Driven by digital innovations

Regulating connected car data access and use, for Telematics Insurance in Europe

FREYJA VAN DEN BOOM

A thesis submitted in partial fulfilment of the requirements of
Bournemouth University for the degree of

Doctor of Philosophy

Department of Humanities and Law, CIPPM
Faculty of Media and Communication
Bournemouth University

September 2021

ABSTRACT

Driven by digital innovations
Regulating In-vehicle data access and use, for Telematics Insurance in Europe

The topic of this research is whether the European Union (EU) legal and regulatory framework is fit for purpose in relation to the take-up of telematics insurance. As an example of use-based insurance, telematics insurance is made possible by continuing advancements in data analytics and sensor technologies as well as the shift in the automotive industry towards the development of a business ecosystem around the connected car and value proposition that user-generated car data brings.

With a focus on balancing the different interests of the stakeholders involved for competition, privacy, and innovation; the position taken in the thesis is that there is an urgent need for regulatory action to respond to the legal challenges but not that there needs to be a complete redesign of the regulatory framework.

The analysis of the key EU regulations – namely, the Insurance Distribution Directive; The Database and Trade Secrets Directive; the Treaty on the Functioning of the European Union; and the General Data Protection Regulation – indicates that, although the current legal framework has the elements in place to help facilitate telematics innovations based on connected car data, several improvements are urgently needed.

First, there needs to be more clarity about the scope of the relevant rights and responsibilities for the principal stakeholders (consumers, insurers, and car manufacturers) especially with respect to the data and information sharing duties they have towards each other.

Second, the overall coherence of the regulatory environment needs attention by clarifying for stakeholders how to comply in the case of conflicting requirements that stem from the different regulations that apply.

Third, responding to concerns about market domination, the regulation of competition and enforcement thereof must be improved to address the potentially disruptive effects of the shift towards business ecosystems and non-traditional market players.

Finally, due to the limited scope of this research and the ongoing developments taking place, the thesis calls for further research to gain more insight into how to regulate in a way that facilitates innovation while ensuring this is beneficial in terms of consumer welfare.

TABLE OF CONTENTS

FIGURES AND TABLES

ACKNOWLEDGEMENTS

Already in make-belief, my big brother, Pepijn,
foreseeing the challenges and (monetization) opportunities ahead

To my first and second team of supervisors. Firstly Julie Robson and Sally Weston for taking a chance both with me and taking an interdisciplinary approach with all the challenges this brings. I am forever grateful for their understanding and trust to give me the freedom to explore both in theory and practice these exciting challenges we face in ensuring we can have a world worth living in and enjoying these fascinating artificial intelligence innovations. Secondly Dinusha Mendis for her willingness to step in when she was needed and last but not least to Roger Brownsword. Who not only pulled me over the finish line but has become an inspirational mentor to me with his knowledge, curiousness and clarity showing me that things are possible even when you are running on empty.

I have met so many amazing people (Melanie, Arno, Tijmen, Stefan, etc) I hope you all know how much you have contributed and I do hope that you feel it was worth your time sharing your knowledge, experience and most importantly laughter and silly walks with me. I am so very grateful our roads have crossed in the ways and times they did and will continue to do in the future!

And of course my (chosen) family, Especially Ine, Pep, Carlos, Ed and Mark for you having to put up with what may have been one of the most challenging roads I've taken so far, but that's what you love about me.

With sadness and loving memories, I dedicate this to Bomma, Guido and Bompa.

AUTHOR'S DECLARATION

Some of the content of this thesis has been previously published or derived from the follow publications:

Publications

- Van den Boom, F (2022) Regulating *Telematics insurance* in Bellantuono G, De Bellis M, Van den Boom F, (Eds) Comparative Legal Perspectives on New Mobility Paradigms, European Business Law Review (Forthcoming)
- Van den Boom, F (2021) 'The connected car ecosystem: regulating for data-driven innovations', Book chapter in R. Brownsword and M. Borgi (eds) *Law, Regulation and Governance in the Information Society: Informational Rights and Informational Wrongs*, Routledge (Forthcoming)
- Van den Boom, F (2020 a) 'Vehicle data controls – balancing interests under The Trade Secrets Directive', Int. J. Technology Policy and Law, Vol 3 Nr 3
- Van den Boom, F (2020 b) "Regulating Telematics Insurance" Book Chapter 12, in P Marano and K Noussia (eds): Insurance Distribution Directive, AIDA Europe on Insurance Law and regulation, Vol. 3

Conference presentations/posters/papers [selection]

- RDA Plenary 18/19 Co-chair IG on Privacy and research data
- MYDATA Conference 2020: Panel MyData Principles in IoT
- CPDP Computers, Privacy and Data Protection conference
- • 2021 Panel Rethinking 'openness' in the context of artificial intelligence
- • 2019 Panel on Insurance, algorithmic decision-making, and discrimination
- Creative Commons Virtual Conference:
- 2021
- 2020 Presentation Performance on (copy)Rights for AI
- 8th AIDA EUROPE CONFERENCE:
- Personal data and Consumer Insurance: a freedom to share or duty to disclose?
- 8th International Conference on Information Law (ICIL):
- Vehicle data controls: Balancing interests under The Trade Secrets Directive and the GDPR.
- Istanbul 2018 Privacy conference:
- Trade secret protection for vehicle data
- APC 2018 Amsterdam privacy conference:
- Fair and equal access to vehicle data
- European Policy for Intellectual Property (EPIP) conference, Berlin:
- Trade secrets: driving forces or roadblocks for access to vehicle data
- Insurance marketing conference 2018, Bournemouth:
- Personal data and Consumer Insurance: a freedom to share or duty to disclose?
- Royal Society London Conference (2017) on Ethics and AI:
- Algorithms behind the wheel: Poster presentation
- Tilt-ing conference, The Netherlands
- 2021 Panel on Insurance, Discrimination and AI
- 2017 Presentation on 'Data ownership'.

Working paper presentations and feedback sessions:

as a visiting Scholar at

- Humboldt-University, Faculty of Law, Berlin, Germany
- Melbourne University, Melbourne School of Engineering, Melbourne, Australia
- European University Institute, Faculty of Law, Florence, Italy
- Free (VU) University, Law Faculty, Dep. Transnational Legal Studies, Amsterdam, The Netherlands

as a research Fellow with

- The Weizenbaum Institute, Berlin, Germany on *Technological, Legal, and Ethical Layers of Mobility Data.*
- ITforChange, Delhi, India on *Unskewing the data value chain*

as a member of the Dutch Association of Insurers, Working Group on Big Data

CHAPTER 1: INTRODUCTION

Previous research shows there is a potential disconnect between digital innovations and the regulation thereof to ensure these are and remain beneficial for all stakeholders involved.[1] A good example, and the topic of this research, is the development of telematics insurance (also known as black box insurance, pay as you drive, or usage based insurance) which is made requisite by continuing advancements in data analytics and sensor technologies as well as the shift in the automotive industry towards developing business ecosystems around the connected car and the data that is being generated.[2]

Based on the understanding that telematics insurance will become beneficial for society in terms of improving insurability and contributing to road safety, the current situation where the take-up in the European Union remains low justifies looking at why this is.[3] This PhD research presents the insights gained from a primarily doctrinal research analysis, on the role of key laws and regulations of the EU acquis Communautaire – the legal framework – relevant to answer the main research question:

Is the current EU legal framework fit for purpose to facilitate the take-up of telematics insurance in Europe in a way that is beneficial in terms of consumer welfare?

This chapter introduces the topic and consists of six parts. Part *1.1 From horsepower to data-driven cars* illustrates how cars are digital devices generating consumer data as a valuable resource for innovations. Part *1.2 Telematics and the Law: Roadblocks or full speed ahead?* looks under the bonnet at what the value proposition is that connected car data creates. Part *1.3 The Legal Challenge: Unlocking data driven innovation* presents *the* challenge for regulation to fully unlock the benefits of the car data value chain. *1.4 Research Questions* presents the focus of this research. *1.5 Research methodology, scope and limitations* describes the choice for, and combined research approach of, complementing the doctrinal literature study with qualitative interviews. It further describes what was included in the analysis, and the contribution to knowledge from the insights gained. *1.6 Introducing the next chapters* guides the reader through the next chapters.

1.1 From horsepower to data-driven cars

Ongoing innovation in the automotive industry fuelled by digital technology has made it possible for modern cars to become increasingly automated, running on a combination of hardware and software. Although we are not able to take our hands off the steering wheel just yet, most of the cars on the road today have become connected cars improving their safety, security, and overall convenience for

[1] Underlying many of the discussions is the premise that law needs to be updated to regulate digital technologies. Leenes, R (2019) '*Regulating New Technologies in Times of Change'*, in Reins, L. (ed) (2019), *Regulating New Technologies in Uncertain Times*, Information Technology and Law Series 32.

[2] See further Directive 2010/40/EC (ITS Directive) which aims to ensure the compatibility, interoperability, and continuity of Intelligent Transport Systems throughout the European Union; European Commission (2020) *Ethics of Connected and Automated Cars: recommendations on road safety, privacy, fairness, explainability and responsibility*. Publication Office of the European Union: Luxembourg.

[3] Tselentis, D. et al., *'Innovative insurance schemes: Pay as/how you drive'* Transportation Research Procedia, 14 :362– 371. See research by McKinsey who identified more than 30 examples including predictive maintenance, over-the-air software add-ons and usage-based insurance. McKinsey (2016a) *Monetizing car data New service business opportunities to create new customer benefits,* Advanced Industries Report p 7.

consumers. The value proposition comes in part from the data they generate, which has already been used by car manufacturers to improve the car itself but goes beyond what car manufacturers can use it for: a prominent example is the use of car data for consumer car insurance purposes.

Usage Based Insurance or *Telematics Insurance* is a specific form of insurance where the car data generated by consumers while driving is used by car insurance companies for insurance purposes, including to help improve the accuracy of their risk assessments. Despite the benefits, the take-up of telematics insurance in the EU Member States is low.[4] Existing research into why this is shows that consumers are mostly worried about their privacy, whereas for insurers there are serious technical, economic, and legal challenges to overcome. The focus of this research are the legal challenges.

To contribute to improving the take-up of telematics insurance, what follows is a doctrinal analysis on the regulatory fitness of the current EU legal framework as it applies to the connected car data value proposition. The aim is to contribute with recommendations – based on the insight gained from the sector-specific example of telematics insurance – for the discussion on whether regulatory intervention is needed to re-connect and ensure the take-up is beneficial for all stakeholders involved. Because ensuring data governance to contribute to global welfare is a challenge, not just for the EU but for governments and policymakers worldwide, insights gained here may also be of relevance for the discussion at the international level.[5]

1.2 Telematics and the Law

This part contains three sections: *1.2.1 Under the hood: The Data-driven value proposition. 1.2.2 Processing in-car generated data for telematics insurance: stakeholders' interests and 1.2.3 Approach to regulatory fitness*

1.2.1 Under the hood: The data-driven value proposition

There is a shift in the automotive industry towards a more cooperative business ecosystem model for car manufacturers in response to pressure from consumers to develop increasingly connected and automated cars. Based on the understanding that this is not something that can be done by car manufacturers alone, they must seek collaboration and engagement amongst multiple actors in the service network, including telecommunication providers, customers and additional product and service providers.[6]

The value for consumers from these cars includes being offered additional innovative products and services. Many of these innovations are only possible when the data generated by cars is made

[4] With some exceptions, most notably in the UK and Italy. Mordor (2021) *Insurance Telematics Market,* sample report. Available at https://www.mordorintelligence.com/industry-reports/insurance-telematics-market (Accessed 18 December 2021)

[5] See Syed, N. (2017) *Connected car data: Let the data flow* and *Uncertainty and Risk in the Global Automotive Industry*, Thomson Reuters Blog

[6] McKinsey (2016b) *Automotive Revolution – perspective towards 2030;* Available at https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/disruptive-trends-that-will-transform-the-auto-industry/de-de (Accessed 18 August 2020); McKinsey (2016a); Deloitte (2019) *Monetizing data in the age of connected cars*, Deloitte Insights Available at https://www2.deloitte.com/uk/en/insights/industry/automotive/monetizing-data-connected-vehicles.html (Accessed 18 August 2020)

available. Understanding what this means for regulators, who are called upon to respond to the data access concerns involved, justifies taking a sector-specific research approach.

Data-driven potential for innovation stemming from connected cars includes the following steps subject to regulation:

Generating car data

Modern cars are said to contain more than 100 sensors which create a constant stream of data.[7] According to estimates, the amount of data can be as much as 25 gigabytes per hour and increasingly more as cars become automated.[8] There are different ways to categories the data based for example on how it is being generated through sensors or camera's or by looking at the information it holds about the in-vehicle systems, its surroundings or driving behaviour. Important for the main argument made here is whether data can be accessed by third parties in real time.

Through telecommunications connected cars hold the promise of sharing the data they generate in real time with the car manufacturer who can monitor the functioning of the vehicle and with third parties. It is the real time sharing of data that holds the most innovative potential providing third parties with the opportunity not only to provide but also adjust them based on the use of the car in real time. In addition, it allows new products and services to be developed that rely on having direct contact with the driver. Some examples having access to in-vehicle generated data and systems in real time are for insurers to be able to adjust their premiums in real time to reflect the real time risk assessment; to reduce moral hazard being able to provide the driver with feedback and warnings to for example reduce their speed or take an alternative safer route. Other parties may be interested to give the driver recommendations where to go to get the cheapest fuel when they are running low and/or how to get there the quickest.

Since there is no standard connected car in terms of design, the sensors they contain, and data being generated there is not one definition of telematics data. Gartner provides a broad definition for telematics in the context of automobiles [..] *whereby installed or after-factory boxes collect and transmit data on vehicle use, maintenance requirements or automotive servicing*.[9] For the purpose of this research a working definition is used for Telematics data as *'all the data that is generated through the in-vehicle system';* and access to be adequate when this includes both *historic and real time trip data.*[10]

Focusing on the use of car data for insurance purposes, not all these purposes require for insurers to have access to all the data that is generated. For example, some argue location data is not required for the risk assessment whereas other insurers said their accuracy depends on being able to allocate where

[7] For an overview of advanced driver-assist features enabled by and generating data see Tselentis, et al (2017)

[8] Wright, S. (2021) *Autonomous cars generate more than 300 TB of data per year.* Available at https://www.tuxera.com/blog/autonomous-cars-300-tb-of-data-per-year (Accessed 18 august 2021)

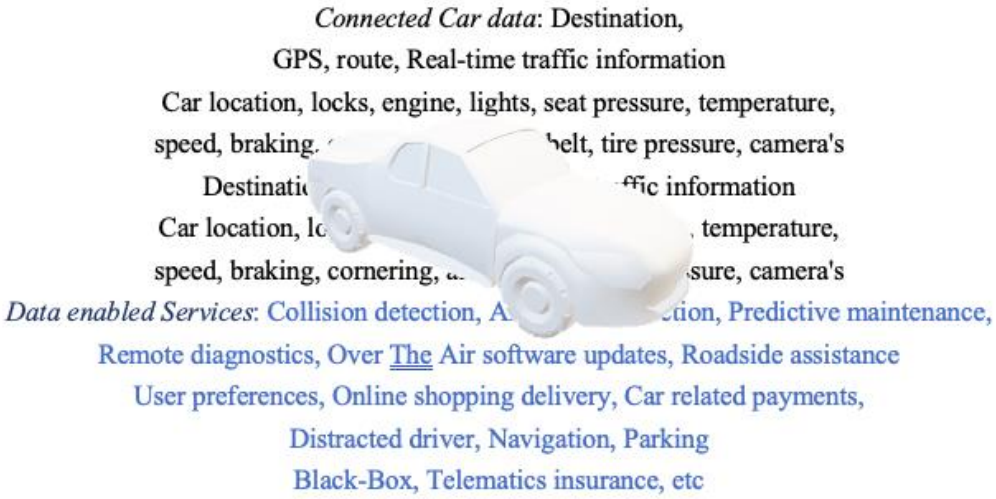
[9] Gartner (no date) *Glossary.* Available at https://www.gartner.com /en/information-technology/glossary/telematics. (Accessed 18 august 2021)

[10] The benefits of having access to historical and real time data means that insurance can be(come) more dynamic. The Institute and Faculty of Actuaries (2017) *Policy Brief Data science in Insurance* V 08.

the car has been driven and to do so in real time.[11] The discussion amongst telematics insurers on whether real time data is needed or if access to historic data is sufficient for a more accurate risk assessment is ongoing. The research presented here will not further elaborate when what data 'should' be used but looks at the regulation that applies to access to and control over both kinds of data.[12]

The following gives a brief overview of different services and data that can be obtained from connected car sensor and communication technology to provide the reader with basic knowledge to understand what is at stake.

Figure I Connected Car and Car Data Value Proposition



Sources: BMW, FIAT, VOLVO, PEUGEOT, AUDI official websites[13]

Digital innovations have helped to improve safety, diagnostics, convenience, and environment monitoring, and is slowly being made available for other parties to facilitate a value proposition

[11] Researchers show that not only the distance travelled by the driver, but also driver habits, significantly influence the expected number of accidents. Ayuso, M et al. (2016) *Improving Automobile Insurance Ratemaking Using Telematics: Incorporating Mileage and Driver Behaviour Data*, Transportation 46, 735–752

[12] For different use cases see the example of insurance company Verisk which provides insurers with near-real time data for insurance purposes: '*The Verisk Data Exchange™ collects and normalizes trip-level telematics data from millions of consenting drivers [..] Verisk provides insurers with historical driving behavior data to enable the delivery of an accurate, personalized driving discount at point of quote in seconds[..]the insurer is able to calculate the driver's personalized safe driving discount in near-real time during the quoting process. [..]Insurers can also receive a continuous data feed.*' Verisk (n.d.) *hyundai telematics integration goes live* . Available at: www.verisk.com (Accessed 20 August 2020)

[13] For examples see Datarade (n.d.) *Traffic-data.* Available at: www.datarade.com (Accessed 20 August 2020)

around the connected car.[14] And just as people are becoming used to always being connected and having products and services on demand, they may increasingly require the automotive and insurance industry to provide them with the same.

Accessing car data

The growing number of sensors being placed in the car today generate a wide variety of data that has been obtained and used by car manufacturers for many years.[15]

The discussion so far has focused on three ways in which access to in-car generated data can be provided. Although they are all considered to be within the existing legal framework, several challenges remain with each of these. What is argued for here is, therefore, that enabling connected car data to be sent directly to independent servers *(Third option*), instead of being dependent on the car manufacturer to obtain data, would unlock the full innovative potential of the connected car value proposition. It would enable stakeholders a) to develop and offer consumers innovative products, and b) to enter the market and compete more fairly, because they can obtain access under the same conditions, including having access to all data generated and made available in real time, as the car manufacturer, creating a level playing field.[16] One of the few limitations most parties agree upon is not providing access to critical systems and data which would compromise vehicle safety.

Enabling in-car access as the preferred access model, confirms what the EU study on access to in-car data and resources also considers as being the most optimal option.[17] This includes having access to the communications technology that will enable real time data to be shared directly with third parties and not as is the case at the moment for the data to be sent to the car manufacturers case first. Even if the car manufacturers can guarantee unmonitored access third parties would still incur a latency in receiving the data compared to having the data being sent directly to their own servers.

