maximum amount of privacy, but you need a lot of data to have privacy as well. Otherwise, you cannot know how to protect the people. But yeah, for the user, let's say, I think it's so on, like, very important to not important scale, it's very important, the user needs to know that whereas this data is being used, and how is it being used?

Interviewer

Awesome. How does the user look at the data? So do they look at it at something indifferently? Do they see data as something they own? Or which is very private to them? Or do they even say as data having an intrinsic monetary value?

Expert: 1

We are talking about the average user. So I think the average user looks at the data almost unconsciously, because they click on ads, and then next week, they're seeing this ad again, so they know why they're seeing it. But they just got used to them, at least it's from my niche. Like these kinds of people. It's young people like technology, like they know why they are being shown to buy a smartphone, or a video camera. They know, because they click silly stuff. They watch the YouTube videos. So they know why they are being shown. And yeah, what was the question again?

Interviewer

How the users look at the data. As something in different, they don't care. As something very private to them or something they own? Or as something having monetary value?

Expert 1

Yes. Yes, I think they feel like they own it. But yes, I think that they can erase it. I think so because you can request with the European policies, you can request your data to be removed and everything. So I think in the worst case scenario, they feel kind of safe with that. But they also got used to it, it's kind of unbalanced. Like, they don't really care too much about the average user, like, average, like, let's say, you have 1000 orders, like 1000 customers, let's say and the average user will not care too much about the data. But obviously, you have the extremes that really are very, very protective. And the other ones that click on accept everything. So you have the most extremes. And but the average ones they kind of know they kind of accept that. That's all I think it's a hard question to have.

Interviewer

Alright, coming over to the second part of this questionnaire, data protection, what is the importance of data protection for your company?

Expert 1

Data protection. I don't really, I don't really share the data, like we use the data for our own activity. So we don't really share some of the protection is maximum. Like we keep all the data for ourselves. We don't share with anyone like IBM, these bigger companies like software companies, they need to share good data, that's how they make money. So in my case, they the importance of data protection it's high, because I just use it for our own activities, we don't need to share it with anyone we get a lead from a user. We know for example, the name, the email the country, something like this. We are not telling anyone about this. So the protection is complete between the user and there's no one has access to this. So yeah, in general, big companies, the bigger the company gets, the more data you need. You have I mean, bigger the company more data, more people want the data. So the smaller the company, the protection is high, the big company the protection is low, I think.

Interviewer

Do you see any challenges in complying with data protection for the company?

Expert 1

For me, no. But I can easily see big companies with hundreds of millions of users are big challenges to comply with this, because there are just so many things that come at you like even illegal acts, everyone tried to steal. As companies grow, it gets difficult, more difficult to comply.

Interviewer

And what are the benefits of data protection compliance for the company?

Expert 1

There are very clear benefits. If you comply well with data protection, you have a good image for the company, and everyone likes a good image right? In the long run, it often is good to almost always good to have good user experience, otherwise, the users will leave. And so I think it's really, really important

Interviewer

Do you think the GDPR has changed customer communication or relation?

Expert 1

GDPR?

Interviewer

general data protection regulation.

Expert 1

Protection has changed. I'm not too familiar with that. But so I will say no, because if I knew, maybe it will change.

Interviewer

Okay. What do you think is the importance of data protection for the users?

Expert 1

Yeah, I think we we've been through a similar question before. Yes, I think it's very high. Otherwise, they don't feel safe.

Interviewer

Yeah, so the questions are always structured to two sides. So next up, I'm going to ask you, what do you think the user sees as challenges or disadvantages and complying with data protection?

Expert 1

These advantages or challenges, from his point of view, or from the company's point of view?

Interviewer

This time from the users.

Expert 1

So, okay, so basically, you are telling me that the user enters a website, for example, he has to accept the cookies or not, this is a challenge, for example. Yeah. So I personally don't really like to accept, but sometimes we just don't have time to go and say when it exists, you know, so we just accept everything. So, yeah, this is a challenge. This is one big difficulty. It's not very intuitive. I think it should be more standardized, like, should you ever easier way to make the cookies and everything? Are you listed? I think it's just about like, I cannot say this, but it's a pain for you.

Interviewer

What benefits do you think the user sees and compliance of data protection?

Expert 1

Yeah. So safety, protection, everything.

Interviewer

Coming over to the third part with the ownership? What is the origin of your data? Or how do you get your data?

Expert 1

Mostly through ads? Online ads? So local purchases depend on what kind of data like for me. If I'm, if I'm trying to sell a product, I will first need to get the data from outside resources. Then as the product starts selling, I need to get data from my customers. So do two levels of data. But yeah, usually the ads are the biggest drivers of leads.

Interviewer

Okay, so there are expenses for data acquisition.

Expert 1

Yeah.

Interviewer

But you don't buy data outright. So you don't buy datasets.

Expert 1

I never have, although I am not against it. But it can be useful depending on which data you are using, like, for example, how many people are in the market for fitness, you know, like, which countries are the most active users? You know? So this kind of data, I think, it could be useful if I wanted to, let's say launch fitness app. So I want to know which countries perform the best in fitness. So yeah, it could be it could be good to considering every party involved, knows and accepts this, I think, no problem in getting this data.

Interviewer

So you buy clusters of data?

Expert 1

I would do it.

Interviewer

And do you understand the user as a producer or origin order in respect to their data? So personal data? Who owns it, the user or the company?

Expert 1

I think the user owns it, the company uses it.

Interviewer

Fair enough and how do you think the user sees this? Any differently?

Expert 1

No, I'm a user as well. So I see it like this.

Interviewer

The final part is the monetary value of data, does data have monetary value for your company?

Expert 1

Indirectly, because the data gives more gives profit optimization. So it's kind of without it, we cannot reach that level? Yes.

Interviewer

And what do you think users get out of giving up their data.

Expert 1

What do they gain in retracting their data from the company

Interviewer

In giving data to the company?

Expert 1

Okay, so in giving and not taking, in giving, they're getting a more personalised experience and they're getting more direct, more efficient stream of products that may interest them. So in this case, the cookies and everything else.

Interviewer

So in one word, it would be convenient.

Expert 1

Yes, okay. I can accept that word.

Interviewer

So no monetary value.

Expert 1

No monetary value for the user. Yes, monetary value as well, because convenience is time saving and time is money. So it's like that.

Interviewer

Thank you very much for participating in this interview. And if you want to have access to the results and findings of this interview, don't hesitate to contact me. Once again. I would like to thank you for your time and your patience and answering all these questions honestly. And have a good day.

Appendix C: Expert 2 Interview

Interviewer

Define what data you need for your business.

Expert 2

Here you need virtually all personal customer data including financial circumstances including tax data, denominations et cetera so really very, very extensive and. Also the knowledge and experience, professional training and current status.

Interviewer

Define what attributes you need.

Expert 2

Yes, here is a small repetition. For banks we obviously need all the master data and all relevant attributes of the KYC process, the know your customer process which is essential for banks to verify identities. So these are data that we absolutely needed, they are also specified by law. Now finally tax number address data, identity card, copy for example also in original identity card. Then also those. So the current life situations, speak so married and so on and so forth. Bit as said with the tax number and status to that yes.

Interviewer

Next up I am going to read out a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 2

At the end of the day, they are existential for us, because we cannot work without data release from the customers, which means that we are dependent on the customer also providing and supplying us with the data that we need. In that respect, they are very important for us, yes.

Interviewer

Even how does your company view data as a commodity to be marketed for analytical purposes? Maybe data is a cost or is data a source of profit?

Expert 2

So they are not marketed in our company, not given to third parties. But they are a cost factor, because we simply have to comply with data protection regulations and we have to keep certain things on hand, and they are indirectly more useful for our internal evaluations in order to see how our customers are structured and to be able to better define and measure future advertising measures or target customers.

Interviewer

In your opinion, what is the importance of data for the user, i.e. the private individuals themselves?

Expert 2

Most customers don't know what benefit they have for themselves. So currently they can't really market to you directly in my opinion to that extent - It's a sensitive asset for the customer.

Interviewer

So how do the users see data? Rather indifferent, do they consider data as something proprietary or private or do users see the data as something monetarily valuable?

Expert 2

Exactly most customers are in the middle, and it is becoming increasingly sensitive with time. Can you use them monetarily even as a private customer? On the other hand, users are very open regarding the data release on facebook for example. So when they already have your data users are more open, however others are just

very sensitive. I now have a customer, for example, who has already had his identity stolen, a complete one. That is of course highly sensitive and he feels like he should claim more ownership over it.

Interviewer

The second part deals with data protection. The first question is what is the importance of data protection for your company?

Expert 2

On the one hand, it is very good. To give security to the customers. On the other hand, of course, it is also a great responsibility for us. Protecting our customers' data against attacks from third parties or the like, or even from, let's say, all the people who work here, it can happen that data accidentally falls into the wrong hands. That means we have to be highly sensitive in handling the data. This is how we protect our customers.

Interviewer

What challenges do you see for your company in complying with data protection?

Expert 2

Very high challenges with that yes ultimately again and again. It redefined us in customer acquisition because certain things are now restricted or even forbidden. Now only with the consent of the customer or with the expressed consent of the customer, we are able to contact and record their data. On the other hand, this data, as I said, must also be protected and that is why this is a great challenge for us.

Interviewer

What are the advantages for companies in complying with data protection?

Expert 2

You can see that by law we can only comply with the legal regulations and then work accordingly. Of course we can also keep the customer data for us so we don't have to pass it on somehow or publish it, that is a big advantage. It is explicitly stated in the data protection bill that only with legitimate interest, state, authorities or I have now access to the information and may receive it. So, in this respect, it also protects our customers and as well a bit, our business.

Interviewer

Do you think that the data, that the data protection regulation has also changed your customer communication or customer relationships?

Expert 2

Yes, definitely, so on the one hand it has become more difficult in communication, because you can no longer get hold of data as easily as I described earlier, that you could buy data and then use it once or several times. From whole streets ultimately that means that it is no longer possible. That makes it a bit more difficult in the so to speak announcement of the bank but on the other hand of course as I said there are advantages in other areas again.

Interviewer

Were there any actions by your company before the GDPR to exchange data of customers for other goods?

Expert 2

Yes exactly so, we once had an event, where we had the option for people to exchange their data, like their complete address data including telephone number, for a free cocktail. This is now however fifteen years ago. This is no longer possible today, nor should it be. Unless with a relatively long rat tail of explanations. Now we are more limited. But at the time we did this, people exchanged their data from whom you would not have expected it, because they had not estimated the value of their data at the time.

Interviewer

In your opinion, how important is data protection for users or private individuals themselves?

Expert 2

It has become relatively high. And some customers also ask two or three times again why this data also refers to legal requirements? And what I said earlier, the more the customers have been harmed or have had bad experiences with it, the more sensitively it has to be handled. But there are also people who are still very careless about it.

Interviewer

What do you think are the challenges or disadvantages that users, private individuals themselves, see in complying with data protection?

Expert 2

Disadvantages... a lot has to do with small fine print and whether you read it. I find it for example also always very disadvantageous, no matter which homepage I go now, that I then have to agree again or reject but no real differences. In the run-up it is simply annoying. On the other hand, it has also to do a bit with sensitivity again

Interviewer

Are there also advantages for the user in complying with data protection?

Expert 2

Yes, sure, so in the past there were times so very, very early, that were in essence a cold call on the phone. That is, you could just get the phone number from somewhere, you could call them as often as you wanted. Now our information is no longer so freely available, or only with extraordinary consent.

Interviewer

The third part of the master thesis deals with ownership. Where does your data come from or how does your company get the data?

Expert 2

Only through the customer. That is the customer gives us its data. Firstly there has to be consent given and then we can obtain and enter the data. And when we enter a business relationship, large part of the data are legally relevant and required. We need to inquire in order to be able to accomplish a good and individual consultation. That is the customer is the supplier and the company acts as public registers.

Interviewer

Okay, that means that there are no costs for your company for the data, procurement or data acquisition.

Expert 2

So as far as the actual data acquisition no, because as I said before cold calling or data acquisition is illegal.

Interviewer

Do you understand the user in terms of his data as an owner of his data or just as a data producer that has no right of ownership?

Expert 2

Ok if we would remove the last part of the sentence I would also say yes - the customer is also data producer yes but he still has a right to it. It is his data in my personal opinion. Now I do not know if this is legally sound, but I have an example for payment streams. Here the customer leaves a certain footprint. Is it still his data and there he also has a right that it remains his.

Interviewer

How do you think the user sees the private individuals themselves?

Expert 2

I think most of them also see it that it's his data. Very few say it is the right of the company to be able to do what they want I believe. There are very few, but most see the data as their own.

Interviewer

The fourth and last part is about the monetary value of the data, does data have a monetary value to your company?

Expert 2

Yes, definitely they have, because it's the basis of our business without data we could not work. So, for us it is also of monetary value, although we just do not sell it directly, only use it for our own business relationships.

Interviewer

What do you think, do the users or the private individuals gain from giving out their data? Is it more of a convenience? That they are able to for example log in with just one click or does the user also expect a monetary value by giving out the data?

Expert 2

So I think for many it's convenience at the moment. Because a real direct monetary value is hard to implement, because we know nothing of this practice, where I say, I disclose my data, our process today are rather indirectly. Now for example, I have my credit card and use it to buy inexpensive gifts, and get from certain providers, a token or a point, who then probably will pass on your data, to third parties. Unconscious consent, that one receives for a monetary consideration. But for most, I think it's convenience.

Appendix D: Expert 3 Interview

Interviewer

The master thesis or expert interview is divided into four parts; the first part refers to the potential or general assessment of data. The first question is define what data you need for your business?

Expert 3

From what point of view is that meant? From the point of view of the Business itself, so, the business cases or is that meant from employee point of view?

Interviewer

From the point of view of the business case of the company.

Expert 3

That means, we need of course all physical data of the company, that means the name of course address, locations, all communication, data of the company and we need especially also in the advertising area of the company very detailed presentation, what the company does, what it manufactures, how the company manufactures that. And how the company also sells things, so in principle we need everything about the company, with which a business is operated.

Interviewer

Can they also define what attributes are relevant to their business in terms of the person?

Expert 3

Well, first of all, in the normal business case, of course, the most important thing is the roles that each employee has. That is of course obvious. That starts with the managing director, of course the sales manager for us as an advertising agency is always important the marketing manager. What we were interested in is an assignment of a role understanding.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 3

So data is for our business case vital, yes, we need all the data from the company because it's also often about taking a strategic direction for the company in an advertising agency of course. That's really important for success. So we need to know this data and we also need to know everything about the company the strategic direction but of course also weaknesses to the company in order to read them out correctly, to improve these areas in order to then just change the sales or the case for the company to the positive so to speak, so we really need to know everything about the company.

Interviewer

How does your company look at data? Is data to be marketable, as an analysis tool is data a cost factor or is data even a source of profit?

Expert 3

Profit and analysis tool

Interviewer

What do you think is the importance of data for the user himself? So the private individual?

Expert 3

That always depends, of course, we also have data that are important in the business to business. That is to say, we often have to do with our business customers not with end users but with business customers who buy something, but I would say that balances out so. That's fifty-fifty. The data is of course also crucial for the end user, similar to what I just described, but in principle. Yes, well, they are enormously important, whereby it is often a question for the end user of which product he ultimately has, so if it is now a question of a customer-supplier relationship, so if I now go to the supermarket and buy a product of a company, then the data is important for the end user. If I now go to the supermarket and buy goods from a company, then it is first important for me as a company that the goods really fulfill the purpose that I want to achieve there. Then the company is not quite so important for me. Whereas for an advertising agency, of course, in business to business, these company data are quite crucial, as I said, they are necessary for survival. Less so for the private individual, so not necessary for survival, but still important.

Interviewer

So how do users view data? Are users more indifferent to the data, do they see data as something proprietary or private or do they even see a monetary value in data?

Expert 3

That depends on the user, but the basic user who buys a product from one of our customers, for example, is perhaps not as interested in the data, yes, but there are different users who also have different needs and view data importance differently - I don't think you can generalize like that.

Interviewer

The second part relates to data protection. What is the importance of data protection for your company?

Expert 3

It starts with computer systems, of course, where data about customers and employees is stored. So that's, that's a very secure environment, of course. We no longer have so much physical data hanging in a file cabinet somewhere, but with us everything is digitized and therefore the security of the complete server of the network. This is very crucial, which means that the security factor is extremely high.

Interviewer

What challenges do you see for companies when it comes to data protection?

Expert 3

We have an external data protection officer, so that means that the whole issue is outsourced. Even though we are not a gigantic company now, the topic is of such extreme importance that it belongs in professional hands and for that you also have to invest money.

Interviewer

What are the benefits in data protection compliance for companies?

Expert 3

Well, the benefits are clearly the protection of the personal privacy of each individual both at the customer level and at the supplier level as well as at the employee level. You have to be sensitive with that data, that's our job as a company, and that's a top priority.

Interviewer

Has the Data Protection Regulation changed your customer communication and customer relationships?

Expert 3

It certainly has, because many topics that were otherwise not as important have been re-emphasized. It starts with an Internet page where I first have to click something away before I can surf it, and for many end users this is also a hindrance in the use case. People often don't understand why you have this power or why you should have this power and why this is the case, it's seen as very obstructive, but if you think about the purpose of such a data protection regulation, then you have to realize that data is a highly sensitive good that needs to be protected and that's something we simply have to deal with as a business.

Interviewer

In your opinion, how important is data protection for users or private individuals?

Expert 3

Well, I wouldn't necessarily make a distinction, I think that data is just as important and worth protecting for an end user as it is in a company, so I wouldn't make a big distinction. Data should not be accessible to everyone and should be protected both based, so on commercial as well as on a private level.

Interviewer

The third part is about ownership. Where does your data come from or how does your company get data?

Expert 3

Our company essentially gets data through research, for example, when we don't know customers yet or when we first get to know them, but above all also by actively passing on this person's data to us, because they have a goal, namely to make better advertising and to be marketed well, to work out strengths and weaknesses, and in doing so, passing on data is, after all, a basic prerequisite.

Interviewer

That means costs for data, procurement and data acquisition.

Expert 3

I would say no, because our business is also very much a personal business and we get our customer data and relationships in principle from the people who want to pass them on to us, so that is not the case with us in the company that we now have to go on a cold-calling tour, but we are a very old and experienced company that is very well networked. This means that we often obtain new customers by being recommended to others and do not have to go in search of customers or approach them cold. That's why it doesn't play such a big role in the context.

Interviewer

Do you understand the private individuals in terms of his data as the owner of his data or data? Producer who discards any right of ownership?

