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Exposé der Dissertation

Vorläufiger Titel:

Facilitating the Access to Data Silos – a Tightrope Balancing Act for Legislators

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1. Problem Description

1.1. Data as the Lifeblood of the Digital Economy

Since the advent of the digitalisation, an unprecedented amount of data is being created and with the emerge of new technologies, like IoT-products, and with the increased connectivity of economy and society, this trend will even be accelerated. The European Commission estimates that the amount of data produced worldwide by 2025 will be five times as much as in 2018, namely 175 Zettabytes with one Zettabyte being a billion Terabytes.[1] At the same time, markets are also becoming more and more data-driven. Huge datasets are necessary for machine learning used by AI-applications and in traditionally less data-intensive sectors, like agriculture, a need for accurate and reliable data is developing.[2] Having access to data determines economic success in the Digital Economy, as data is a crucial resource to develop innovative services and products, reduce costs and improve efficiency.[3] Predictive maintenance based on a digital twin, for example, will allow the owner of a physical product to predict failures of a machine. This knowledge allows timely repair, which saves costs and resources. Due to its economic importance data is also labelled "the lifeblood of the digital economy" in the Commission's recently published data strategy.[4]

While the importance of having access to large and diverse data sets is undisputed, businesses are still reluctant to share their data with each other.[5] According to the European Commission, the majority of data holders are keeping their data in-house and do not subcontract it to other entities for further re-use.[6] This is the case despite the fact that the intangible non-rivalrous nature of data would theoretically allow unlimited sharing and re-use across different sectors for different purposes without exhausting the resource. The re-use of data in a different context and merging it with other datasets can not only lead to new opportunities and innovation, but also increases the value of data because unlike oil, data has no value itself, but it depends on the data's point of use. Keeping data in isolated silos, on the other hand, creates inefficiencies because data holders are not necessarily best equipped to extract value of the data they hold.[7] The engine data of connected vehicles, for example, can be

[1] COM(2020) 66 final of 19 February 2020.
[2] OECD, *Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-Use across Societies* (OECD 2019); SWD(2017) 2 final of 10 January 2017, 28.
[3] COM(2017) 9 final of 10 January 2017.
[4] COM(2020) 66 final of 19 February 2020 1.
[5] OECD (n 6) 17.
[6] COM(2017)9 Final of 10 January 2017 (n 4) 9.
[7] Martina Barbero and others, 'Study on Emerging Issues of Data Ownership, Interoperability, (Re-)Usability and Access to Data, and Liability: Final Report' (Deloitte 2018).

used by the manufacturer to offer predictive maintenance services, but at the same time insurance companies might be interested in data that provides insights in the driving behaviour and a navigation service provider would need access to location data in order to provide real-time traffic updates. Accessing different data silos and linking the datasets is often a precondition for offering a certain service. Real-time traffic updates could not be provided only on the basis of the location data of all vehicles produced by BMW, for example.[8]

The accumulation of large data sets in the silos of only a handful of market players may also distort competition. One example of the competitive advantage large data holders can have over SMEs is that of online marketplaces like Amazon. The e-commerce platform, operated by Amazon Marketplace, offers individual traders a reach that goes far beyond that of their own website. However, the integration also means that the platform collects all the transaction data; at the same time, traders only have limited possibilities to analyse the relevant data. Moreover, Amazon does not only operate the platform but – under Amazon Retail – also acts as a trader itself and competes with other merchants. In the competition with independent traders, Amazon Retail has access to all the data collected by Amazon Marketplace, which gives them important insights. These insights can be used to analyse offers of competing traders or the behaviour and preferences of (potential) customers on the platform.[9] Based on the detailed information collected by Amazon Marketplace like the time customers looked at a product, or which items ended up in the shopping cart but were never purchased, successful products and the price customers are willing to pay can be identified and Amazon Retail is able to offer these profitable products itself.[10] Due to a lack of viable alternatives, traders accept the adverse terms of platforms, such as the limited control over valuable transaction data. By relying on direct distribution only, traders would reach a much smaller customer group and creating their own platforms is most of the time no options either, as the capital costs for creating a platform are very high. The competitive disadvantages for independent traders could be mitigated by prohibiting Amazon to exploit transaction data in the current form. This approach would pre-empt the creation of a large data silo in the hand of one market participant and thus also lessen the competitive

[8] Josef Drexl, 'Designing Competitive Markets for Industrial Data – Between Propertisation and Access' (2017) 8 JIPITEC 257.
[9] Vera Demary and Christian Rusche, 'Data Sharing im E-Commerce: Rechtliche und ökonomische Grundlagen' (Institut der deutschen Wirtschaft 2019).
[10] Lina M Khan, 'The Seperation of Platforms and Commerce' (2019) 119 Columbia Law Review 973.

distortions. Another and perhaps more libertarian approach would be to even the playing field by allowing traders to access at least some the platform's data.[11]

Competitive imbalances, due to limited access to data, are not limited to e-commerce platforms, but may also arise in the context of smart manufacturing, smart agriculture, smart energy and smart health. In all these cases, either several stakeholders contribute to the production of data and/or have an interest in accessing the produced datasets for their purposes. If one of the parties in the value chain has *de facto* control over the generated data, they are in a stronger bargaining position vis-à-vis the other stakeholders. The increased barging power can be used to either charge high fees for the access or denying access at all. In smart agriculture, for example, farmers have an interest in accessing the data collected by the sensors of the machines in order to improve the production process. At the same time, the manufacturer of the machine wants to use the data to further improve their product. In addition, third-party service providers, that offer an analysis of the combined datasets from all the machinery used on a farm, would require access to the data of all the smart agriculture equipment. Manufacturers that have *de facto* control over the collected data could use their position to offer analytic services themselves and by denying access, squeeze out third-party service providers. This would force farmers to buy all products from one manufacturer because otherwise, an analysis that combines the data of all the machines deployed on the farm would not be possible.[12] In the context of connected vehicles, even more stakeholders with different interests, like insurance companies, repair shops, component suppliers, are interested in accessing the data created by the vehicle.