In its report, the committee discussed the following three technical options to facilitate access to in-car data and resources.[18]

- First, they discussed the in-car interface concept, which is the option of using the OBD interface to access the car whereas the application runs outside of the car
- Second, the use of a data server platform where the data is sent outside of the car to a back end server which can be a) the car manufacturers' back end servers; and/or b) a neutral server shared by a consortium of stakeholders, and/or c) an independent server in the form of a market place providing a layer between the car and service provider where the data comes

---

[14] Mckinsey (2016a) p. 7.

[15] William J Fleming categorises in-car sensors according to their place of deployment in a car: namely powertrain sensors, chassis sensors, and body sensors. See Fleming, W (2008) *'New Automotive Sensors—A Review*' IEEE Sensors Journal, vol. 8, no. 11,1900–1921; Turner, J (2009) *Automotive Sensors.* Momentum Press, New York USA; For an overview of in-car sensors see Abdelhamid, S. et al (2014), '*Vehicle as a Mobile Sensor'* Procedia Computer Science, 34, 286–295.

[16] McCarthy et al. (2017)' *Access to In-Vehicle Data and Resources* report for the European Commission

[17] Working Group 6 (WG6) proposed three *(Data Server Platform; In-car Interface; On-board Application Platform)* technical solutions for access to in-car data and resources. For a discussion about these, see McCarthy et al. (2017).

[18] Notwithstanding the use of after-market service devices may be sufficient for some use cases, the focus here is on facilitating innovations by having direct access to in-car data and resources.

from the car manufacturer's server but is maintained by an independent service provider who facilitates access by the market

- The third and most optimal option is the On-board Application Platform, to allow access to car data and the execution of applications directly inside the car environment[19]

The smartphone alternative

Modern smartphones also include a wide variety of sensors that can record relevant data from which, for example, an insurer can analyse driving behaviour.[20] Via an app, the data can be obtained and sent to the insurer for their risk analysis, in addition, the driver can obtain feedback on how well they drive and how to improve. While for some purposes this could be a suitable alternative for the use of in-car generated data, for the purpose of this research, which is to unlock the full potential for telematics insurers, the smartphone option remains limited and will therefore not be included in the further analysis.

1.2.2 Processing in-car generated data for telematics insurance: stakeholders' interests

The discussion about car manufacturers controlling the accessibility of in-car data and systems revolves around the question of whether their current position not to allow unmonitored access is problematic from the perspective of insurers who require access and consumers who may not be provided with the products and services they need and demand.[21] The research is based on the following understanding that there is an access problem that has led to limited uptake of telematics insurance and that this is something that the legal framework should address. The understanding of whether the legal framework is fit for purpose in terms of facilitating access takes into consideration the different interests of the key stakeholders namely the need for access by telematics insurers; the need to control data by the consumers as opposed to the need for car manufacturers to control who can have access and under what conditions.

The need for access by insurers

Insurance markets including consumer car insurance are facing structural losses due to heavy price competition and rising claims costs. Insurers therefore can benefit from the developments and advances in autonomous car connectivity and safety functions.[22] Adequate access to telematics data holds the potential for insurers to provide consumers with more affordable insurance coverage for a growing number of risks where previously no data was available to do so.[23] Sector-specific challenges insurers face as a result of their lack of information and unpredictability of risk are adverse selection,

[19] WG6 also described three derivatives of the Data Server Platform. See McCarthy et al. (2017) p. 12.

[20] For a comparison see IMS (n.d.) *Mobile Telematics: The Game Changer for Insurance Telematics*. Available at: https://ims.tech/opinion/mobile-telematics-apps-auto-insurance/ (Accessed 20 August 2020)

[21] See for a detailed discussion McCarthy et al. (2017)

[22] IFoA (2017)

[23] Löffler, M.et al. (2016) *Shifting gears: Insurers adjust for connected-car ecosystems*, Digital Mckinsey Referring to '*the ability to process and draw useful conclusions from larger quantities of data, from variable sources, much faster than ever before.'* Available at https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/shifting-gears-insurers-adjust-for-connected-car-ecosystems (Accessed 18 August 2020)

and, to a lesser extent, moral hazard.[24] These are two issues specific for the insurance industry that can be addressed with improving data access.

Consumers can benefit from on-demand products and services. In the case of insurance this could mean that only when the consumer uses their car would they need insurance and when they do not use the car for example while they are on holiday, they could arguable not need to have their car insured.

And when people become even more accustomed to sharing their data in real-time, they could demand their insurer to adjust their premiums in real time to accurately reflect the actual risk in real time. if for example the real time data shows the driver is driving late at night with limited vision due to a fog, this could increase their premium for that portion of their trip whereas driving the next day when the sun is shining, and vision is clear their premium drops again to adjust to the risk score being lower. In response to growing consumer awareness and the regulatory changes, insurers find themselves having to innovate and improve their products and services to address and reflect consumer behaviour.[25]

Which data they need for what purpose

In the EU, insurers are free to decide, if they can provide statistical evidence, what factors and subsequent data they consider relevant to use for their risk assessments. Being able to do so successfully will result in their being able to improve their position to compete and become more profitable in the market.

As shown with the examples [box I] telematic insurers can benefit from using historical and real-time data for various telematics insurance purposes. The key innovative value of the connected car is that the data can be accessed in real time. Having real-time access enables telematics insurers to assess and in theory adjust premiums based on real-time driving. Furthermore, it would provide opportunities for insurers to, and improve communication with, the consumers. Insurers for example will be able to provide consumers with direct feedback on their driving to help them drive safer, to find alternative roads or help them in case the data shows an accident has happened.

Problem: market failure

Insurers may use any information they consider relevant (material) for their analysis of the likelihood of a driver getting into a car accident and the severity thereof.[26] If, however, not enough data is available for them to accurately calculate risk, they are unlikely to be willing to invest in providing or developing innovative insurance products that would contribute to improving consumer welfare.

What became clear from the discussions about access to the car systems and data that is generated needed for car repair, is when car manufacturers can discriminate between an independent insurer and

[24] *Adverse selection* is when consumers have better knowledge and obtain premium coverage that does not adequately reflect their risk. *Moral hazard* refers to the negative change in behavior of people when they have insurance knowing their loss will be covered. See chapter 2 for detailed explanation of these challenges for insurers.

[25] IFoA (2017) p 6

[26] Outside of scope, but insurers are also allowed to use data for the analysis of a person's likelihood to put in a (fraudulent) claim. However, this often leads to debate how far insurers may go.

their preferred partners this will lead to a market failure as telematics insurers cannot enter or compete fairly on the consumer market.[27]

Chapter 2 will subsequently deal with the rights and legal requirements for insurers to request or otherwise obtain access to relevant telematics data which as seen includes real-time data and to use it for the development and providing consumers with telematics insurance. Chapter 3 will present for discussion the analysis that this includes the need for independent insurers to obtain access under the same conditions as car manufacturers have access, to enter and compete fairly on the telematics insurance market.

Given the important role that insurance has in modern society to enable people to take risks, it is even more urgent that the regulation thereof is fit for purpose and can facilitate that, in the best interest of consumers, innovation and fair competition are ensured in the insurance market. This challenge for regulation to ensure a level playing field with respect to telematics insurer's access to data is further analysed in chapter 4

The need for control by car manufacturers

The growing number of sensors being placed in the car today generate a wide variety of data that has been obtained and used by car manufacturers for many years.[28] This has helped to improve safety, diagnostics, convenience, and environment monitoring, and is slowly being made available for other parties to facilitate a value proposition around the connected car.[29]

However, opening the connected car ecosystem would allow different stakeholders not only to provide consumers with complementing but also with competing products and services. [30] This, in combination with the risks for car safety, security and consumer privacy, is why there is still a reluctance amongst the car manufacturers to facilitate access.[31]

What has been known by car manufacturers for years is that both historical and real time telematics data has value beyond its functional use within the car.[32] The knowledge about the value may explain

---

[27] Also necessary is interoperability or 'the ability of a system, product or service to communicate and function with other (technically different) systems, products or services.' See for a detailed analysis Kerber, W. & Schweitzer, H (2017) '*Interoperability in the Digital Economy*'. Journal of Intellectual Property, Information Technology, and E-Commerce Law. 8(39) para 2.

[28] Fleming, W (2008); Turner,J (2009); Abdelhamid et al (2014).

[29] Mckinsey (2016b) p. 7.

[30] Future of Privacy Forum (2017) *Data and the Connected Car – Version 1.0.* Available online *https://fpf.org/* (Accessed 5 June 2020) For more on car sensor technology see Guerrero-Ibáñez, J. et al., (2018) *Sensor Technologies for Intelligent Transportation System*s. Sensors, MDPI AG 18(4): 1212.

[31] Authors consider that *'Long-term competitiveness, however, depends on whether the innovator builds a strong position in specialised complementary assets and can reconfigure them over time in line with changes in the market environment.*' Desyllas, J. and Sako, M (2012) *Profiting from business model innovation: Evidence from pay-as-you-drive auto insurance* Research Policy, volume 42, issue 1 pp 101–116.

[32] Ferreira, J. and Minikel, R (2010) *Measuring per Mile Risk for Pay-As-You-Drive Automobile Insurance* 2 3 TRB Paper 12-20.

why car manufacturers currently do not facilitate unmonitored access to the in-vehicle systems real-time data.

Instead, third parties including insurers who wish to obtain real-time data can only do so in agreement with the car manufacturer and/or consumer installing an aftermarket device in the car which can record and communicate data directly to their servers.

The car manufacturers through a combination of factual, technical, and legal means determine the level of and control over access to the connected car and the value proposition.

- Control *by design*
  Car manufacturers have control over whether and how the data can be accessed. There has been some worry about modern cars no longer having an OBD port, which without an alternative would reduce the opportunity for telematics insurance using a dongle. Another example is the control the car manufacturer has whether and to what extent to facilitate levels of connectivity and telecommunications. Not all cars are designed with the same level of connectivity, and some have no connectivity at all.
- Control *by code*
  Another way how car manufacturers control the data is through encryption. Although it is possible, unless they are legally obliged to do so, much of this data is not made available in an interoperable format. Car manufacturers are free to encrypt their data and/or make their fault codes necessary to understand what the data entails proprietary and keep them confidential.
- Control *by law*
  Most people are not aware that when they buy a car and sign the contract, they also agree to the car manufacturer to control the data. Furthermore, liability is often conditioned making consumers hesitant when it comes to giving access for independent product and service providers. The car manufacturers, through contractual agreements, are therefore mostly in control over who can use car data – a position they can strengthen, albeit limited, by becoming the owner of the database that contains the car data, either via the Sui Generis rights being granted for the database, or by protecting the data itself as a trade secret. Due to the lack of copyright and uncertainty over the scope of protection granted via the Database Directive, it is expected that the use of trade secrets may become increasingly important for car manufacturers to protect their investments and competitive advantage.

The position of control by car manufacturers over who can access the car and data being generated is increasingly contested by other stakeholders within the connected car ecosystem including insurers and consumers. To address the concerns from the key stakeholders involved the legal framework is fit for purpose if it provides for a balanced approach deciding which interest prevails and under what conditions considering the rights and responsibilities of the car manufacturers, the consumers and telematics insurers.

Chapter 4 covers the legal analysis of intellectual property protection and competition law focusing on the question of data accessibility. When protection of the stakeholders' interests is adequate this will also contribute to improving data sharing.[33] What follows from the analysis of the intellectual

[33] On the position of car manufacturers. Available online www.*CarDataFacts.eu* (Accessed 21 may 2020)

property rights framework with respect to the allocation of control over access to in car generated data confirms the consensus *that the existing intellectual property laws do not provide a satisfactory framework for the management of data as such.*[34]

The need for control by consumers

It is said that the main reason, for consumers not to opt for telematics is their concern for privacy. People do not want their driving being constantly monitored by their insurer which is not surprising given the wealth of information that can be derived from having access to a person's location data. Both historic data and the real time monitoring of telematics data especially location data has shown to reveal a lot of private and highly sensitive information about people. Consumers fear that the information insurers can derive from car data may lead to misuse and being charged higher premiums or treated unfairly.

Despite these concerns surveys have shown that consumers are interested in and willing to share (access) to their data when it is in their best interest namely to be able to obtain more affordable insurance and those who consider themselves safe drivers to pay a fairer price based on accurate risk assessments.

When consumers are provided with more control over the data they generate and purposes for which this data is used this is likely to improve the trust in and adoption of telematics insurance. Besides control, being adequately informed and made aware of the data generation and subsequent processing for purposes that go beyond what is needed for the car to function as expected is something found lacking. The lack of transparency and limited control consumers have when it comes to the connected car and data value chain is discussed in Chapter 5

1.2.3 Approach to regulatory fitness

With new use cases continuously being developed, regulators are challenged to make sure these uses and future innovations remain lawful and beneficial without causing unintended harm. However, as many other digital innovations have shown, the legal framework needs to be re-evaluated considering the speed and impact of rapid changes and disruptions of traditional industries taking place, to see if it is still fit for purpose. To enable telematics data to be generated and used in a way that will indeed be beneficial it is important to strike the right balance when it comes to data governance to facilitate innovation while protecting individuals.

For this research to take a sector-specific focus, analysing whether the current regulation is adequate to enable the development and improve the take-up of telematics insurance looking specifically at

[34] De Wolf & Partners (2016) p. 12. On the discussion if new rights for data and producers should be established see Hugenholtz B, (No Date) *Data Property: Unwelcome Guest in the House of IP* Available at https://www.ivir.nl/publications/ (Accessed 20 August 2020) Drexl J (2016) *Designing Competitive Markets for Industrial Data. Between Propertisation and Access,* Max Planck Institute for Innovation & Competition Research Paper No. 16-13; Malgieri G (2017) *'Ownership' of Customer (Big) Data in the European Union: Quasi-Property as Comparative Solution?* Journal of Internet Law, Vol. 20, n.5

telematics data accessibility, is justified, given its contribution to improving consumer welfare and help achieve policy aims of the EU to reduce road deaths to almost zero by 2050 ("Vision Zero").[35]

To help understand and provide insights into the relevant legal framework addressing the key legal challenges, this research takes a sector-specific focus looking at *telematics insurance* in the context of the *connected car ecosystem.*

Telematics Insurance is a good example of the benefits that come from enabling third parties to access the connected car and the telematics data being generated, bringing value to the ecosystem. The choice to focus on telematics insurance is to provide the reader with real-life examples from practice but also to respond to the urgent calls from the insurance industry regarding how they can use car data to better meet the needs and demands of consumers with sufficient safeguards in place to improve the level of consumer trust in the industry.[36]

Disruptive innovations made possible by rapid developments in digital technology have not only impacted regulation and policymaking but also how to think about the environment in which companies operate.[37] Therefore, the research introduces the reader to the concept of *business ecosystems*, which is important to be able to evaluate the regulatory fitness.[38] A business ecosystem is characterised by interdependence and cooperation between its members, something that can be seen when looking at the development of the connected and increasingly autonomous car.[39]

BMW is a good example of creating an ecosystem around its connected cars to provide consumers with additional value. Through its open-source platform, BMW ConnectedDrive, developers can provide BMW drivers with additional products and services such as parking and navigation apps.[40] These cross-organisational collaborations, that can only take place because of the ecosystem, generate a value for consumers which would not have been possible otherwise.[41]

---

[35] Most notably through encouraging safe driving and in addition by enabling emergency assistance and improved car safety through car smart connectivity. See European Commission Communication (2018) *'Europe on the move Sustainable Mobility for Europe: safe, connected and clean'.* COM 293

[36] Examples of Telematics Insurance will be used throughout the research to illustrate and help understand the challenges for regulation that brought by digitisation within the automotive and insurance industry bring.

[37] Parker, G and Van Alstyne, M (2014), *Platform Strategy*, The Palgrave Encyclopedia of Strategic Management; Gawer, A and Cusumano, M. (2013). *Industry Platforms and Ecosystem Innovation*. Journal of Product Innovation Management, 31(3) 417–433.

[38] The term was first introduced by James F. Moore as a new model for businesses that have shifted from being a member of a single industry towards that of an ecosystem in which others cooperate. Moore, J. F. (1993) *Predators and prey: a new ecology of competition*' Harvard Business Review 71(3) pp 75–86.

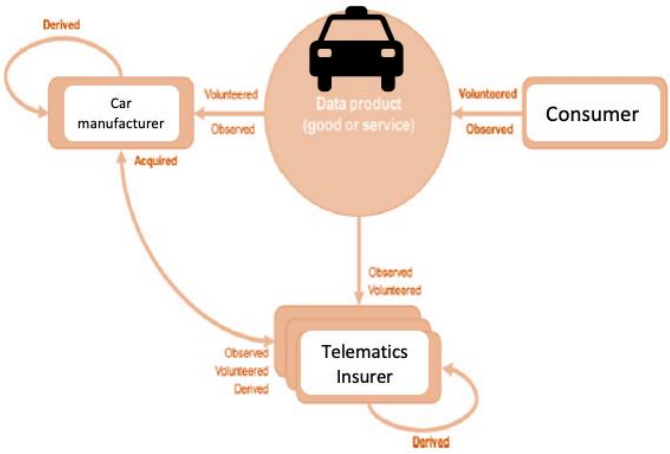
[39] Moore (1993).

[40] BMW has partnered with various telecom and third party services such as T-Mobile and Apple Car Play Available at https://www.bmwusa.com/explore/connecteddrive.html#resources (Accessed 18 august 2020)

[41] Ecosystem members have to coordinate to create a unique value proposition for the consumer, which would not exist without an underlying ecosystem. Kapoor R, (2018) *Ecosystems: broadening the locus of value creation.* Springer, Journal of Organization Design, 7, 12.

The following image shows an overview of the different stakeholders involved in the connected car data flow. In bold is the moment of data creation.

Figure II The connected car as data product and data flows



Adapted from Abrams (2014)[42]

As more and more use cases help to understand the potential of the car data value chain the position of the car manufacturer within the connected car ecosystem has become highly contested.[43]

Understanding the role each stakeholder takes within the connected car ecosystem and value chain, and the power that comes with it, will contribute to a better understanding of whether regulation is effective in these changing markets.[44] For example, to be able to know whether the allocation of responsibilities to comply with privacy regulations is effective, and/or if consumers are effectively empowered with data access rights and consent mechanisms. The next chapter will first provide the reader with the working knowledge necessary to understand the connected car business ecosystem and its influence on the development and take-up of telematics insurance.

The conclusions based on the research presented aim to contribute to the discussion and the European Commission (EC) evaluation of whether a regulatory response is needed to indeed enable fair and equal access to the data connected car drivers generate for telematics insurance and the take-up thereof be improved.[45]

---

[42] Abrams, M.(2014) *The Origins of Personal Data and its Implications*, Available at https://ssrn.com/abstract=2510927 (Accessed 5 august 2021)

[43] Krid, L.(2018) *Access to car data – the new battleground that risks consumer choice* Available at https://www.euractiv.com/section/data-protection/opinion/access-to-car-data-the-new-battleground-that-risks-consumer-choice/ (Accessed 5 June 2020)

[44] Deloitte Insights (2019).