Expert 3

Owner.

Interviewer

How do you think the user sees himself?

Expert 3

I think the end user, the normal general end user doesn't give it that much thought. The one that does think about it, he also sees himself as an owner. At least that's my impression.

Interviewer

The fourth part deals with the monetary value of data, does data have a monetary value for your company?

Expert 3

Of course. As I said before we use it for analytic purposes, that's why it gives us value which is ultimately reflected in monetary gain.

Interviewer

What do you think the individual gets out of giving out their data? Is it kind of a convenience for a faster login for example or for a more tailored service or does giving out the data also have a monetary value to the user themselves?

Expert 3

So that data has a monetary value, we don't need to talk about that, yes, that's actually the case simply because there are large companies that hopefully earn a lot of money by passing on data. Yes, that is so. I believe that there can be advantages associated with it, yes, at the moment when a company defines a value with it and possibly wants to do something good by handing over the data. But I also believe that there is a great deal of fraud going on and that you have to be careful with the data.

Appendix E: Expert 4 Interview

Interviewer

Then we start with the first question: define what data you need for your business?

Expert 4

Well, of course we need all customer data. So first of all we need the personal data of the customer. For certificate number, ID number, if it is a first time renter and has never rented from a rental agency before. Yes, we have different payment options, we have the possibility to book on account, but the customer number, the customer himself must know and be able to name. That's how the records are found in the end.

Interviewer

What attributes do you need from personal or living identifiable persons?

Expert 4

We have a data entry mask, which guides us through the rental procedure. All data, beginning with the salutation over the name over the surname, complete like an identity card, finally payment option, address, driver's license number must be deposited. Of course we have to make sure that this person has the permission to drive the vehicle. The identity card number finally the legitimation. And the means of payment which must be deposited.

Interviewer

Next up I am going to read out a quote by Allinson, 2022 in Robotics & Automation News: “Data is now considered to be the globe's most valuable and vulnerable resource.” What is the importance of data to your business?

Expert 4

For me, data has very limited importance because I always have this data temporarily. That is, I record the data, I store it in our system, and after the rental process is completed, I personally, as an operational entity, no longer have access to it. That is, I could not contact the customer after the completion of the appointment process or reach them even if I wanted to. This would then have to be requested via our head office. So the issue has become very sensitive. I've been doing this for seventeen years now at a rental agency and when I think about how easy it used to be to rent out... of course, nowadays it's become much more difficult in the wake of data protection. We are completely dependent on the fact that the customer can call on his customer number independently, because I am not legally allowed to see his number, and without this number we cannot provide any service. Yes, it's a bit off topic, as I said at the beginning, because I think the customer has concluded a framework agreement with us. We are ultimately the one who have to execute, who have to advise him and the customer does not deal every day with such a set of contracts, and not every day with his specific number, which he signed sometime two years ago and also does not know it by heart. And of course he would like to know from me which options and possibilities are more likely to suit them.

It's actually made a little more comfortable for me as an operations person. Not all customers necessarily understand that either. So even the customer says this can't be true, I've done everything with you, you have to be able to give me the number, not the other way around. But the issue of data security and data protection is not up to me here as an agency partner but to our franchisors. That's a problem for my agency partner who sits on the data, who owns the data, who secures the data, and so I have to live with what I'm provided.

Interviewer

The next question is how do your companies look at data?

Expert 4

That's hard for me to judge now. Because, as I said, I'm not that close to the topic to be able to really judge it objectively. Purely subjectively, I would say that it is not profit. We don't send out series, letters or anything else. I know that as soon as customers have made a reservation, they get a message telling them what options they still have, what they could book in addition, etc. This is an automatic process, which both sides follow. That is an automatism, to which both agree with reservation creation.

Otherwise, of course, the data has an incredible value, as we have also noticed with the cyber attack that we have now suffered from. Fortunately, nothing sensitive was lost, but it has led to programs being shut, even if it was just purely preventive. And some of the rentals have also been completely shut down, simply to make sure that they don't leave any back doors open that would allow the attacker to access sensitive personal data. This was done to the detriment of our rentals. You can see from this the respect and fear that prevails. That such data will end up in the wrong hands, so it's better to do without business and revenue than to take the risk of being robbed. In this sense I would say that data can be marketed, but it can be a huge cause for costs.

Interviewer

In your opinion, what is the importance of data to the user or the private individual?

Expert 4

I think that's also a bit in the eye of the beholder. So for me personally, I just think when I have to accredit somewhere or when I have to register somewhere. So what, I don't give out any great personal data, important data or anything else. But now, if I have to register somewhere, because I want to book something somewhere or so then it has become everyday life for me. Some would actually call me a black sheep because I can get targeted by tele sales with something they want to sell. This does not concern me that much, then I press the conversation away and says nice day or even nothing and then that was it for me. I know of course others feel annoyed by something like that, I think that is always a bit in the eye of the beholder or how sensitive one reacts to it. But where the value lies I can not generalize.

Interviewer

How do the users, i.e. the private individuals, view the data? Are they rather indifferent to the data, do they regard the data as something proprietary or private, or do they even see the data as something of monetary value.

Expert 4

Well, if we now ultimately assume that we are talking about credit card data or if we are now talking about medical records of whatever kind, I don't think anyone wants to be able to see such things. I am personally also no friend of customer loyalty models of all Payback or other providers it makes oneself again additionally glassy. My wife is a fan of it. She registers everywhere. I don't think you can generalize that. Every person reacts differently somewhere.

Interviewer

The second part deals with data protection. How important is data protection for your company?

Expert 4

Elementary. Well, that's really true. Through this cyberattack, I just said what happened there and how it was reacted by and that you closed the system to the detriment of sales. In the end, we stopped using our point of sales devices. That wasn't without its problems. I have to say, quite honestly, that you can see that the company really had massive fear that data would be channeled into the wrong channels, and that's why they closed everything down.

Interviewer

The next question follows on from this, what challenges do you see for companies in complying with data protection?

Expert 4

Um. Challenges yes of course, GDPR, technical, legal. Ultimately there is always work. So we're all working again now with new software that we're facing and relearning.

What other things they are planning to do in the background, of course I don't know.

Interviewer

Do you also see advantages in data protection compliance for your company?

Expert 4

I have to think a little bit longer. For me as an operative, I see a few disadvantages of a more serious nature than advantages with data protection, especially since we have dealt with it very carefully in the past anyway. So we wouldn't have had to deal with any data, budget or otherwise. For me as an entrepreneur, I actually see data protection as a positive thing, even if I had a black sheep in my company. Let's say now, for example, I collect the data and would then give or sell the data to a competitor. This is factually no longer possible, no one can export data, create an excel file of customer data and transfer it to a USB stick. That means this data is all safe, I can't even just look at it. Then I had to go a few ways and write that I just need this data and also why I need them and I think that's for me personally as an entrepreneur a very good aspect, because I do not run the risk that someone steals the data and sells it. Or someone makes himself independent behind my back successively poaches all customers and that he has all the data of all customers including prices and duration of contracts etc pp.

Interviewer

Has the General Data Protection Regulation changed your customer communication or customer relations?

Expert 4

GDPR was a global blow that not only affected us, but rolled over all of my country like a wave. I think this has also led to a bit of understanding among the population. Or also with the customers, who always noticed that they are ultimately condemned to it or have to implement it, and I think there was then a basic acceptance. I think it would have been the other way around if we had said that we are the pilot companies that are doing this without anyone else in the economy and country having anything to do with it. I think that would have been more problematic. But this way, people get it from the media and from their environment and know that the ground is common.

Interviewer

In your opinion, how important is data protection for the user or the private individual?

Expert 4

Ah as I said. He can lean back with security. There used to be companies that would sell and dispose of data. Like I just said, then the phone would ring non-stop or you would get some kind of mailings. I personally have the feeling that this has decreased a little bit, I have the feeling that through the GDPR this has finally become a little bit more regulated.

Interviewer

What do you think are the challenges and disadvantages that a user or the private individuals see in complying with data protection?

Expert 4

Yes, as I said, with us in our case there are no data transfers. So that's a one-way street. So even though he has a problem accessing his data when he needs it, we can't really accommodate him in that case either.

Interviewer

You don't see cookies or pop up messages that refer to data protection as a disadvantage.

Expert 4

I'm not an expert enough to say that, I have to be honest, I can't judge, I've heard from various people that this is actually accepted by the user anyway, that he really allows and permits and that not much has actually changed as a result of this.

Interviewer

The third part deals with ownership. Where does their data come from or how do you get the data?

Expert 4

85% of the data is disclosed online by the customer and that means that we are online with our reservations and that means that the customer either books via the normal website or has a booking tool or uses a supplier, so for example somehow, I don't know a booking tool or a broker, through which he then finally books. The data actually comes 85% online into my system which means that I actually only have the obligation here to enter about 15% of the in-store customers data into the system.

Interviewer

That means that the last remaining fifteen percent is physically entered or locally entered data?

Expert 4

Exactly.

Interviewer

That means there is no cost to you for data, procurement or acquisition either.

Expert 4

No, no, not at all.

Interviewer

Do you understand the user or the private individual in terms of his data as the owner of his data or merely as a data producer who relinquishes any right of ownership?

Expert 4

No, absolutely he is still the owner. So that's your data and he can decide independently to whom he transfers it and not and for what period of time as well.

Interviewer

How do you think the user sees himself?

Expert 4

Mhm. Well, I would say no different. He is the owner. Because at the end of the day, he has always had to do his necessary ways and we haven't just been active online for two years now, and I think what he did before, he'll do today. I think, in my opinion, the issue has been very, very hyped up. We have not felt any reason, with us now in our company as operational forces. The head office probably sees it differently, but we as operational forces do not. Why do we now feel this increased pressure to suffer or why has this not been pushed so hard, but there must have been reasons that prompted us to take all these measures.

Interviewer

The fourth and last part is about the monetary value of data, does data have a monetary value for your company?

Expert 4

For me personally, I can't access it anyway, so the monetary aspect is not there.

For the head office, perhaps more so, because they then say that the sales department can perhaps cooperate better. The individual customer who is on vacation or planning a move, but seventy to eighty percent of them are business or corporate customers. That means we actually work mainly with companies that use our fleet and of course it's important to know. In the case of ongoing contracts, it is important to extend them in good time so as not to lose the customer in the end, so as to be able to continue to operate. So of course there is a very strong monetary value here.

Interviewer

What do you think users or private individuals gain from handing over their data? Is it a relief for them, a convenience, or does the data also have a monetary value for the user?

Expert 4

Is the personal data of monetary value or is the data by just a means to an end. With our case the user follows on the basis of the data of the identification and legitimation on the vehicles to drivers. If someone breaks off its lease he gets of course monetary consequences, but the data as such? His own data whether they represent now a personal value for him? In the moment of the handover I dare to doubt.

Interviewer

All right. Those were my questions. Thank you very much for your time, if you are interested in the results, please let me know, I will be happy to send you my master thesis after completion. I would like to take this opportunity to thank you again for your participation and time.

Appendix F: Expert 5 Interview

Interviewer

The first question is to define what data you need in your organization.

Expert 5

So, the main core of data that I deal with in our database, and we need in our Consulting Company, in order to make sure that we do business is client data, right? So every single audit client that we have globally, we store and start pieces of information from personal information up to business restrictions. Different clients, like different kinds of data loading and financial data, legal data, different clients, right, so every single piece is important for us. So we can understand if the one we can do business with that client, if we can audit that client on a legal basis if we can do that on a constant basis. And free, if we can scale the work that we do with clients, to other clients, its subsidiaries, and so on and so forth, right? So every single piece of data that's related to clients to companies we currently store, we have over 4 million data points from different clients. And I think that that's like the basic kind of data that we need to perform on our business.

Interviewer

And regarding the personal data of clients, can you define unique attributes?

Expert 5

So he goes through main email, phone numbers, and that is categorized between so we have like for email, we have like six or eight categories of emails, going for billing email, personal mail, business email, a bunch of emails, phone numbers, same kind of categories means we have, I think, four different kinds of names. So we have like preferred name, English name, Chinese name, whatever. What else? What else? What else? So I think these are the main bits there are more, but honestly, I don't know from the top of my head.

Interviewer

That's awesome. Next up, I'm going to read a quote from Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 5

As a resource, basically, every single client data that we have drives our auditing business. So if we don't have the correct data, we may be at risk of getting like, I don't know, extra fees or losing the client to the competitor bit of data inside the Big Four, so PwC KPMG, EY, and, and the other one that I completely forgot a but of every single bit of data within those big four they are very similar meaning. But it's very valuable to us to keep our data confidential to keep our data secure. And to leverage our data within our auditing business, right? If we lose that, we are going to lose the conclusion, and that's very dangerous. So that's like, I think like the value of every of the data that we currently possess.

Interviewer

So how does your company look at data? Is it a commodity to be marketed? Is data a cost or even a source of revenue?

Expert 5

Source of revenue, 100%. Now market, we don't do that. All the data that we have currently is from within our current clients. We are starting to leverage lead data. So potential clients' data, but that is not in the scope currently. So it's definitely driving revenue. That's the main thing

Interviewer

And what do you think is the important data for the user himself?

Expert 5

By having the correct data, we literally minimize the risk that users currently may face when starting a new engagement. If we don't have the correct data there, our users may start an engagement with a different competitor. And that will be very dangerous for us. And that would represent a risk. So minimizing risk is one of the main points that we currently have as an objective and strive for.

Interviewer

How do users, the private person or individual, look at the data? Are they indifferent to the data? Do they see data as something they own or something very private? Or do they see us having monetary value?

Expert 5

I believe it is a mix of having monetary value but also owning the data we currently have on our day schema, a functionality where users can own certain clients within their territories. And that ownership basically drives the auditing business. Right? So if we have, I don't know, I'm auditing Tesla, right? Tesla present over 100 territories, right? We need to understand which territories the Consulting Company is acting upon.

Within Tesla so which, which ones are we actually working with? So this is like the ownership that our users manage, and that drives monetary value.

Interviewer

Awesome. Coming over to the second point, the data protection, what is the importance of data protection for the company?

Expert 5

Very, very important, we have very, very, many confidential data that we cannot display that we cannot put out there. And we need to manage internally. If we don't do that correctly, that represents a big risk to the business. And that can even represent some unwanted fees that we may pay to the government or two different companies, depending on like it's whether we use our data correctly or not. So I think it's an, it can represent huge risk, depending on like how we manage it.

Interviewer

So this is a great addition to the second question, what do you see as a challenge in complying with data protection for your company.

Expert 5

I think the main challenge I would separate it from the changing legal environment as the consulting company is a global company. But still, each territory has its own regulations. It's hard to have a unique approach to data regulation and data protection; every territory is managed on its own. However, the Consulting Company also has a structure where there is global management. It's hard to have all territories on the same page. I think that's number one. Number two, I believe it is kinda like having access to data equally. Every territory has its own local territory data points, but at the same time, we have a global territory data point, right? How does that work? If that's used as an example. Again. So if the consulting company is doing business with Tesla US, this is a one-to-one business, but Tesla can be present in another territory. However, it's the main account. It is owned by the US. So the US needs to basically like put the deal out there for other consulting companies to see, but that's not the case. Right? So that can represent a lot of loss of revenue, sometimes. So access to data, literally, very big challenge, especially because we are fragmented in a way. I think those two points actually were the ones that I wanted to mention. I don't have a third point. So I think that those are the two main big things being big challenges.

Interviewer

Having gone over the challenges, what are the benefits of complying with data protection?

Expert 5

We protect our clients, and we protect the confidentiality of our clients, meaning we can do more business with them. Right, which means we can escalate our revenue because they trust us. So I think it's all about trust here. And that trust brings us more revenue. So I think that that is the goal of the business.

Interviewer

Yeah, it makes perfect sense. Do you think that GDPR has changed your customer communication or relationship?

Expert 5

Yes, it did. Not tremendously. But it did, in a way, where mean we needed to align all of our policies; that is where we have middle business between Europe, outside Europe, right? And we have a lot of those cases. And we needed to align all of those policies on a global level. And then every territory needed to have at least the basics of the alignment, right, which was a big, big, big work on the data governance side. In the past two

years, I think, I think is more about the chains were more about policymaking and making sure that every territory is compliant. So it actually is trained with the basics of GDPR. So we can all we can be compliant on a global level as well.

Interviewer

Awesome. And what do you think is the importance of data protection for the individual, private user?

Expert 5

On the individual side, we have a system within the consulting company, for example, that basically manages, I don't know, an example, right? Employee information. Very important to keep it confidential, and very important to have like, data protection levels within these data. So what do I mean by levels? Every single kind of user needs its own permissions in our system. And we have that across all of our implementations, right? Users have different access to data. And that's how it should be because otherwise, we're going to be displaying the same kind of data, which is confidential to an individual, to everyone, and that cannot happen. Right? And that goes across not only internal systems but all of our integrations with different CRMs with different local systems that are spread all over it. Right. So it needs to happen.

Interviewer

And what do you think the users and the private person see as a challenge or disadvantage in compliance with data protection?

Expert 5

Good Question. So I think that the challenge here is to make the user and the individual understand that he or she can or cannot have access to certain kinds of data from other people. And sometimes, they want like to make an analysis or whatever and they cannot. And also, like, I think something that is very challenging for those integrators and also for the company is the principle of normalization. Right? So how can you like keep the minimal data in order for it to perform yours on your day-to-day activities? It's very hard to be compliant with that because we want to have gone through data sets; you want to have the complete information to complete background, but sometimes just not needed. Right. So minimizing that, I think, is a big challenge that users have for the company also has.

Interviewer

Next question is, what benefits do you think the user receives in compliance with data protection?

Expert 5

If you're safe, he or she feels safe, right? Feeling safe makes it easier to do business with, too, and to also like, make sure that the users of our system, who are consultants, can pass that security to engagement teams and to actual clients. Right. So it's all about safety, I think, for the user.

Interviewer

Makes sense. The third part concerns the ownership of the data. What is the origin of your data? Or how do you get the data?

Expert 5

From engagement teams. So from consultants that deal with clients directly.

Interviewer

Okay, so it's voluntarily given?

Expert 5

Not voluntarily given its company policy. So there are a lot of policies with the company, right? And we have a central system global system to manage all of that information. One, when we engage when we start an auditing work with a client, that work needs to be within our CRM that needs to be documented, we need to have every single bar and piece of information from that client in order for us to start an engagement with that client. Otherwise, it's just not permitted. Right? So it's not a voluntary basis; it is a common policy, but it is our consultants that engage with the client and update the system as they please.