The increasing success of Internet intermediaries in industrial sectors provides another example for the competitive advantages of controlling large data sets. In the production of smart goods, access to large and reliable datasets is a key resource in order to ensure and improve the functioning of a product. Furthermore, the data collected on the Internet sector also provides insights into consumer behaviour, which allows efficient targeting of potential customers. Hence, it is no surprise that Google's affiliate company Waymo, with its access to very detailed geographical data, seems to have the competitive edge on the market of driverless cars over traditional companies in the automotive

[11] Demary and Rusche (n 12) 38.

[12] Wolfgang Kerber, 'Rights on Data: The EU Communication "Building a European Data Economy" from an Economic Perspective' in Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Trading Data in the Digital Economy: Legal Concepts and Tools: Münster Colloquia on EU Law and the Digital Economy III* (1st edn, Nomos 2017) 127–128; Josef Drexl, 'Neue Regeln für die Europäische Datenwirtschaft? (Part 1)' [2017] NZKart 339, 342.

sector. Expanding to the industrial sector also allows internet intermediaries to utilise the data produced by the smart good, increasing the datasets in their control, which in turn leads to even more market power and enables them to enter additional markets.[13]

Although b2b data sharing can create efficiencies, foster competition, and facilitate innovation, there are also various reasons why companies are hesitant to allow access to their data. The business model of e-commerce platforms, for example, relies to significant part on the exclusive access to large datasets. Sharing data would reduce expected revenues and may render it more difficult to find the necessary investments to build these platforms in the first place.[14] Unless there are strong incentives like a high remuneration, even data without any current use for the company is hardly shared. Companies fear to lose their competitive edge by unknowingly sharing data that will become valuable in the future. When it comes to allowing downstream players in the same value chain to access the collected data, these concerns are even intensified, as the competitive threat is more imminent. Established banks, for example, have very limited incentives to share data, beyond what is legally required, with FinTech start-ups that offer innovative payment services. Another explanation, why businesses are reluctant to allow access to their data, is that when sharing personal data, companies need to do so in accordance with data protection law; otherwise, they are exposed to liability and fines. Moreover, customers might mistrust companies if they feel that their personal data is not safe and can be accessed by various other companies. In order to evade possible violations of data protection law and losing the trust of their customers, companies might choose not to share data at all.[15] Furthermore, companies also fear that they lose control over their datasets if they are reused by other market-participants. Finally, since traditional concepts of trade law are not applicable to data, there is currently no clear legal framework for data transactions in place.[16] Especially smaller market participants might be reluctant to enter into an agreement because, without default rules, the transaction costs for them would be very high. Moreover, default rules could serve as a benchmark for a balanced solution in contractual negotiations.

[13] Drexl (n 11) [35–36].
[14] Demary and Rusche (n 9) 39.
[15] Barbero and others (n 7) 79.
[16] Christiane Wendehorst, 'The ALI-ELI Pinciples for a Data-Economy' in Alberto De Franceschi and others (eds), *Digital Revolution - New Challenges for Law: Data Protection, Artificial Intelligence, Smart Products, Blockchain Technology and Virtual Currencies* (Beck; Nomos 2019) [1]; COM(2020) 66 final of 19 February 2020.

The outlined examples allow the conclusion that, due to the aggregation of large datasets in the hand of a few market players and the resulting unequal bargaining power of the different stakeholders, market-based solutions alone do not necessarily lead to fair and innovation-friendly outcomes.[17] Based on these considerations, discussions both on an academic and policy have arisen, whether and how legal interventions could facilitate the sharing of data and thus break up data silos. The European Commission's proposed goal in that regard is quite clear: "Companies (especially SMEs and start-ups) that do not wish to or cannot generate all the data they need for their products or services should be able to obtain data like any other (physical) resource. At the same time, such data trading allows companies to monetise certain data they hold (e.g. anonymised data), opening additional sources of revenue."[18] Possible solutions, however, require careful balancing between various interest.

Firstly, the problems of limited access to and unfair allocation of data do not arise in the same form or extent across all sectors of the digital economy and also depend on a company's market power and its position in the value chain. A small farmer using an agricultural machine, whose efforts contributed to the creation of the datasets held by the producer of the machine, is in a completely different position than a large data analytics company form a different sector.[19] Furthermore, legislative solutions also need to balance the legitimate interests of data producers to receive a fair return on their investment. Otherwise, companies would be discouraged to invest in the creation of data in the first place, which would run counter to the idea that data is a necessary resource for innovation in the digital economy. Moreover, enhanced data access cannot be at the expense of the protection of IPR and trade secrets.[20] Therefore, when discussing solutions to facilitate the access to data, one has to take into account the economic circumstances of the sector in question, the diverging interests of the stakeholders involved, as well as their power to assert their interests on the market. The required balancing act is aggravated by the fact that the exchange in the data economy is not limited to non-personal data but also includes personal data.[21] This is especially true for data transactions on the soil of the European Union, as the GDPR[22] uses a rather broad definition of personal data.[23] Hence, instruments that facilitate data access also need to respect the data subject's fundamental right to informational self-determination, which

[17] COM(2017)9 final of 10 January 2017, 10.
[18] SWD(2017) 2 final of 10 January 2017, 12.
[19] Barbero and others (n 7) 53.
[20] COM(2017)9 final of 10 January 2017, 11.
[21] ibid 9.
[22] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ 2016 L 119/1.
[23] ibid Art 4(1).

is in tension with the economical use of data.[24] This renders consumers, whose private data is concerned, relevant stakeholders in b2b data transactions.