[45] The European Parliament called on the Commission to regulate access to in-car data and resources to be fair, timely and unrestricted to protect consumer rights, promote innovation and ensure fair, non-discriminatory competition; TRAN report, *amendment n°20.*Available at https://www.europarl.europa.eu/doceo/document/TRAN-AM-661964_EN.pdf (Accessed 5 June 2020)

Although some may argue that there may not (yet) be an urgent need for regulators to intervene with respect to telematics insurance, because alternatives such as the use of smartphone apps exist, the interviews do confirm there is growing concern amongst different stakeholders that this may change soon.[46] Therefore, to ensure future relevance of the insights for the discussions on how to govern data from consumers, generated through their use of digital devices, this research looks at what has been proposed as the optimal solution that will unlock the full (future) potential for innovations, and what is required in terms of regulation to strike the right balance for innovations to be beneficial in terms of consumer welfare.[47]

1.3 The Legal Challenge: Unlocking data driven innovation

The question raised here is whether EU regulation is effective in creating the right environment that will allow innovative use of consumer generated data while protecting privacy and ensuring consumer welfare and the interests of car manufacturers in controlling the data.

What became clear from the interviews and many industry discussions is that there are legal challenges because of the development of the connected car ecosystem that may stifle the potential benefits of the telematics data value chain to be shared amongst all stakeholders involved. [48]

As mentioned in the introduction, often when something happens in society that causes harm, a first response is to call upon regulators to take regulatory action. Whereas in the face of uncertainty, a first reaction is to remain precautionary. However, both these responses may not be what is needed.[49] The purpose of this research is therefore to analyse whether the European legal framework is capable to adjust and respond to the challenges digital innovation brings. One of the main concerns is whether the regulatory tools are still capable to lead to the intended outcomes. This in part depends on the willingness of regulators to deal with the challenges before them that may require a novel response and/or interpretation of the scope of the law.[50]

Figure III Overview of key legal issues concerning the connected car data chain

[46] Indicated by interview participants and personal conversations about the impact of digital disruptions in the respective markets.

[47] McCarthy et al. (2017); McKinsey (2016b)

[48] At stake during the discussion on car connectivity was whether the law would hinder emerging technology entering the market. Euractive (2018) *What's driving Europe's strategy on connected cars*? Special report. Available online https://www.euractiv.com/content_providers/euractiv-com/ (Accessed 5 august 2020)

[49] See Baldwin R. and Black J, (2008) *Really responsive regulation*, Modern Law Review, 71 (1) pp 59–94.; Buckley R, et al., (2019) *Building FinTech Ecosystems: Regulatory Sandboxes, Innovation Hubs and Beyond*' Washington University Journal of Law and Policy, Vol. 61

[50] For example, more anticipatory regulation suggested by Armstrong H, et al. (2019) *Renewing Regulation: 'Anticipatory regulation' in an age of disruption,* NESTA p.27; French regulators (2019) *New regulatory mechanisms, data-driven regulation;* World Economic Forum (2018) *Agile Regulation for the Fourth Industrial Revolution A Toolkit for Regulators*, Available online https://www.weforum.org/about/agile-regulation-for-the-fourth-industrial-revolution-a-toolkit-for-regulators (Accessed 5 June 2020) p.16.

1.4 Research Questions

This research aims to evaluate whether in theory and practice the existing legal regime for data is effective to enable safe, lawful, and fair access to telematics data by insurers to improve the take-up of telematics insurance in Europe. The insights and conclusion stemming from the results of the analysis presented here, contribute with knowledge for the discussion on regulating the Internet of Things (IoT) for beneficial innovation with a sector-specific analysis of EU law applied to telematics insurance.[51]

Is the EU legal framework fit for purpose and effective to regulate the beneficial innovative potential of connected cars and the data they generate?

The specific focus is on whether key regulation for telematics data is adequate to regulate both access and use thereof for telematics insurance purposes,[52] where "adequate" is understood as being both effective in means and scope as well as through its understanding and enforcement in practice.[53]

The answers to the following questions will give insights as to whether this is the case, and/or where there is indeed a need for regulatory action or other initiatives to improve the effectivity either in theory or in practice:

- Is the EU regulatory framework *fit for purpose* to address the highlighted challenges, enabling access to telematics car data for telematics insurance purposes?
- Based on the understanding that legal issues remain; what are potential solutions to help overcome the identified legal challenges for these insurance innovations to be beneficial?
- What recommendations including legal reform or alternative solutions, can be made to improve the legal framework and take-up of telematics insurance in Europe in a fair response to stakeholder concerns?

---

[51] The term 'Internet of Things' is attributed to Kevin Ashton. Avast (n.d.) *'How Kevin Ashton Named The Internet of Things.'* <Available online https://blog.avast.com/kevin-ashton-named-the-internet-of-things (accessed 28 May 2020)

[52] Confirming that both over-regulation and under-regulation result in bad market outcomes. See Reillier LC, and Reillier B (eds) (2017) *Platform Strategy*, London: Routledge p 174.

[53] On the ex-post regulatory evaluation see Chapter VI of Commission Staff Working Document (2017) *Better Regulation Guidelines*Available at https://ec.europa.eu/info/sites/default/files/better-regulation-guidelines.pdf (Accessed 10 june 2020)

1.5 Research methodology, scope, and limitations

This part contains 3 sections: *1.5.1 Assessing regulatory fitness: 1.5.2 Participant Interviews; 1.5.3 Scope and Limitations.*

1.5.1 Assessing regulatory fitness.

To provide useful insights for the EU to consider for its evaluation policy to achieve "better regulation" this research considers whether the regulatory framework is fit for purpose for the promotion and application of beneficial technologies. To do so, regulators must create a regulatory environment that is properly geared for risk management and benefit-sharing.[54]

The following key questions have been put forward for regulation to be considered fit for purpose when it comes to facilitating digital innovations:[55]

- Does the law provide adequate protection against the risks?
- Are the aims of the regulation legitimate?
- Is the legal framework fit for purpose in terms of its means, and effectiveness in practice?
- Does the law address the right targets or is there a lack of connection between what it regulates and who is regulated?

This research focuses specifically on the question of whether the current regulatory framework on the use of car data is fit for purpose so as to improve the take-up of telematics insurance in the context of the connected car business ecosystem. More specifically in relation to key regulations that apply: *does the EU regulatory framework facilitate beneficial innovations such as telematics insurance by ensuring access to connected car data is adequate while protecting fair competition and privacy?*

Regulating for the take-up of telematics insurance in Europe the research concerns the question of whether the current legal framework is fit for purpose and effective to balance the different interests involved. Based on the understanding that telematics insurance is important, because it will improve consumer welfare and positively contribute to society, this research is justified in looking at whether the legal framework enables the use of telematics car data based on the understanding that this is necessary for insurers to develop and provide telematics insurance for consumers.[56]

Building upon existing research which has identified there is cause for concern about the role car manufacturers play in this regard, the focus is on the means for the stakeholders to control access to

---

[54] Brownsword, R (2019) *Law, Technology and Society Re-imagining the Regulatory Environment*, Routledge; Ayres I and Braithwaite J (1992) *Responsive Regulation* Oxford: OUP; Baldwin and Black, (2008)

[55] 'If law and technology are to work together to improve the basic conditions of human social existence(...) this presupposes a regulatory environment that supports the development, application and exploitation of technologies that will contribute to such an overarching purpose, an environment properly geared for risk management and benefit sharing.' Brownsword (2019) p 1.

[56] There is no general prohibition in the EU for insurers to use car data as long as they comply with legal requirements.

in-car generated data and resources that will either enable or hinder insurers to obtain the data they consider material to develop telematics insurance and compete in the market.

Besides regulating for adequate access for insurers, regulators are challenged to protect the interests of the other stakeholders. This includes consumer protection against the misuse of their personal data and the protection of companies' incentives to invest and be able to compete fairly.

The interests of insurers, consumers and car manufacturers may overlap and/or contradict, and it is up to regulators to provide a legal framework that can balance between being too restrictive, stifling what otherwise would become beneficial innovations, or not taking enough precautions and protecting the interests of car manufacturers to allow them to profit from their investments and the privacy of consumers. Understanding that stakeholders' interests can also pose a risk that regulators need to take into consideration, the question is whether regulators have taken a sensible position when it comes to enabling access, on the one hand, while still protecting competition and privacy on the other.

1.5.2 Participant Interviews

The doctrinal research has been enriched with and guided by the insights from experts and practitioners to identify the key issues and potential solutions concerning the fitness of regulation to help improve the adoption of telematics insurance in Europe. The main motivation for conducting interviews was to obtain a working knowledge of telematics insurance and the automotive and insurance industry and the connected car and consumer motor car insurance markets as a whole.[57] The interviews further provided the opportunity to obtain in-depth knowledge about the interviewees' respective industries for consideration, especially when it comes to balancing the different interests and market characteristics of the automotive and insurance industry respectively.[58]

Recruitment of Interview Participants

Potential participants were identified in three ways:

- via the researcher's and supervisors' network within the insurance industry, automotive industry and wider academic and practitioners' network
- via an analysis of the relevant literature discussing telematics insurance such as academic and industry reports, blogs and news items referring to companies, interest groups and expert practitioners working in the field
- by attending industry meetings and conferences. This however has been limited due to the Covid-19 pandemic.

The potential participants were invited to participate in the research and asked to suggest others who may be contacted to take part in the research as relevant parties (known as snowballing). Given the lack of initial contacts by the researcher, who is new to the field of telematics insurance in combination with the topic, using snowballing has helped to overcome the lack of trust with potential participants to commit to an interview.

---

[57] Bryman B et al., (2019). *Business research methods.* 5th edition Oxford University Press; Lewis-Beck M et al., (2004). *The SAGE encyclopedia of social science research methods Thousand Oaks,* CA: Sage Publications, Inc

[58] See for more details Appendix A Interview guide.

A database was created to record and classify potential participants (see categories below) to ensure an audit trail and to monitor invites and responses.

Classification of Participants

The main stakeholders within the connected car ecosystem were classified as follows:

- Consumers: Car drivers for the sake of clarity are considered to be the owner
- Insurance: Consumer Car Insurance providers, underwriters and actuaries Insurance analytics companies including those providing driving and fraud scores
- Automotive: (connected) Car manufacturers, Aftermarket service providers, telematics device and analytics companies, Car and Mobility data platforms and marketplaces
- Other relevant parties: Policymakers and (non) governmental organisations; Stakeholder representatives and interest groups (privacy, consumer protection, human rights, unfair competition); academics, consultants etc.

This simple classification system was used to help guide work on the recruitment of participants, and to help ensure a balance of interviews that covered the different classifications.

A total of 31 interviews were conducted. See Table 1 for a profile of the interview participants. Interviews were conducted between November 2019 and September 2021

Table I Interview Participants Profiles

Respondent nr	Sector	Specialism	Location
1	Insurance	Telematics insurance analytics company	EU
2	Insurance	Telematics insurance analytics company	NL
3	Insurance	Telematics insurer (B2C)	NL
4	Insurance	Telematics insurer (B2C)	BE
5	Insurance	Telematics insurer (B2C)	IT
6	Insurance	General insurer (B2C)	UK
7	Insurance	Telematics insurance analytics company	UK
8	Insurance	Fraud analytics company	EU
9	Automotive	Car Data and analytics platform	GLOBAL
10	Automotive	Car Data and analytics platform	EU
11	Automotive	Aftermarket service provider	DE
12	Consumers	Workshop participants	DE
13	Consumers	Workshop participants	UK
14	Government	DG Connect	EU
15	Government	DG Connect	EU
16	Government	Privacy Authority	NL
17	Academic/Expert	Ethics and Insurance	UK
18	Academic/Expert	Ethics and Insurance Law	NL
19	Academic/Expert	Computer Science	DE
20	Academic/Expert	Competition law	DE
21	Automotive	Car Data and analytics platform	EU
22	Academic/Expert	Privacy and Cyber security	NL/BE
23	Academic/Expert	Human Rights Law	IT
24	Government	Financial Ombudsman	NL
25	Government	Amsterdam	NL

26	Insurance	Insurance Europe	EU
27	Consumers	BEUC	EU
28	Automotive	Volvo	GLOBAL
29	Automotive	Tesla	GLOBAL
30	Insurance	Telematics insurer (B2B)	NL
31	Automotive	OEM representative	EU

The Interview format and process

Full ethical approval for conducting the interviews was received from Bournemouth University prior to commencing the interviews.[59]

Potential interviewees were invited to take part in an interview by email. Each interview was conducted by either phone, Skype or in person according to the preference of the interviewee. Each interview was scheduled for around 45 minutes, and on average interviews lasted for 60 minutes or more.

The interview format was that of a qualitative semi-structured interview.[60] This gave the opportunity to modify the pre-defined list of questions to the participants' industry, knowledge and experience and to be able to ask for additional questions when something was not clear or of particular relevance to discuss this in more detail.[61] All interviews were recorded with the permission and privacy consent of the interviewee and each has been transcribed and coded using the themes identified in the interview guide.[62] The relevant research issues that emerged were further used to identify and challenge the key concerns regarding the telematics data value chain and how to regulate to enable beneficial innovations. Furthermore, potential solutions were discussed and how these would contribute to overcoming the identified challenges and/or what recommendations could be made.[63]

As such the doctrinal research was enriched with and guided by the insights from practice to identify the main issues concerning the regulation for improving adoption of telematics insurance by consumers and insurers in Europe.

1.5.3 Scope and Limitations

Taking a sector-specific focus, analysing whether the current regulation is adequate to enable the development and improve the take-up of telematics insurance, looking specifically at data

[59] Social Sciences & Humanities Research Ethics Panel Approval obtained 06 August 2018, Bournemouth University.

[60] Bryman A. et al. (2019); Lewis-Beck et al. (2004).

[61] Bryman A. et al. (2019)

[62] See Appendix A for more detail. Glaser B, (1992). *Basics of Grounded Theory: Emergence vs. forcing.* Mill Valley, CA: Sociology Press; Charmaz, K. (2006). *Constructing Grounded Theory: A practical guide through qualitative analysis.* Thousand Oaks, CA, SAGE

[63] The selection criteria of participants included their contributions to the respective automotive and insurance industry providing solutions for identified legal and ethical challenges posed by digitization and data processing. See further Appendix A

accessibility therefore is considered justified given its contribution to improving consumer welfare and help achieve policy aims of the EU to reduce road deaths to almost zero by 2050.[64]

Limitations of the research

With the nature of a PhD research being limited in resources and scope there are relevant topics that have not been included.

With the focus on data access, topics that could have been included mostly have to do with the use of data analytics and artificial intelligence. As a result, the following aspects were considered but outside of the scope:

- Consumer contracts including unfair contracts
- Anti-discrimination and human rights law
- International, national and sector-specific regulations for the automotive and insurance industry such as EU regulations concerning e-call and car type approval.[65] Except when these were put forward by interview participants as a highly relevant solution addressing key concerns raised for adequate regulation
- Regulations that were not yet in force at the time of completing the analysis

The following Figure presents the relevant relationships between the different stakeholders and simplified relevant legal framework within the scope of this research.

Figure IV Legal framework (simplified)

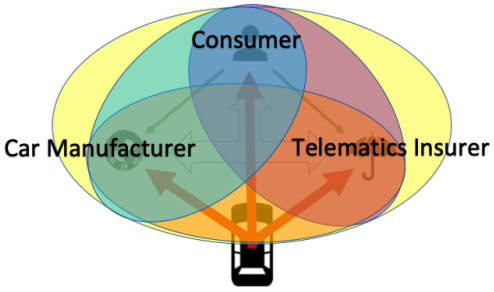


IMAGE OF THE [simplified] LEGAL FRAMEWORKS THAT APPLY TO THE DIFFERENT RELATIONSHIPS

Green = permission
Red = data flows
Yellow = Privacy / GDPR
Purpose = Insurance / IDD
Mint = IPR
Orange = Competition law / trade secrets

[64] Most notably through encouraging safe driving and in addition by enabling timely emergency assistance and improve car safety through car smart connectivity.

[65] Regulation (EU) 2015/758 of the European Parliament and of the Council of 29 April 2015 concerning type-approval requirements for the deployment of the eCall in-car system based on the 112 services and amending Directive 2007/46/EC (E-call) and Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor cars and their trailers, and of systems, components and separate technical units intended for such cars, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC, Official Journal of the European Union, L 151/1, 14.06.2018.

1.6 Introducing the next chapters

Concerning fitness analysis of EU regulations to enable the take-up of beneficial innovations improving access to data and market for fair competition while protecting consumer welfare:

Chapter 2 introduces the reader to *the connected car business ecosystem and telematics insurance* as the focus for the legal analysis. The relevance of the ecosystem perspective is the consideration of complementariness and interdependencies between members of the ecosystem to help evaluate whether regulatory action is effective and proportionate towards achieving the EU policy goals. The key legal challenges stem from the need for regulators to respond to the concerns from the different stakeholders involved by focusing on enabling access for beneficial innovation while providing adequate protection of consumer privacy and fair competition.

Moving from sector-specific insurance regulations to the more general legal frameworks for competition and personal data protection chapters 3–5 present the legal analysis of whether the regulatory framework is fit for purpose to address the main legal challenges identified.

Chapter 3 covers *insurance and insurance law* and its fitness to regulate telematics insurance.

Given the EC Insurance Distribution Directive (IDD) together with the Utmost Good Faith doctrine, both consumers and insurers, based on their specific interests, have certain rights and responsibilities towards each other. However, the scope of their rights and responsibilities is not clear and needs further clarification for them to become more effective in terms of ensuring that the interests of insurers and consumers are adequately balanced and protected.

Insurers based on the IDD requirements have a duty to only develop and provide consumers with telematics insurance that is in their best interest. The doctrine of utmost good faith, unique to UK insurance, plays a role in ensuring the interests of insurers and consumers are balanced.[66] With respect to facilitating access to data, consumers have a duty to enable insurers to obtain the relevant data they need. What follows from the analysis is that, while insurance law contributes to the regulatory framework to regulate telematics insurance, there is a need for clarification of key requirements for insurers to comply with, and to strengthen the role of, the utmost good faith doctrine, to facilitate the take-up of telematics insurance in a way that safeguards the interests of both consumers and insurers.

Chapters 4 and 5 look at non-industry-specific key regulations for data governance, and the question of whether these are fit for purpose to facilitate insurers' access to consumer-generated car data for telematics insurance purposes. *Chapter 4* covers the legal analysis of *intellectual property protection and competition law* focusing on the question of data accessibility. *Chapter 5* covers the legal analysis of personal data focusing on the question of *consumer privacy* protection. It presents an analysis of the role of the General Data Protection Regulation (GDPR) to enable the take-up of telematics insurance products and services by consumers.

Finally, ***Chapter 6*** presents the conclusions drawn upon the insights gained from the previous chapters regarding regulatory fitness to unlock the value proposition of the connected car ecosystem for telematics insurers to the benefit of consumers.

---

[66] Note that the United Kingdom is no longer part of the European Union since 31 January 2020. Much of the research, however, has been conducted and completed before the end of the transitioning period. The references to the UK should be considered in that context and may no longer be accurate.

As its *contribution to knowledge*, what follows from the research analysis is the main conclusion that:

In general, there is *no need for a major reform*, as most if not all of the actions concerning telematics insurance will fall under at least one of the legal frameworks discussed here, or may likely fall under a specific regulation, some of which, although considered, were not included for further analysis.

However, there is *a need to clarify the rights and responsibilities for all stakeholders regarding access to personal data, use and protection measures*. Most notably there is a lack of legal clarity about interpretations of the scope and requirements for car manufacturers and insurers to comply with for their processing to be lawful; the protection and scope of consumers' rights and an urgent need to improve enforcement that takes into consideration the specific characteristics of the digital market and the connected car ecosystem.

To address some of the challenges that remain, potential solutions, including *the role of data portability, ensuring interoperability and enforceable self-regulatory codes of conduct* are identified; then follow discussion and lastly recommendations for further research and need for monitoring of governmental and industry initiatives regarding data governance to ensure a fair digital single market increasingly dominated by complex digital ecosystems.