Interviewer

So does your company have expenses for data acquisition?

Expert 5

A lot of it! We try to be as extensive and exhaustive as possible in our solutions. For that we need data.

Interviewer

Okay, do you understand the user as a producer, who relinquishes all of his ways of ownership, or as the original owner disrupted their data?

Expert 5

Original owner. Because they own like the engagement teams, they own the work? And they are the ones that make sure that data is that data? Otherwise It's their loss, meaning it's the company's loss. And that is something that is unacceptable in the company.

Interviewer

And how do you think the user, so the private person sees themselves?

Expert 5

In which way?

Interviewer

As a data owner or simply as the data producer?

Expert 5

Data owner

Interviewer

The last and final part is about the monetary value of data. Does data have a monetary value for your company?

Expert 5

Yes.

Interviewer

Can you define the value?

Expert 5

The value of the data that we currently have can be divided per client and per account. So we have a few data points in our schema which define restriction restrictions within an engagement, right? Those restrictions are

equivalent to certain aspects of revenue. So we have certain clients that we know for a fact that brings over, like, 50% of our revenue is just a handful of clients. These are divided within our data points today, the restrictions that are considered just mentioned. So it's very easy to quantify, using our data, which ones are bringing us more revenue or not.

Interviewer

And what do you think the user gets out of giving their data? Is it for the user's convenience or a currency of convenience? Or does the user also see monetary value in their data?

Expert 5

I would say a bit of both from the attendee more to the convenience side, right? Because once the user wants engagements and gives us the information, right? One, that information is sent out across the globe. So that account is protected. So no other engagement team can touch it. Right? So for that team, that means monetary value, right? However, it's very convenient for those teams to add the information on all the information in a central system because currently, we are working from home, we are not like 100% in the office, and sometimes engagement teams are spread out across Europe, for example, right? If we don't, it's very convenient to have information, all the information in one central place in one central system, so everybody has access to it. So I would say it's a bit of both. There is the monetary part, but also it's very convenient for the user.

Interviewer

Thank you very much!

Appendix G: Expert 6 Interview

Interviewer

The first question is to define what data you need for your company.

Expert 6

Okay, so basically, as I told you, we have this hotline, are we just to get clear, we're working with the definition of general data, like personal data or general data?

Interviewer

So for the first question, I'm going to ask you about the general data, what general data your company would need, and for the second data, it's more the attributes of the person itself.

Expert 6

Okay, cool. So basically, as I told you, we have this, this kind of technology is due to branches. And so we, as a service, we are recollecting these URLs, this links that lead you lead us to some kind of human rights violation on the internet. So this is really something that we do. And we are in this project in this process of curating and sanitizing this data to understand and gain knowledge from it. So it's really well, we have this, like, if you check our website, based on the complaints we receive, we can generate more data for the public, like transparency data, from the kinds of complaints, the kinds of pages that are taking down the kind of, sorry, my English is a little broken the legal aspect of what happens later after someone does a complaint. So there are some kinds of things that we tracked inside our report system for the helpline, basically, we try. And for sexually, we try to guarantee that they are anonymous. So the complainer or the person who will reach the helpline. They don't identify themselves, basically, their name or something like this. But then we had a problem in the helpline that was a lot of fake complaints, people were trying to tease us or people were trying

to even extremists were searching for us to basically, troll somehow, you know, and to threaten the team and stuff like this. So basically, because of that, we started to insert an email campaign. So we could identify in certain patterns, just, you know, because of this, this problem we had. So these are two entries and for the educational aspects, that is really important to be honest, because we do these kinds of things in school. We go to schools here in my country, we teach some classes, we do some different kinds of methodologies. And we have like this form a feedback form. And you help us to understand what is good, what is working, what is not working. And we can change and reshape our action based on the feedback. So the feedback form is really important to us. It is not identified as well, people don't have to insert their names or anything. So they can send us the feedback. But this is some kind of monitoring activity that is really important for an NGO, like basically all our projects have this monitoring aspect that is really important, because we have to understand that what we are doing, is it good and more than that, are we kind of doing the right thing to get the impact that we want to have in a change that we want to see in the world. So the data I think it's really important for an NGO in this aspect is something that helps us to read our actions and to change them and to adapt and to change our strategy based on constant monitoring of what we are doing. So those are some kind of examples of how we use data, both for public service, both for sharing with authorities, for example, so we can make the internet a safer place, but also for us for feedback for changing the way we see an action. We also do this one thing, that we collect some data before we are doing an activity with a school. So we create this form where we can track what are the main doubts that people have? What are the main concerns so we can do something that actually talks about a context in the school and not just, you know, go there and think that we have all the knowledge and just talk, we also tried to construct together by like, gathering some data on what are the biggest problems that that school that place is facing. So those are some examples. And right now, we are also doing like, we do a lot of panels and events to talk about this kind of topic to the Safer Internet. And one thing that we are doing a lot is gathering data from the audience to understand the biggest problems and to actually talk to the audience the whole time that we are doing our activities. This happens both in events and also in the school dynamics that we do. So we have this live interaction, especially if you have like a full auditory tutorial, you know, a full a full room, and you can talk to everyone. And the question is can you know not everyone can make a question. And you know, you have introverts. So we have this, you're using more and more educational platforms to gather feedback, live feedback from the audience. So we can, you know, talk to them the whole time that we are doing a presentation. These are some I guess, things, but I think the monitoring, and the evaluation aspect is a really important one to us. Does this answer your question?

Interviewer

Sure! And could you define what attributes you would need in the sense of personal data context?

Expert 6

Personal data, let me think just a little? Oh, well, we have the internal process, you know, HR, for instance, oh, I think this is this is something interesting for you to think about. Recently, we been to a compliance by the UN. And because we earned a fund from the UN, and they have a series of requirements that we have before contracting any service provider, or contracting anyone to work with our team in this project. So we have to check actually, if the person has been involved in any case of slave labor, or any case of child trafficking, or any violations of human rights, especially sexual and exploration, sexual exploration and sexual abuse, because since we are a project that are putting people in contact with children, we can create more risk to the children by putting someone that would, you know, abuse the project somehow, and use it to gain access to children for, you know, any purpose, like violence somehow, like sexual abuse and exploration. So something that we have to do right now is that we have to check everything, we have to check condemnations from descriptions, you know, if the people have been convicted in one of those crimes, yeah, this is like a compliance thing. But it's also really important for us. So we have to check criminal convictions, we have to check, we have to do a background search, but we have to do it all according to the to the data protection law. But this is something that's like it's changing the way that we think and something that we have to do for every company and for info for people that we are interacting with, to guarantee that we are

not supporting anyone, supporting somehow something that might create a greater risk for the children, or to guarantee that we are not, you know, exchanging things with someone that is involved in a corruption scheme, and that we are supporting this kind of thing somehow. So I think this is an aspect that is important. And another aspect for the feedback forms, for instance, we try to map out the age, the location so we can understand where the answer comes from, and water the different aspects of the answer from region, like my country is, like a really, really big country. So we have to understand what someone from the capital is thinking that is so different from someone from the north of the country, and what are the different problems and aspects so we can better shape our action. So I think I have here something that we met, we met gender, age, race and location city. And I think those are the main things that we met for the feedback and for the entry of people in our, in our in our programs like for the terrorists, this is something that we also met and for voluntaries to gain this access to the information that I told you, you know, the compliance thing we have to know their names, we have to know some information Hmm, so we can locate the data and understand if they have any convictions or anything that would not allow them to work with us.

Interviewer

Awesome. Now I'm going to read out a quote from Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 6

I think I think I've been through this somehow. But I think the monitoring and evaluation aspect is really important to us, and especially for the hotline for this product. And that data will be really important to create new prototypes and new keywords, and they will step that will allow us to actually fight against that sexual exploitation and abuse. So just to give you an example, we had a partnership with Twitter, where with our database, we help them to identify more keywords that people who are trying to approach children online use to, you know, to talk to them, and what are dangerous keywords that somehow dangerous keywords that are used in this context. So now, when people use some of these expressions that are typically used to approach children for sexual abuse and exploitation, there is a popup on Twitter that redirects the person to our page of helpline, and hotline. So this is some kind of this is like a practical use that we do. And we did this partnership with these bigger enterprises to help them fight fair in the fight against violence using language specific terms, because we don't have like big datasets in my native language about this topic. And this is really important, like this is some kind of deterrence technology that we can create based on data to make the internet a safer place somehow. And I think this is a cool example to show you how, like how we are dealing with data and what we are trying to develop somehow.

Interviewer

That's really impressive. What would you say? How does your company look at data? Is it like a commodity to be marketed as a data cost, or even a source of profit or revenue

Expert 6

I think one big aspect to understand this is that we are an NGO, so we don't look at anything for profit somehow. But for us data is this aspect, it's really important for research really important to develop new tools really important for partnerships. And we have this aspect of being like a kind of data collector that we do research and then share the results with other companies with other external means, like this, like we do some kind of research sometimes with children and adolescents. And then we do this intermediate position. And but there is also an aspect that I think it is important to, to present that the data protection law, it has a lot of compliance things that we have to do. And in this sense, I feel that my, that my organization sees it as a, you know, a means to an end, it's more like we have design goals that we are doing and all these projects Because of our model of work, we gain money to do projects, and then we don't have a lot of money to do. And so this is a big question for the compliance with the data protection, because it is difficult to gain money, especially to you know, to do this based on our model work. We are an NGO that works by project. So we

don't have money to you know, focus on data protection, specifically, it is a bit more complicated than that. I don't know if you get the aspect, but it's like, it's this two things. It's important. It's important for research, it's important for a lot of things. But it is also a compliance thing that some somehow we as an small NGO, a lot of times we don't have like the money and it's perceived as something that is like, Oh, this is you know, it's like more of a problem, especially the compliance aspect of the national law.

Interviewer

But for sure this is all the points you raised are really interesting. So going further with the questions, what do you think is the importance for data for the users or for the private personal individual came itself?

Expert 6

I had this like there was this researcher in my country there was this whole campaign actually called your data is you and basically here in my country, we had a problem with some pharmaceutical, they were always asking for your form of identification. And there was some noise about how this data could be shared with life insurance companies and stuff like this to it make it go higher, because we didn't know what the farms were doing with this. Anytime you went by a marketplace, they asked your ID, and you gave it and then you had a big discount, so everyone gave it but there was no finance, there was no purpose, nobody knew the purpose exactly of what was being done. So I think this is reflects a lot of a big problem. And considering that your data is you. You can profile what someone buys as maps, and you can, you know, get a pretty good picture of what is the health state of that person. And maybe this can affect their lives in a negative way. I think more and more data reflects who you who you are somehow, and more and more is being used to, you know, grant some access or not to some services. So this is something really important here in my country, we had another problem in the pandemics that the government they gave money to people who lost their jobs overall in a bad situation, because of the pandemics. And because some people didn't have their data up to date in the government system, they ended up not being able to access this money. So this is a really big, big problem. I think, basically, if your data is you, it has to be accurate, but it also can generate you some kind of discrimination, or some kind of difficulty to access a public service, which is something that really happened. So I think this is my general perspective.

Interviewer

That's really cool. For sure. I'm going to research your data.

Expert 6

I can send you a link with a second. There's this cool video about this farm stuff that I told you that they try to do an awareness raising campaign to make us always question like, why are you giving your code. Question like, what is the purpose? What are you going to do with this? And so yeah, cool.

This is the video. Watch it later. But one aspect that really worries me is the profile thing of it all. Like, before, I studied a lot of digital philosophy. One thing for me, that is a little weird is how you we are creating a society that we are trying to really, you know, we are trying to look into the future and create the future based on our look into the future. And I mean, how does this work? Like Basically, I think, Lukas, I analyze you. And I think Lukas is someone that would really like this red cup. So I'll show you this red cup, and show you this red cap, I'll show you this red cup, and you will end up trying to want it. You end up needing this red cup wanting this red cup. This is a simple example. But I think it works for a lot of things like how we are shaping the future based on making it happen in the right now. And we are doing this with data analysis and trying to you know, do a preventive kind of thing to actually making the future that we analyze happen, because we analyze it and say that it was going to be like this. I don't know if you could understand, but like the compass case in the United States that we have, like the whole racist algorithm, because he was reading reality. And he was, I don't know if you know, this case, compass. No? in the United States, they basically started using an algorithm to measure the possibility that someone who committed the crime would commit again, and basically a church with use this this rationality to help him decide this person should it released or

not. I can send you a text of mine that I talked a little about this case later. And anyway, so what that what they what an NGO, an investigation found out later is that they were being harder, the algorithm was harder with black people, because society is harder with black people. Basically, it was this logic, you know, that that black people were more likely to be considered dangerous by the system than white people, that older people were more likely to be considered cool, you know, that they would not commit more crimes just because they were old. There were a lot of difficulties with the system and it was being used in the criminal system that is like the last place that we are, we want to test this kind of technology. And basically you can read are some kinds of real damage because there was it was reading what the world says today, you know that we have a racist society that we have real big problems but reinforcing this. And because of that it was taking away opportunities from the black people who were being, you know, targeted by this app. So I think this is a good example. This is a tricky subject. But yeah, how important it is that we have a careful look about data in general in the US that we do it, especially from a human rights perspective.

Interviewer

Cool, thank you so much.

I think this is really interesting. You're opening up a lot of new and important perspectives. And after all, this is why I'm doing this this expert interview right to gain more knowledge from different perspectives.

Expert 6

Okay, I have a really big set of examples and anecdotes about data protection in my country, someday we can like, grab a coffee, and I'll tell you everything I know.

Interviewer

Awesome. Yeah, I'm looking forward to that. So how do you think users look at their own data? Do you think they're like, indifferent to it? They don't have an opinion on it. Do you think they see data as something that they own or very private and unique to them? Or do you even think users think that their data has monetary value?

Expert 6

I think after Cambridge, Analytical conflict, like we have more awareness raising, and we had more perception, especially after the Netflix documentary, social dilemma, I felt that a lot of people gave like this knowledge that Oh, wow, this is something that we should care about. But I think one big challenge is because caring about it is hard today, like how do you care about it's abstract? I think the notion of data, sometimes, you know, that is floating around that you were and we have a lot of data lakes here in my country. So you know, my staff is here around the internet somehow, and it's circling, what can I do about it, I think we have a lot of this, like this notion that data is important somehow, and that things can be used to do it, we have a lot of talk about algorithms and bubbles, and does information and how this is all associated. But I think there's also a side that doesn't really know what they can do about it. And this is something like, I feel like a lot of times today, we are still working with a past perception of what data protection should be in the sense that I see data protection as a collective, collective aspect, like, this is something that should be seen in a society, it's not something that just the end user, or just the person should be talking about the physical problem, correct experts. So this is really important to me. But I feel like somehow the way technologies are developed, they enforce this individualistic perception of data protection. For instance, here in My country, we had like this recent case that a guy had his cell phone stolen, and it was unlocked. And because of that, like he lost a lot of money, a lot of access to his bank accounts, a lot of his accounts. And then we had these tutorials teaching what to do to protect yourself if your cell phone gets stolen, and et cetera, et cetera. And so the choices that they gave us, like, the tutorials were huge, you had to download apps and log everything have this and have that. And sometimes the tutorial, the tips, they were, like, so far away from the real context of the population, like have two phones, who can have two phones, like it's not, this is not a simple tip. And I feel like the technology really doesn't help us to have this radio control, where daily like we are the ones who

have to do all these fancy steps of security measures that are not by default. One thing that I really believe is privacy by design and privacy by default, and taking away the end user full responsibility for the control of his data. Like if you don't care at all, like you don't care, nothing about her data protection is not a problem. You shouldn't have to care. So you have to be to be protected. Like this is a fundamental right, you should be protected if you're not willing to move a single finger to do anything about it. And I think this is a perspective that we are trying to build somehow. And because of that I really like the framework of privacy by design and privacy by default because I think this is like a conception of data as a form of that'll right. This is my conception, my personal perception. And I think this is a way to get to perceive this in a more collective way. Like we shouldn't make people do stuff. So they have their data protected. This is Yeah, I mean, their relationship is to asymmetric, so to even consider this. So I think I talked a lot, but I don't know.

Interviewer

No, I agree 100%. In my master's thesis, a big topic is going to be privacy as a fundamental right, whether we monetize privacy, and make it in fact, a luxury good. So this is really important. Thank you for seeing it that way. There was another point I strongly agree with. There is also a big problem caused by Information asymmetry. So on the market, there's a huge information asymmetry. I mean, like I said, I mean, you get a discount for sharing the data. But then what is happening with this? Like, how much is your data worth through the companies like, of course, you get a discount. So you kind of know what data is worth to you, or at least what you're willing to give up to receive a discount. But the actual word for companies and what they're doing with it, it's completely unknown. So it's completely left out. So yeah, so far as this problem hasn't been solved, like to have power to the user and power to your data. We cannot have a good data economy and Data Society.

Expert 6

Yeah, sure. Also, I think one big aspect of this is limitation, you have to stop companies from reusing data for a completely different purpose than an initial that it was collected. And this is difficult to enforce. I mean, this is something that we are trying my country, but our authority is really young, and it has such few workers doing the job there. So it's kind of we have where we are having an enforcement problem here right now, and the whole process. So yeah, this is an aspect as well.

Interviewer

Transition to the next part of the expert interview, it's concerned with data protection. So what is the importance of data protection for your company?

Expert 6

I think one really big importance is because we have data from children and adolescents. So data protection, and having this setup is really important so that we don't have this sensitive data falling and leaking to people who shouldn't receive it. We also work with a lot of sensitive information in general, I mean, we are working with human rights in a country that it is, you know, my country, is that a great company to work with human rights in general. So I think the data protection comes with this aspect of also protecting ourselves somehow and do our work and what we are doing to, you know, to guarantee this doesn't fall in the wrong hands somehow. And I think more in general, it's, it's, there's a scene, guaranteeing that we have this certain level of protection, but also in our educational projects, we talk a lot about data protection, about privacy, about security, because this is a problem that we see we have a lot of cyber-crimes happening. And I think this is all related somehow. Because sometimes people you know, abuse, some data of yours that was leaked to create a trust relationship, and then get some more access or give you know, co news somehow to, I don't know, you know, What Sapp, clone all this stuff. These are things that are easier if you have a public photo, and the people can use it and access your context and talk to people community to you and ask for money. So I think this whole we have this, this far, the data protection is also important to prevent cybercrimes, and also to a reputation of faith that we are working a lot even more now. Like how some people lose their jobs easily because something they post on Twitter, or because some people are canceled because of something they

posted like years ago on Twitter, maybe it's not even something that they believe anymore. But you know, it happens and it can be big and it can be awful. So this is something that we talk a lot about, with children in the in the actions that we do like this reputational thing, this digital personality that we have, and how important it is that we have more control of it. And like maybe clean your social network, see what you posted since the beginning. Have more, you know more control of where you are putting your information and for what or what people was in how do you control it and where your information is? It's, it's, you know, moving around somehow I think those are some aspects.