Against the background of the different situations in various sectors, the heterogeneous stakeholders involved, and their diverging interests, a one-size-fits-all solution does not seem feasible. This conclusion, however, is not contractionary to a horizontal and consistent legislative framework that promotes b2b exchange and re-use of data on a European level. Such an overarching framework does currently not exist in the *acquis*. Besides sector-specific data access regimes, competition law and the GDPR's right to data-portability – although coming from two different angles – can provide a basis for breaking up data silos. The existing instruments vary in scope and are based on different concepts and rationales. On the one hand, this leads to overlaps and spill-overs, on the other hand, it leaves gaps, for example, where non-personal data in sectors without an access regime is concerned.[25] Before describing the existing legal instruments, some delineations of the research scope shall be made.

1.2. Delineations

The previously outlined discussion only focused on the sharing of data between businesses (b2b), but of course, also the exchange of data between the public and the private entities can bring benefits for actors in both sectors. Public sector data can be shared with businesses (g2b), and privately held data can be made available to government authorities (b2g). In all three variations, the underlying idea is that sharing datasets between different actors increases their value and puts society as a whole better off.[26] However, the considerations, the questions that arise, and the instruments that are in place differ. Sharing and re-using public data has been a major policy issue for almost two decades[27] and is based on the rationale that public sector data has been created by society and should therefore be available for the common good.[28] Whilst some research looks at ways to enhance the free flow of data between all actors,[29] the aspired Thesis seeks to address the problem that the aggregation of large datasets in the hand of a few private actors may have adverse effects for consumers and other players on the market. Thus, the research will focus on b2b data sharing and not address issues related to the

[24] *Gutachten Der Datenethikkommission* (2019), 136.
[25] Inge Graef, Martin Husovec and Jasper van den Boom, 'Spill-Overs in Data Governance: The Relationship Between the GDPR's Right to Data Portability and EU Sector-Specific Data Access Regimes' [2020] EUCML 3.
[26] see COM(2020) 66 final of 19 February 2020, 8.
[27] see SWD(2018) 145 final of 25 April 2018, 4.
[28] COM(2020) 66 final of 19 February 2020, 6.
[29] E.g. 'Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-Use across Societies' (n 2).

exchange of data between the public and private sectors. However, where considerations for sharing data between public and private sector provide inspiration for the b2b exchange of data, these shall, of course, be taken into account.

The interoperability of data is a policy issue closely connected to the discussion of data sharing. Porting data from one holder to another one and merging datasets from various sectors, presupposes the technical features that allow a seamless exchange of data between different actors and different technical systems. Introducing a legal framework that enhances the exchange of data without ensuring the interoperability of the exchanged data would be ineffective and not achieve the aspired objective. Insufficient interoperability can be addressed by standardisations or shared protocols for gathering and processing data, either by means of voluntary schemes or by regulatory provisions.[30] Despite the close practical connection between the discussions of data sharing and interoperability, the legal questions that arise belong to different fields of law. While technical standards mandated by public authorities fall within the realm of public law, the legal instruments discussed in the aspired Thesis are, to the most part, private law. Moreover, the questions that arise in regard to developing an interoperability framework are, to a large extent, very technical. For these reasons, data interoperability issues are not included in the scope of the research.

2. Existing Legal Framework

The problem of data-silos and the reluctance of market players to share their data has been discussed on a European level for the past several years. Initially, the policy discussions, which originated from an academic debate on whether to introduce an ownership right for data, focused on the access and sharing of non-personal data only.[31] After a public consultation, the Commission refrained from introducing a horizontal, i.e. non-sector-specific, framework for sharing non-personal data and issued guidelines for b2b data sharing. However, the combination of the GDPR's broad definition of personal data and improved data analysis techniques, which allows linking of seemingly unrelated data to natural persons, blurs the distinction between personal and non-personal data. Hence, it was questioned whether it is even aspirational to introduce a horizontal data access regime for non-

[30] COM(2020) 66 final of 19 February 2020, 8.
[31] COM(2017) 9 final of 10 January 2017, 11.

personal data only.[32] Against this backdrop, the Commission – in its recently published Data Strategy – does not limit possible horizontal actions to the exchange of non-personal data anymore.[33]

The existing legal framework on an EU level is rather piecemeal and consists of several instruments with different scopes and objectives that apply next to each other and partly overlap. For personal data, the European legislator introduced the GDPR, which primarily aims at protecting the individual's personal data, but also at ensuring the free flow of data between Member States. With the data subject's right to data portability (Art 20 GDPR), the GDPR provides a tool that can facilitate the re-use and exchange of personal data across all sectors. In certain sectors like banking, energy, and automotive, specific data access instruments have been put in place; some are limited to non-personal data while others cover personal data as well. Finally, where data silos lead to competitive imbalances, competition law rules can – under certain circumstances – also provide a basis for accessing datasets of (dominant) market players. The following section shall give an overview of these regimes.