CHAPTER 2: REGULATING TELEMATICS INSURANCE IN CONTEXT

The primary purpose of this chapter is to sketch the context for the regulation of telematics insurance.

The chapter consist of 3 parts: *Part 2.1 Business ecosystems*, provides the reader with an understanding of the shift within the automotive industry towards the business ecosystem characterised by companies becoming increasingly interdependent and cooperative. *Part 2.2 Telematics Insurance* describes how insurers can use the data connected cars generate to provide consumers with car insurance based on the data they generate while driving. Insurers can improve their risk assessments and consumers who are safe drivers can benefit from lower premiums. Despite the benefits, the take-up is low, and *Part 2.3 Topic of Research* defines the main question of whether the regulatory framework is fit for purpose to facilitate innovations within the connected car ecosystem through the analysis of telematics insurance and improving the take-up thereof.

2.1 Business ecosystems

This part has four sections *2.1.1 Introduction Business Ecosystems; 2.1.2 Ecosystem health; 2.1.3 Members of the Ecosystem; and 2.1.4 The ecosystem for connected cars*

2.1.1 Introduction Business Ecosystems

Innovations have led to the disruption of sectors to become increasingly more complex characterised by interdependence and cooperative business models.[67] This new collaborative model for doing business is what Moore describes as *business ecosystems*.[68]

Ecosystems are dynamic and co-evolving communities of diverse actors who create new value through increasingly productive and sophisticated models of both collaboration and competition.[69]

Such a shift towards becoming an ecosystem can, for example, be seen within the automotive industry where car manufacturers are increasingly working together with software and telecommunication

[67] The theory of co-opetition challenges the notion that competition is a Zero-Sum Game, instead authors concluded that most companies succeed when others do too. Brandenburger A (2020) *The Rules of Co-opetition,* Available at https://www.stern.nyu.edu/experience-stern/faculty-research/rules-co-opetition (accessed 17 August 2021)

[68] The term 'ecosystem' was first introduced into social science by the sociologist Amos Hawley, who referred to an ecosystem as an *'arrangement of mutual dependencies in a population by which the whole operates as a unit and thereby maintains a viable environmental relationship'* Hawley (1986) 26. The lack of consensus about the definition is problematic. See Kapoor (2018) and identifying four major streams of ecosystem research, each with a different theoretical underpinning. See Tsujimoto, M et al. (2017) '*A review of the ecosystem concept – Towards coherent ecosystem design*'. Technological Forecasting, Forecast and Social Change.

[69] Chew B, et al., (2015) *Regulating ecosystems,* Deloitte University Press, p III

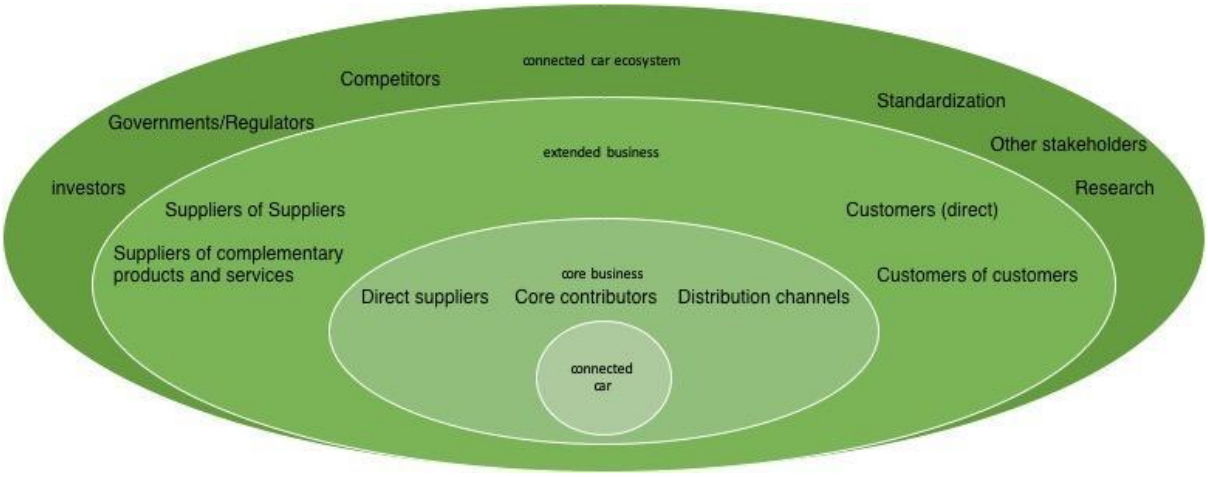
companies to provide consumers with connected and automated cars.[70] These innovations enable other companies and organisations to join the ecosystem and contribute by developing additional products and services contributing to the value proposition making it more attractive for consumers.

(...) Markets, hierarchies and ecosystems are the three pillars of modern business thinking and should "provide the foundation for competition policy, regulation, and antitrust actions" according to Moore.[71]

Before going into more detail, the next section presents a brief introduction to help understand the regulatory environment for connected cars as a result of the shift towards business ecosystems.

A business ecosystem has three distinct layers which, depending on the perspective from which the ecosystem is viewed, includes all the relevant suppliers, producers, customers, competitors and any other organisation with a stake or interest in the focal offer or firm.[72]

Figure IIV The connected car ecosystem



The centre of the ecosystem is the focal firm or offer which can be a product or service from which perspective the ecosystem is viewed.

The *core business layer* includes the company's direct suppliers, core contributors and distribution channels.

---

[70] See Donada C and Attias, D (2015*). 'Food for thought: Which organisation and ecosystem governance to boost radical innovation in the electromobility 2.0 industry?*' International Journal of Automotive Technology and Management; Moore 1993; 2005 p 2; Kapoor, (2018) '*ecosystems broadening the locus* of value creation' Journal of Organization Design, 7:12 p 2; Iansiti M, et.al (2004) *The Keystone Advantage: What The New Dynamics Of Business Ecosystems Mean For Strategy, Innovation, And Sustainability.* Harvard Business School Press.

[71] Moore (2005) p. 2

[72] Moore (1998), p 168. Some define the ecosystem to include the community of organisations, institutions and individuals that impact the focal organisation. See Teece, D (2007). '*Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance*'. Strategic Management Journal, 28(13): pp 1319–1350.

The *extended business* includes providers of complementary products, suppliers of the company's direct suppliers and the direct customer as well as their customers.

The *outer ecosystem layer* consists of all the members of the business ecosystem. This includes competitors, regulators, standard-setting organisations, researchers and other stakeholders.

Taking into consideration that *"drawing the precise boundaries of an ecosystem is an impossible"* the following description is not an attempt at being conclusive but to serve as an illustration to the more in-depth analysis of the legal challenges discussed in the remaining parts of the research.[73]

All the members of the ecosystem together contribute to the value of the focal offer. They can focus on the focal offer itself or offer upstream components integrated within the focal offer, or they can focus on providing downstream complementing offers to be integrated by the users.[74] The latter is the case with telematics insurance, for example.[75]

Furthermore, the actions of the members are influenced by what the other members do in terms of complementarities and interdependencies.[76]

However, *complementarities* between members come from the fact that the functions performed by their respective offers help to create or enhance the user value proposition. They represent an economic relationship in terms of the potential for value creation. Some of these may be obvious whereas others are more indirectly linked.[77]

Interdependencies between members come from the fact that their offers are connected within a system-level architecture. Interdependencies represent a structural relationship between offers in terms of how they are connected for the value to be created and how a change in one offer may affect the contribution of other offers towards value creation.[78]

This again comes back to the need for all members in the ecosystem to co-operate and co-evolve to ensure the value proposition of the connected car for consumers.[79]

2.1.2 Ecosystems health

An ecosystem is not static but evolves over time and perishes when it is no longer vital enough to survive. This is not a problem, as long as its members can freely move between ecosystems.

---

[73] Iansiti & Levien (2004).

[74]Kapoor (2018); Adner and Kapoor (2010).

[75] A good example is the ecosystem analysis of Microsoft. Iansiti & Levien (2004).

[76] Adner and Kapoor (2016); Adner (2017); Jacobides et al. (2018).

[77] For example, the complementarities between the connected car (data) and telecommunications infrastructure; internet servers; sensors; telematics devices may be obvious, the interdependence between sensors and data is different from the interdependence between connected cars and the telecommunication infrastructure. Whereas sensors and connected car (data) are directly connected via a component-product upstream interaction; telecommunication infrastructure and connected car data are indirectly connected via the downstream user interaction. Adapted from Kapoor (2018)

[78] To enhance the contribution of the telecommunication infrastructure towards connected car data value creation, the grid must also be optimised to deal with senor improvements. Kapoor (2018).

[79] See for a methodological framework for analysing ecosystems of the automotive industry. Donada & Attias (2015).

Regulation should therefore not focus on protecting existing ecosystems at all costs, but to ensure new ecosystems can emerge protecting them against premature destruction while still encouraging competition amongst ecosystems.[80]

The health of an ecosystem can be determined based on measuring the following:

Productivity is the ability to consistently transform technology and other raw materials of innovation into lower costs and new products. A relatively simple way to measure this is the return on invested capital.

Robustness is the capability to survive disruptions, with relationships amongst members being protected against external "shocks", such as unforeseen technological change. Robustness can be measured by looking at the survival rates of ecosystem members, either over time or relative to comparable ecosystems.

Niche creation is the capacity for meaningful diversity through the creation of valuable new functions or niches. One way to assess niche creation is to look at the extent to which emerging technologies are being applied in the form of a variety of new businesses and products. Niches however do not need to be maintained as long as new niches are not prevented from emerging.

For an ecosystem to function effectively, each domain within it that is critical to the delivery of a product or service should be healthy, otherwise it will undermine the performance of the whole.[81]

2.1.3 Members of the Ecosystem

An ecosystem can be organic, created based on evolving industry, government and market trends or more deliberately planned around a service. A good example is the development of car manufacturers' connected car ecosystem with software and telecommunication companies and allowing, for example, app developers to contribute with products and services that make their brand of cars more attractive for consumers.[82]

As all members benefit from a healthy and stable ecosystem, it is in their best interests to contribute to the well-being of the ecosystem. This includes not only those companies involved in the core and extended layer, but the ecosystem as a whole. What is interesting about the ecosystem perspective is that it acknowledges the fact that regulators are part of the ecosystem, meaning that they play a role in contributing to the value proposition the ecosystem presents. There are four distinct roles for organisations within the ecosystem; which role an organisation takes (or changes into) depends on their contribution and relation to other members of the ecosystem. Furthermore, an organisation can take a different role in different ecosystems simultaneously.[83]

---

[80] Moore (1993) p 78.

[81] ' [..] maintaining the health of the ecosystem is important not only for its own survival but to the survival and progress of the firms within it' Anggraeni et al., 2007; Moore (1996).

[82] See for example BMW ConnectedDrive product and services. Available online https://www.bmw-me.com/en/topics/fascination-bmw/connected-drive/bmw-connected-drive-overview.html (Accessed 1 June 2020)

[83] Moore (1993) p 26.

Leaders: One or more organisations can take up the leadership role and set the directions for the ecosystem. Having a strong leader who manages to bring different organisations together based on a shared vision of the future is a key factor for the ecosystem to become successful.

Keystones: Organisations which contribute by providing assets that are predictable and stable take up a vital role as keystones. Keystones share the value they create with the other members within the ecosystem and therefore are vital to helping establish and maintain the health of the ecosystem.[84] Keystone organisations are therefore crucial, meaning that if they fail the entire ecosystem collapses. Failure can also come when a keystone abuses its dominant position.[85]

Dominators: Companies which have become dominant by integrating and taking over (a large) part of the network can take over the entire ecosystem. Compared to a keystone, a dominator will not share but capture all the created value. This will ultimately stifle innovation, eliminate competition and consumer choice.[86] A dominator can destroy the ecosystem either because of their physical presence leaving no opportunity for a meaningful ecosystem to emerge or by extracting as much value from the ecosystem as possible until there is no more left to sustain the ecosystem.[87]

Niche players: Most of the companies will be niche players who together create most of the wealth and innovations.[88] Due to competition, innovation is vital for niche players to be able to maintain their position. Their strategy is often focused on specialisation and differentiation by enhancing their narrow domain of expertise and leveraging complementary resources from other members.

2.1.4 The Ecosystem for Connected Cars

Understanding the role and the power that comes with it for companies to influence the ecosystem environment and the behaviour of other members is relevant for the analysis for several reasons.[89]

(…) As ecosystems enable more rapid, cross-cutting innovation, regulators are challenged to create policies and solutions that protect the public's interests and are also dynamic enough to keep pace with innovation.[90]

---

[84] Otherwise, they fail to attract or retain other members of the ecosystem. Iansiti & Levien (2004).

[85] Niche players can execute (some) control over keystone organisations if their behaviour becomes increasingly dominant.

[86]See in more detail on power relations and abuse Moore (1993).

[87] For examples See Dohmen F, and Hawranek D, (2019) *Das Autokartell und sein Verrat am Wettbewerb*', Available at *https://www.spiegel.de/wirtschaft/soziales/autokartell-daimler-vw-und-bmw-verhinderten-moderne-umwelttechnik-a-1261542.html* (Accessed 5 june 2020) ; and a recent case on price collusion together with the supplier of steel. Available at <https://www.spiegel.de/wirtschaft/unternehmen/vw-bmw-daimler-kartellamt-verhaengt-hundert-millionen-euro-bussgeld-a-1297554.html> (Accessed 08 May 2020)

[88] Iansiti & Levien (2004).

[89] For example, no party can unilaterally control or set terms for prices, quantities or standards. Compare this with a supply chain where the car manufacturer controls what and how much is supplied and at what cost. Jacobines et al (2019) p. 2264–6; West & Wood (2013) 2264–6.

[90] Chew et al. (2015)

A well-known challenge for policymakers is the differences in pace between the speed at which innovation takes place and how quickly regulation can respond when problems arise.[91,92] For regulation to be effective it must be targeted at the right actor with the right tools at the right time. Understanding which role an organisation plays will help regulators to better understand who regulation should be targeting and with what means to avoid disproportioned, burdensome or allover ineffective efforts aimed against the wrong actions and/or subject. Furthermore, as regulators are also a member of the ecosystem, and their interference can help to direct the ecosystem towards achieving policy goals enabling beneficial innovations respecting European values and empowering people and businesses.

Car manufacturers have begun to develop an ecosystem around their connected cars for consumers to benefit from additional products and services that contribute to the value proposition brought by increasing connectivity and automation. Taking up leadership, they can decide whether and to whom to provide access to car data to develop and provide consumers with complementary products and services contributing to the value for consumers. They have begun to form partnerships not only with suppliers of the technology and connectivity required but with other products and service providers that can add to the value proposition of their brand to attract consumers.[93]

Digital platforms, for example, are developing that offer access to data from multiple brands, as well as providing additional products and services to help turn this data into actionable information.[94] Depending on how the connected car data ecosystem and market for telematics data further develops and regulation thereof, platforms could grow in importance and take up a keystone position within the connected car ecosystem as the (only) means for access.[95] Other relevant developments are that several major car manufacturers have started to cooperate, working towards a common goal. A good example is a partnership between several leading car manufacturers formed around HERE Technologies (a location data and technology platform) to work together and share resources to develop new solutions in the field of location technology.[96]

The following image is an example of the connected car ecosystem with the car manufacturer as the focal firm.[97]

---

[91] Like businesses, regulators will have to adapt their strategy and could learn how to become more agile. Reeves, M et al. (2015) *Your Strategy Needs a Strategy: How to Choose and Execute the Right Approach*, Harvard Business Review Press.

[92] Globalisation and digitisation have enabled new market players to cross boundaries which challenge regulators to respond. See Mckinsey, (2015) *Competing for the connected customer – perspectives on the opportunities created by car connectivity and automation.* Advanced Industries Report.

[93] Examples include parking apps, navigation, entertainment and shopping.

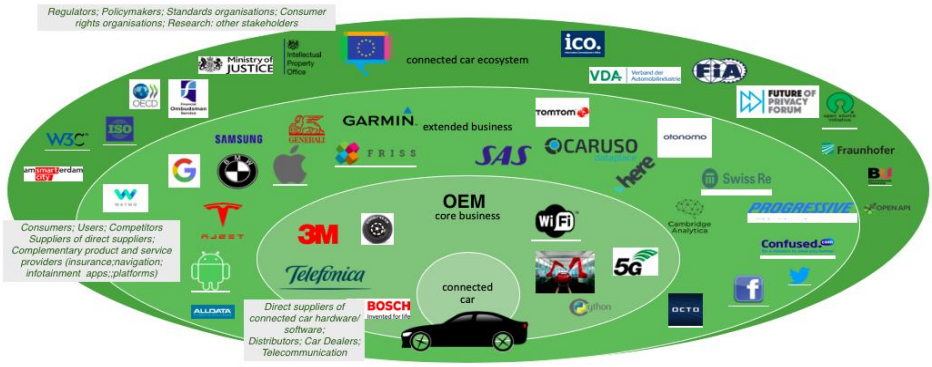
[94] Examples of data platforms available at https://otonomo.io/ and https://www.octotelematics.com. (Accessed 3 june 2020)

[95] See further on ecosystem and digital platform dynamics Kapoor (2000); Iansiti (2000); Jacobides (2000); Gawer (2000)

[96] The HERE Partner Network. Available at https://www.here.com/strategic-partners (Accessed 05 December 2019)

[97] The role of the members and their position within the ecosystem depends on the focus taken for analysis. For the analysis, a relevant focus can be to take the perspective of the car manufacturer or telematics insurer as the focal firm, or the connected car or car data platforms as the focal product or service.

Figure V the connected car ecosystem: stakeholders



Members of the ecosystem's core layer are the suppliers of software and hardware components required to make the car function and telecommunication companies enable the car's connectivity. Members include the connected car distribution channel of dealers.

Members of the extended layer are the providers of complementary products and services, such as insurance companies and maintenance and repair shops. Members include developers of infotainment and other driving-related smartphone apps such as parking and navigation, and suppliers further down the supply chain relevant for direct suppliers to be able to provide their products. This also includes direct customers and their customers.

Members of the outer ecosystem layer include the competing brands' traditional car manufacturers as well as new entrants into the automotive space such as Google and Apple. It also includes the investors, regulators, policymakers and consumers.

In the case of the connected car ecosystem, *the driver* would be part of the extended business as an end consumer. In addition, the driver should also be considered a member of the core business of the connected car and telematics ecosystem, considering that without the use of the car, data would not be created in the first place. If the consumer decides not to produce and/or share the data the added value from connectivity and data sharing could not manifest.[98]

Having gained a better understanding of the environment in which companies, consumers and regulators find themselves, the next section takes a closer look at telematics insurance as an innovation enabled when companies can have access to in-car generated data. Taking a sector-specific focus analysing whether the current regulation is adequate to enable the development and improve the take-up of telematics insurance, looking specifically at data access contributes to important policy aims, namely to help reduce road deaths to almost zero by 2050.[99] As such, a regulatory intervention

[98] See for example '*opting out of data sharing (...) may result in your car suffering from reduced functionality, serious damage, or inoperability*'. Tesla Customer Privacy Notice Available at https://www.tesla.com/legal/privacy > (Accessed 10 June 2020)

[99] Most notably through encouraging safe driving and in addition by enabling timely emergency assistance and improve car safety through car smart connectivity.

is justified, considering that improving the take-up of telematics insurance contributes to consumer welfare and EU policy aims.[100]

2.2 Telematics Insurance

This part has three sections: *2.2.1 Introduction, 2.2.2 Data driving insurance,* 2.2.3 The car data value proposition.