Interviewer

And what do you see as a challenge and complying with data protection for your company?

Expert 6

I think this the money aspect that I told you, like we are product based. And so to comply with data protection, we have to create this culture where things are the more smooth as possible, like people know, the law, people know, though, I think the principles is a big thing that is important to know, because they give you the rationality to apply the law in different activities. But there's also the thing that to map out the flows to be 100% compliance, you have to have someone working on it, like managing a project, but it's a project that we don't have funds to do. So I think this would be a challenge, like we do it. And we gather some resources that we are able to do it, but it's like, not like the biggest, biggest, biggest priority because we still have to deliver the projects in etcetera, etcetera. So I think this would be a big challenge, and also creating a culture like for different. We have people from different backgrounds, not just law, not just the technical background. So how do we get everyone on the same page to understand like the spirit of the law and apply it in any test that they will do in a way that is not impossible, you know, in a way that is not far from there, from what they know. And I think working with principals is a good thing to do this.

Interviewer

It makes sense. And I think we already touched upon this, but just in the sense of asking my questions in line, what are the benefits of data protection compliance for your company?

Expert 6

Yes, I think it's the thing that I say less, but about, you know, protecting the sensitive data that we have, protecting the people that were are working with us like with the helpline, we can say who are the helpline attendants, because they might be targeted. We've been targeted before by extremists about extreme right wing people and stuff like this, we also have the service that we are collecting hotline tips against abuse. So it is important that we protect the people who are working behind the scenes in this kind of stuff. So data protection is also important because of this. So just to give you a little different answer from the one I said before, but to complement it, I think this would be also really important, like personal protection of the people who are working in risk jobs somehow.

Interviewer

Would you say the Data Protection Act has changed your customer communication or relationship?

Expert 6

Yeah, I think the lot to be honest, because with this data protection law. We have to adapt everything like we are being more straightforward. And this is something that we do because we work a lot with children, adolescents. So we have to translate the data protection obligations, like informing the purpose of the collection of data, but to a child friendly language. So we use memes, and we use jokes, and we try to be as straightforward as possible to you know, make them understand what the hell we are doing with this data, and what is it going to be used for, but we had to adapt, like our whole language of forms that we do feedback forms, everything now has a disclaimer that explains exactly like we are collecting this because of this

purpose, you will be shared with this or you will not you will not be shared at all. And after the Spirit time, we will delete it or anime in shit, make it anonymous, you know? And so basically, we changed how we build this kind of communication with the users. Yes. And we also always have the email so people can, you know, request to change the data to review it to exercise their rights. So this is a big, big change.

Interviewer

What do you think the importance of data protection is for the user itself?

Expert 6

I think this is basically a lot related to what we talked about before, but I think, you know, it's about self-determination somehow. It's about who we want to be in how we define ourselves. And this means taking away your data is you yes. I think oh, I'll go with that. Because I think this is really important. Like we have to have data quality data, we have to think about and also today, one thing that really worries me is the surveillance aspects. And you know, especially if you are looking at countries that may become or are already authoritarian, it really works. Originally what personal data analysis can do, you know, to go after activists to go after people who are against the government and stuff like this, we know that stuff like this happened. We had disinformation, for instance, people, you know, using this concept to go after political enemies. And with data protection, you can also profile people who are not, you know, we have an example in My country, Africa will be a little clearer on what I'm trying to say. But in 2019, I think some supporters of our great president. And by this, I said, ironically, they gather a lot of data, that personal data, but there was public in Facebook accounts, and they made this dossier on Japan system. It wasn't an Tifa dossier, and differ, you know, Malmo and Miranda just mapping people who were who posted filters that saying they were against personnel who are saying that they were against fastest and stuff like this. So they mapped out people based on public data, that's the personal data that they posted on their profiles. And they were like, spreading this kind of this kind of memo to a lot of extremists. A lot of people who, you know, were against this kind of people. So I think this is worrying, especially if you are in a country that has alternate tendencies like, what can be done with this? Who are you targeting? And why? So this is something that worries me a lot.

Interviewer

So sure. What do you think user offices are a challenge or disadvantage in compliance with data protection law?

Expert 6

The SEC, some think user associates the challenge of ethical by better protection users from a user perspective? I think, I think the law is very close. And this is not just data protection, like all laws are awfully written like they are, they are written in a way that you can't really understand and how can you exercise your rights? If you don't understand what your rights is? I think this would be a big challenge, like to understand that you have rights, what those rights are, and how can you exercise them, and to guarantee that you have, you know, enforcement to guarantee that the enterprise will exercise your rights, that the organization is actually doing what they seem to do. And I think this would be a big challenge, and also creating more user friendly platforms that they can exercise the rights, like, how can you give more control? If we have if we are leaving enough black betters? Yeah, like better and society, like, it is really difficult to exclude your account from Amazon, like, it shouldn't be that difficult, it shouldn't be that difficult to have control. So if you have dark patterns, what's it called? I think this is a big, big difficulty, like, how can I exercise my right? If it is difficult, if it is hidden, if the website is not helped me if the design of the website was not made for me to exercise my rights?

Interviewer

And on the flip side, what benefits do you think the user sees and compliance with data protection?

Expert 6

I think it could have decreased stress somehow in the company, because basically, the more you see that the company is actually worried about your control of data about how they are using it, and they are explaining it to you, you create trust, and maybe if you trust that that company, you know, has, they are really appreciating your rights, they are using your data for the only purpose that you have agreed to, or that you somehow feel comfortable with. I think it makes you more willing to work with them more, you know, closely, like I will maybe more be more willing to even give out more data and gain more benefits and access to services. Because I understand, because, you know, okay, this is a cool company will work with them. I know, they respect me. And I think he creates stress in that sense that that's really important.

Interviewer

Awesome. The third part of this expert interview concerns the ownership of data, what is the origin of your data? Or how do you get your data?

Expert 6

I think I told you a little about this, we have like different means, we have the hotline and the helpline that there are some ways that we get the data we have the feedback forms we have, you know, I think those would be the main forms

Interviewer

So, in your company, there are no expenses for data acquisition,

Expert 6

Not for acquisition, we have expenses, of course, we have servers and you know, to the extractor to maintain this data.

Interviewer

And do you understand the user as a producer or owner as a producer who will relinquish all rights of ownership to their data and once they enter it into your service or as the Ashland original owner with respect to that data?

Expert 6

Can you explain to me again, the difference that you're seeing between the producer and owner?

Interviewer

The owner, so even though the data is stored on your server, you still consider the original customer or user entered the data as the owner of the data. And on the flip side, there's the producer. So basically, he just produced data, but you store it, so you own it.

Expert 6

Oh, I don't know. I'm definitely not a producer. That's I think it would be more like ownership, like it's not our data, somehow, we are storing it. And we, we are having like the preoccupation that we have a means of contact that they can exercise the rights of this data. It's not something that we own somehow. So yeah.

Interviewer

How do you think the user sees themselves?

Expert 6

In what aspects sorry,

Interviewer

Again, as a producer, who actually owns as an owner, who actually claims ownership over their data, or just as a producer who produces it, but then, as soon as he stores it on your server, he doesn't have any ownership over it.

Expert 6

Because I have something that might really help you. It's like a really, really big research that was made in my country, and that was just released, like, one week ago, of users perspective on data protection. And so they have like, this really, really big research about how users perceive themselves how people perceive themselves. Yeah, I will send you to you right now. Because the second important thing is the I mean, I think you can handle it with Google translator.

Interviewer

Thank you so much, that's going to be helping a lot, for sure. I love that you're so up to date with even the research.

Expert 6

And then we have some data like to inhibitory users of the internet in my country, they care about their data with online shopping, stuff like this. Just a sec. Here it is. If you like this is from last week, so it's really up to date.

So it's like a really, really big research. But it's just like, it reminded me a lot right now of your questions, because it's basically about user perception. How people in my country see data protection, all this kind of stuff.

Interviewer

Sure, if it's right in there, thank you very much. 220 pages, it's going to be my evening lecture

Expert 6

Yeah, I hope it can help you. Maybe just focus on the data parts. But yeah, that he has a lot of cool stuff.

Interviewer

Awesome. All right, coming down to the fourth and final part of this expert interview, the monetary value as part of data, does data have a monetary value for your company?

Expert 6

To be really honest, and you will not, you know, put my name on this, right? Put my direct name on this answer

Interviewer

All the questions, all the answers will be anonymously and discreet. I'm not even going to answer or name the company.

Expert 6

No, cool. So yes, basically, we just received like this big funding, because we have data that no one has access to. And now we can like do this project that we have, that we can grant access to people in a controlled way. Because of all the stuff that I told you. We can't like just, you know, if the data to everyone but like to researchers that were that have been through the medical procedure that are compliant with the ethical research spec. But basically, if I'm being really honest, we are gaining money to develop a data access platform API. Is that so yeah, it has a value for us. Okay, make sense? Yeah, it does. What are these numbers?

No data. But yeah, it's basically, you know, its part of the job to the research aspect that we can do with data is a really, it's a funding source for us.

Interviewer

This is a unique answer. I never heard this before. So thank you for what you have.

What do you think users get out of giving up their data? Is it more like a convenience or currency for convenience? So they just have access to specific service quicker? Or do you think the users themselves also have monetary value in giving up their data?

Expert 6

Yeah, I think today is a convenience thing. I think a lot of People don't see how we could benefit from monetarily giving out our data, like basically platforms do. But I think they implant implanted this idea in our society that we have free access to the service because we are giving out our data. So I think this would be a general answer, but I think the research will tell you more about general user perception than me. I'm just the user though. Just thinking about this here.

Interviewer

Awesome. All right. That's it.

Appendix H: Expert 7 Interview

Interviewer

Given your industry and the company define what data you need.

Experte 7

Definitely, for us, it's quite important to have market specific data. So as we're dealing with more data specialised for companies and businesses, such metrics are of key importance for us. So, to see performance indicators, classic financial figures used in a profit and loss for example, is quite crucial for us. But then also more indicators relating to specific sales performance in the industry, like click rates, like reviews and ratings. The comparison between various, the sales of various products in relation to time, for example, is quite crucial for us. And in further steps, then, also for diligence reasons, we need historical data, basically, on the financial position of the individual companies.

Interviewer

In regards to personal user data, can you define what attributes you would need from the user itself?

Experte 7

In what context, can you give an example.

Interviewer

For sure, this can be something like the credit worthiness or the financial situation of him, but also the gender, age, or usual buying preferences.

Expert 7

For us, specifically, and there's two sides to it. So if we are in the operational part of our business, gender, age, preferences, etc, is extremely important. If you're more on the acquisition side, most of my expertise,

then gender age, for example, like personalized data is not as interesting. For us. It's really interesting, like the financial history of the company or the individual, depending upon the legal structure of the desired user so to speak. That's more crucial. so for us It's interesting, for example, how much revenue was generated? How high were cost of goods sold? Where were the margins, how much raw materials was purchased for what price? And also credit score's in? Is there any depth in the company? Is that paid off? Is that paid off in time? Are there any is are there any risks involved with this? For example, if we were to take over a company and there's still a significant part of depth or there still any kind of conflict that arose from that being able to settle on his credit, that's crucial for us so very much depends upon what area of our business you're looking at, on the one side more the personalized data. On the other side more the data specific to and company and industry.

Interviewer

I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 7

That is extremely crucial for us. Because, for us, it gives us a tool, it gives us a gateway in order to strategically oriented ourselves and to make the right decisions in the end. So as for us, we have an A rather analytical view on achieving our goals and on making these right decisions. For that we are only we have to operate evidence based, fact based. And that is purely to be read from the data that we can seek at all. Therefore, knowing it's cruciality and importance, also, but I guess also the fragility of it is an issue, especially for our for the for the companies that we might acquire. I know that, obviously, the founders are always a bit hesitant and maybe giving our data and don't want to be copied or don't want to have any spillage leakage. So for us, we really respect the fidelity and building up a safe and secure system to store the data and also to delete the data again, in order to protect all the stakeholders affected by our business

Interviewer

So I think you answered this already with your last question. I'm still going to answer for completion sake, how does your company look at data? So I'm going to give you an example. It can be a commodity to market as a cost or as a source of profit

Expert 7

It's definitely source of profit. Commodity not so much because we don't trade it, source of profit 100%. Because for our operational teams, selling goods, selling the products, it basically tells them again, to make the right decisions and to experiment with variety of products and channels, generating exactly that profit. And on the other side, on the more of the investment side, it's yeah, it's still a tool, it's still a gateway to make profit, but also, from my perspective, a tool to reduce risk and not make the wrong decisions, technically, hurting our business and wasting money and time so to speak.

Interviewer

Good. What do you think is the importance of data for the user?

Expert 7

Can you define the user?

Interviewer

User is any individual dealing with data, so this is the end user, the actual consumer, in a sense of a private person.

Expert 7

10/10. And there, then the question was the importance of the data or their viewpoint on the data? Yes. 10/10

Interviewer

This goes into the second question, how do users look at the data for this, I have three other examples. Do they look indifferently at data? Do they see data as something they own? So something private? Or do you think they see data as a monetary value?

Expert 7

Well, I think that we have to see it in the context of our business, we have to crucially distinguish between the data that is personal to the individuals like to our employees, for example, and the data that they deal with, through the company, but that's technically as a property rights. It's owned by the company. So if the data is owned by the company, it's definitely a source of generating profit and revenues for themselves, I guess it's more of a personal thing. Not so sure. It depends on the individual if they really monetize upon their data. I know that a lot are quite protective of their data, so to speak, especially because they are from the industry of marketing, for example, so they know how to use the data and how to trigger ads, for example. And so it's that's really crucial or the viewpoint of the company.

Interviewer

Going over to the second part out of four, what is the importance of data protection for your company?

Expert 7

Yeah, massively important, as I already said, so for us, especially because we deal with federal data of other companies that we evaluate, and that we diligence, therefore, it's extremely important this data isn't leaked, that this data isn't published in any form, not outside of the company, but also inside of the company. So for us, it's crucial, since we are a company that invests and operates actively, we have to build the so called are the sole reference chains wall in between the two parts of the company. And so because it's mean, we can evaluate one business, have the data spill or leak and have the operational teams profit from it. Yeah, not only unfair, but also we would incriminate ourselves, but we also very much value the integrity of our of our potential investments if we were to invest in the company or not. And that's why data protection is so particularly crucial for us in the in containing data and protecting leakages, but also erasing data again, once not needed anymore

Interviewer

What do you see as the challenges in complying with data protection for your company?

Expert 7

Challenges are definitely to pick and choose who sees what I think there's the baseline with pretty solid operating system. But as we are developing and growing company, it's obviously crucial to give access to the individuals who need it. But also considering having high turnovers and employees to be very careful with who has access to watch. And especially with maybe also taking data from ourselves and the internal side of the company, and on the external side of the company, obviously to continuously protect our servers and not have any outside party gain access to the data in order to I don't know use it for use it for any reasons, really. So there again, two sides, internally versus externally, I think there's a constant struggle also to innovate or

data protection and say, say up to up to speed. I mean, our IT team is doing a great job there. But it's definitely just a challenge to keep up with her with a fast innovation. positively and negatively

Interviewer

So going on to the next point, what are the benefits of data protection compliance for your company? If there are any?

Expert 7

Well, benefits isn't interesting point of finding it because for us, it's not so much. It's more neutrality. So there's so many upsides that are but we I think always I defined benefits, I would gain from the benefit, but like with compliance, it's more so I think that's just necessary. So it's not that we would decide to do it or not, it's crucial to do it and is also mandatory to do it. But we in real life we never like financially for example, we don't benefit from being compliant. It's more so that we would not benefit like very harshly not benefit from not being compliant. So it's just, it's just a necessity, if that makes sense.

Interviewer

That makes absolute sense. And would you say, the GDPR. So the General Data Protection Right has changed your customer communication or customer relationship?

Expert 7

Yeah, I think over the last years, people have definitely become more cautious. So like with, like, just hearing about, like in the media, being about leakages, or misconduct of data, it's tough for them to generate this basis of trust in order to give out their data. And it's also tough for us to find a source that's really reliable, because especially in the data, that's difficult to get from a third party source. So not in any way manipulated by individuals, which is oftentimes, which gives our customers of ours more trust, as there is no direct connection to the systems as if we can hook up our API, for example, to their operating systems. But they give us reports, they are more than trust, they have more trust, and it's easier for them to give out the data. Since they know exactly what they're giving out, even though we obviously explain to them in detail what we need and what we seek. Whereas they're still they oftentimes still struggle with the idea of our systems connecting directly to there's no way that you get it from a from a neutral source. And especially in the beginning stages of the diligence, where it's not all set in stone yet. And especially not necessarily in writing or not like whether legal protection isn't higher than then the GPDs or NDA there, it's cautious thoughts with a level of trust, it usually works out.

Interviewer

What do you think the importance of data protection is for the user?

Expert 7

Well, for the user itself, I think it's on the individual basis. Quite subjective, some issue, more important to us to be a bit more cautious, to deal with it a bit more in detail. And there are those that maybe still deal with it a bit more laissez faire with their protection. Yet, it obviously changes depending upon who owns the data. So if it's the personal data, subjective, if it's data owned by others, then the importance of data protection is extremely high, even for the individual, due to the fact that they understand the potential consequences and the potential the responsibility you have for dealing with that data.

Interviewer

Sure, that makes sense. And what do you think the user sees as a challenge or a disadvantage in compliance with data protection?

Expert 7

Yeah, again, keeping up to speed with the innovations in data protection and data threats, but also really reminding yourself psychologically, to really pay attention. And really be cautious about what data you're dealing with. And from which sources you got it, where you plug it in, so it's always the staying up to speed, but not becoming too comfortable with the data you deal with on a daily basis in order not to get sloppy and more, which would lead to being more prone to mistakes.

Interviewer

Sure, that makes sense. So, coming now to the third part, ownership, what is the origin of your data or how do you get the data?