2.1. Competition Law

As outlined above, the aggregation of large datasets in the hands of a single market player can lead to competitive imbalances. Hence, competition law, which prohibits the abuse of a dominant position, seems like an obvious response to address the issue that large data holders deny access to their data. Indeed, the essential facility doctrine (EFD), which originated from Art 102 AUEV, is discussed as a possible solution for cases of denied access to data. The EFD is designed to addresses cases where a dominant market player refuses to grant access, without objective justification, to a resource that is essential for a downstream market and thereby eliminates effective competition. As the name suggests, the test was originally developed for cases of denied access to physical facilities, such as ports. Later, the notion was expanded to cases where access to information was denied based on IP-rights. In *Magill*,[34] TV stations refused to grant a copyright license of their TV listings and thereby impeded a publisher to offer comprehensive programme guides to consumers. The *Microsoft* case[35] concerned interoperability information, which was indispensable for producing programs that are compatible with Windows. In these IP-rights cases, information was considered to be an essential

[32] OECD (n 2) 26.
[33] COM(2020) 66 final of 19 February 2020, 13.
[34] Case C-241/91 P (Joined Cases C-241/91 P, C-242/91 P) *RTE and ITP v Commission* [1995] ECLI:EU:C:1995:98.
[35] Case T-201/04 *Microsoft v Commission [*2007] ECLI:EU:T:2007:289.

facility for entering a downstream market and the refusal of the information holders to grant access to information to be abusive.

With data often being digitalised information, the EFD seems to be also very fitting for cases of denied access to data. So far, however, there have been no cases where a dominant company was ordered to share their data on the basis of the EFD. Furthermore, a closer look reveals that its application may be more challenging and limited than expected. Applying the requirements of the "exceptional circumstances" test for compulsory licensing, which were developed in the above-mentioned cases, to situations of denied access to data creates various issues.[36] However, since the EFD originated from case-law, the requirements could be adapted to situations where companies refuse to grant access to their data and, as some authors argue, there are good reasons for applying it more flexible than in cases of physical infrastructure or IP-rights.[37] Competition law as an enabler for accessing data is also criticised for being too slow to address urging competitive concerns since investigations can last for several years. Hence, it is argued that competition law needs to be accompanied by a sound data access framework.[38]

It also needs to be pointed out that competition law is not only an enabler of data sharing but can also set limits to the exchange of data among companies. Sharing commercially sensitive data can be considered an anti-competitive exchange of information that constitutes collusion and thus may fall under 101 TFEU. Furthermore, pooling agreements between competitors, on the basis of which data is shared, can potentially concentrate large amounts of data in the hands of only a few market participants. Hence, pooling agreements do not necessarily benefit consumers and enable effective market entry, but may also put other market participants at a competitive disadvantage.[39] Similar reasoning also applies to mergers of companies, which would lead to a combination of large datasets and put the company in a position to impede effective competition. In order to defuse adverse competitive effects, the merger could either be blocked at all or it could be ordered to keep the

[36] Drexl (n 8), [133].
[37] Heike Schweitzer and others, 'Modernisierung der Missbrauchsaufsicht für marktmächtige Unternehmen' (2018) Projekt im Auftrag des Bundesministeriums für Wirtschaft und Energie (BMWi) 66/17, 139; Inge Graef, Thomas Tombal and Alexandre de Streel, 'Limits and Enablers of Data Sharing. An Analytical Framework for EU Competition, Data Protection and Consumer Law' [2019] SSRN Electronic Journal <https://www.ssrn.com/abstract=3494212> accessed 20 April 2020, 17.
[38] Mathew Heim and Igor Nikolic, 'A FRAND Regime for Dominant Digital Platforms' (2019) 10 JIPITEC 38, [25].
[39] Graef, Tombal and de Streel (n 28), 7–8.

datasets of the merging companies separate.[40] However, the complete opposite remedy, namely mandatory sharing of data with competitors, is also a possible solution in these merger cases.[41]

Research of the aspired Thesis will focus on the potentials, challenges and limits of European competition law for opening up data silos. Recent developments in this field, such as the Commission's investigation into possible anti-competitive conducts by Amazon[42], will be monitored, and results will be included in the legal analysis. In addition, the Thesis seeks to analyse adaptations of national competition law to the digital economy and its effects on data sharing. In this context, especially the developments in German competition law are highly relevant. Already the 9th amendment of German competition law introduced adaptions to address challenges of the digital economy. With the proposed 10th amendment, further steps are envisaged. For example, the requirement that a dependent company has to be small or medium-sized is abolished because especially in platform to business relationships (p2b) also larger firms may be dependent on a platform.[43]

2.2. Data Portability

The GDPR is not only aimed at the protection of personal data of individuals, a fundamental right protected by the Charter of Fundamental Rights[44], but also at ensuring the free flow of personal data in the digital single market. While, the GDPR's requirements and principles, such as purpose limitation or data minimisation, certainly set limits to the sharing of data between companies, the right to data portability (RtDP), which is laid down in Art 20, is directed at facilitating the re-use of data.[45] Art 20 gives the data subject the right to retrieve the personal data they have provided in a machine-readable format and to transmit the data to another controller. The RtDP, on the one hand, strengthens the informational self-determination of individuals, as it allows them to switch between suppliers, which in turn also facilitates competition. On the other hand, it gives the receiving company access to datasets they might otherwise not have.[46] That the RtDP facilitates the flow of data between