2.2.1 Introduction

It has long been the established practice for insurers to gather data on applicants' characteristics and use this to assess the likely chance and cost of claims. From that, an underwriting decision would be made either to accept the risk on standard terms, to accept on modified terms, or to decline.[101]

Traditional car insurance premiums incorporate a range of individualised risk factors and represent the cover selected.[102] Typical underwriting factors include age, gender,[103] prior driving experience and information of the car. Until the adoption of telematics,[104] actual data on driving behaviour simply was not available, or acquisition cost was too high for the insurer and therefore not been incorporated into the actuarial pricing.[105]

However, as shown in the previous chapter things have changed both in the automotive and insurance industry because of continuing digital innovation. With the development of autonomous and connected driving technologies, cars can generate ever more data through sensors and devices, which in combination with advancements in data analytics have enabled new applications for customer convenience, safety, security, advanced car maintenance and better fleet management. At the same time, the increased availability has contributed to insurers being able to provide consumers with more affordable insurance coverage for a growing number of risks where previously no data was available to do so.[106]

---

[100] Following the four evaluation criteria for regulatory fitness as proposed by Prof Brownsword. Brownsword R (2008) *Rights, regulation, and the technological revolution.* Oxford University Press, Oxford

[101] IFoA (2017)

[102] A Greenberg (2009) *Designing pay-per-mile auto insurance regulatory incentives,* Transportation Research Part D 14, pp 437–445.

[103] The use of Gender for insurance in the EU is limited. Directive 2004/113/EC See Ayuso M, et al. (2016*) 'Telematics and Gender Discrimination: Some Usage-Based Evidence on Whether Men's Risk of Accidents Differs from Women's*', Risks Volume. 4 (No. 2), 10

[104] For an overview of the terms and definitions and a proposed categorisation of insurance pricing schemes see Kurylowicz L (2016). '*Usage-Based Insurance: the concept and study of available analyses'* Wiadomości Ubezpieczeniowe. 127.

[105] Greenberg, (2009); Ma Y. et al., (2018) '*The use of context-sensitive insurance telematics data in auto insurance rate making*', Transportation Research Part A 113, pp 243–258.

[106] Given *'the ability to process and draw useful conclusions from larger quantities of data, from variable sources, much faster than ever before*' Löffler et al. (2016); IFoA (2017)

The example and focus of the research presented here is telematics insurance. Taking a sector-specific focus analysing whether the current regulation is adequate to enable the development and improve the take-up of telematics insurance, looking specifically at data accessibility, therefore, is considered justified given its contribution to improving consumer welfare and help achieve policy aims of the EU to reduce road deaths to almost zero by 2050.[107]

As the car insurance markets are facing structural losses due to heavy price competition and rising claims costs, insurance can benefit from the developments and advances in autonomous car connectivity and safety functions through the use of telematics.[108] The British Insurance Brokers' Association (BIBA) reports that in 2017 the number of live telematics-based policies in the UK reached almost one million.[109] Ptolomus predicts that nearly 50% of the world's cars globally will be insured with telematics policies by 2030, generating more than €250 billion in premiums for insurers.[110]

As mentioned in the previous chapter, cars becoming increasingly software-driven, generating large amounts of data that can be accessed and communicated remotely, has unlocked the potential for data to be used for a wide variety of additional purposes that go beyond its original function. Namely, making sure the car moves safely and securely from A to B.

What are the best solutions for an insurer depends on what is available, but more importantly on what data (including quality frequency and format) they require to develop their products and any additional services they will provide for the consumer.[111] Based on the understanding, however, that the optimal situation would be for insurers to have access to the data and system under the same conditions as the car manufacturers currently have, is what is argued for as the most future-proof solution, and what will be considered for the following chapters.

2.2.2 Data driving insurance innovations

Growing awareness of the value of being able to obtain and analyse telematics data by third parties including insurers has put pressure on car manufacturers to make this data more accessible. Although one could argue that currently no access problem exists, as telematics insurers can obtain data to develop and provide telematics insurance, this may change depending on how the market develops.[112]

---

[107] Most notably through encouraging safe driving and in addition by enabling timely emergency assistance and improve car safety through car smart connectivity.

[108] IFoA (2017).

[109] The BIBA conducts annual research into the number of telematics policies live in the UK. Available at <.https://www.Biba.org.> (Accessed 12 May 2020)

[110] Ptolemus (2013) *Overview of the Global Study 2013:* Available at <http://www. ptolemus.com/ubi-study/ubi-study-overview/> (Accessed 6 June 2020)

[111] Some well-known factors that increase risk are speeding and harsh braking and weather conditions but to know what factors, contribute to better risk analysis is what gives insurers their competitive advantage and is kept confidential.

[112] Now telematics insurance is done using either a smartphone (which is not further discussed here) or by obtaining the data from the in-car system either by installing a device or by plugging it into the OBD port II.

The consumer is provided with a telematics device such as a dongle that is used to "read" the data from when the car is being driven by the respective owner/policyholder.[113] From the various car systems including sensors and cameras, data is obtained and communicated back to the insurer who can then use this data for their data analysis to obtain relevant information that can then be used for their risk assessment. Comparing the obtained data against what the insurer considers to be factors that indicate good or bad driving leads to a driving score. This, in combination with other data about factors that correlate with the insurance risk, will help calculate and offer consumers a more accurate premium to cover their risk.

In the EU, insurers are free to decide, as long as they can provide statistical evidence, what factors and subsequent data they consider relevant to use for their risk assessments. Being able to do so successfully will result in their being able to improve their position to compete and become more profitable in the market.

Based on shared characteristics drivers are put into a pool of people. Depending on how successful the insurer is in their risk assessments and classification of consumers, more or fewer deviations within the pool exist, resulting in those who drive safer to subsidise the more risk-taking drivers.[114] Using telematics data allowing insurers to provide their consumers with a premium that takes into consideration an analysis of how well they drive, is therefore often promoted as being fairer, compared with traditional insurance which does not consider a consumer's actual driving score.

The connected car not only enables insurers to obtain data to personalise their pricing, it also provides them with an opportunity to respond (even in real-time) to changes in consumer behaviour. Several telematics insurers have begun to provide additional services, for example to give drivers insights about their driving after each trip and advice on how to improve their driving score incentivised through lower premiums. Enabling full non-discriminatory access to both the data and the in-car systems – including the dashboard – to communicate directly with the driver, is another important proposition that will only become more important as cars become increasingly automated.

2.2.3 The Car data value proposition

Increasingly, research is confirming how the use of telematics data can benefit insurers by helping them improve the accuracy of their risk assessments.[115] For example researchers showed that insurers may occur underwriting loss from adverse selection when they do not include "pertinent risk factors"

---

[113] The analysis is based on the understanding that the connected car and telematics insurance consumer/policyholder is the driver generating the data.

[114] See for example Dutch insurance company 'Fairzekering' promoting its telematics insurance as being fairer. Available at <http://fairzekering.nl/hoe-werkt-het/> (Accessed June 2020)

[115] Baecke P, Lorenzo P., Bocca, R. (2017) *The value of car telematics data in insurance risk selection processes.* Decision Support Systems 98. 98:69–79 ; IFoA (2017)

such as hard braking, peak time travel and, speeding.[116] Others have shown using GPS data that there are gender differences for accident risks.[117]

These examples illustrate the value of sharing telematics data for insurance purposes brings for the various stakeholders involved. Insurers, for example, can better determine costs associated with the risk cover and to set more accurate premiums. Consumers benefit since they only pay for the risk they pose, rather than being charged a flat premium fee. Other benefits include better consumer targeting and product design, claims management including identification and avoidance of fraud, and improved driving leading to greater road safety.[118]

Given the growing awareness about the value telematics data brings for insurance, concerns about the potential lack of access have led to calls for regulatory intervention

Based on the understanding that it will become essential for insurers to have access to car data if they want to remain competitive, it may come as a surprise that the take-up of telematics in Europe has not followed the earlier predictions made, which underlines the relevance for this research project to look at possible reasons why this is.[119] The focus here is on the role of regulation either as a barrier or enabler for telematics insurance take-up.

Notwithstanding the benefits, besides the legal challenges which are the topic of this research, there are also other challenges that need to be addressed to help improve the take-up of telematics insurance.[120] These challenges include for insurers to be able to reduce the costs involved to set up their telematics process, especially for smaller insurers and for insurance markets where competition is high and the profit margins for car insurance are low.[121] However, this may not be the case for long, as technology is becoming more affordable and ready-made solutions are available, though other concerns warrant further attention.[122] The societal impact of improving access and use of

---

[116] Ma, et al. (2018)

[117] Mercedes Ayuso et al. (2016) '*Using GPS data to analyse the distance travelled to the first accident at fault in pay-as-you-drive insurance*'. Transportation Research: Part C 68, p 160–167.

[118] Bolderdijk et al.,(2011) '*Effects of pay-as-you-drive car insurance on young drivers' speed choice: Results of a Dutch field experiment*'. Accident Analysis & Prevention, 43 (3) p 1181–1186. Bordoff J, and Noe P, (2008) '*Pay-as-you-drive auto insurance: A simple way to reduce driving-related harms and increase equity'.* Hamilton Project Discussion Paper. The Brookings Institution, Washington DC. Wouters P & Bos J, (2000) '*Traffic accident reduction by monitoring driver behaviour with in-car data recorders*'. Accident Analysis & Prevention, 32 (5) 643–650.

[119] Syed (2017)

[120] The Institute and Faculty of Actuaries (IFoA) state that 'As insurers are able to see risks in finer detail, the level of cross-subsidy between policyholders could decline. It is also possible that some policyholders could find insurance harder or more expensive to obtain. Data access and consent to use it is also a key concern, as is data security and consumer trust'. See IFoA (2017).

[121] As stated by the interview participants and private conversations with experts in the insurance industry. Van den Boom (2020) *Insurance companies and industry representatives.* See also Available at <http://www.actuarialpost.co.uk/article/telematics-as-an-underwriting-tool-7454.htm> (Accessed June 2020);

[122] For example, insurers can decide to outsource (parts of) the process. Osborne Clarke (2017) *Legal Memorandum on connected cars and data.* Available at https://www.fiaregion1.com (Accessed May 2020)

consumer car data for insurers include the effect it may have on the underlying notion of solidarity, and whether insurance remains affordable.[123]

With respect to the legal challenges, research on the reasons why people do not opt for telematics insurance mostly cite that they do not like the idea of being constantly monitored by their insurer and are worried about the (mis) use of their data for practices they do not agree with.[124] Taking these reasons seriously grants another justification for limiting the analysis to focus specifically on the impact improving access for insurers may have on consumer privacy, and whether the legal framework is adequate to protect consumers from the collection and use of car data for purposes they may not agree with.[125]

2.3 Topic of Research

The question this research addresses is whether the current legal framework is fit for purpose to unlock the potential that adequate access to telematics data brings for key stakeholders in the value chain.

To challenge the assumption that there is a regulatory disconnect, the next chapters analyse whether this is this case by looking at the role of relevant regulations concerning *Chapter 3: Insurance; Chapter 4: Data access, control and competition; Chapter 5*: *Personal data flows and privacy protection*; *Chapter 6*: *Conclusions and Recommendations*

What follows is that, although the current EU regulatory framework has all the elements in place to help facilitate telematics innovations based on connected car data, there is an urgent need to improve matters by providing more legal clarity, establish regulatory coherence and improve enforcement. Due to the limited scope of this research and the continuing developments taking place, the need for more insight and call for further research remains to gain better understanding of how to regulate in a way that facilitates innovations while ensuring these are beneficial.

---

[123] '*If insurers have a clearer understanding of an individual's risk characteristics, then individuals in certain market segments may then find that insurance is harder or more expensive to obtain'* IFoA (2017).

[124] For example, price discrimination where premiums are based on factors unrelated to risk but their sensitivity to price and brand loyalty for example (willingness to pay). For a good introduction to these issues see Cather, D (2020) *'Reconsidering insurance discrimination and adverse selection in an era of data analytics'* Geneva papers on Risk and Insurance, 45: 426–456.;

[125] Consumer organisation Which? (2018) Policy Report *Control, Alt or Delete*? Available at https://www.which.co.uk Accessed June 2020)

CHAPTER 3: INSURANCE AND INSURANCE LAW

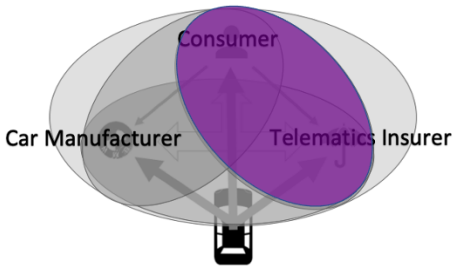
To account for the differences between Member States and national insurance markets, what follows is that, instead of a regulatory framework harmonising data governance for the European single market, a degree of flexibility is necessary. To help understand whether the current regulation is fit for purpose to regulate the connected car ecosystem and unlock the innovative potential of car data, this chapter focuses specifically on telematics insurance and the main regulation that applies.[126]

Given the important role that insurance has in modern society to enable people to take risks, it is all the more urgent that the regulation thereof is fit for purpose and can facilitate that, in the best interest of consumers, innovation and fair competition are ensured in the insurance market. [127]

This chapter contains six parts, starting with *Part 3.1 Insurance fuelled by data,* which briefly introduces the key characteristics of insurance, its challenges, and concerns over whether regulation is fit for purpose in addressing the impact of digitisation and facilitating innovations. *Part 3.2 European Car insurance* gives a brief introduction to how car insurance works in Europe. *Part 3.3 The Insurance Distribution Directive* looks specifically at the IDD as the main regulation that applies. It presents the analysis of key requirements relevant for the relation between telematics insurers and consumers, and whether these are fit for purpose to balance the different interests involved. Part *3.4 In Utmost Good Faith* looks at the scope of a duty for both insurers and consumers to share information with each other including (access to) car data. Part *3.5 Conclusions and recommendations* confirms the identified concern that, although in general the IDD plays an important role in regulating telematics insurance to contribute to consumer welfare, for it to be considered fully fit for purpose it needs to be improved in terms of clarity for insurers to improve compliance and protect consumers against the potential for harm that comes from improving car data access for insurers and the take-up of telematics insurance. Establishing the scope of a mutual duty to provide information and data between consumers and insurers would help to contribute to improve clarity, trust and compliance.

This chapter covers the relationship between consumers and insurers.

Figure VIII Relationship (simplified)



[126] Although the topic of this research is whether 'European Union' regulation is fit for purpose, this chapter includes analysis of national insurance law in the UK, which is no longer part of the EU. However, much of the research and writings for this chapter was conducted and completed before the end of the transition period (31st January 2020). The insights remain relevant for comparison. Most notably The Utmost Good Faith doctrine unique to UK insurance law could help as a potential solution to address some of the problems following the information asymmetry that exists between insurers and consumers.

[127] Although the terms ‘consumer’ and ‘customer’ are often used interchangeably, and it seems at first glance that the IDD does so (compare for example Recital 5 and 6 IDD) their meaning is not the same. For readability ‘consumer’ is used in reference to the driver buying telematics car insurance for their own use. Where relevant the distinction is made.

3.1 Insurance fuelled by data

This part contains three sections: *3.1.1 Uncertainty and information asymmetry*; *3.1.2 Challenges for the Insurance Industry*; and *3.1.3 Challenges for regulation.*

Discussions have intensified in the different sectors involved in the connected car ecosystem about how to govern telematics data at EU level, not least because of a growing awareness about the value of data and the privacy risks involved, as well as the competitive advantages that being in control of user-generated data brings.[128] The current situation in the automotive and telematics insurance market specifically is that car manufacturers control who can obtain access to the data. This is problematic from the viewpoint of the consumers, who generate the data while driving, and insurers, who want to use the data for insurance innovations in response to consumer demands and needs.

This chapter contributes with an analysis of sector-specific regulation relevant to the question of whether the EU legal regime is fit for purpose to adequately regulate data processing for beneficial innovations such as telematics insurance. Focusing on the relationship between consumers and their telematics insurers, how does insurance law address the conflict of interests that emerges from information asymmetries between insurers, who want to obtain data, and consumers, who want to protect their personal data against being used for purposes they do not agree with.

Addressing the question of whether *insurance regulation enables adequate access for insurers to car data with a specific focus on the role for consumers to provide (access to) telematics data*, the following sections provide an analysis of the main requirements for insurers, namely:

their need to have access to consumer data, which is essential to be able to provide good and affordable insurance products while remaining competitive on the market, and

their duty to only act, develop and propose telematics products that are in the best interest of consumers.

3.1.1 Uncertainty and information asymmetry

Without insurance, the majority of people would not drive a car, because getting into an accident could result in them having to pay a large amount of money. With insurance, people will be remunerated for their loss if the event is covered under their policy.[129] Insurance, therefore, is a way for people to protect themselves against the risks of unforeseeable events.

Insurers will generally try to avoid accepting people who pose too high a risk for the insurer to provide them with affordable insurance. Insurers will therefore gather as much relevant data as possible on applicants' characteristics to be able to assess the likely chance and cost of claims in case

[128] Acknowledged by the European Parliament stating that (...) *Notwithstanding all the benefits, FinTech confronts us with essential questions of a regulatory societal nature.* European Parliament (2017) *Draft Report on FinTech: the influence of technology on the future of the financial sector.* Available at http://www.europarl.europa.eu/ (Accessed 13 June 2020); IAIS (2018), '*Issues Paper on Increasing Digitalisation in Insurance and its Potential Impact on Consumer Outcomes'* Available at https://www.iaisweb.org/ (Accessed 13 June 2020)

[129] ABI (2008) *Insurance in the UK: The Benefits of Pricing Risk, pp 1–8*

of events.[130] Based on their risk assessment, the insurer decides whether to accept or to decline a person's application, and on what terms. Insurance premiums are generally priced based on the probability of the event occurring among a pool of people who share certain characteristics that indicate their level of risk.[131] Being able to classify people according to their risk allows insurers to place people in the right risk pool. Insurers will look at particular characteristics (rating factors) and assign that individual a level of risk. The higher the risk, the higher the premium. Having more data available due to digital innovations will allow insurers to become more successful by improving the accuracy of their risk assessments. It also facilitates the shift towards increasingly individualised insurance, separating people into more granular risk pools.[132]

3.1.2 Challenges for the Insurance Industry

Even without being able to obtain data the future remains uncertain; therefore, insurers are always faced with having to make their decision on imperfect information. Sector-specific challenges insurers face as a result of their lack of information and unpredictability of risk are adverse selection, and, to a lesser extent, moral hazard. These are two issues that can be addressed with improving data access as follows:

Adverse Selection
Adverse selection occurs in insurance markets when the insurer cannot observe an individual's risk at the time policies are issued and the individual has superior information about his or her risk.[133] The consumer may not be willing to share certain relevant risk-related information because they want to obtain the lowest possible premium to cover their risk, whereas the insurance company needs as much information about the individual as possible to make an accurate risk assessment and provide them with a premium that will cover the predicted loss. As a result of insurers not being able to obtain adequate information about differences in risk for prospective insureds, some insurance markets may fail to exist, while others may become inefficient.134

To deal with information asymmetry, the insurance company will need to set a premium that covers the average loss expected within a risk pool of people.[135] Drivers who either don't know what risk

---

[130] Dorweiler back in 1929 said that certain information would be more predictive but was unattainable at the time. Paul Dorweiler (1929) '*Notes on Exposure and Premium Bases*' CAS Proceedings, Volume XVI, Number 33, p. 337; On the difference between factors and proxies See Weiss (2012) p 5 and Conners, J & Feldblum, S (1998). *Personal Automobile: Cost Drivers, Pricing, and Public Policy.* Available at https://www.casact.org/sites/default/files/database/forum_97wforum_97wf317.pdf (Accessed 18 August 2020)

[131] The basic principle of insurance is that the losses of the few are paid for by the premiums of the many. ABI (2008).