Expert 7

variety of ways. So there depends upon if we generate the data through our own systems or if we seek it from other systems. Basically, when we evaluate companies, we see it from their system. So there's two ways once we can talk our, our operating systems to theirs immediately and pull reports, which is our preferred way, obviously due to the neutrality or we issue data requests and get it behind form of Excel tables or of any, any array really. And the other part is on auto generated data. Basically, that's all submerged in our operating system, and then our ERP, for example, and, and the different marketplaces we sell we sell data through

Interviewer

So are there any expenses for data acquisition?

Expert 7

Yeah, sometimes, sometimes, especially for market specific data, or if we do market analyses, and we don't know, use secondary databases, just to save time, for example, or to get more access, especially when not scraping yourself, then there are costs emerging, they fluctuate a lot.

Interviewer

And do you understand the user as a producer or owner with respect to their data?

Expert 7

Secondly, you could say both, I mean, whatever you produce, you also own. I think that's the ownership part as we transmit ownership in legal rights in the companies. So with this, also the data rights are being transmitted. Yes, if the business is sold, for example, then he or she is still the producer, or was the producer, yet it's not the owner anymore. And this has to be stated very clearly, in order for data to be able to come back and really recognise the transaction.

Interviewer

Sure, that makes sense. And what do you think the user sees themselves as so as a producer, or as the owner, who stays the owner all throughout the process?

Expert 7

That's always a bit of a challenge for us to really explain and help the customers so to speak, understand that such rights are being transmitted. I think they do see themselves as producers, which they were, and its owners, which they were but to make this switch and and to realize that one is not the owner anymore and can also use the data anymore. I said he's not legally allowed to use the data. That's always a bit of a challenge for us, because usually the individual believes himself to be the owner.

Interviewer

Great, perfect. And now coming over to the fourth and final part. And I think we already touched upon these points, so you can quickly go over them. Does your data have monetary value for your organization?

Expert 7

There are too many tremendous monetary value, because it's the source of our strategic decision making. And therefore, our source of generating profits next to obviously raw materials and then products, but it's extremely valuable for us.

Interviewer

And what do you think the user gets out of giving out their data?

Expert 7

In terms of leaking data, or like, individually, just like, I don't know, for example, stating your names and your age, gender.

Interviewer

In this case in the latter

Expert 7

Could you give an example?

Interviewer

I can say for most business cases, it's the case that for example, for Facebook, you give out your names for convenience, or is it the case that by giving out their data, they get monetary value?

Expert 7

It does not get any monetary value because it's usually necessity since we operate in the sector of E commerce. So you have to give your data in order to purchase your goods and actually get them. And therefore, for its more a necessity.

Appendix I: Expert 8 Interview

Interviewer

The expert interview is divided into four parts. We start with the general or potential assessment of data. Define what data your organization needs.

Expert 8

My company would need addresses of customers, e mail addresses, most of the time even mobile numbers. That was quite good. Age is not so important. Origin is still interesting.

Interviewer

Can you say in which context you need attributes of people for your company?

Expert 8

Simply in order to understand a little bit, as for example in the German courses, where it is mainly a matter of understanding a little bit the constellation, from which countries the people come, in order to see what constellation is coming up to me at the moment, how I have to act. Age is not so important at first. Address is also interesting to know where the customers live, what kind of course you have, but now many people are in Berlin or whether now maybe from Hamburg, from Munich and so on. It's really just a little bit about preparing for it or adjusting to what to expect.

Interviewer

In the following, I'll read out a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 8

With data, I can see retrospectively which customers have been with me and then I can look ahead with it to then better match my target audiences and just create a cut of my target audiences' class.

Interviewer

How does your company look at data? Is data to be marketed, or commoditized? Is data a cost or is data a source of profit?

Expert 8

Yes, it is profit because as I said you can filter better what is really the target group then. At the beginning I didn't know now between the age 18 and 65 who is really my target group there. Now it's relatively crystallized between early 20s to early 40s and that's because of data collection

Interviewer

What do you think is the importance of data to the user or the individual themselves?

Expert 8

Yes, that's a good question, of course. Now, if we want to know, for example, how old I am, where I come from, you, of course, just a background of interests and I think that the individual customer would not be able to do so much with my data. So not so important.

Interviewer

How do private individuals view data? Do they view data rather indifferently? Do they view data as something proprietary or something private? Or do private individuals view data as something actually monetarily valuable?

Expert 8

I will say that most people, at least in the context that I work with, share a lot of data, especially in groups. Be it addresses, origin anyway speaking, but also cell phone numbers are shared. Well maybe not everyone shares his or hers last names. So first names rather than last names simply for security reasons. Not everyone

can share letters and last names with everyone, but it is not obvious. And I also believe that most actually don't share their last name, but rather their cell phone number.

Interviewer

The second part is about data protection. What is the importance of data protection for your company?

Expert 8

Yes, of course I treat my customers' data with care, as required by law. And yes, that's actually more or less everything. And the rest of the data is processed by my own company, as it is allowed, as it is permitted

Interviewer

What challenges do you see for your company in complying with data protection?

Expert 8

Yes, for example, if you want to shoot a video, for example, to get a feedback round, for example, about the German course, about the school. And so on. To then market that online, of course, it's not that easy because you would need the consent form, of course. You have to pay attention to a few things and that's why the whole thing is difficult. You can work with it, but you have to be really careful.

Interviewer

And what do you see as the benefits of privacy compliance for companies?

Expert 8

Yes, you protect, yes, you also protect the privacy of people at that moment, because you never know what's really going to be done with the data. Or you can just imagine what you could do. And by simply protecting the data as a company, you are also protecting the individual at the moment. And that, in turn, also means protecting yourself. Because if all companies comply, I'm a customer somewhere, somewhere else. And if data is handled carefully there, then I don't have to worry about my data for the time being.

Interviewer

Has the GDPR changed their customer communications or relationships?

Expert 8

No.

Interviewer

How important do you think data protection is to the user or individual themselves

Expert 8

I think that in any case everyone should know that their data, if they are registered somewhere, that there is simply handled with care. That it is not being sold, listed or outsourced, for example, but that it is simply being used within the company. That is also a gray area. Or rather, it's not an official gray area, but it is a mental gray area, because you also know that quite a lot can be done with your data, even within just one company, whereby they then remain closed, but you still know a lot about this person. See buying behavior etc..

Interviewer

Absolutely. What do you think are the challenges that the user, the individual sees in terms of privacy compliance?

Expert 8

I'll put it this way. The crux of the whole thing is that you simply have to provide certain data, but most of the time it's already very private, in order to get a service at all then on the other side with the service provider due to, for example, writing invoices. If someone would book with me and he enters only the last name, I can not write an invoice, because I need the address to do so, because in the end I can not hand over the invoice to the tax office. So from there it's just like there's a certain kind of data that just has to be shared, but it's also maybe not so nice for everybody. Because if you know the name, the phone number, the address and the email address and maybe even the date of birth, although that would be relatively superfluous. But many have to give that anyway on certain websites. Then I often already know almost everything about the customer and can work with it. That's a legally gray area, I would say.

Interviewer

In your opinion, what advantages does the user see in compliance with data protection?

Expert 8

Yes, that the user simply feels secure. And that a user also knows exactly that if you leave the data with us, that it's not being worked with. Or, above all, that it will not be sold. That the data was simply collected only for the school purpose for the company and always only for the benefit of the respective customer. Such as an e-mail address to send offers that fit for example for the customer or to send certificates by mail to the address home of the customer, because the way to school would be too long.

Interviewer

The third part of the interview is about ownership. Where does your data come from or how do you get personal data?

Expert 8

Through course entries or bookings on a website.

Interviewer

So there is no cost for you for obtaining data?

Expert 8

No.

Interviewer

In terms of their data, do you understand the user to be the owner of their data or just a data producer who discards any right to ownership?

Expert 8

The second one.

Interviewer

Justify.

Expert 8

Yes, because at that moment the customers just carry the data to me and we just use it in a purpose and I didn't ask anybody to do that, I just follow the law of the legal situation because I have to collect this data to be able to bring this service.

Interviewer

How do you think the user, the private person, sees himself?

Expert 8

I think that many don't even think about it, they just do it in such a relaxed context like booking a German lesson for example or booking an online service with us. Not so much thought is given to it as now for example. I have to register on a completely unknown website in order to get any information at all. With us it's the other way around. You get the information first and then you decide based on trust and reviews etc. to leave your data here to be able to book the service you have chosen.

Interviewer

The fourth part deals with the monetary value of personal data. Does data have monetary value to your business?

Expert 8

Define monetary a little bit more or what exactly do you mean by monetary

Interviewer

When I say monetary value I mean economic profits or costs, or a measurable value in Euros. Many companies have data as a cost. That is, these costs can be related back to the data and go into the accounting and balance sheet. Other companies sell their data. That means that you can define a direct monetary value or a price for the data. Other companies store or refine much more data and also so you can say that the data and personal data in our particular case has some value to the company as an asset.

Expert 8

Well, so it's definitely kind of enumerated somewhere as sort of an asset in the company. However, of course, that's used to then run the advertising campaigns, to from becoming and from advertising, to collect tables from the data and to see where are the customers coming from? What is interest, what is mostly searched, what are the requests? And so on, and based on this, the marketing activities are then switched on. So there is a later benefit in the end that the terms and conditions can simply be designed better and you lose less money or can use more money precisely.

Interviewer

What do you think users or private individuals gain from handing over their data? As an answer possibility there is either a convenience, which for example makes a time saving possible. Or is data personal data also of monetary value to the user, the private individuals themselves?

Expert 8

I definitely think that it's just more convenient for most people to just give the stuff out because otherwise they wouldn't get anywhere. And we need the data in the end anyway, especially if it then goes in the direction of certificates. Many people just come here and then make certificates and they know exactly okay, I have to hand over my data anyway and whether I give it now to language school confidentially or later to the foreigners authority. It's the same process. From that point of view, yes.

Interviewer

Thanks! We have come to the end of the interview. I thank you for your time and for participating in the interview. If you are interested in the results of this master's thesis, I am happy to share them with you.

Appendix J: Expert 9 Interview

Interviewer

The interview guide is divided into four parts. The first one is assigned to the potential assessment or the general and overall data meaning. Let's start with the first question. Define what data you need for your business.

Expert 9

For our business, you need all the personal data, so all that just you listed. Name, birthplace, address, zip code, last name. And because we work in the banking system, we need even more sensitive data. That means credit card numbers, too. Bank numbers and account. All of them. All data that has to do with account management.

Interviewer

Very good. The second question would have been Define what attributes your company needs. But you have more or less already answered that for me. Now I am going to read out a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 9

That's where you have to be sensitive and they have a value. There are, after all, rules underlay in the German banking industry. And the German banking industry. But also regulatory exists, how to deal with the data, accordingly sensitive the topic high priority.

Interviewer

How do you view data? Is data a commodity to be marketed, a cost factor, or is data a source of profit?

Expert 9

So between marketable and what was the other? They are not a profit, but they are necessary to maintain the project and above all cost factors. Because here the data, personal data, is encrypted, so with hardware encryption in our databases, which are also then only again with the associated certificate and the personal key accessible. And the credit card numbers and so on everything is encoded with us in the databases, so that even we internally do not know the identity behind the data.

Interviewer

In your opinion, what is the significance of data for the private individual himself?

Expert 9

Also, very, very high, very high importance.

Interviewer

And how do the users, the private individuals, view data? Are they more indifferent to the data? Do you see the data as your property or as something private? Or do you see the data as having a monetary value?

Expert 9

As property from the individuals.

Interviewer

The second part deals with data protection. What is the importance of data protection for your company?

Expert 9

A very high priority and also a cost-intensive priority.

Interviewer

What challenges do you see in data protection compliance for companies

Expert 9

What challenges do we see today? The biggest challenge is there to accommodate the regulators and also not to cause a no data protection case or case against us.

Interviewer

Sure there are. Or rather, what are the benefits of data protection compliance for businesses?

Expert 9

On the one hand are compliant with the law and on the other hand compliance to users law. we handle the data sensitively and sensibly and especially in Germany with the company in Germany we are here according to German or European standard data protection compliant.

Interviewer

In your opinion, has the General Data Protection Regulation changed customer communication or customer relations?

Expert 9

Yes, so not directly our customers, because we know what to know. But we do the infrastructure for banks. We have in the systems, where we directly address users accordingly data protection guidelines and also ask permission.

Interviewer

In your opinion, how important is data protection for users or private individuals?

Expert 9

Divided in two. If nothing happens, not important at all. If something happens? Extremely important. One should be very sensitive with the data. And above all with which data.

Interviewer

Always with personal data, i.e. all data that can be traced back to an identifiable person.

Expert 9

Extremely, extremely important.

Interviewer

The next two questions - What do you think are the challenges or disadvantages that the user or the individual sees in complying with data protection?

Expert 9

One disadvantage is, for the end user, the disadvantage is having to fill out 5000 forms, over and over again and sometimes repeatedly. If I give the bank, if I approve something as a user, I may have to get that repeated after four five years. The approval. That's natural as a user. One relies on the other hand, however, on the self-protection. So for those who don't care, necessary.

Interviewer

Necessary. That's a very good point. What benefits do you think the user, the private individual, sees in privacy compliance? That as well.

Expert 9

The benefit of compliance through that, of course, has the benefit. That can be driven already just with my data. So prevention is a very good keyword. Prevention for no nonsense at all and from us not exploiting.

Interviewer

The third part deals with ownership. Where does your data come from or how do you get your data?

Expert 9

Where does this data come from and how do we get the data?

The customer voluntarily enters into the system or allows the or the supplier to allow the data to be sent into the system. So purely classically.

Interviewer

So in your company there is no cost for data procurement.

Expert 9

Cost of data procurement.

Not directly for data. For storage? Yes. For the data Procurement? No.

Interviewer

In terms of their data, do you understand the user to be the owner of their data or the data producer who discards any right to ownership?

Expert 9

As an owner.

Interviewer

What characterizes the user as such or can you justify that?

Expert 9

Because the user only shares their data with permission. And that's where we have the due diligence, that's where we have to have the due diligence about what we were doing, being sensible with the data. And our business model is not to resell the user's data in order to make money with it. Accordingly, we have no interest in that at all. And the data, as I said, the data storage costs us rather money, because we have to take precautions, because we just have this data. But without that data we can't provide the, we can't operate the systems and we can't provide the user on the the service that we have.

Interviewer

How do you think the user or the private person sees himself?

As an owner or as just a data producer?

Expert 9

Yes, that's a very general one. There are those and those I would say. If I were to do that with our customers I would think of it more as data, as owner, but as owner and as producer you have a choice. As an owner, I would think with our customers that is how they see themselves and hope that that is how they choose themselves, let's say.

Interviewer

The last part does deal with the monetary value of data. Does data have a monetary value to your business?

Expert 9

Monetary Value. It helps to get an understanding on what is meant by monetary value in that context.

Interviewer

It's often mentioned in the context of data acquisition. That means that when data is acquired, either there is a price for the data or if data continues to be resold, a price can be obtained.

Expert 9

Okay, no.

Interviewer

Good. What do you think the users or the individual gain from giving out their data? It is more of a convenience that they just don't have to fill out all the forms again. Or does data also have a monetary value to the user or the individual?

Expert 9

There can be monetary values behind it. It can. I can give out my data and get money back in pennies or a point system.

Interviewer

All right. Thank you very much for your time. First of all, it's been very helpful and a bit of fun.

Appendix K: Expert 6 Interview

Interviewer

The first question is; define what data their company needs?

Expert 10

I'm speaking now for as a company in the food industry. Because we need company data on restaurant operations.

Interviewer

Define, you can also define what attributes you need for that.

Expert 10

Restaurant name, so all single info.

So street, house number, zip code, restaurant phone number opening hours, owner. Website Facebook url, menu, information, pictures. Twitter handle.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 10

The highest. Without the restaurant data or without this information, our company that would not exist.

Interviewer

How does your company view data? Is data a commodity to be marketed, a cost, or even a source of profit?

Expert 10

All three.

Interviewer

What is the importance of data to the user or the individual?

Expert 10

Who is meant by this? The guest? Or the restaurant owner?

Interviewer

No, the guest in that sense or rather the restaurant operator, because he is the one who provides the data.

Expert 10

Yes. What was the question, what value the data to me?

Interviewer

Importance.

Expert 10

What importance? I don't think actually that big either. For him it is background information. Because he wants to sell his food.

Interviewer

What do you think how the users, the private person in our case the gastro operator see the data, do you see the data set indifferent to do you see the data as property or as something private or do you even see a monetary value in their data?

Expert 10

So they definitely don't see a monetary value in the data. There's a big difference in how someone sees their data as belonging to them or not. I would say the ratio of restaurant operators who see the data as valuable

and belonging to them to restaurant operators who don't see it as relevant is about ten to ninety. So ninety percent of the restaurant operators see it as that's just the way it is. So that's not my individual data, but that's not something that I'm aware of or would have any copyright on.

Interviewer

Very good. The second part of the expert interview is about data protection. What is the importance of data protection for your company?

Expert 10

A very big one. Because we have to make sure, of course, because we have a lot to do with reach and users, website users, that if we don't handle the user data very carefully, we might get fined or lose our customers trust. Because we generate our revenue through advertising, of course, and we have to pay very close attention to that and make sure that we comply with all the data protection guidelines.

Interviewer

Do you see any challenges for companies in complying with data protection?

Expert 10

The biggest challenge is actually with the documentation, because of course that creates a huge amount of work. We have to document everything, when the user comes to the site, what type of data we store, how we store it, where we store it, and how long we store it, so that's the biggest difficulty. And then we have to ask for consent. Which of course we need, also because of the advertising background.

Interviewer

Do they also see or rather what are the benefits in data protection compliance for their business?

Expert 10

Actually just legal assurance. Legal security.

Interviewer

Do you think the GDPR has changed your customers, communications or customer relationships?

Expert 10

Yes, definitely, because the GDPR demands that we always have to show users, especially users who don't really care about what's going on, what we're doing, you have to click on accept, otherwise you won't get anywhere. I don't want them to accept anything, simply because they have to accept.

Interviewer

In your opinion, how important is data protection for the user private individuals or restaurant operators?

Expert 10

Well, it depends. So there are some data points that are of course super sensitive.

It's still not a clean balance between necessity and really meaningful data protection. So that's it, far too much is demanded than the user even cares.

Interviewer

That's a good intro to the next question, which is what do you think are the challenges or disadvantages that the user sees? Individual, gastro, operator in complying with privacy?

Expert 10

Effort, documentation, time. Actually understanding legal frameworks that nobody has any idea about at all.

Interviewer

And conversely what benefits do they think the private individual sees in complying with data protection?

Expert 10

I think the private person assumes that by complying with data protection, they will get less spammed and less advertising is displayed. But that is not the case.