[40] ibid 10.
[41] Nils-Peter Schepp and Achim Wambach, 'On Big Data and Its Relevance for Market Power Assessment' (2016) 7 Journal of European Competition Law & Practice 120, 123.
[42] 'Antitrust: EC Opens Formal Investigation against Amazon' (*Press Release European Commission*) <https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291> accessed 24 April 2020.
[43] Schweitzer and others (n 28), 56.
[44] Art 8 Charter of Fundamental Rights of the European Union, OJ 2012 C 326/391.
[45] Rec 4 GDPR.
[46] *Gutachten Der Datenethikkommission* (n 23), 136.

companies is also underlined by the fact that exercising the right does not require the initial data holder to erase the data.[47]

Due to the fact that the GDPR applies horizontally and is not limited to certain sectors of economy, the RtDP has a rather broad scope of application. Furthermore, while competition law enhances the exchange of data only if access to data mitigates competitive risks, data subjects have a general right to request the transmission of personal data to another data holder, irrespective of any purpose.[48] However, the RtDP also has its limits, and its exact scope is still debated in legal literature. First, the RtDP can only be invoked for processing, which was carried out by automatic means and was based on the individual's consent or necessary for the performance of the contract.[49] In addition, data can only be requested if it was "provided" by the data subject. Despite the guidelines issued by the Data Protection Working Party,[50] which are not legally binding but have authoritative status, it is still discussed in literature what exactly is to be considered "provided" data.[51] Moreover, data subjects can only invoke the transmission of their data to another controller if it is technically feasible. A notable exception, which will also need to be examined in the Thesis, is that the exercise of the RtDP shall not adversely affect the rights of third parties.[52] In particular copyright law, trade secrets and database rights could limit the exercise of the RtDP.[53] It is also discussed whether the RtDP facilitates only one-off data sharing[54] or also a continuous supply of data,[55] which is often required for complementary services.

As shown in the paragraph above, the exact scope of the RtPD still raises several questions and will thus be a key aspect in the aspired Thesis. Furthermore, the Thesis will discuss RtDP role in empowering individuals, its potentials and limits, as well as its relation to other regimes that facilitate the exchange of data. Research will also focus on intermediaries and their role of mitigating the risk,

[47] Working Party 29, Guidelines on the right to data portability, WP 242 rev.01, 13 April 2017, 7.
[48] Inge Graef, Martin Husovec and Nadezhda Purtova, 'Data Portability and Data Control: Lessons for an Emerging Concept in EU Law' (2018) 19 German Law Journal 1359, 1363.
[49] Art 20(1) GDPR.
[50] Working Party 29, Guidelines on the right to data portability, WP 242 rev.01, 13 April 2017.
[51] See Graef, Tombal and de Streel (n 37); Ruth Janal, 'Data Portability - A Tale of Two Concepts' (2017) 8 JIPITEC 59, [7–10].
[52] Art 20(4) GDPR.
[53] Graef, Husovec and Purtova (n 48) 1363.
[54] Graef, Husovec and van den Boom (n 25) 12.
[55] Heike Schweitzer, 'Datenzugang in der Datenökonomie: Eckpfeiler einer neuen Informationsordnung' [2019] GRUR 569, 576.

that the RtDP might play in the hands of bigger undertakings with market power.[56] The legal analysis will also take into account considerations to adapt or expand the RtDP, for example, to industrial, i.e. non-personal, data.[57]

2.3. Sector Specific Regimes

Competition law and the GDPR's data portability right have in common that both apply across all sectors of economy. While currently no horizontal data access regime exists on a European level, there are several sector-specific regimes in place. The analysis of sector-specific access rights is of particular importance for the Thesis, as they can serve as inspiration for more overarching solutions. Although the existing instruments have some common trades, a closer look reveals much more differences than one might expect. In the following the Payment Services Directive 2,[58] the Type Approval Regulation[59] and the Digital Content Directive[60] shall be briefly outlined, as examples for sector-specific access regimes. While the former two are examples of access rights that directly facilitate the exchange between businesses, the latter shows more similarities to the data portability right.

For the banking sector, the Payment Services Directive 2 (PSD2) allows third-party providers to access the account information of customers in order to provide payment initiation or account information services.[61] An example of such a payment initiation service provider is the German Company "Sofort Überweisung", which provides a software that facilitates transactions between online traders and their customers. The term 'account information services' covers software that gives a user-friendly overview of several different bank accounts.[62] This so-called 'access-to-account' rule needs to be seen in light of the PSD2's internal market objective, which is to promote competition and innovation in the payment

[56] 'Gutachten Der Datenethikkommission' (n 24) 136.
[57] Drexl, 'Designing Competitive Markets for Industrial Data – Between Propertisation and Access' (n 8) [157].
[58] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC, OJ 2015 L 337/35.
[59] Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC, OJ 2018 L 151/1.
[60] Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services, OJ 2019 L 136/1.
[61] Art 66 and 67 PSD2.
[62] 'PSD2 - Third Party Payment Service Providers: What Effect Does PSD2 Have on Services Such as Sofort, IDeal and Trustly? | Payment Services Law Blog | GÖRG' <https://payment-law.eu/psd2-third-party-payment-service-providers-what-effect-does-psd2-have-on-services-such-as-sofort-ideal-and-trustly> accessed 30 April 2020.

sector.[63] The access right is limited to financial information which is necessary for the performance of the payment service and is depended on the payer's consent. In practice, however, it will often not be the payers themselves who invoke the access-to-account rule, but the service provider after the payer has given consent.[64]