[132] The extent to which premiums are based on the risk of the group rather than the individual risk depends on a number of factors, including whether there any restrictions on the amount of information an insurer may collect about a particular risk, and the cost-effectiveness of collecting that information. The less information held about an individual risk, the less the premium can be tailored to that risk. Swedloff R, (2014) *Risk Classification's Big Data (R)evolution'* 21 Conn. Ins. L.J. 339, 340–44.

[133] Akerlof G (1970) 'The market for lemons: Quality uncertainty and the market mechanism' Quarterly Journal of Economics 84 (3) p 488–500.

[134] Akerlof (1970)

[135] ABI (2008) p. 2

they pose or know they have a high risk will buy the insurance. Drivers who know they are a lower risk however will not buy the insurance at the average price. This will lead to a loss for the insurer who in turn could decide to raise the premium in order to cover the losses of those with high risks. This however is likely to cause even more people with lower risk to leave. Or not willing to take this risk; the insurer may decide not to provide insurance coverage at all.[136] Telematics provides insurers with actual information on people's driving behaviour from which they can assess risk scores and therefore price their premiums more accurately, avoiding some of the issues concerning adverse selection.[137]

Moral Hazard

With respect to moral hazard, it has been shown that when people have an insurance they may no longer be as risk averse, and this is a serious problem for insurers as it means that their initial risk assessment is no longer accurate.[138] There are ways of reducing the effects of moral hazard for example by requiring the consumer to bear some of the costs before collecting insurance benefits and by monitoring the consumer's behaviour.[139] Especially with respect to the latter, telematics can contribute to reduce both the risk and effect of moral hazard.

Avoiding moral hazard is one of the use cases that are facilitated by providing direct access to in-vehicle generated data. It not only enables insurers to include the data to improve the accuracy of their risk assessment, it also allows them to respond more directly to changes in consumers' behaviour.[140] Through telematics insurers can monitor consumers and give them feedback how to improve their driving to obtain a lower premium, and because they could also raise premiums every time consumers engage in what is considered riskier driving it may reduce moral hazard by providing an incentive for consumers to drive more safely.[141] Being able to more accurately price risk and improving road safety benefits insurers, consumers, and society. However, there is also a clear conflict of interest between the insurer's need to get as much relevant information about the consumer and the consumer's interest

---

[136] ABI (2008) p. 3

[137] An introduction to insurance use of telematics, see Fan C, Wang, W. (2017) *A comparison of underwriting decision making between telematics enabled UBI and traditional auto insurance*. Adv. Manage. Appl. Econ. 7, pp 1–5

[138] Defined as 'the tendency of insurance protection to alter an individual's motive to prevent loss' Shavell S. (1979) '*On Moral Hazard and Insurance.'* In: Dionne G., Harrington S.E. (eds) (1979) *Foundations of Insurance Economics*. Huebner International Series on Risk, Insurance and Economic Security, vol 14. Springer

[139] A deductible is the maximum amount that the policyholder must pay themselves before the insurance company pays the rest. A co-payment is a flat fee that an insurance policyholder must pay before receiving services. Co-insurance requires the policyholder to pay a certain percentage of costs.

[140] On how in-vehicle smart driving system can lead to significant improvements in driving behaviour see Birrell S, et al., (2014) *Effect of using an in-vehicle smart driving aid on real-world driver performance Intelligent Transportation Systems*' IEEE Transactions on, 15 (4) pp. 1801–1810; On the opportunity to provide driver feedback: Dijksterhuis C, et al. , '(2016) *In-car usage-based insurance feedback strategies. A comparative driving simulator study*'. Ergonomics. 59(9) pp. 1158–70.

[141] One of the interview participants shared the results of a commissioned research they did, which showed that the positive effect on a person's driving behaviour only lasted approximately three months. After this time people would fall back into their previous habit of driving less safe. Van den Boom (2020) *Interviews with Insurance industry experts and insurers*

in obtaining the lowest possible premium. Another main reason cited by consumers, irrespective whether they are high risk or low risk, not to opt for telematics insurance is privacy.[142]

Given the important role insurance plays in society and the need for consumers to be able to obtain affordable insurance, the consequences of information asymmetry in favour of either party poses a challenge for regulation.

3.1.3 Challenges for Regulation

The question is whether regulation faced with the challenges from ongoing digitisation in the automotive and insurance sector provides an appropriate framework within which to consider the conflicting interests of consumers and insurers.

In the context of developing and providing telematics insurance, insurers need access to relevant car data.[143]

Based on the understanding that, historically, information asymmetry was in favour of the consumer, insurance law permits insurers to request data from consumers when they can show this data is necessary for them not only to assess risk but also to remain competitive.[144] In addition to the right to ask for and process personal data, insurers may lawfully refuse to accept or provide a different premium related to the individual's risk and therefore indirectly discriminate between people when they have an objective justification to do so.[145]

Referring again to the issue of moral hazard, insurers already collect and combine data from various sources to create increasingly detailed consumer profiles. The more information they can obtain the better they gain insights about people's lives and habits that may go well beyond what they need to know in the context of their risk assessment.146 A relevant discussion is therefore if insurers may discriminate between people charging them a higher price based on factors that are not risk related. For example, in the UK there is concern that people are being charged a higher premium based on

---

[142] Surveys show that people are willing to share personal data when there are strong incentives for them to do so. Derikx, S., et al. (2015). *Buying-off privacy concerns for mobility services in the Internet-of-things era.* Proceedings of the 28th Bled eConference, Bled, Slovenia

[143] On what data from vehicles may be of use for insurers in the context of risk assessments see Geneva Association (2018) *Big Data and Insurance: Implications for Innovation, Competition and Privacy,* Available at https://www.genevaassociation.org/research-topics/cyber-new-technologies-and-data/big-data-and-insurance-implications-innovation (Accessed 7 June 2020)

[144] For a good overview of all the issues see Tselentis et al. (2016) pp 362–371; Husnjak S et al., (2015) *Telematics system in usage-based motor insurance*. Procedia Engineering.

[145] Rothschild M, and Stiglitz J, (1976) '*Equilibrium in competitive insurance markets: An essay on the economics of imperfect information*', Quarterly Journal of Economics 90 (4) pp 629–649.

[146] Swedloff R (2014) '*Risk Classification's Big Data (R)evolution' 21* Conn. Ins. L.J. 339, 340–44. Stakeholders from the government and consumer organisations, confirmed during the interviews that they were concerned about the negative impact profiling has on the relationship between insurers and consumers. An example often mentioned was that although a person with a low risk score would be charged the same as a person with a higher risk score, and not what they should be charged based on a fair assessment. Van den Boom (2020) *Interviews with stakeholders from the government and Insurance industry.*

insurers being able to know what they are willing to pay before they would switch to another insurer.[147]

The opportunities and risks confirm why the interests of consumers in being protected against uncontrolled access and use by insurers of personal data for profiling purposes must also be adequately regulated for.

Instead of a one-size-fits-all industry solution to the challenges posed to regulating connected car ecosystems and the data value chain, a sector-specific approach is called for, taking into consideration the characteristics of the relevant insurance market, which is more likely to improve compliance and protection without stifling insurance innovation to the detriment of consumers.[148]

The following parts therefore evaluate whether the EU regulatory framework for insurance is fit for purpose to provide regulators with an adequate framework in which to balance these competing interests of consumers and insurers regarding the processing of telematics data for insurance purposes.

3.2 The European Car Insurance market

It is mandatory when registering a vehicle in any of the EU member states to have a third-party liability car insurance to cover for accidents that cause property damage or injury to others. In addition, consumers have the option to extend their cover and take out first party liability insurance to include cover for their own personal injuries or car damage and theft. In the absence of EU wide regulations for optional insurance, there may be national differences with respect to the terms and conditions applied by insurers.

With respect to the question of access in the context of in-vehicle generated data the EU has several more specific directives that deal with the need for data to be made available.[149] There are already specific EU regulations that require car manufacturers to enable access to certain in-vehicle data and systems for specific purposes.[150] These directives may, if they do not already, provide sector specific solutions to regulate accessibility.[151]

The growing importance and need for third parties to access certain types of car-generated data, and the reluctance of car manufacturers to enable especially unmonitored access to their vehicles, has

[147] Zuiderveen Borgesius F. (2019) *Price Discrimination, Algorithmic Decision-making, and European Non-discrimination Law*, European Business Law Review.

[148] Geneva Association (2018) *Big Data and Insurance: Implications for Innovation, Competition and Privacy,* Available at https://www.genevaassociation.org/research-topics/cyber-and-innovation-digitalization/big-data-and-insurance-implications-innovation. p 16. (Accessed June 2020)

[149] Commission Regulation (EC) No 715/2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles.

[150] Commission Regulation (EC) No 692/2008 on emissions from light passenger and commercial vehicles; Commission Regulation (EU) No 566/2011 on access to vehicle repair and maintenance information.

[151] For an in-depth analysis see Kerber (2018).

been acknowledged already, since cars have become increasingly driven by software.[152] In order to compete fairly with the car manufacturers and authorised dealers and repairers it became necessary to regulate for independent aftermarket service providers to have access to information necessary to provide repair and maintenance services under the same conditions.[153] Car manufacturers are held to ensure that independent operators have "unrestricted and standardised access in a non-discriminatory manner" to vehicle repair and maintenance information (RMI).[154] A similar approach could be taken with respect to other data that is generated which is currently not made available by the car manufacturers under the same conditions.

Similarly, telematics insurance would not be possible without non-discriminatory access to the relevant data for use-based insurance purposes including for more accurate risk assessment and pricing thereof.[155]

The key EU legal framework relevant for telematics insurance which is discussed in more detail is the Insurance Distribution Directive (hereinafter the IDD).[156] The IDD is relevant for both the question on access and protection for misuse of telematics data. In addition, the potential role for a Good Faith duty for information sharing is discussed. Specifically, the "Utmost Good Faith" doctrine, as it is known in the UK, with different versions in EU Member States, is used to help understand and argue for the scope of such a duty for disclosure when telematics have become material for insurers to provide consumers with insurance that best meets their needs and demands.

3.3 The Insurance Distribution Directive

This part contains six sections *3.3.1 Introduction 3.3.2 The consumer's best interests; 3.3.3 IDD: Product Oversight and Governance (POG) requirements; 3.3.4 Information Disclosure: Requirements*; *3.3.5 Information disclosure: The Insurance Product Information Document; and 3.3.6 Considerations.*

3.3.1 Introduction

[152] A discussion which takes place on both sides of the Atlantic. See for example the discussion in the US on the right to repair and car data rights the following websites for information. Available at <https://www.autocare.org/government-affairs/issues/right-to-repair/> and <https://yourcaryourdata.org/> (Accessed 01 May 2020)

[153] This mandatory requirement is limited to a subset of data. Recital 12. Commission Regulation (EU) No 566/2011 on access to vehicle repair and maintenance information. Available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011R0566&locale=en (Accessed 05 June 2020)

[154] Regulation (EU) No 566/2011.

[155] Also necessary is interoperability or 'the ability of a system, product or service to communicate and function with other (technically different) systems, products or services.' See for a detailed analysis Kerber, W. and Schweitzer, H. (2017) *Interoperability in the Digital Economy*'. Journal of Intellectual Property, Information Technology, and E-Commerce Law. 8(39) para 2.

[156] Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution (recast) (Hereinafter IDD).

With the introduction of the Insurance Distribution Directive, the EC aims to improve consumer protection and to create a level playing field for fair competition for the insurance industry.[157]

To help achieve this, the IDD contains specific requirements for insurers to provide more transparency on pricing and costs of insurance products; better and more comprehensive information to improve consumer decision making and transparency; and business conduct rules to prevent the mis-selling of insurance products to consumers.[158]

Although relevant for the analysis, certain insurance practices do not fall under the IDD definition of "insurance distribution", most notably the management of claims; adjusting loss and expert appraisal of claims by undertakings as well as (...) *providers who only supply the insurer with data and information on potential policyholders but who are not involved with the conclusion of the contract as such.* Depending on the interpretation this could mean that data brokers who provide credit, fraud or driving scores about the individual do not fall under the scope of the IDD.[159]

The IDD only provides minimum harmonisation of national provisions.160 This gives Member States the flexibility to account for differences allows member state the freedom to take into consideration the characteristics of national insurance markets which differ significantly and/or to provide for a higher level of consumer protection proportionate to the additional administrative burdens this may put on insurers.[161]

To analyse whether the IDD is fit for purpose, the following key requirements for telematics insurance are discussed, namely the general principle for insurers to always act in the best interest of consumers; specific information requirements; and conduct of business rules for insurers.

3.3.2 The consumer's best interests

[157] Recital 6 IDD; Recital 2 IDD. For a critical analysis of the background and IDD requirements in relation to its aims see De Maesschalck N (2017) '*The Insurance Distribution Directive: What Does It Change for Intermediaries and for Others?*' in P. Marano, M. Siri (eds.), *Insurance Regulation in the European Union* pp. 59–79; Hofmann, A, Neumann, B. and Pooser, A (2018) *Plea for Uniform Regulation and Challenges of Implementing the New Insurance Distribution Directive* The Geneva Papers, 43, pp. 740–769; 5

[158] EU Publications (2016) *Insurance distribution new rules from 2018,* Document 32016L0097 Available at https://op.europa.eu/en/publication-detail/-/publication/7eb916cb-663f-416f-97a6-088479d73d83/language-en (Accessed 10 May 2020)

[159] Part of the analysis has been published as a book chapter. Van den Boom, F (2020) *'Regulating Telematics Insurance'* Chapter 12, in P Marano and K Noussia (eds) (2020) *Insurance Distribution Directive,* AIDA Europe on Insurance Law and regulation, Vol. 3.

[160] Complemented by additional secondary legislation by the EC including delegated acts and providing technical standards. Recital 3 IDD.

[161] Art. 11(2) IDD and Recital 3 IDD.

Art 17 IDD, as a general principle, states that insurance distributors, when carrying out insurance distribution, "*must always act honestly, fairly and professionally in accordance with the best interests of their customers"*.[162]

Although insurance-based investment products are not dealt with here, the European Insurance and Occupational Pensions Authority (EIOPA) specifically refers to *a suitability/appropriateness assessment* to ensure that no more information is requested from the consumer than needed (or duplicated) to provide good quality advice to the consumer. The EIOPA considers this will further enhance the quality of service provided to the consumer, strengthening the framework for proper selling practices.[163]

Based on the IDD general principle, insurers must act in response to consumer demands and needs, which in other words means that insurers may only use telematics data for insurance purposes that meet those demands and needs. This leaves room for interpretation, and as a result uncertainty about the effectiveness of the IDD to protect consumers about misuse of their data by insurers. There are examples where use is clearly permissible and clearly prohibited but there is also a large grey area where it will ultimately be up to judges to decide whether the insurer has crossed a line. Depending on how regulation in the different Member States regarding the use of telematics data develops will determine if protection is effective.

3.3.3 IDD: Product Oversight and Governance (POG) requirements.

To improve consumer protection and to offer products that are in their best interest, insurers are required under the IDD to have a proportionate and appropriate product approval process in place for each insurance product.[164]

Article 25 IDD

1 (…) The product approval process shall ***specify an identified target market for each product****, ensure that all* ***relevant risks to such identified target market are assessed*** *and that the intended distribution strategy is consistent with the identified target market, and take reasonable steps to ensure that the insurance product is distributed to the identified target market.*

The insurance undertaking ***shall understand and regularly review the insurance products it offers or markets,*** *taking into account any event that could materially affect the potential risk to the identified target market, to assess at least whether the product remains consistent with the needs of the identified target market and whether the intended distribution strategy remains appropriate.*

---

[162] Insurers must avoid selling insurance products which do not meet the consumers' insurance demands and needs. Art. 19, 20 IDD

[163] See consideration 8 of the EIOPA (2016) *Technical Advice on possible delegated acts concerning the Insurance Distribution Directive,* Final Report on Consultation Paper no. 16/006

[164] Art 25 IDD; Recital 55 IDD: For specific guidelines on how to comply in practice see the EIOPA (2016*) Preparatory Guidelines on product oversight and governance arrangements by insurance undertakings and insurance distributors.* Available at https://www.eiopa.europa.eu/document-library/guidelines/preparatory-guidelines-product-oversight-and-governance-arrangements_en (Accessed 10 May 2020) For detailed analysis of the POG requirements see further Marano P, (2019), *Product Oversight and Governance* in Marano P and Rokas M (eds) (2019), *Distribution of Insurance-Based Investment Products.* The EU Regulation and the Liabilities, Springer, pp 59–96.

Relevant for telematics insurers to comply with the POG requirements they must:[165]

- identify the target market for telematics insurance based on the needs and demands of consumers and assess the risks and costs involved[166]
  For example in the UK telematics is mostly targeted at young people who because of their inexperience are considered high risk and therefore unable to obtain affordable insurance
- design a distribution strategy consistent with the identified target market reaching only those consumers with needs and demands best served by the product[167]
- regularly review to ensure that marketed products remain to serve the needs of the market and the distribution strategy remains appropriate.[168] To enable such review, their distributors are held to provide them with relevant information about the distribution of the products. For example, whether a specific insurance is sold to people outside the target market which may require the insurer to redesign the product[169]
- provide their distributors with all the relevant information needed in order for them to carry out their distribution activities in accordance with the best interests of their consumers.[170] To fully understand the product approval processes and products they intend to sell this includes the target market, the proposed distribution strategy and any circumstances which might cause a conflict of interest to the detriment of the consumer[171]

The IDD also requires both insurers and insurance distributors to document their actions and to make this available upon request to authorities.[172] This would ensure that insurers are also well informed themselves of adverse effects for their consumers as a result of their products and services and decision-making processes.173 The lack of understanding of the impact especially as a result of automated decision-making has become a topic of concern that the industry is seeking to address.174

---

[165] Insurers are considered manufacturers when they have a decision-making role in designing and developing products for the market. Which is assumed when they can autonomously determine: *'the essential features and main elements of an insurance product, including its coverage, price, costs, risk, target market and compensation and guarantee rights.'* Art 3 IDD

[166] Article 5(1) IDD *(...) be identified at a sufficiently granular level, taking into account the characteristics, risk profile, complexity and nature of the insurance product (...)* Recital 5 and 6 IDD Regulation further explain that (5) The identification of the target market means *describing a group of customers sharing common characteristics at an abstract and generalized level in order to enable the manufacturer to adapt the features of the product to the needs, characteristics and objectives of that group of customers*. (6*) The level of granularity of the target market and the criteria used to define the target market (...) should be relevant for the product and should make it possible to assess which customers fall within the target market.*

[167] Art. 5(1), Recital 5 and 6 IDD.

[168] Art. 25(1) IDD.

[169] Art 10,11, 25(1) IDD.