If necessary, his information is distributed just less often on our websites or are somewhere to be read by any crawlers.

Interviewer

The third part deals with ownership. Where does your data come from or how do you get your data?

Expert 10

We use publicly available sources to collect our restaurant data. So for example Google. The website of the restaurant Facebook page Instagram everything where ultimately restaurant information can be found which is also publicly communicated trade register entries.

Interviewer

This means that there are no costs for you for the data, acquisition or data procurement.

Expert 10

So except for the time that is always spent on respectively the cost per record, then paid at data suppliers. we ultimately employ companies that provide us data that we don't have yet, so the sources, ultimately websites. However, we could do it ourselves or just hire someone to do it more often.

Interviewer

Do you understand the user in our case the restaurant operator in terms of his data as an owner of his data or just a data producer who discards any right of ownership.

Expert 10

We try to live in a coexistence with the user. And of course we see the data about his restaurant as his own on the other hand we try to make it clear to them that an entry with us of course offers a certain advantage, because it is above all also in a free entry and we can gain an additional reach and thus marketing for his restaurant. That data he stores in our system technically belongs to us. In the very last instance, if restaurant operator says he doesn't want that, then we delete the information. In this respect. The data belongs to the restaurant.

Interviewer

Okay. How do you think the restaurant operator sees himself?

Expert 10

The basic data belongs to the restaurant.

Interviewer

Can you elaborate on that?

Expert 10

For example, if we had nothing to do with the restaurant at all, but a guest comes to us, suggests a restaurant, writes a review about it and uploads pictures about it. In that case, that's information that was not provided by the restaurant operator, but by a guest. And to that extent, we consider that to be our property, so to speak, the ratings that we generated there.

Interviewer

The ratings: what if a guest enters the publicly viewable master data with you? Then is that also their property or does that belong to the topic of the restaurant owner?

Expert 10

The basic data. Well well so if the data comes to us like that and the restaurant owner says take that out now we'll do that. Period.

Interviewer

How do you think the restaurant owner sees himself as a data, producer or data owner?

Expert 10

So in that case as a data owner.

Interviewer

The last part is about the monetary value of data, does data have a monetary value to your business?

Expert 10

Yes. Can I even quantify exactly? Changes from month to month though.

I don't think they want or need to put the value in the context of this master, these numbers.

Interviewer

Can you be more specific or define the value of data to their business? You mentioned that it's also used for marketing purposes?

Expert 10

We can accurately determine the value for each restaurant entry so on average on a monthly basis, yes. It also depends on how much content we have for a restaurant. So the more, content and the more relevant a restaurant on the website, the more valuable that data set is. Because of course we can generate more reach with it, because the more interesting it is to me for the search engines and therefore will be ranked relatively high.

Interviewer

So that means the more complete the profile, the more valuable in principle.

Expert 10

It doesn't always have to be one hundred percent complete, fifty percent is enough. Fifty percent correct.

Interviewer

What do you think the restaurant owner gets out of it when you give out your data? Is it more a kind of convenience that is visible very quickly or does the data also have a monetary value for the user himself?

Expert 10

Well, it is definitely a relief in the daily business if he maintains his data with us, because he ultimately has less effort with his own website. Is the first point the second point is since we are very much involved with digital menus, do we generate or do we ensure that he could even save costs. By using our free digital menu that we provide, he saves printing costs that he then doesn't have to use in his restaurant business. The standard menu in the restaurant can either via a QR code or via the sticker or via whatever make our digital menu available to his guests and save any printing costs.

Appendix L: Expert 11 Interview

Interviewer

Define what data you need for your business.

Expert 11

All data is stored in the hospital information system, or HIS for short. Without HIS, hospitals can no longer operate. HIS consists in the fact that there is a data structure, because huge amounts of data are constantly fed in. The assignment of patients, cases, laboratory values, pacs, X-ray images all this has now been digitized. A huge data hall is the HIS and we also need this data.

Interviewer

Define which attributes the company needs.

Expert 11

All Personal Data is important, especially all health related data. Of course, all master data but also the medical history, special notes. Theoretically, we could need all the data or attributes, because they can be used to draw conclusions or insights into the current findings.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 11

A very high significance. Because, of course, the entire patient care is based on data transfer and data analysis, i.e. a very large part of patient care. You can see this, for example, in what happens when a hospital is hacked and paralyzed. How it happened, for example, with the Lucas Hospital Neuss. Then patient care is maximally limited and threatened. A year or two ago it was the university hospital in Düsseldorf, and we have also been attacked. Data access denial attacks. These are attacks where nothing works anymore. In other words, where the HIS is paralyzed. Then the hospital is almost incapacitated. Because really every step in the hospital is designed so that data can be entered into the system and read out again. For example, laboratory values and everything I have just listed.

Interviewer

Is data a commodity to be marketed for analytical purposes? Maybe data is a cost factor or is data the source of profit?

Expert 11

For us, data is essential. But we don't buy data. For us, data related to patients is an analysis tool because it helps us understand how to help the patient.

But on the other hand, data is also a big cost factor for us.

Interviewer

In your opinion, what significance does data have for the user, i.e. the private individuals themselves?

Expert 11

In the hospital itself, the patient usually does not care whether someone "unauthorized" gains insight into his data. "Unauthorized" is also anyone who is not directly involved with the patient. A surgeon who has taken over a patient from gynecology, although he is supposed to operate on the same patient on the same day, should not get an insight into the patient file, according to data protection, because he is "unauthorized".

In fact, however, he needs certain data and needs insight. It also happens that a patient attaches great importance to data protection. That can always happen. But in fact, I have never seen a patient say "No, I don't want you to be able to read my name on my bedside", because that too is part of data protection and is actually forbidden.

Interviewer

So how do users see data? Are they indifferent to the whole topic? Do they regard the data as something they own or private or do you see the data as something of monetary value?

Expert 11

I think that most "users" already see themselves as owners and recognize data as something private. In the context of the hospital, however, patients or users usually have other concerns and are therefore rather indifferent to them.

Interviewer

What is the significance of data protection for your company?

Expert 11

I am a victim of data protection. A common saying in healthcare is "death through data protection". Clinics sometimes have clinics when patients come to the outpatient clinic and are admitted to the ward, sometimes different doctors and different structures are responsible for this, depending on how the whole thing is organized. And there are clinics where the doctors in the ward can no longer access what was collected in the outpatient clinic. This does not mean that they are not allowed to do so at all and impossible, but it may be complicated and require consultations that are not possible at night, and then the information falls away and has to be de facto re-collected, or is no longer available. And that can be, as everyone can imagine, for this you do not have to be a trained doctor, this can be irrelevant information, but it can also be very important for further treatment. And this is becoming increasingly difficult. The transfer of data. Just one more example, how does the communication take place between a doctor in private practice and wants to send him to the clinic, or vice versa. So far, it has been quite common to fax this finding. Now, about a year ago, there was a letter from a data protection authority that said this is prohibited in the future. You are not allowed to fax. Because you don't know where the fax receiver is and then some unauthorized person can access the data. What you are not allowed to do is email. So scan and send by email. This has been forbidden for a long time. Because email can be hacked and that is considered too insecure. You are not allowed to fax a surgical plan with patient names. But the names must not be there. Or emailed. Someone could crack the email account and see that Mr. X will be operated on tomorrow.

You could send it over highly secure lines and encrypted, but that's very costly, so it's not the right solution either. What was the solution from the data protection officer? The solution is – send it by post. In all seriousness. This is not a joke or an exaggeration of mine. And of course I grab my head, because there is a delay in information of let's say at least 2 days, and I don't know where the increased security is. This development is highly problematic.

Interviewer

What challenges do you see for your company in complying with data protection?

Expert 11

That is what I have just mentioned. There are requirements from the government that have to be met, but no realistic and good solution to meet them.

Interviewer

What are the benefits of complying with data protection for companies?

Expert 11

In hospitals, data protection is more of an obstacle. But I can understand that this may make some patients feel safer.

Interviewer

Do you think that the data that the General Data Protection Regulation has also changed your customers' communication or customer relationships?

Expert 11

Yes, definitely. We now have a data protection officer in our hospital. You have to. He is an external lawyer and he works for us, for money and he deals with data protection issues. But there are very trivial things. Patients are taken to the operating room in bed. But now we don't just have an operating room but let's say 8 operating theatres, so there are 8 beds and at some point there are also let's say 14 beds, if it overlaps or 15 beds even. And of course you want to put patients in the bed they came with afterwards and not somehow a foreign bed. So you have to assign the beds to the patients. And the simplest tradition, which has been lived for centuries, is to write the name on the beds at the foot end, or to make a sticker on it. Then we know, "Aha, that's when Mr. Stratmann came" – but you can't. Because if the name is written at the foot of the bed, then some unauthorized person can come by and unauthorized is anyone who is not involved in the immediate patient care. So "unauthorized" is also a doctor. Actually, it is forbidden to provide the beds with the name of the patient. Or visitors in the room. They are mostly in 2 or 3 bedrooms. There comes a visitor from patient A and they can read what is at the bed ends of the bed of the other patients. And for centuries no one was bothered. That's why we got the order that these labels are somehow done differently. But an assignment must also be possible. That means if you really implement it, you would actually have to have a highly complex system, which then also has to work in reality, and you can't have an IT technician at that moment who assigns the bed encryption, you would have to encrypt it somehow and then decrypt it again. This is, of course, completely illusory. That's why we just keep it up. During inspections, there are always auditors who criticize this, but these are usually not offenses that entail a closure of the hospital. If you ask them for one of their solutions, they will nuzzle something in their beard and have no answer. But actually, it is forbidden. And that is data protection.

Interviewer

Is there a solution?

Expert 11

There is a relatively simple at least partial solution, and it goes as follows. So there are limitations. But everyone is allowed to access data even outside the department he is not authorized then a button pops up. A so-called Red Button. I'll paraphrase now. It says, "This data is not really meant for you. But when you press this button, you are allowed to see them, but your access data is stored and potentially traced." And then you press the button, and then you can see everything you want, but it's your own name or account, which can also be someone else if you have not logged out, is saved. De facto, however, one has to say who is tracking this back? There would have to be a kind of clinker computer police. That's time-consuming and of course nobody does that. That means it is a data graveyard that is being created, and no one is tracking it back. At least as long as nothing happens, if something happens then probably no one knows how to trace it back at all. And the employee representation that is the conflict, the whole life is full of conflicts, the employee representation says of course you may not just store the data of the one who asks for it. So the data

protection says we have to record this, so actually we have to prohibit it and if then record, then the employee representatives say you are not allowed to record anything. Yes, it is then silent and there are some compromises, which then look like it is only stored for 1 or 2 days then the data must be deleted. Yes, that's our world. So very complicated, lots of compromises, very complex and potentially very problematic if you can't get the data you need.

Interviewer

In your opinion, how important is data protection for the users or the private individual himself?

Expert 11

So I would almost say 99%, I'm not exaggerating now, 99% don't care at all. There are very rare, I don't know if I've ever experienced this, so now they don't look at my name tag or what interests them.

Interviewer

What do you think, what challenges or disadvantages does the user, the private individuals themselves, see in compliance with data protection?

Expert 11

If I tell a patient their heart catheter results they have to pick up from the cardiologist, because I can no longer call there. Or I can call there but get no information, then they are horrified. Then they can't say that. And then I say privacy. And then they look puzzled, because everyone has heard that before data protection. And then say that then I have to go there again.

Interviewer

Are there also advantages for the user in compliance with data protection?

Expert 11

Of course, you know this from ATMs. You should keep your distance. And if there is an ATM on the street and then when people enter their secret number and there is someone behind them and it is too close to them. Since I have often experienced that they say please take a step back. This is also a certain form of data protection, data autonomy, that is my secret number for me to keep. But I've never experienced that in the hospital. That people have kept sensitive, that just does not exist. They are fighting for a right that people do not demand.

Interviewer

Where does your data come from or how does your company get the data?

Expert 11

The data is collected in the individual departments and by the treating physicians. The master data comes from the patients themselves.

Interviewer

Okay, that means there are no costs for your company for data, procurement or data acquisition.

Expert 11

No.

Interviewer

In relation to their data, do you see the user as the owner of their data or merely as data? Producer who distracts any right to ownership?

Expert 11

He is the owner.

Interviewer

How do you think the user sees the private individuals themselves?

Expert 11

Also owners.

Interviewer

The fourth and final part deals with the monetary value of the data, does data have a monetary value for your company?

Expert 11

Conditionally, we are dependent on data, without data we are incapacitated, but data per se has no value for us – not without a patient.

Interviewer

What do you think the users or the private individuals get out of it, when they give out their data, it is more of a convenience that they get themselves. Can you log in somewhere with just one click or does the user also expect a monetary value by releasing the data?

Expert 11

In the hospital, he has to give out at least part of his data, otherwise we can not treat him.

Interviewer

Thank you very much for the interview!

Appendix M: Expert 12 Interview

Interviewer

The interview is divided into four parts. We'll start with the first, the potential or general assessment of data, that the first question defines what data you need for your business?

Expert 12

That is very different. Customer data and personal data. Of course, when we talk about the whole topic of payment processing, I need financial data, bank details as well as data. Of course, I first need data so that they say that it is not the way they ultimately do it. In other words, you need data on market-standard cutting-edge technology, i.e. competition, data, size, growth, developments, products. So I ultimately price data on products, sometimes general specifications. I have to, I need data there. If I equate data with knowledge, I need data too often on regulations. In which business am I moving? For example, as I said, medical technology is a huge topic. Approvals, regulations, um, this field, to briefly outline it, then of course I need data from within my company, so ultimately data on whom and who can deliver, produce, help me how quickly any things? If I simply equate my data with knowledge, I have to know that, so that all that, all the contacts that I, who I do not need in such a company, who I can ultimately supply with data for my studies, then I need, when I finally go out with my product, I need customer data.

Who is a potential customer? Why might he be interested? I need to know what problems does he have? Can I solve them or how else do I get it sold in the end? Am I in marketing? Do I need to do this? Ultimately, I need competition data. For me, too, this must ultimately be delineated. Such stories. And then I want to do business with the customer, do I have to give him data from within his company, how is it going there? I need to know the processes. The contact persons can also provide data to make the financial processing. I then have to have the addresses and so on. After that, when I close the deal, I ultimately want to have feedback data. Aftersales data. Are you satisfied? This can be done on site. What's next? Can I offer someone else? Need something else? And then, so to speak. Finally, the circle closes. And again, when I am perhaps at the next product or subsequently product.

Interviewer

Can you also define which attributes you need in relation to customer-related data?

Expert 12:

Attributes related to customer-related data. So master data is clear that I have the company data addresses HRW number such stories bank data. Which contact persons, if it is a larger company. Which department, the postal address, there are other addresses and so on.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 12

So it doesn't work without data. And of course that's the case, but if you have more data, you ultimately have advantages.

Interviewer

Who considers your company's data to market data, a commodity, a cost factor or even a source of profit?

Expert 12

So both. So data is first of all a cost factor, right at the beginning. You have to invest to get data. But in the long run, of course, they are a win.

Interviewer

In your opinion, what significance does data have for the user, i.e. the private individual himself?

Expert 12

Huge and central.

Interviewer

How do users, i.e. the private individual, see the data? Are they rather indifferent to the data? Do they see the data as their property or as private, or do you see monetary value in the data?

Expert 12

Personally, I handle my own data very sensitively. I know, that my data has some value for certain companies. For others. In this respect, I am very, very, very sensitive to actually. And I'm also a bit skeptical and reserved.

Interviewer

The second part deals with data protection. What importance does data protection have for your company?

Expert 12

A very high one. So data protection is a topic that every company should actually deal with very seriously and should really know very well what it ultimately does with the data in order not to make itself vulnerable.

Interviewer

What challenges do you see in complying with data protection for companies?

Expert 12

The legal situation is often not really clear, at least as far as the interpretation is concerned. Because the legal situation changes again and again. And I no longer see the problem with data protection in the international arena. Because I am competing with competitors who ultimately do not fall under the strict European data protection law.

Interviewer

Do you also see advantages in compliance with data protection for your company?

Expert 12

For the company's advantages for companies in terms of data protection? What a question. So I see the advantage in the fact that if we can make this seriously clear, why we comply with all data protection regulations and perhaps go beyond that. Then I have an advantage in communication with the customer. But now? Of course, I as a company would have more of it if I didn't have to comply with any data protection regulations. In this respect, of course, it limits me.

Interviewer

Has the General Data Protection Regulation changed your customer communication or relationship?

Expert 12

Yes. Made it much more difficult. So I know that from experience. Especially when trying to contact a new customer. Ultimately, we are required to sign the data protection regulations. If not you cannot contact the customer again. That was especially in the early days of the GDPR passing, when it was extremely unclear.

Interviewer

In your opinion, how important is data protection for the user or the private individual?

Expert 12

That is super important, so for the user. But it also makes some things for the user really extremely much more complex I say every homepage I visit, I have to make accept some terms. That's annoying, but it's just little things.

Interviewer

This follows on from the next question: what do you believe, what challenges or rather disadvantages do you have for the user, the private individual in compliance with data protection?

Expert 12

Well, that's always demanded. That's quite annoying.

Interviewer

In your opinion, what advantages does the user, the private individual, see in compliance with data protection?

Expert 12

Well, you have a certain security. One should assume very, very carefully to formulate that his data is also protected accordingly and that it is handled seriously. Is that really the case at the end of the day? Question mark.

Interviewer

The third part deals with ownership. Where does your data come from? Or how do you get the data?

Expert 12

That depends on where the sources are. Ultimately, of course, this customer data is completely different from the customers, i.e. company data from within the respective departments from within the respective departments. I don't think you can say that.

Interviewer

This means that they are collected themselves or are there also costs for data, procurement or acquisition?

Expert 12

So we generate data ourselves, but ultimately we also have a past. If I use my old purchased market data, for example.

Interviewer

And do you understand the user in relation to his data as the owner or as a data producer who has renounced any right to ownership?

Expert 12

So the latter by no means at all. Rather, I say basically, the one who produces data should also have a certain ownership.

Interviewer

Even if it stores them in their existing infrastructures.

Expert 12

Yes

Interviewer

What do you think, how the user, the private person sees himself?

Expert 12

Right now, we didn't even know that you end up generating data and thus generating added value for some that you don't have access to yourself.

Interviewer

The fourth and unfortunately already last part of the expert interviews refers to the monetary value of the data. Does data have monetary value for your business?

Expert 12

Yes.

Interviewer

Can you define it or classify it in the value chain?