It has been a long-standing issue in the automotive sector that independent repair service providers and spare part producers are dependent on access to technical information, held by the car manufactures. Due to the profitability of the aftermarket services, car manufactures have tried to forestall effective competition by denying access to brand-specific technical information in order to promote authorised dealers and repairers. [65] The recently revised Type Approval Regulation, obliges car manufactures to grant independent service providers access to the necessary technical information in a non-discriminatory way for fees that are reasonable and proportionate.[66] This so-called FRAND (fair, reasonable, and non-discriminatory) based access right is of particular importance for the intended research, as it is discussed as a blueprint for other access regimes.[67] Despite the Type Approval Regulation, denied access to in-vehicle data is still an issue for players on related markets. For example, the increased connectivity of vehicles offers manufactures new opportunities to exclude independent service providers form offering certain services, like remote repair.[68] Moreover, the possibility of car manufacturers to monitor and analyse the access requests by independent providers gives them important information on their competitors in the downstream market, which can lead to competitive advantages similar to those of e-commerce platforms like Amazon (see above).[69] Access requests to in-vehicle data for purposes other than maintenance and repair (e.g. by navigation service providers or insurance companies) are not covered by the Regulation. The Thesis will describe the outlined access problems in the automotive sector in more detail and will also explore whether and how the GDPR's RtDP could facilitate the exchange of personal data between the different actors in theses multi-stakeholder situations.

[63] Rec 33 PSD2.
[64] Graef, Husovec and van den Boom (n 25) 5.
[65] Wolfgang Kerber and Daniel Gill, 'Access to Data in Connected Cars and the Recent Reform of the Motor Vehicle Type Approval Regulation' (2019) 10 JIPITEC 244, [5].
[66] Art 61(1) Type Approval Regulation.
[67] COM(2020) 66 final of 19 February 2020, 13.
[68] see Kerber and Gill (n 65) [22].
[69] ibid [24].

The recently adopted Digital Content Directive (DCD) lays down common rules between traders and consumer for contracts for the supply of digital content and services. Art 16(4) allows consumers, upon termination of a digital sales contract, to retrieve any content, other than personal data, that was either provided or created by the consumers when using the digital content or service. This data retrieval right has a different thrust than the access rights discussed in the previous two paragraphs because it does not directly facilitate the exchange of data between different businesses but primarily empowers the individual consumer. The characteristics of the data retrieval right show similarities to the GDPR's RtDP and the two regimes even complement each other, as the latter is only applicable to personal data while the data retrieval right explicitly excludes personal data from its scope.[70] However, other than the RtDP, the data retrieval right does not entitle the consumer to directly transfer the data to another controller.[71] Another difference is that exercising the retrieval right obliges the trader in principle to refrain from using the digital content. It can also be discussed whether the role of Art 16(4) in facilitating the exchange of data is currently overestimated in legal literature. After all, the DCD is an instrument that regulates the contractual relationship between buyer and seller of digital content and Art 16 lays down the obligations of the trader in the event of termination. Therefore, it can be argued that Art 16(4) merely is a provision of unjust enrichment, which does not aim at enhancing the free flow of data.

3. Possible Adaptations of EU Law

Currently, the denied access to data, and its adverse effects are tackled from three different angles. On the one side of the spectrum is competition law, on the basis of which access to datasets of large companies that have a dominant position on the market could be granted, in case the denial of sharing the data would constitute an abuse of that position. On the other side of the spectrum is the GDPR's right to data portability, which empowers consumers to transfer their personal data from one data holder to another one. Businesses are the indirect beneficiaries, as exercising the RtDP might give them access to datasets that they would otherwise not have. The sector-specific access regimes fall somewhere between competition law and the GDPR's RtDP: while the DCD's data retrieval right has similarities to the RtDP, other instruments are based on rationales that are closely connected to those of competition law, e.g. the access right based on FRAND principles in the Type Approval Regulation.

[70] DCD Art 16(4).
[71] Graef, Husovec and van den Boom (n 25) 9.

Many of the possible solutions that are discussed in legal literature build on existing regimes and aim to improve the functioning of these instruments and/or to extend their scope. In EU competition law it is discussed how existing doctrines could address cases of denied access to data and some Member States are considering adaptations to their competition law rules (see 2.1). Regarding the right to data portability, it is considered to expand its scope to non-personal data and intermediaries could be used to further strengthen the data subject and to improve the efficiency of the RtDP (see 2.2). Another important aspect for competition law is the market definition in the digital economy since the application of competition law requires market dominance of the data holder.[72] Also, the discussion around introducing FRAND based access regimes[73] draws inspiration from competition law cases and the Type Approval Regulation.[74]

However, possible solutions to facilitate the exchange of data and break up data silos are not limited to competition law and the right to data portability but could also be based on contract law. The unfairness control of standard terms could address situations where companies agree to unfavourable terms due to the data holder's strong barging position. Currently, in EU law, the judicial control of standard terms is limited to b2c relationships. However, the underlying rationale that economically stronger parties can (ab)use their position to impose unfavourable terms on parties with a lack of bargaining power or use standard terms to such an extent that it would be too time-consuming and economically unreasonable to review the terms, regularly applies to b2b contracts as well.[75]

Expanding the control of standard terms to b2b data contracts might seem like an easy to implement policy option. However, applying the established unfairness test to data clauses raises considerable difficulties: to determine whether a term is unfair, courts use default rules as a benchmark (so-called "*Leitbildfunktion*"[76] of default rules); a significant deviation from the legislator's conception of how the parties' interests should be balanced is a strong indication that the term is unfair.[77] Since there are no default rules for b2b data transactions, there is also no benchmark for assessing the terms used in