[170] Art. 17(1) of Directive (EU) 2016/97. Art 8(3) and Recital 55 IDD.

[171] Art 8(2); Recital 10 IDD.

[172] Art 9,12 IDD.

[173] Without being able to process information about protected characteristics such as gender or race, insurers are unable to monitor the impact of decisions on solidarity and affordability of insurance products most notably for vulnerable groups.

[174] Initiatives such as the Solidarity monitor developed in the Netherlands to monitor the impact of adoption of Automated Decision Making (ADM) by insurers.

What follows from these requirements is that compliance with the IDD requires insurers to become better informed themselves. This is raising concern about the impact this will have on privacy as a result of the necessity to gather and analyse personal data to understand and continue to assess their products concerning the target market and to document their steps for accountability purposes.175 These efforts may contradict the data protection principles they must adhere to under the GDPR, such as the principle of data minimisation, storage limitation and privacy by design. This issue has been identified and will be discussed in more detail in chapter 6.

3.3.4 Information Disclosure: requirements

Under the IDD, insurers must provide consumers with relevant information about the insurance product in a comprehensible form.[176] If a consumer is offered a contract this must be consistent with their insurance *demands and needs*.[177] The information given must be f*air, clear and not misleading*.[178]

To understand what information requirements their product (telematics insurance) target consumer has, insurers must take into consideration the complexity of the insurance product and the type of consumers it is for.[179] For example, when it comes to new and innovative insurance products like telematics, consumers require more information to understand how telematics works and what the consequences are when they do not maintain a safe driving score based on criteria set by their insurer. The rise in complaints about the perceived unfairness of telematics insurance illustrates such a lack of understanding especially amongst young people of their policy requirements which could be improved through better and more comprehensible information.[180]

The requirements for insurers under the IDD include providing consumers with information which would allow them to make well-informed decisions and challenge the processing of personal data for use which would not be in their best interest. At the same time this provides a tension between the IDD and the data protection principles of the GDPR, when to comply requires insurers to collect potentially more information about their potential consumers than they otherwise might have.

The information requirements for insurers, for example, include when they provide advice about a product; they need to explain (and therefore know) why a particular product would best meet the

---

[175] Article 7(3) of Delegated Regulation 2017/2358 requires insurers to monitor their products for adverse effect on the consumer. See further EIOPA *Q&A on appropriate product testing requirements*. Available at https://eiopa.europa.eu/ (Accessed 05 June 2021)

[176] *(…) objective information about the insurance product in a comprehensible form to allow that customer to make an informed decision.* Art. 20 IDD.

[177] Art. 17 (3) IDD.

[178] [A]Art. 17(2); 20(7) and 23 IDD. This is somewhat similar to the GDPR principle of lawfulness, fairness and transparency where transparency requires information and communication relating to the processing of personal data to be easy to understand using clear and plain language. Art 5(1)a, Art. 12 GDPR and Recital 39 GDPR.

[179] Art 20(1) and Art 20 (2) IDD.

[180] Brockman M, (2018) *Rise in telematics complaints down to "sub-standard" market entrants*' Insurance Times. Available at https://www.insurancetimes.co.uk (Accessed 24 April 2020) Specific on fairness in relation to processing personal data, Recital 71 GDPR discussed in Chapter 5.

customer's demands and needs,181 and whether the proposed contract or advice given is based on a fair and personal analysis.[182]

The IDD does not give further guidance on how to interpret many of the IDD requirements in practice. Chapter VI of the IDD holds additional requirements for information in the context of insurance-based investment products which provide some useful insights on how to improve the information requirements for insurers towards consumers.[183]

The European Insurance and Occupational Pensions Authority (EIOPA) provides further guidance how to interpret the Product Oversight and Governance (POG) requirements.184

Under the POG requirements to undertake appropriate product testing of insurance products, EIOPA proposes to include scenario analyses, to ensure that the product meets over its whole lifetime, the identified needs, objectives, and characteristics of the target market.185 The product should be tested on all relevant dimensions and include assessments of:

- the working of the product
- the price and coverage of the product
- the performance of the product
- the risk/reward profile of the product and
- the product information provided to consumers

In the context of product testing, EIOPA gives "good practice" examples including when a motor insurer wants to provide car insurance premiums based on driving behaviour. This should be tested on a pilot group to determine whether the feature and outcome matches the expectation of the client before the feature is launched.186 Consumer testing, for example, is a good practice to assess the comprehensibility of insurance products and to analyse complaints about similar products to improve the insurance product.

Other relevant sources for industry guidance are national authorities and organisations.

In the UK, for example, the Financial Conduct Authority (FCA) provides practical examples of what they consider to be IDD compliant advice for UK insurers.[187] According to the FCA, advice given by an insurer to a potential consumer, which includes proposing all available insurance products with

---

[181] Additional information requirements apply see art 18–20 IDD

[182] Art 20(3) IDD

[183] As these products are outside the scope, we will not further consider them here. For a good understanding of these requirements see Marano and Rokas (2019) Also, these requirements do provide some useful insights in how the requirements for consumer vehicle insurance products could be improved.

[184] EIOPA (2018) *Answers to (EU) 2017–2358 product oversight and governance requirements for insurance.* Available at https://www.eiopa.europa.eu/qa-regulation/questions-and-answers-database/2358_en (Accessed 24 April 2020) These answers by the EIOPA are however not legally binding and do not prevent national competent authorities from maintaining or introducing stricter standards on a national level.

[185] Delegated Regulation 2017/2358

[186] Understood as the ability to track drivers and to offer a discount on the premium when driving safely. See EIOPA (2018).

[187] FCA (2017) *Insurance Distribution Directive Implementation*, Consultation Paper I (CP17/7).

only a generic statement for each product on what type of needs it will meet, is most likely to be non-compliant. That is to say, this is the case unless the insurer can show that they have, identified, and all the products offered are consistent with, the consumers "demands and needs".[188]

Conducting the demand and needs test for each consumer before providing advice on what insurance products are suitable will help improve not only their understanding of telematics insurance, but also contributes to having the means and information available to evaluate the impact telematics insurance has more generally within society. However, there is concern that it will lead to more personal data being collected about potential consumers which could be problematic in terms of compliance by insurers with the data protection principles of the GDPR.189

3.3.5 Information Disclosure: The Insurance Product Information Document.

As mentioned, the IDD requires insurers to provide consumers with a simple, standardised Insurance Product Information Document (IPID).

The IPID, which is a new requirement introduced by the IDD for insurers, presents for each type of insurance product what the key characteristics of the product are.[190] These include what is and what is not insured; what is covered and any restrictions on coverage; key obligations for the policyholder including payment and finally information about the start, end and policy cancellation.

As the IPID only contains key product information it does not replace the need for consumers to receive more detailed information including when they receive an offer for a product how the product complies with their specific needs and demands. This is acknowledged within the IPID which contains the statement that all the necessary pre-contractual and contractual information is available elsewhere.[191]

[188] FCA (2018) *IDD: delivering clear, fair outcomes for consumers from the insurance sector.* Available at https://www.fca.org.uk/firms/insurance-distribution-directive/idd-delivering-clear-fair-outcomes-consumers-insurance-sector (Accessed 20 April 2020)

[189] See Chapter 5 for the detailed analysis of the GDPR.

[190] Article 20(8) IDD specifies which information the insurance product information document (IPID) should contain. EIOPA has provided a widely adopted template.

[191] Article 2 IDD.

Figure VI EIOPA proposed IPID format

The key information provided for on the IPID aims to enable consumers to quickly understand what the insurer offers and to compare between different insurers.[192] However, and despite that most stakeholders welcomed the IPID and its purpose, there are serious concerns about whether in its current form the IPID is effective and proportionate.193 If it is not effective to achieve its purpose it poses disproportionate administrative burdens for insurers to maintain. Main concerns include whether consumers are better informed and enabled to make comparisons, as well as the potential risk of overreliance by consumers on the basic information contained in the IPID.[194] As a result, consumers could even be less informed about the specificities of their insurance if they do not also read the main insurance policy documents.[195]

Research already shows that the IPID may not present potential consumers with key information necessary for them to make an informed decision. A comparison shows different interpretations amongst insurers of what is key information to be shared with consumers. See for example the IPIDs from an insurer in the Netherlands and in the United Kingdom, whereas the latter mentions that the policy may be cancelled as a result of breaching policy terms or severe traffic violations. The former only mentions that driving behaviour may lead to a premium reduction, but not that a traffic violation

---

[192] Recital 3:*(...) to provide customers with product information which is easy to read, understand and compare*, Commission Implementing Regulation (EU) 2017/1469 *laying down a standardised presentation format for the IPID*, C/2017/5544, OJ L 209, 12.8.2017, pp. 19–23.

[193] Insurers saw the potential use for a standardised document to help inform consumers but questioned whether the IPID in its current form was adequate. For example, several insurers said they found the template unclear and did not know what information to provide. Van den Boom (2020) *Interviews with Insurance industry: insurers and industry representatives.*

[194] Several insurers and representatives from the insurance industry mentioned that they found the IPID was more an administrative burden and questioned whether consumers used the IPID to compare insurers before making a decision. Van den Boom (2020) *Interviews with Insurers and experts in the Insurance industry*

[195] Van Boom W, et al. (2016) '*If It's Easy to Read, It's Easy to Claim – The Effect of the Readability of Insurance Contracts on Consumer Expectations and Conflict Behaviour*', Journal of Consumer Policy, Volume 39, Issue 2, pp 187–197; Davis J, (1977) *'Protecting consumers from over disclosure and gobbledygook.* Virginia Law Review, 63(6), 841–920; Pander Maat H, et al. (2009). *De gebruiksvriendelijkheid van hypotheekinformatie*, Universiteit Utrecht.

could lead to the policy being cancelled immediately.196 This should be regarded as key information for consumers to know about risks involved with the insurance product before deciding whether to opt for telematics insurance. Others have shown that current interpretations of the IPID format by insurers offering the same product do not allow consumers to make comparisons, given that insurers do not provide comparable information.[197]

Hence, it is important to continue to monitor signs of overreliance on the limited information contained in the IPID, as it could result in consumers becoming less informed about insurance products, which is against the aim and purpose of the IPID.[198]

3.3.6 Considerations

Based on the general principle (article 17 IDD), and for insurers to comply with the product oversight and governance requirements (article 25 IDD), it can be said that this gives insurers a legitimate interest to obtain (access to) vehicle data when it offers telematics insurance products. Since it is in the consumers best interest to be able to obtain insurance that is fair and affordable, insurers should be enabled to innovate, based on data they consider to be relevant. For telematics insurers this includes having adequate access to, and use of, vehicle-generated data when this is relevant also for compliance with the product oversight and governance requirements of article 25 IDD.

It remains to be seen how the scope of the IDD will be interpreted in the different Member States, including whether consumers can be held to provide access to telematics data while being adequately protected against the potential for use thereof by insurers for purposes that cause harm or consumers may not agree with. As such, monitoring of the IDD in terms of regulatory fitness is important to ensure the take-up of telematics insurance in a way that balances consumers' and insurers' interests.

3.4 In Utmost Good Faith

This part contains 4 sections *3.4.1 The duty of Utmost Good Faith 3.4.2 The scope of a duty to inform; 3.4.3 Industry guidelines and good practice; 3.4.4 Consequences of non-compliance.*

3.4.1 The duty of Utmost Good Faith

196 A comparison was made between the IPID documents provided for online from two Telematics insurance companies: VIVAT Schadeverzekeringen N.V. and Aioi Nissay Dowa Insurance Company of Europe (insurethebox). Available on file with the Author.

197 Research shows that comparison remains difficult even when a standardised format is used insurers differ in the level and type of information they provide. See Brofeldt A and Bo Kolding-Krøger C,(2019) *'The promised increase in customer protection under the IDD. Customers' demands and needs and comparable pre-contractual information in form of a standardised IPID'*, Paper and presentation at 8th AIDA Europe Conference.

198 The FCA's *Smarter Consumer Communications Feedback Statement (FS16/10*) noted that consumer communications should be simplified for a better understanding by consumers of the key product benefits and limitations, enabling informed decisions based on a broader range of considerations alone than price. Available at < https://www.fca.org.uk/firms/insurance-distribution-directive> (Accessed June 2020)

In English insurance law, contracts are said to be *uberrimae fidei*, or contracts of *the utmost good faith*.[199] Aiming to address the lack of information symmetry between insured and insurer, the duty of utmost good faith means that both parties are bound to disclose and not to misrepresent any material facts affecting the risk before the contract is conducted.[200] In this respect insurance law differs from contract law, since English law does not recognise a general duty to disclose material facts known to one contracting party but not to the other.[201]

Judge Mansfield in *Carter v Boehm* explained the rationale as follows:

Insurance is a contract based upon speculation (...) Good faith forbids either party by concealing what he privately knows, to draw the other into a bargain from his ignorance of that fact, and his believing the contrary.[202]

The heavy burden of disclosure for the insured was considered justified, given that the insurer was dependent upon them to provide full disclosure of all circumstances to be able to calculate the risk underwritten by them. However, the duty of Utmost Good Faith disclosure no longer applies to consumer insurance contracts considering consumers could not be expected to know and therefore disclose all the relevant information their insurers would need; and for their contracts to become void in case of a breach was considered too harsh given the consequences.[203] Instead, consumers now have a duty to take *reasonable care* not to make a misrepresentation.[204]

Important to note here is that English law only refers to the duty to disclose information before the contract and in case of a variation but does not mention a specific duty for consumers throughout the policy. According to Section 2 of the Act:

(2) It is the duty of the consumer to take reasonable care not to make a misrepresentation to the insurer (...)[205]

What consists of a "misrepresentation" is not further defined, with the exception that this is the case when the consumers do not confirm or amend in response to a specific request by the insurer.206

---

[199] Codified in the *Marine Insurance Act 1906, s.17.* Important to note here that English law, compared with other jurisdictions, does not have a general duty of good faith. See McKendrick, E (2017) *Contract Law*, Palgrave

[200] Gurses provides the following useful definition: *'the party proposing the insurance is bound to communicate to the insurer all matters which will enable him to determine the extent of the risk against which he undertakes to guarantee the assured.'* Gürses O (2015) *Marine Insurance Law*, Routledge p. 51

[201] Non-disclosure is concerned with the insured's duty to volunteer material facts. Misrepresentation is the duty to answer accurately questions raised by the insurer. See case Keates v Cadogan (1851) 10 CB 591.

[202] The duty of Utmost Good Faith or '*uberrimae fidei*' for insurance contracts was established in the landmark case: Carter v Boehm (1766) 3 Burr 1905.

[203] On the need for this reform, see the Law Commission report (1980) *Insurance law – non-disclosure and breach of warranty*, No. 104, London; British Insurance Law Association, (2002) *Insurance contract Law reform*; Available at https://www.i-law.com/ilaw/doc/view.htm?id=107614 (Accessed 10 November 2020) Lowry J, (2011) Insurance *Law Doctrines and Principles,* 3rd edition, Hart Publishing

[204] Article 2*(4)* Consumer Insurance (Disclosure and Representations) Act 2012 *(hereinafter Act 2012).*

[205] A failure by the consumer to comply with the insurer's request to confirm or amend particulars previously given is capable of being a misrepresentation (...) Art. (3) Act 2012.

[206] Section 2(3) Act 2012.

Under common UK law it is a misrepresentation when something is either inaccurate or misleadingly incomplete.[207] Three aspects are relevant: whether the insured

a) knew about the facts;
b) knew that they were relevant to the application;
c) has taken reasonable care to state the facts accurately.

The duty to take reasonable care applies to all elements.

Important for insurers is to make sure the questions they ask customers are as clear, specific and unambiguous as possible so that "a reasonable consumer" would understand that this question was asking about particular and relevant information.[208] This will also make it easier for the insurers to identify dishonest and fraudulent claims.[209]

3.4.2 The scope of a duty to inform

According to the UK Act consumers have a Pre-contract and pre-variation information duty and must provide the insurer with information upon request. Arguably this includes telematics data in the case of telematics insurance when the consumer is asked for this data and if the consumer refused or does not provide the information this could constitute a misrepresentation against which the insurer has redress. If a consumer is not willing to provide the data insurers can refuse to accept them.

The standard of 'reasonable care' required is that of a reasonable consumer which is determined by taking into consideration all relevant circumstances.[210] Besides making clear that there is a lack of reasonable care when the insured is dishonest by ignoring for example the existence of facts or deliberately misstating known facts; the full scope of what is reasonable has not been defined.[211]

Some examples given of relevant considerations when determining "reasonable care" are

Section 3(2) (...)

(a) the type of consumer insurance contract in question, and its target market.

(b) any relevant explanatory material or publicity produced or authorised by the insurer.

(c) how clear, and how specific, the insurer's questions were.

(d) in the case of a failure to respond to the insurer's questions in connection with the renewal or variation of a consumer insurance contract, how clearly the insurer communicated the importance of answering those questions (or the possible consequences of failing to do so);

(e) whether or not an agent was acting for the consumer.

---

[207] Pinsent Masons, Out-Law Guide *'The Consumer Insurance Act'* Available at https://www.pinsentmasons.com/out-law/guides/the-consumer-insurance-bill (Accessed September 2020)

[208] A general question for a policy renewal such as 'has anything changed in the information we asked for in your proposal form?' is unlikely to be specific enough for the consumer to reasonably have known what information was important. The FCA's *Smarter Consumer Communications Feedback Statement* (FS16/10)

[209] Consequences include claim rejection, and it may become more difficult to obtain affordable insurance in the future. Available at https://www.abi.org.uk/data-and-resources / (Accessed September 2020)

[210] Art.3(3) Act 2012.

[211] Art. 3(5) Act 2012.

Section 3(4) furthermore states that relevant knowledge of the insurer about any characteristics or circumstances of the actual consumer will also be considered to determine reasonable care.

Based on the previous, when applying for insurance or at variation, telematics data should be disclosed to the insurer by the consumer if:

- The data is material to the risk, meaning that it would influence a prudent insurer in deciding whether to offer cover against the proposed risk, under what premium and under what terms
- The consumer knows or can be presumed to know about the data, meaning that it is not required for the insured to disclose material facts they do not know or could not know
- A reasonable consumer in this position would disclose the data to the insurer, taking into consideration the nature and extent of the insurance cover sought, and the circumstances[212]

When it comes to "reasonable care" it is generally agreed that this does not include a duty to undertake extensive investigations.[213] However if the data were obviously relevant and easily ascertainable it is reasonable for consumers to know and disclose them. The law commission in this regard recommends that knowledge should be assumed if the material fact would have been ascertainable by reasonable inquiry and if a reasonable consumer applying for the insurance in question, would have ascertained it. Even if the previous conditions have been met, only when *a reasonable consumer* would do so given the circumstances does information have to be disclosed. The courts will decide what knowledge and experience can be expected of the reasonable consumer given the circumstances.

These include for example:

- the type of insurance and whether it is ongoing or only temporary insurance and the magnitude of the proposed risk.[214]
- whether the insurer gave the impression that certain material facts did not need to be disclosed, either because they already had access to them or considered them irrelevant.
- if the insurer failed to make clear to the consumer to disclose relevant material facts the consumer should be protected against non-disclosure.[215] This is especially the case with respect to proposal forms where the consumer may think that the questions cover all material facts that are needed by the insurer. Only if the insurer has made it clear to the consumer through explicit warnings that additional information may be required is there a duty upon the

[212] See the recommendation from the Law Commission report (1980).