Expert 12

Difficult. So I would do it the other way around. I would ask myself what if we didn't have the customer data? Then the company would ultimately not be able to survive. Certainly. In this respect, the data have a very, very basic, essential value, how high it is now monetary I can not answer precisely.

Interviewer

What do you think the user gets the private person out of it? When you hand over your data? Is it a kind of convenience for me, for example by signing his on with one click login? Or does the user also expect a monetary value when publishing?

Expert 12

So I don't think that the normal user expects monetary value, so I just believe convenience.

Appendix N: Expert 13 Interview

Interviewer

The expert interviews are divided into four parts. We will now start with the first, the general or data. Define what data you need for your business.

Expert 13

We need location data. We have many locations in Cologne 370, in Aachen over 60 and we definitely need the data here. Address, house number, location, operator, phone number of the location operator to be able to place our advertising media there. Then of course we need the customer data. We have created over 7000 different accounts in a customer database, where we then store contact persons, e-mail addresses, telephone numbers and of course also the respective history. What was communicated with the customer? When were all our orders are stored in the database as quotes and then saved as orders. In addition, we have a lot of campaign data. How many campaigns are being run at the moment, for how long, when is the next campaign starting. We also need data, the circulation figures, the issues. Exactly how much of that is produced. Then for our warehouse, of course, we have the responsible warehouse management, this shows us when we need to restock, if there is a shortage or surplus in supply. As far as prices are concerned, we have to know what costs how much. These are our main data points. However we have to know what else is in the database.

Interviewer

And related to customer data you have three different attributes that you need. You just said something like phone number.

Expert 13

Yes, definitely the telephone number, the name of the contact person the e-mail address of the contact person, then any companies, that belongs to it, also address, postal code and everything like that. In addition, we like to take for our customers who have been customers for a long time, special information. That can be their hobbies, their likes and interest. This helps us as it establishes a personal connection, especially in the acquisition of customer, if you can then ask them about their last weekend activity for example.

Interviewer

Next up I am going to read a quote by Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 13

Data is definitely essential to our business. Without data, our company would not be able to function the way it does. Otherwise, we would lose all customers and not place our order. We would have locations. We definitely need the data.

Interviewer

How does your company look at data? Do you look at data as a marketable commodity? Do you think data is a cost or is data a source of profit?

Expert 13

Data is definitely a source of profit, not a cost. We do not pay for customer data nor do we sell it – in regards to the customer data. However, it is definitely important for us to have data so that we can execute our campaigns with it.

Interviewer

What do you think is the importance of data for the user himself?

Expert 13

For me as a users and private individuals?

The data is also important for the customers, for example the location data. For example, every customer wants to have a map and the location with their interests. That is, after all, our data that we have on the road. These lists are created, for the customers convenience.

Interviewer

How do you think the user sees the data? Do you understand the data as indifferent to it? Doesn't have an opinion about it? Do users view data as their property or something private? Or do users see monetary value in data as well?

Expert 13

For data protection, of course, it's super important, so it must already be safe to enter, for example, and pick entire phone numbers. Just like of course things are billed towards payments. That's all always accessible. Its name is encrypted and I would say the customers think that is private.

Interviewer

The second part is regarding data protection. What is the importance of data protection to your business?

Expert 13

Super important. So we also have an extra database that was externally programmed for our requirements for extra security. Generally data protection is super important. So that not everyone can access all the data, so for example someone from accounting, can not open employee data and vice versa, that there are certain areas of responsibility for it and the data is otherwise always encrypted and secured. Of course it is also important that no outside sources can have insight into our data.

Interviewer

What challenges do you see for your company in terms of data protection compliance?

Expert 13

It's definitely not without its challenges. There is a lot of public attention on data protection nowadays. Establishing who can have access to which data is one of our main challenge. And that's where it gets difficult, ideally everyone wants to know and have insights into all of the data. Because you can only then access the data at the specific location, or terminal and only with a specific set of rights granted to you via your login. Because the data that I have access to, might not be for everybody. See this for example can act as one huge challenge. However, it is not necessarily a problem because if you have a strict set of roles and rights established it can be a streamlined process. There has to be a trade off.

Interviewer

What are the benefits in complying with data protection for your company?

Expert 13

We place high value on data protection in disposition to some of our competitors so customers might perceive us more highly and more trustworthy. In addition, it can also solve customer theft concerns, if others would get access to our database and know all the contacts because of it. So it protects us from competitors gaining insights into our data, and potentially stealing our customers. This is very important for data protection. In addition, of course, most importantly to the customer. We don't want any problems with data protection to arise and customer data to go somewhere else.

Interviewer

Has the General Data Protection Regulation changed your customer communication or customer relationship?

Expert 13

I don't think so. No, we were covered.

Interviewer

Okay. How important do you think data protection is to the user?

Expert 13

So I speak for myself now?

Interviewer

As a private person, yes.

Expert 13

Ah, okay, that's really important to me. So data like my locations among others that I don't want to be shared with everybody. But also personalized advertising emerged, which is not all too bad. But there are still some information that I would not like to share, like my banking details, so data protection should be really important.

Interviewer

What do you think are the challenges that the user, the individual, sees in terms of data protection compliance?

Expert 13

So a negative aspect?

Interviewer

Yes.

Expert 13

I have to re-enter all of my data, every time I re-visit a website. This is just inconvenient. Also there are cookies I have to accept all the time. And I still feel like my data is not 100% protected.

Interviewer

And what benefits do you think the user, the private individual, sees in terms of privacy compliance?

Expert 13

Yes, there are definitely some. One is privacy, you cannot be contacted by anybody on the internet. You can have a virtual wall around your data.

Interviewer

Let's move on to the third part of the ownership of the data. Where does your data come from and how does your company get customer data?

Expert 13

Our data comes from over 25 years of customer contact. So we deactivate and delete data once it expires or after a certain amount of time. But our data comes mostly from our own research. We simply go on the internet, and google for the company. First the address is found on the Internet, and then it goes mostly the usual way about imprint, and inquire until you find someone who is responsible. This is done many many times over until you have a new contact. So we look in our database and then on the internet. And it is of course much easier with already existing contacts, or having someone in your network who says, we know this company and already have a contact person. There are appointments where you get to know each other and you meet with one of the parties. We research most of our data ourselves, we have never bought customer data.

Interviewer

Our next question is are there any costs associated with acquisition?

Expert 13

No not for acquisition. Maybe for upkeep and maintenance.

Interviewer

Do you understand the user in terms of his data as producer or owner? Who owns the customer data? The company or the individual?

Expert 13

Data belongs to the private individual. We just note their data. For us the user is the owner.

Interviewer

Can you justify that?

Expert 13

Well, the person is the individual who owns the data and also who works with his data. We just have him noted in our database and can work with his data. And of course this data is protected. In our system the person can even access his own data in our database.

Interviewer

How do you think the user sees himself as the owner of the data or just the producer of the data?

Expert 13

I think that he sees himself much more as the owner of the data. Because of course we just know information about him, while the user actually is what is represented in our database.

Interviewer

Now we come to the fourth part, the monetary value. Does data have a monetary value to your business?

Expert 13

They definitely have a monetary value to us. But it's not like we're selling or buying. But rather through data we earn revenue and profit.

Interviewer

Yes. Do you want to define the value of that data a little bit more?

Expert 13

That is incredibly valuable in terms of our, so also our contacts, in terms of our ability to implement and incorporate campaigns and all. So we have to get to these people somehow, who want to advertise somehow. But if there is this data and this data about the people or the companies, then I can always rely on it. And also just entries in the history are valuable. If I know, okay, I did something with this person two years ago, then I can now trace what happened two years ago. And then come up with something new from that, so to speak.

Interviewer

What do you think users gain from giving out their data?

Expert 13

The users also benefit from it, because they have to explain everything again and again, so to speak. Everybody in our company can follow international standards and guidelines. In addition, it is an extreme time saving, if we do not have to ask again and again. Especially also something like writing an offer. If all the data in the offer are already in there and you just have everything ready with one click. Of course, it's much faster than having to re-enter everything every time.

Interviewer

Thank you for your time for your participation in the interview. If you are interested in following along with the results of this study, please feel free to contact me. I will make them publicly available.

Appendix O: Expert 14 Interview

Interviewer

The expert interview is structured into four parts. We start with the potential or general assessment of the data and with the first question. Define what data you need for your business.

Expert 14:

I need customer data. Suppliers, data, personnel data. I need all data.

Interviewer

Yes. In terms of customer data, you can define for me what attributes you need from each customer.

Expert 14:

The basic requirement to then have appropriate historical data and current data and what you tell us.

Interviewer

Basic requirement is a verified identity, for example?

Expert 14:

Right.

Interviewer

Okay. Now I'm going to read a quote from Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 14:

For our Business Data is Cash. Of course data is also a huge cost.

Interviewer

How does your company view data? Is data a commodity to be marketed, a cost, or even a source of profit?

Expert 14:

The raw data has a monetary value for us, which we can also determine exactly. Then we enhance it and it has even more value to us. We could use it for analytic processes, but we don't. And as I just said, data also yields costs.

Interviewer

In your opinion, what is the importance of data for the user, i.e. the private individual himself?

Expert 14:

The users don't care about the data at all.

Interviewer

Okay. And how do the users, that is the private person, view the data are they rather indifferent to it? Do they see the data as something proprietary or private or do they even see a monetary value in the data?

Expert 14:

Completely indifferent. That's what we've learned from 15 years of professional experience. They don't care.

Interviewer

All right. The second part deals with data protection. What is the importance of data protection for your company

Expert 14:

Data protection is an annoying obstacle. Of course we have to comply with data protection, we comply with the minimum requirements. There are companies, our competitors, that don't comply or comply less with data protection, don't get caught and can make a lot more money.

Interviewer

What challenges do you see in data privacy compliance for companies?

Expert 14:

Many processes are paralyzed by it. A constant back and forth on queries. Data protection just costs us an enormous amount of money.

Interviewer

Yes. Are there differences between national and international data protection laws?

Expert 14:

Yes.

Interviewer

Can you define them or to what extent do you express additional challenges?

Expert 14:

It's individual, every other one has to be looked at separately. So now not EU, but if we now look to America it is again different than here or South America is again different. At the moment I can only refer to Europe, there it is relatively homogeneous, at least what is checked or regulated via the European level. But the rest is a case-by-case examination.

That actually means that you have to deal with each one individually. That is what is cumbersome.

Interviewer

What is the country with the most regulations?

Expert 14:

I can't observe in detail, because we have our experts in the legal consultation, so I can't say that.

Interviewer

But do you see any advantages in data protection compliance for your company?

Expert 14:

Whew. Well. I am going to be very blunt here. No.

Interviewer

Has the General Data Protection Regulation changed your customer communication or customer relationship?

Expert 14:

Yes, it paralyzes everything. Things don't move as fast as they used to because everyone is retreating to that. I can't buy data anymore. I'm constantly having problems with my data protection officer when I want to contact someone - it's changed a lot!

Interviewer

How important do you think data privacy is to the user or the individual?

Expert 14:

I don't think the private individuals themselves care at all.

Interviewer

Do you see any privacy compliance challenges for the user as well?

Expert 14:

Challenge? Yes, that the privacy statements are extremely confusing and long. Nobody understands that.

Interviewer

Yes, and for the user you also see advantages in complying with data protection.

Expert 14:

No. Nothing has changed for the user. If we're honest, the big Internet octopuses just keep collecting their data. They just do it illegally now.

Interviewer

The third part deals with ownership. Where does your data come from and how do you get it?

Expert 14:

Most of things are built by ourselves. So from the company.

Interviewer

Okay. So that means for them there is no cost for data acquisition or data acquisition.

Expert 14:

Sure, we still buy data. Partly overseas.

Interviewer

Okay. Do you understand the user in terms of their data as an owner or just a data producer who files the right of ownership?

Expert 14:

According to data protection, purely from the rules of data protection - I own the data. If the user discloses it to me, and I store it on my technical infrastructure. Then the data belongs to the company, and no longer to the user.

Interviewer

Interesting.

Expert 14:

Yes. If I give out information under data protection conditions, it is no longer my property. I don't have to give out the data.

Interviewer

How do you think the user, the private person, sees himself?

Expert 14:

Again, the user doesn't care what happens to his data. He has no idea about it.

Interviewer

The last part is about the monetary value. Does data have a monetary value for your company?

Expert 14:

Yes, absolutely. Data is money.

Interviewer

Can you define it?

Expert 14:

I don't. But without data, I can go right back to the index card.

Interviewer

Um, what do you think the users get out of it? If they give out data? Is it kind of a convenience for faster log in processes or better customer service or is there also a monetary value that the private parties are expecting to get when they give out the data?

Expert 14:

Only the former.

Interviewer

Excellent. We have come to the end of the interview. I thank you for your time

Appendix P: Expert 15 Interview

Interviewer

We start with the first one, the general or potential importance. That's why the first question is: Define what data you need for your business?

Expert 15

Me, what data I need for the business.

Interviewer

Exactly.

Expert 15

Personal and general.

Interviewer

What falls under general?

Expert 15

Bank account. Okay. Personal would be employee, data, customer data, vendor, data.

Interviewer

And for customer data, do they need all master data?

Expert 15

Yes.

Interviewer

Okay. Now I'm going to read a quote from Allinson, 2022 in Robotics & Automation News: "Data is now considered to be the globe's most valuable and vulnerable resource." What is the importance of data to your business?

Expert 15

Data does indeed play a big role for us, but it is because of their costs to us.

Interviewer

Ha. That almost answers my next question. How does your company view data? Is data a tool to be marketed, a cost, or even a source of profit?

Expert 15

I have to choose?

Interviewer

You can pick one, all three or even come up with a new terminology better fitting for your company.

Expert 15

Primarily costs.

Interviewer

Okay. What do you think is the importance of data for the user, for the individual?

Expert 15

Ten, very high ten.

Interviewer

And how do users, that is, the private individual, view data? Do you view data more indifferently? Do you regard the data as something that is your property or private? Or do you even see something of monetary value in the data?

Expert 15

Increasingly monetarily valuable.

Interviewer

The second part deals with data protection. What is the importance of data protection for your company?

Expert 15

Sure. Very high.

Interviewer

What challenges do you see in complying with data protection?

Expert 15

This is where a lot of the costs come from. The compliance, the storage, and penalties for not complying with the GDPR.

Interviewer

Do you also see benefits in data protection compliance for your business?

Expert 15

Yes. Data protection is a basis of trust for users. It is the legal framework for digital trust.

Customers see they comply with data protection, they handle my data well, I feel safe there. I think that's great to be with them.

Interviewer

Do you think the GDPR has changed your customer communication or customer relationship?

Expert 15

We have always been conscious of how we handle data. Hence the high costs. It will have affected many companies more than us.

Interviewer

How important do you think data protection is for users or private individuals?

Expert 15

Very important.

Interviewer

What do you think are the challenges or disadvantages that the user, the private individual sees in complying with data protection?

Expert 15

Sorry again what disadvantages...?

Interviewer

And challenges do you think the user sees in complying with privacy?

Expert 15

Data protection regulation violations or non-compliance.

Interviewer

Okay. Do you think the user also sees benefits in complying with data protection?

Expert 15

Yes. Those are the trust points that I mentioned earlier.

Interviewer

The third part concerns me in ownership. Where does your data come from? Or rather, how do you get the data?

Expert 15

Partly purchased.

Interviewer

Does that mean that there are costs for the data procurement?

Expert 15

Yes. So partly purchased, partly developed with customers and suppliers. Developed the customers, suppliers and employees. And yes, there are costs incurred in part.

Interviewer

Do you understand the user in terms of their data as an owner or just a data producer who discards any right to ownership?

Expert 15

Ownership.

Interviewer

How do you think the user, the private individual, sees themselves?

Expert 15

An owner.

Interviewer

The fourth part is about the monetary value of data. Does data have a monetary value to your business?

Expert 15

Yes, very clearly.

Interviewer

Can you define it? Not in monetary terms, but how it is expressed, in the value chain for example.

Expert 15

So very high importance, existentially important.

Interviewer

Okay. What do you think users get out of it, the private person, giving out their data? It's more of a convenience kind of thing, that you can log in faster, for example. Or do users also already understand their data with a monetary value in giving it out?

Expert 15

I think the monetary aspect is becoming more and more interesting. There are now solutions that reward users directly with money for their data. So beyond paid responses to surveys.

Interviewer

All right

Appendix Q: Codebook

Codesystem

1 Company Perspective
1.1 Data Potential (general)
1.1.1 Essential
1.1.2 Source of Revenue and added Value
1.1.3 Supporting Function
1.1.4 Limited Importance
1.1.5 Costs
1.2 Data Protection (legal)
1.2.1 Benefits of Data Protection
1.2.1.1 Protection Corporate Espionage (external)
1.2.1.2 Protection Employees & Customers (internal)
1.2.1.3 Legal Compliance
1.2.1.4 Creation of Trust
1.2.2 Downsides of Data Protection

1.2.2.1 Damaging
1.2.2.2 Legal Fees & Costs
1.2.2.3 Uncertain Legal Environment/Framework
1.2.2.4 Change in Process: Accessibility/ Roles & Rights
1.2.2.5 Change in Organizational Structure: New IT
1.2.2.6 Changes in Legal Structure: Consent
1.3 Data Ownership Company Perspective
1.3.1 User owned
1.3.2 Company owned
1.4 Data Value (economic)
1.4.1 No Value
1.4.2 Definitive Value
1.4.3 Conditionally
2 Privat User Perspective
2.1 Data Potential (general)
2.1.1 Sensitive
2.1.1.1 Property
2.1.1.2 Monetary
2.1.2 Indifferent
2.2 Data Protection (legal)
2.2.1 Positive Aspects

2.2.1.1 Security
2.2.1.2 Self Determination
2.2.2 Negative Aspects
2.2.2.1 Not Understanding
2.2.2.2 Data Security Insufficient
2.2.2.3 Do not care
2.2.2.4 Nuisance
2.3 Data Ownership User Perspective
2.3.1 Indifferent
2.3.2 User owned
2.3.3 Extraneously owned
2.4 Data Value (economic)
2.4.1 Indirect Economic Value
2.4.2 Economic Value
2.4.3 No-Value

1 Company Perspective

Definition: This code was assigned when topics from the company's perspective were asked about and discussed in the interview.

Anchor Example: /

Creation: Deductive

1.1 Data Potential (general)

Definition: This code was assigned when themes regarding the potential of data from company perspective were discussed.