[72] see Schweitzer and others (n 37) 30–32.
[73] see COM(2020) 66 final of 19 February 2020, 13.
[74] see Rolf Weber, 'Improvement of Data Economy through Compulsory Licences?' in Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Trading Data in the Digital Economy: Legal Concepts and Tools: Münster Colloquia on EU Law and the Digital Economy III* (Nomos; Hart Publishing 2017) 156.
[75] Josef Drexl, 'Neue Regeln für die Europäische Datenwirtschaft? (Part 2)' [2017] NZKart 415, 419.
[76] Horst Eidenmüller and others, 'Towards a Revision of the Consumer Acquis' (2011) 48 Common Market Law Review 1077, 109.
[77] Case C-415/11 *Mohamed Aziz v Caixa d'Estalvis de Catalunya, Tarragona i Manresa (Catalunyacaixa)* [2013] ECLI:EU:C:2013:164 [68–69].

these agreements.[78] To address this issue, the American and European Law Institutes (ALI-ELI) are developing Principles, which provide general aspects that should be considered when determining whether to grant access to data. Courts could resort to these Principles when applying the unfairness test to standard terms in data trading contracts.[79] Developing default rules for data transaction would also lead to more legal certainty and reduce transactions costs if the rules reflect risk allocations for which the parties otherwise would have bargained.[80] The ALI-ELI's so-called "Principles for a Data Economy – Data Rights and Transactions" are of significant importance for developing such default rules as they seek to establish a common understanding of data transactions and the respective rights of the parties. As the Principles have a very close connection to the Thesis' research scope, they will be thoroughly discussed, and future output is closely observed.

In their Principles for a Data Economy, the members of the ALI-ELI have also given thought to the situation that several actors have contributed to the creation of data but there are no contractual links between the different parties involved. A possible solution for these situations could be the concept of 'rights in co-generated data', which has been developed and coined by the ALI-ELI and which has already been picked up by the German Data Ethics Commission[81] and the European Commission.[82] A right to data should, according to the Principles, be recognised if actors contributed to the creation of data, regardless of their contractual relationship, provided that their contribution was not insignificant. Although the notion of rights in co-generated data fulfils a similar function as the notion of ownership for traditional resources, the two concepts need to be distinguished. The owner of a traditional resource has the right to exclude anyone with a lesser right from using the resource. In contrast, the right to data set out in the Principles gives contributors only non-exclusive rights to access and port co-generated data. This seems appropriate due to data non-rivalrous nature and the fact that overall welfare is usually increased if data is used by more actors. From today's point of view the concept of 'rights in co-generated data' seems to be a promising approach in order to achieve an overarching framework for data access and to tackle to problem of data silos. It will be interesting to see whether

[78] Friedrich Graf von Westphalen, 'Contracts with Big Data: The End of the Traditional Contract Concept?' in Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Trading Data in the Digital Economy: Legal Concepts and Tools: Münster Colloquia on EU Law and the Digital Economy III* (Nomos; Hart Publishing 2017) 249.
[79] Wendehorst (n 16) [38].
[80] Louisa Specht and Wolfgang Kerber, 'Datenrechte – Eine Rechts- und Sozialwissenschaftliche Analyse im Vergleich Deutschland - USA' (ABIDA - ASSESSING BIG DATA 2018) 79 <https://www.abida.de/sites/default/files/ABIDA_Gutachten_Datenrechte.pdf> accessed 24 April 2020.
[81] 'Gutachten Der Datenethikkommission' (n 24) 82.
[82] COM(2020) 66 final of 19 February 2020, 9.

the European legislators are going to pick up this concept and if so, how a right in co-generated data is going to be implemented for constellations where there is no contract between the parties involved.[83] As the Principles have a very close connection to the Thesis' research scope, they will be thoroughly discussed, and future output is closely observed.

This is only a very brief overview of the possible solutions that could enhance b2b data sharing. An in-depth analysis and comparison of the different ways to address the problem of data silos is at the heart of the Thesis's research. The analysis shall in particular include the benefits and disadvantages of each solution, the difficulties in implementing them, and their relationship to each other as well as possible spill-over effects. Moreover, situations in which the solutions could be applied shall be identified. The unfair terms control, for example, presupposes that the parties are in a contractual relationship or are at least willing to conclude an agreement for trading data.

4. Preliminary Research Questions & Methodology

The previous sections describe the problem of data being held in silos and outline existing measures that aim at facilitating b2b data sharing as well as possible solutions to further enhance the exchange of data. It is also pointed out that introducing a data access framework is a profoundly difficult task, as various diverging interests are involved and the situations, where denied access to data is seen as a problem, differ quite significantly. In the following section, the research scope and the preliminary research questions of the Doctoral Thesis shall be defined before describing the methodology of the Thesis.

4.1. Research Questions and Scope

It has been outlined that the sharing of data is of pivotal importance in the digital economy. Despite the benefits, B2B data sharing instruments in the European Union are still in their infancy. Accessing data silos and facilitating the free flow of data between business has been the proposed objective of the European Commission for several years now. Achieving this goal, however, has proven to be a difficult balancing act for private law; the interests of various stakeholders to access data are opposed

[83] John Thomas and Christiane Wendehorst, 'Response to the Public Consultation on "A European Strategy for Data" COM(2020) 66 Final' (2020) <https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Projects/Data_Economy/ELI_Response_European_Strategy_for_Data.pdf> accessed 2 June 2020.

to data holders' interests to receive a fair return on their investments and to keep their competitive edge. Moreover, when personal data is involved, the interests of the natural person who the data concerns, also need to be taken into account.

So far, no coherent legal framework has been developed on a European level, but there are several instruments in place that facilitate the exchange of data between businesses, some of which are horizontal, while others are limited to certain sectors. First, the Thesis seeks to establish the current status of EU Law. This means identifying the legal instruments that provide a basis for accessing data silos and discussing their scopes, functioning and relation to each other. In a next step, the research will focus on possible adaptions of EU law that could further enhance access to data. To achieve this, the research will primarily focus on legal literature but also draw inspiration from national laws. It will be assessed whether the possible solutions are targeted at sector-specific problems or can be applied horizontally. Moreover, the Thesis will look at the rationales of these instruments and their relationship to other regimes. By examining position papers of interest groups that represent the various stakeholders involved, the Thesis also aims to give considerations to whether proposed solutions seem politically feasible. The main research question that the Thesis aims to address can be outlined as follows:

- How can private law facilitate access to data silos and enhance the exchange of data between businesses?

To arrive at an answer, a number of sub-questions are put forward:

- What problems does denied access to data entail? In which constellations does the denied access to data have adverse effects on other businesses and consumers? What are the interests of the different stakeholders involved?
- What instruments are in place to mitigate the adverse effects of data silos? What are the benefits and problems in the application of these regimes? What is the relationship between the various instruments?
- What are the possibilities *de lege ferenda* to facilitate b2b data exchange? Which advantages and disadvantages do these solutions have? Which situations of denied access can be addressed by the proposed instruments?

As indicated in previous sections, the research will be conducted in the field of European Law. However, since only certain areas of law are harmonised by the EU and the rest is left to the laws of the Member States, there are instances where the full picture can only be obtained by recourse to national law. In these cases, both the Austrian and German legal systems shall be considered in combination with European Law. Preference is given to these two jurisdictions because of the author's educational and language background.

The preliminary outline of the Thesis and the research questions are subject to one important caveat. Since in its data strategy communication, the Commission announced that it will examine the need for legislative action that supports b2b data sharing,[84] the Thesis aims at a somewhat moving target. Although the original time plan to put forward a proposal by 2021 might be thrown off by the current Covid19-Ciris, it needs to be anticipated that a legislative instrument will be proposed by the Commission (and possibly even adopted by the European legislators) during writing of this Doctoral Thesis. Therefore, the developments on an EU level will be closely monitored and any legislative text proposed by the Commission shall be analysed in this Thesis. Of particular interest will be which instrument(s) the Commission chooses to peruse, what the concrete modalities are and how possible new regimes relate to already existing ones. The adoption of a legislative proposal would shift the focus of the research somewhat away from the possible solutions discussed in literature and more towards the text of the proposal and its implications.

4.2. Methodology

According to the customs of legal research, predominantly hermeneutic methods will be used to answer the research questions outlined above. However, to a certain extent, the methodology of the Thesis can also be characterised as normative. The first part of the Thesis, which aims at establishing the current legal framework for accessing data silos, follows traditional hermeneutic methods. As a first step, normative sources, in particular legislative acts by the EU, and authoritative sources, such as CJEU decisions and academic papers, are collected. These constitute the main objects of the research. Then, the texts are subjected to interpretation in order to find out how and under what conditions the different instruments can enhance access to data silos. For example, by means of interpretation, it needs to be established what kind of data Art 20 GDPR covers, when it refers to "data […], which [the data subject] has provided to a controller". As texts often allow various reasonable interpretations,

[84] COM(2020) 66 final of 19 February 2020 13.

which might diverge quite significantly, legal arguments are necessary to sustain a certain interpretation. This approach, of linking hermeneutic and argumentative methods, has long a long-standing tradition in legal doctrine.[85]

The second part of the Thesis, which will look at instruments *de lege ferenda*, will also use hermeneutic methods. However, since the focus is on legal regimes that might be adopted in the future, authoritative sources, such as academic writing or the ALI-ELI Principles, will constitute the basis of the research. First, the relevant contributions by legal scholars shall by complied to give an overview of the different solutions discussed in legal literature. The different arguments will be structured and, where they are contradictory, they shall be juxtaposed. By following this approach, the Thesis aims at giving a holistic view of the functioning and limits of each instrument. However, the methodology also shows normative elements, as the Thesis attempts to consider which instruments are desirable for a European framework that facilitates access to data. Following a normative approach entails the risk of subjectivity, which of course would dilute the scientific nature of the work. To counter this, normative statements shall only be made on the basis of an analysis of economic studies, legal writing and position papers of industry stakeholders.

5. Preliminary Structure

1. Introduction
2. Data and the Data Economy
    2.1. What is Data?
    2.2. The Importance of Data for the Digital Economy
    2.3. Data Silos
    2.4. Co-Generated Data
    2.5. Blurred Lines between Personal and Non-Personal Data
3. Data Ownership and the Origins of the Data Access Discussion
    3.1. No Ownership or Ownership-Like Rights to Data
    3.2. From Data Ownership to Data Access
4. Existing Instruments to Facilitate the Exchange of Data
    4.1. Competition Law

[85] Mark van Hoecke, 'Which Kind of Method for What Kind of Discipline?' in Mark van Hoecke (ed), *Methodologies of Legal Research : Which Kind of Method for What Kind of Discipline?* (Hart Publishing 2011).

6. Preliminary Timetable

• **SS 2020**	Definition of the Research Topic Writing the Exposé Presentation of the Research Topic Collection of Literature and Research
• **WS 2020/21 – WS 2021/22**	Writing of the Dissertation
• **SS 2022**	Revision of Content and Form
• **WS 2022/23**	Submission of the Dissertation & *Defensio*

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