Anchor Example: /

Creation: Deductive

1.1.1 Essential

Definition: This code was assigned when themes regarding the potential of data from a company perspective were discussed. More specifically when data was mentioned as an essential, curcial or necessary element for the companies survivability and operability.

Anchor Example:

Data is definitely essential to our business. Without data, our company would not be able to function the way it does. Otherwise, we would lose all customers and not place our order. We would have locations. We definitely need the data. (Interview 13, item 13)

Creation: Inductive

1.1.2 Source of Revenue and added Value

Definition: This code was assigned when themes regarding the potential of data from a company perspective were discussed. More specifically when data was mentioned to be a driving factor in revenue or profit, or can be used with a clear value adding potential or purpose.

Anchor Example: Source of revenue, 100%. Now the market, we don't do that. All the data that we have currently is from within our current clients. We are starting to leverage lead data. So potential clients' data, but that is not in the scope currently. So it's definitely driving revenue. That's the main thing. (Interview 5, item 17)

Creation: Inductive

1.1.3 Supporting Function

Definition: This code was assigned when themes regarding the potential of data from a company perspective were discussed. More specifically when data was mentioned as a supporting function in the company, such as monitoring, analytic or marketing purposes.

Anchor Example: they are indirectly more useful for our internal evaluations in order to see how our customers are structured and to be able to better define and measure future advertising measures or target customers. (Interview 2, item 17)

Creation: Inductive

1.1.4 Limited Importance

Definition: This code was assigned when themes regarding the potential of data from a company perspective were discussed. More specifically when data was mentioned as having only limited importance to the company, with no clear value adding or revenue driving factor or purpose.

Anchor Example: For me, data has very limited importance because I always have this data temporarily. That is, I record the data, I store it in our system, and after the rental process is completed, I personally, as an operational entity, no longer have access to it. (Interview 4, item 13)

Creation: Inductive

1.1.5 Costs

Definition: This code was assigned when themes regarding the potential of data from a company perspective were discussed. More specifically when data was mentioned as a cost factor for the company, as compliance to the law, maintaining or storing data and fees associated with data.

Anchor Example: So they are not marketed in our company, not given to third parties. But they are a cost factor, because we simply have to comply with data protection regulations and we have to keep certain things on hand (Interview 2, item 17)

Creation: Inductive

1.2 Data Protection (legal)

Definition: This code was assigned when themes regarding the legal aspects of data from a company perspective were discussed.

Anchor Example: /

Creation: Deductive

1.2.1 Benefits of Data Protection

Definition: This code was assigned when positive aspects or benefits of the legal aspect of data from a company perspective were discussed.

Anchor Example: /

Creation: Deductive

1.2.1.1 Protection Corporate Espionage (external)

Definition: This code was assigned when positive aspects or benefits of the legal aspect of data from a company perspective were discussed. More specifically, when talking in regards to data protection for the company, such as protection from corporate espionage, competitors or any outside or external forces.

Anchor Example: In addition, it can also solve customer theft concerns, if others would get access to our database and knew all the contacts because of it. So it protects us from competitors gaining insights into our data, and potentially stealing our customers. This is very important for data

protection. In addition, of course, most importantly to the customer. We don't want any problems with data protection to arise and customer data to go somewhere else. (Interview 13, item 37)

Creation: Inductive

1.2.1.2 Protection Employees & Customers (internal)

Definition: This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, when talking in regards to data protection for the company, such as protection for employees and management or any inside or internal forces.

Anchor Example: protecting the sensitive data that we have, protecting the people that were are working with (Interview 6, item 53)

Creation: Inductive

1.2.1.3 Legal Compliance

Definition: This code was assigned when positive aspects or benefits of the legal aspect of data from a company perspective were discussed. More specifically, when the interview partner mentioned compliance to the according laws such as GDPR as a positive aspect.

Anchor Example: On the one hand are compliant with the law and on the other hand compliance to users law. we handle the data sensitively and sensibly and especially in Germany with the company in Germany we are here according to German or European standard data protection compliant. (Interview 9, item 33)

Creation: Inductive

1.2.1.4 Creation of Trust

Definition: This code was assigned when positive aspects or benefits of the legal aspect of data from a company perspective were discussed. More specifically, when the data protection laws were mentioned as creating trust for the user or serving as a legal framework for digital trust.

Anchor Example: There are very clear benefits. If you comply well with data protection, you have a good image for the company, and everyone likes a good image right? In the long run, it is often good to have good user experience, otherwise, the users will leave. And so I think it's really, really important. (Interview 1, item 41)

Creation: Inductive

1.2.2 Downsides of Data Protection

Definition: This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed.

Anchor Example: /
Creation: Deductive

1.2.2.1 Damaging

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, when the data protection laws were mentioned as something harmful and damaging to the companies operability.

Anchor Example:

I am a victim of data protection. A common saying in healthcare is "death through data protection" (Interview 11, item 28-29)

Creation: Inductive

1.2.2.2 Legal Fees & Costs

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, when the data protection laws were mentioned as costs intensive in compliance and when corresponding legal fees were mentioned.

Anchor Example:

Data protection just costs us an enormous amount of money. (Interview 14, item 36)

Creation: Inductive

1.2.2.3 Uncertain Legal Environment/Framework

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, when compliance to data protection law was mentioned as being a factor of uncertainty and changing regulatory mandates and environment.

Anchor Example:

The legal situation is often not really clear, at least as far as the interpretation is concerned. Because the legal situation changes again and again. And I no longer see the problem with data protection in the international arena. (Interview 12, item 34)

Creation: Inductive

1.2.2.4 Change in Process: Accessibility/ Roles & Rights

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, where data protection laws have changed processes within the firm. Data is no longer available and accessible for every stakeholder of the company, but rather roles and rights for different positions have to be defined, which can have paralyzing effects on the company.

Anchor Example:

Establishing who can have access to which data is one of our main challenges. And that's where it gets difficult, ideally everyone wants to know and have insights into all of the data. Because you can only then access the data at the specific location, or terminal and only with a specific set of rights granted to you via your login. Because the data that I have access to, might not be for everybody. See this for example can act as one huge challenge. (Interview 13, item 34)

Creation: Inductive

1.2.2.5 Change in Organizational Structure: New IT

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, where data protection laws have changed or even given rise to new organizational structures. This can be the appointment of a data protection officer, or changes in the IT structure of a company such as the installation of new secure and encrypted data infrastructures.

Anchor Example:

It starts with computer systems, of course, where data about customers and employees is stored. So that's, that's a very secure environment, of course. We no longer have so much physical data hanging in a file cabinet somewhere, but with us everything is digitized and therefore the security of the complete server of the network. This is very crucial, which means that the security factor is extremely high. (Interview 3, item 33)

Creation: Inductive

1.2.2.6 Changes in Legal Structure: Consent

Definition:

This code was assigned when negative aspects or downsides of the legal aspect of data from a company perspective were discussed. More specifically, where data protection laws have added an additional step or hurdle in customer communication. An example of this is the storing and monitoring of data as well as the request for explicit consent.

Anchor Example:

it's not that easy because you would need the consent form, of course. You have to pay attention to a few things and that's why the whole thing is difficult. You can work with it, but you have to be really careful. (Interview 8, item 33)

Creation: Inductive

1.3 Data Ownership Company Perspective

Definition: This code was assigned when themes regarding the ownership of data from a company perspective were discussed.

Anchor Example: /

Creation: Deductive

1.3.1 User owned

Definition: This code was assigned when ownership themes of data from a company perspective were discussed. More specifically when the user was mentioned by the company as having ownership rights over his or her data

Anchor Example: Data belongs to the private individual. We just note their data. For us the user is the owner. (Interview 13, item 72)

Creation: Inductive

1.3.2 Company owned

Definition: This code was assigned when ownership themes of data from a company perspective were discussed. More specifically when the company named itself as an owner with ownership rights over the users data.

Anchor Example: According to data protection, purely from the rules of data protection - I own the data. If the user discloses it to me, I store it on my technical infrastructure. Then the data belongs to the company, and no longer to the user. (Interview 14, item 81)

Creation: Inductive

1.4 Data Value (economic)

Definition: This code was assigned when economic aspects of data from a company perspective were discussed.

Anchor Example: /

Creation: Deductive

1.4.1 No Value

Definition: This code was assigned when economic aspects of data from a company perspective were discussed. More specifically when from companies' perspective data had no monetary or economic value.

Anchor Example: For me personally, I can't access it anyway, so the monetary aspect is not there. (Interview 4, item 80)

Creation: Inductive

1.4.2 Definitive Value

Definition: This code was assigned when economic aspects of data from company perspective were discussed. More specifically when from companies' perspective data had definitive and specific monetary or economic value.

Anchor Example: They definitely have a monetary value to us. But it's not like we're selling or buying. But rather through data we earn revenue and profit. (Interview 13, item 84)

Creation: Inductive

1.4.3 Conditionally

Definition: This code was assigned when economic aspects of data from a company perspective were discussed. More specifically when from companies' perspective data had a conditional or indirect monetary or economic value, when data could be used to gain a monetary value.

Anchor Example: Indirectly, because the data gives more profit optimization. So it's kind of without it, we cannot reach that level (Interview 1, item 93)

Creation: Inductive

2 Privat User Perspective

Definition: This code was assigned when topics regarding the potential of data from the user's perspective were asked about and discussed in the interview.

Anchor Example: /

Creation: Deductive

2.1 Data Potential (general)

Definition: This code was assigned when themes regarding the potential of data from user perspective were discussed.

Anchor Example: /

Creation: Deductive

2.1.1 Sensitive

Definition: This code was assigned when topics regarding the potential of data from user perspective were discussed. More specifically, when it was mentioned that users place a high value on their data and are sensitive to the topic.

Anchor Example: The data is of course also crucial for the end user (Interview 3, item 25)
Creation: Deductive

2.1.1.1 Property

Definition: This code was assigned when topics regarding the potential of data from user perspective were discussed. More specifically, when it was mentioned that users place a high value on their data and are sensitive to the topic. This code was assigned, when users were thought to claim ownership over their data and see it as their own property.

Anchor Example: As property from the individuals. (Interview 9, item 21)

Creation: Inductive

2.1.1.2 Monetary

Definition: This code was assigned when topics regarding the potential of data from user perspective were discussed. More specifically, when it was mentioned that users place a high value on their data and are sensitive to the topic. This code was assigned, when users were thought to place a monetary value on their data.

Anchor Example: Increasingly monetarily valuable. (Interview 15, item 38)

Creation: Inductive

2.1.2 Indifferent

Definition: This code was assigned when topics regarding the potential of data from user perspective were discussed. More specifically, when it was mentioned that users do not place a value on their data, but rather are indifferent towards their data.

Anchor Example:

Completely indifferent. That's what we've learned from 15 years of professional experience. They don't care. (Interview 14, item 28)

Creation: Deductive

2.2 Data Protection (legal)

Definition: This code was assigned when themes regarding the legal aspects of data from user perspective were discussed.

Anchor Example: /

Creation: Deductive

2.2.1 Positive Aspects

Definition: This code was assigned when positive aspects of the legal aspect of data from user perspective were discussed.

Anchor Example: /

Creation: Deductive

2.2.1.1 Security

Definition: This code was assigned when positive aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that data protection gives the user a sense of security and privacy.

Anchor Example: Yes, that the user simply feels secure. (Interview 8, item 53)

Creation: Inductive

2.2.1.2 Self Determination

Definition: This code was assigned when positive aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that data protection gives users a sense of self determination and autonomy in regard to their data handling.

Anchor Example: it's about self-determination somehow. It's about who we want to be in how we define ourselves (Interview 6, item 61)

Creation: Inductive

2.2.2 Negative Aspects

Definition: This code was assigned when negative aspects of the legal aspect of data from user perspective were discussed.

Anchor Example: /

Creation: Deductive

2.2.2.1 Not Understanding

Definition: This code was assigned when negative aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that users do not understand data protection as a whole, and their user rights, or do not understand the process according to data protection, or are not willing to understand.

Anchor Example: Not all customers necessarily understand that either. So even the customer says this can't be true, I've done everything with you, you have to be able to give me the number, not the other way around. But the issue of data security and data protection is not up to me here as an agency partner but to our franchisors. (Interview 4, item 14)

Creation: Inductive

2.2.2.2 Data Security Insufficient

Definition: This code was assigned when negative aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that users feel that even after the implementation of data protection laws the level of security is still insufficient.

Anchor Example: And I still feel like my data is not 100% protected. (Interview 13, item 56)

Creation: Inductiv

2.2.2.3 Do not care

Definition: This code was assigned when negative aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that users simply do not care about their data being protected.

Anchor Example: So I would almost say 99%, I'm not exaggerating now, 99% don't care at all. (Interview 11, item 49)

Creation: Inductive

2.2.2.4 Nuisance

Definition: This code was assigned when negative aspects of the legal aspect of data from user perspective were discussed. More specifically when it was mentioned that users primarily see the data protection laws and the subsequent changes more as a nuisance that hinders them, an annoyance or an obstacle.

Anchor Example: I have to re-enter all of my data, every time I revisit a website. This is just inconvenient. Also there are cookies I have to accept all the time. And I still feel like my data is not 100% protected. (Interview 13, item 56)

Creation: Inductive

2.3 Data Ownership User Perspective

Definition: This code was assigned when ownership themes of data from users perspective were discussed.

Anchor Example: /

Creation: Deductive

2.3.1 Indifferent

Definition: This code was assigned when ownership themes of data from users perspective were discussed. More specifically when it was mentioned that users are indifferent and do not care about ownership over their data.

Anchor Example: I think the end user, the normal general end user doesn't give it that much thought (Interview 3, item 65)

Creation: Inductive

2.3.2 User owned

Definition: This code was assigned when ownership themes of data from users perspective were discussed. More specifically when it was mentioned that users see themselves as the owner over their data, instead of the company.

Anchor Example:

I think that he sees himself much more as the owner of the data. Because of course we just know information about him, while the user actually is what is represented in our database. (Interview 13, item 80)

Creation: Inductive

2.3.3 Extraneously owned

Definition: This code was assigned when ownership themes of data from users perspective were discussed. More specifically when it was mentioned that users see other parties as owners over their data, as they relinquished their rights to ownership.

Anchor Example:

There's a big difference in how someone sees their data as belonging to them or not. I would say the ratio of restaurant operators who see the data as valuable and belonging to them to restaurant operators who don't see it as relevant is about ten to ninety. So ninety percent of the restaurant operators see it as that's just the way it is. So that's not my individual data, but that's not something that I'm aware of or would have any copyright on. (Interview 10, item 34)

Creation: Inductive

2.4 Data Value (economic)

Definition: This code was assigned when economic aspects of data from user perspective were discussed.

Anchor Example: /

Creation: Deductive

2.4.1 Indirect Economic Value

Definition: This code was assigned when economic aspects of data from user perspective were discussed. More specifically when it was mentioned that data has an indirect value to the users. This can be a discount when exchanging personal data or a convenience factor.

Anchor Example: I think today is a convenience thing. I think a lot of People don't see how we could benefit from monetarily giving out our data, like basically platforms do. But I think they implanted this idea in our society that we have free access to the service because we are giving out our data. (Interview 6, item 114)

Creation: Inductive

2.4.2 Economic Value

Definition: This code was assigned when economic aspects of data from user perspective were discussed. More specifically when it was mentioned that data has a direct economic value to the user.

Anchor Example: I think the monetary aspect is becoming more and more interesting. There are now solutions that reward users directly with money for their data. So beyond paid responses to surveys. (Interview 15, item 99)

Creation: Inductive

2.4.3 No-Value

Definition: This code was assigned when economic aspects of data from user perspective were discussed. More specifically when it was mentioned that data sees no value in their data, or it is mandatory or required to exchange their data, either by company policy, legal framework or to ensure the operability and service of the company.

Anchor Example: In the hospital, he has to give out at least part of his data, otherwise we can not treat him. (Interview 11, item 81)

Creation: Inductive

Appendix R: Code Frequencies

	Frequency	Percent	Percent (valid)
Benefits of Data Protection	0	0,00	0,00
Change in Organizational Structure: New IT	9	60,00	60,00
Change in Process: Accessibility/ Roles & Rights	7	46,67	46,67
Changes in Legal Structure: Consent	10	66,67	66,67
Company Perspective	0	0,00	0,00
Company owned	5	33,33	33,33
Conditionally	3	20,00	20,00
Costs	10	66,67	66,67
Creation of Trust	9	60,00	60,00
Damaging	5	33,33	33,33
Data Ownership Company Perspective	0	0,00	0,00
Data Ownership User Perspective	0	0,00	0,00
Data Potential (general)	0	0,00	0,00
Data Potential (general)	0	0,00	0,00
Data Protection (legal)	0	0,00	0,00
Data Protection (legal)	0	0,00	0,00
Data Security Insufficient	3	20,00	20,00
Data Value (economic)	0	0,00	0,00
Data Value (economic)	0	0,00	0,00
Definitive Value	12	80,00	80,00
Do not care	6	40,00	40,00
Downsides of Data Protection	0	0,00	0,00
Economic Value	5	33,33	33,33
Essential	10	66,67	66,67
Extraneously owned	2	13,33	13,33
Indifferent	4	26,67	26,67
Indifferent	8	53,33	53,33

Indirect Economic Value	10	66,67	66,67
Legal Compliance	8	53,33	53,33
Legal Fees & Costs	8	53,33	53,33
Limited Importance	1	6,67	6,67
Monetary	3	20,00	20,00
Negative Aspects	0	0,00	0,00
No Value	1	6,67	6,67
No-Value	4	26,67	26,67
Not Understanding	5	33,33	33,33
Nuisance	11	73,33	73,33
Positive Aspects	0	0,00	0,00
Private User Perspective	0	0,00	0,00
Property	6	40,00	40,00
Protection Corporate Espionage (external)	10	66,67	66,67
Protection Employees & Customers (internal)	8	53,33	53,33
Security	14	93,33	93,33
Self Determination	2	13,33	13,33
Sensitive	12	80,00	80,00
Source of Revenue and added Value	10	66,67	66,67
Supporting Function	12	80,00	80,00
Uncertain Legal Environment/Framework	9	60,00	60,00
User owned	13	86,67	86,67
User owned	11	73,33	73,33
DOCUMENTS with code(s)	15	100,00	100,00
DOCUMENTS without code(s)	0	0,00	-
ANALYZED DOCUMENTS	15	100,00	-

Appendix S: Word Cloud



VIII Statutory Declaration

I declare that I have authored this thesis independently, that I have not used other than the declared sources/resources, and that I have explicitly marked all material that has been quoted either literally or by content from the used sources.

30. September 2022

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Date

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Signature