[213] Financial Ombudsman, *note on misrepresentation and non-disclosure,* Available at http://www.financial-ombudsman.org.uk/publications/technical_notes/misrepresentation-and-non-disclosure.htm (Accessed 18 September 2020)

[214] Lowry J and Rawlings P (2004) *Insurance Law: Cases and Materials*, Bloomsbury Academic; Law Commission report (1980).

[215] The Law Commission in this regard proposed that in the case of forms the insurer should ask specific questions to cover all material facts and not accept that a residual duty exists. However, criticism of this approach was that this would lead to unmanageable complex and lengthy forms or the inclusion of general inquiries which place too heavy a burden on the consumer to volunteer further information. Law Commission report (1980).

consumer to provide the information.[216] Whether or not the actual consumer knows or was ignorant about the facts requested is irrelevant.

Consumers may be held by contractual agreement to provide their insurer with access to telematics data throughout the duration of their policy. However, in cases where there is no contractual obligation to do so UK insurance law does not specific whether the consumer has a duty to disclose relevant information after contract formation or variation. The law only refers to the situation before contract formation (which includes renewal) or at variation. Because of the relevant information about the insurance risk that can be obtained from telematics data, this raises the question whether based on UK insurance law there is a duty for consumers to inform insurers by giving them (access to) real-time telematics data.

The adjustments of premiums, with some exceptions, in real time is not something that insurers offer. Under certain conditions however, some telematics insurance policies do, although indirectly, respond to data in real time. Most telematics policies contain the right to terminate the agreement in response to (real-time) data. For example, when the connection is lost for a longer period of time so that the insurer is not able to conduct their risk assessments, or in cases of serious traffic violations.

Given the relevance of telematics data for any insurer, should a consumer who has at some point gained knowledge about a change in their risk score inform their insurer? For example, because they have signed up for a service that provides them with a risk score and after a few days it shows they have been speeding?

Because the Act of 2012 does not exclude the duty for consumers to provide information throughout the policy, there may come a time where the duty not to make a misrepresentation includes the sharing of data in real time to inform insurers of any changes in risk. For now, this has not been challenged or confirmed by the courts to fall under the obligation for consumers. Instead, the FCA argues that the only time a customer has a duty to disclose information is when they buy a policy or when they renew it. And only in exceptional circumstances which is when the consumer deliberately gave a misrepresentation of the original facts can the insurer who finds out afterwards cancel the policy.[217]

3.4.3 Industry guidelines and good practice

The Financial Ombudsman guidelines provide relevant guidance on how they decide upon matters of misrepresentation, looking at what the insurer asked and how it was asked, and whether the answers were accurate.

Asking clear questions falls under what the Financial Ombudsman considers to be a fair information-gathering process.[218] The Financial Ombudsman does not consider it reasonable to expect applicants to volunteer information, rather it is up to the insurer to ask. The Financial Ombudsman looks at

---

[216] See for the discussion on this issue Lowry and Rawlings, (2004).

[217] See on the considerations of the UK Financial Ombudsman for deciding upon misrepresentation and non-disclosure: Available at https://www.financial-ombudsman.org.uk/businesses/complaints-deal/insurance/misrep-and-non-disclosure.> (Accessed 06 September 2020)

[218] Collett M. (2013) *Non-disclosure*, Chapter 4 in Tyldesley P (ed) (2013) *Consumer Insurance Law*, Bloomsbury.

whether the insurer sufficiently explained the importance of providing the correct information;[219] the potentially serious consequences of providing information that was not correct; and that it would not be checking the information but relying on the consumer's answers being accurate.

Considering whether the *answers given are accurate,* the Financial Ombudsman takes into consideration that a consumer can only answer questions to the best of their knowledge and belief, and what is reasonable to expect applicants to remember about events in the past. Insurers therefore should make it clear to check whether information given is correct, instead of basing their answers on an estimate.

Example case ref: DRN9300989
The FO was asked to decide upon the following matter: Mr C put in a claim for a stolen motorbike with his insurer Zenith. However, since the bike's model from the registration certificate was a different model the insurer voided the policy and declined the claim. The insurer said that it wouldn't have offered cover if it had known the correct, imported, model.

In deciding upon this case, the FO considered since no specific questions were asked about the make or origin of the motorbike and there was no evidence Mr C did not take reasonable care in answering the questions Zenith's decision to void the policy and refuse the claim was not fair and reasonable.

It is up to the insurer to provide evidence that the answer given was inaccurate, misleading or otherwise inadequate. This reflects the fact that an insurer is relying on non-disclosure as a defence to an otherwise valid claim.[220] In cases where there is not enough evidence to show that clear questions were asked, and appropriate warnings about the consequences of giving an inaccurate response were given, the Financial Ombudsman is likely to decide that the consumer took reasonable care and that there's no qualifying misrepresentation. Finally, what the insurer knows or ought to know will also be taken into consideration to determine whether there is a failure on behalf of the consumer.

3.4.4 Consequences of non-compliance

If the insured has taken reasonable care the insurer has no remedies, only if the insured is guilty of a qualifying misrepresentation does the insurer have remedies for the breach of the duty.[221] The burden of proof to show misrepresentation is on the insurer.

Section 4(6) *Qualifying misrepresentations: definition and remedies* states that an insurer has a remedy against a consumer for a misrepresentation made by the consumer before a consumer insurance contract was entered into or varied only if:

> *a) the consumer made misrepresentations in breach of duty section 2(2); and*

[219] The UK Financial Ombudsman (FO) states that together with the duty of asking clear questions, insurers must also carefully explain to consumers the importance of disclosing material facts and the serious consequences of not doing so. Namely that the policy may be avoided, and claims refused.

[220] Collett (2013).

[221] Lowry (2011) p. 146.

b) the insurer can show that without the misrepresentation they would not have entered into the contract as is.[222]

Section 5 of the 2012 Act describes what qualifies as a misrepresentation, namely when the insured is either *(a) deliberate or reckless, or (b) careless.*

The insured is *deliberate or reckless* when they knew or simply didn't care whether what they said was untrue and misleading and they knew or didn't care whether it was relevant for the insurer to know.[223]

Section 5 Qualifying misrepresentations: classification and presumptions
(2) A qualifying misrepresentation is deliberate or reckless if the consumer –
(a) knew that it was untrue or misleading or did not care whether or not it was untrue or misleading; and
(b) knew that the matter to which the misrepresentation related was relevant to the insurer, or did not care whether or not it was relevant to the insurer.

It is for the insurer to show that a qualifying misrepresentation was deliberate or reckless.[224] As a result the insurer may avoid the contract, refuse a claim and retain the premiums when the breach was deliberate or reckless. It is considered fair for the insurer to keep all the premiums when avoiding the policy in cases where it is likely that the consumer's misrepresentation was made to obtain a benefit such as cheaper premiums they were not entitled to.[225]

For example, in case Ref: DRN9110532 the FO had to decide upon a case of deliberate or reckless misrepresentation under the Consumer Insurance (Disclosure and Representations) Act 2012. *The case of the matter was that in March 2016, Mr R had a minor accident while driving his sister Mrs R's car. He phoned Aviva, not to make a claim but to notify them of the accident. Because of what Mr R had told its representative including that he was the one who used the car the most and paid the insurance, this in combination with evidence that at the time, a number of online quotations had been sought for the car in Mr R's name, which had been for a higher premiu,. Aviva concluded that the main driver for the policy had been deliberately or recklessly misrepresented by Mrs R to get a lower premium. Since they would not have offered cover, Aviva declared the policy void and retained the premiums paid, which the FO agreed was reasonable given the evidence provided.*

For the insurer to be entitled to have the policy declared void, the insured's misrepresentation had to be "deliberate" or "reckless": if a representation was merely "careless", that would result only in entitlement to for example charge a different insurance premium.[226]

---

[222] ' [..] *any material non-disclosure would only lead to avoidance if it induced the insurer into entering into the contract. If inducement is not proved as a fact then the insurer may not rely on the non-disclosure to avoid the contract.* It does not need to be shown that the risk would have been declined, but only that the insurer would have taken it into account. inducement is a requirement which was implied to the Act by the House of Lords in *Pan Atlantic Insurance* Co Ltd v Pine Top Insurance Co Ltd (1995) 1 AC 501.

[223] Section 5(2) UK, 2012 Act

[224] Section 5(4) UK, 2012 Act

[225] See Financial Ombudsman, *note on misrepresentation and non-disclosure.* Available at https://www.financial-ombudsman.org.uk/businesses/complaints-deal/insurance/misrep-and-non-disclosure (Accessed 10 September 2020)

[226] Sections 2–5 of the UK, 2012 Act, and Schedule 1.

5 (3) A qualifying misrepresentation is careless if it is not deliberate or reckless.

If the misrepresentation was careless, the contract is returned to a position before the false statement was made to determine what the appropriate response would be. This is determined by asking how the insurer would have responded in absence of the misrepresentation.

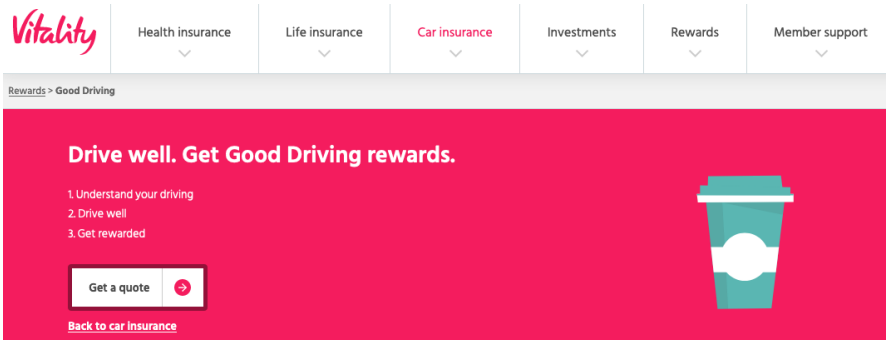
- If the insurer would not have entered the contract at all, the insurer is entitled to avoid the contract and refuse to pay out claims. The insurer does have to pay back the premiums paid by the consumer; or
- If the insurer would have entered the contract, but on different terms the contract is treated as if entered on those terms if the insurer agrees.

The insurer must provide any available evidence that suggests what would have happened if they had been given the correct information.[227]

3.5 Synthesis: The mutual duty for insurers and the insured.

When car data becomes available improving access to this data for insurers would contribute to facilitating the development and take-up of telematics insurance. Mentioned as a specific innovation, connected cars bring for the insurance industry, is the opportunity for insurers to adjust premiums in real time. However so far insurers do not make full use of data post contract or post variation for premium adjustments.

Figure VIII Screenshot Vitality Insurance © 2022 Vitality.



Insurance company Vitality [*Figure VIII]* for example is an insurer who uses rewards in return for consumers sharing their data.[228] Vitality guarantees that premiums will not go up before renewal, but consumers can earn rewards for good driving and when they stay claim free earn a '*No Increase Guarantee'* at renewal.

Despite the benefits, none of the insurers have said they would use monitoring to adjust premiums in real time., with two exceptions. One of the insurers said they would immediately cancel a policy when

[227] Financial Ombudsman, *note on misrepresentation and non-disclosure*

[228] See for more information how their plan works Available at https://www.vitality.co.uk/rewards/good-driving/ (Accessed 10 September 2020)

the consumer committed a serious enough traffic violation; or when the connection with the car to obtain the data was lost and could not be re-established.[229]

Consumers have a duty to provide insurers with relevant information upon request pre-contract and pre-variation. Research shows that actual driving behaviour and driving style correlates with the risk for accidents or loss. Data that can be analysed to provide such information will therefore be relevant for insurers. Using real time data would enable insurers to adjust premiums in real time. This could help reduce the risk of moral hazard when consumers know their driving has a direct influence on their premium. Consumers may therefore (no longer) be able to refuse to provide insurers access to car data unless they are willing to accept the negative consequences.[230]The duty for consumers to inform insurers pre-variation may also include giving access to car data throughout the duration of the insurance policy.

Confirming the understanding that both insurers and consumers have responsibilities towards each other the recommendations (Chapter 6) focus on clarifying a) the duty for consumers to provide insurers access to the information and data they need, such as telematics data in the context of telematics insurance; and b) the duty for insurers only to use the data for purposes that are in consumers' best interest, which not only includes protecting consumers against privacy harms and unfair discrimination but also allows insurers to generate profit to remain competitive in the market.

It goes beyond the scope of this research but still important to consider is that when the use of telematics data becomes increasingly widespread in society this may have undesirable effects. For example, it could lead to a market where consumers, if they refuse to provide access for insurance purposes they do not agree with, pay for their privacy with higher insurance premiums. A discussion about the impact on the underlying notion of solidarity and the right to privacy because of a duty to disclose telematics data is outside of the scope here but must be addressed more broadly in society.[231]

[229] These examples were given by an insurer and confirmed by several others during the interviews, Van den Boom (2020) *Interviews with the Insurance Industry*

[230] See Van den Boom (2020) for a detailed analysis of the consumer duty to actively seek and provide access.

[231] The concerns about human rights law and anti-discrimination in the context of telematics insurance is not addressed in detail here but is addressed in Van den Boom (2020) '*Consent to being discriminated against*' (2020) (working paper on file with author).

CHAPTER 4: CAR DATA GOVERNANCE

This chapter assesses the legal framework regulating access to and control over car data to contribute with insights from overlapping regulations that have relevant data access and disclosure requirements.

Based on the understanding that who holds the data controls the data value chain, the current situation in the connected car ecosystem where the car manufacturers, through contractual agreements with their consumers, are in the position to decide upon access to car data has raised concern amongst stakeholders including insurers and consumer representatives.

The following 10 parts, grouped under four headings, analyse whether the Regulatory framework is fit for purpose to address these concerns as follows:

– I INTRODUCTION*: Part 4.1 Markets driven by car data* on the current situation where markets have become data driven

– II DATA UNDER CONTROL; *Parts 4.2–4.4 on Copyright, Database and Trade Secret protection to allocate ownership and access rights*

– III DATA FOR COMPETITION; *Parts 4.5–4.9 on Article 102 TFEU as a remedy to establish data access*

– IV CONCLUSIONS AND RECOMMENDATIONS *4.10 Markets driven by data control* provides conclusions on the question of allocation of data ownership and control and a duty for car manufacturers to supply (access to) car data

IN THIS CHAPTER THE DISCUSSION COVERS the limited scope of protection of personal data for consumers through intellectual property rights, the scope of database and trade secrets for car manufacturers to strengthen their control over car data. In the case of market failures as a result, competition law provides a remedy for telematics insurers to obtain access to car data as an essential resource. Clarification of key requirements is needed to provide legal certainty and to ensure adequate allocation of control, protecting interests and incentives for data sharing.

I INTRODUCTION

4.1 Markets driven by car data

What may have been true on the internet back in 1993 – that nobody knew you were a dog – is no longer true today thanks to the Internet of Things and our use of connected devices.[232]

Continuing innovation in the automotive industry for example has made it possible not only to improve the safety and security but also the convenience of driving. With the data connected cars generate it is now possible to tell whether consumers not only "drive like a girl" but are a girl. [233] Such profiling enables insurers to increasingly provide consumers with individualised products and services.

The use of data to improve the affordability of car insurance is another good example where the development of the connected car has led to innovations that contribute to consumer welfare. The innovative value from the connected car for telematics insurers comes from the opportunity to analyse car data to improve, for example, their risk assessments and set more accurate premiums to cover the expected costs.[234]

Consumers have been willing to share their personal telematics data with insurers if this means being able to obtain more affordable insurance.[235] However, the situation at the moment is generally that they do not control whether insurers can access in-car data directly. Instead, through car design including the way connectivity to the in-car data and communications system is established and agreements with consumers, the car manufacturer in practice determines the level of access to the connected car and the value it brings. This "gatekeeper" position has raised serious concern amongst other stakeholders, including insurers who want to enter and compete fairly within the connected car ecosystem.[236]

Enabling access to in-car data and resources however also poses serious risks including for car security, safety and privacy. The European Automobile Manufacturers' Association (ACEA) has identified hacker attacks, endangering safety-critical functions, driver distraction and software

---

[232] Steiner P (1993) published by The New Yorker. Available at https://en.wikipedia.org/wiki/On_the_Internet,_nobody_knows_you%27re_a_dog (Accessed 18 June 2020)

[233] Black box insurance "Drive like a girl". Available at https://www.drivelikeagirl.com/about-us (Accessed 18 June 2020)

[234] See chapter 3 on the value proposition of car data for insurance purposes.

[235] Surveys show that around 60-70% per cent of people would share their data in exchange of such benefits; McKinsey (2016); SBD (2020) *What Europeans think* Available at <https://info.otonomo.io/sbd-eu-consumer-survey-results-lp> (Accessed 02 June 2021)

[236] "any business based upon generating, collecting and exploiting data currently needs to take extreme care in both defining and obtaining the rights (...) problems are multiplied when a business operates across borders." De Wolf & Partners (2016) *Legal study on Ownership and Access to Data*, Final Report, Luxembourg, Publications Office of the European Union, p. 6.

malfunction as key risks.[237] While car manufacturers have responded to the concerns by saying they are willing to facilitate access, they currently do not provide such access for third parties under the same conditions they have themselves to the car system and data it generates.[238]

To facilitate the take-up of telematics insurance the regulatory challenge is therefore to allocate control over car data between the consumer; the car manufacturers and telematics insurers in a way that balances legitimate market-driven interests, the need for fair competition and adequate consumer protection in terms of privacy, security, as well as policy to improve road safety.

II DATA UNDER CONTROL

When it comes to the question who can control access to data, there are different European intellectual property rights (IPR) each with their own subject matter and scope of protection.[239] As cars generate different categories or "types" of data these may fall under the scope of a different sometimes overlapping legal regime.[240] Relevant for the discussion on telematics insurance are the following: *the classification of data* to fall under the scope of Copyright; The EU Database Directive and/or Trade Secrets Directive for protection. Whereas the general consensus is that telematics data does not attract copyright the following analysis focusses on *the rights to control and/or access the data established* by the latter two regimes.

What follows are three parts:

Part 4.2 The role of the EU Database Directive confirms that car manufacturers are mainly in control over access to connected car data which, although limited, they can strengthen via database protection. Part *4.3 The role of the EU Trade Secrets Directive* analyses the key requirements and scope of trade secrets protection for car data. *Part 4.4 Insights: who controls data access controls take-up of telematics insurance* concludes the first section with the analysis of the Trade Secrets Directive to incentivise data sharing by car manufacturers granting them rights against unlawful use.

4.2 The role of the EU Database Directive

This part contains four sections *4.2.1 Database protection for car data collection 4.2.2 The scope of protection: exemption for lawful users 4.2.3 The scope of protection: balancing interests 4.2.4 The role of the database directive for innovation*

---

[237] See the special European Automobile Manufacturers' Association website. Available at *CarDataFacts.eu* (Accessed 04 April 2020)

[238][238] The ACEA representing the car manufacturing industry in Europe has as its guiding principle that its members are '*committed to making car-generated data available for third-party services in a manner that ensures the protection of the user's personal data, does not endanger the safety and (cyber) security of the car and its occupants, and does not undermine the liability or intellectual property rights of the car manufacturer.'* Available at <https://www.acea.be/news/article/auto-industry-actively-sharing-car-data-putting-consumer-choice-safety (Accessed 04 April 2020)

[239] Art. 17(1) EU Charter of fundamental rights. The EU's regulatory framework for copyright and neighbouring rights (acquis) harmonises essential rights and reflects Member States' obligations under the Berne Convention and the Rome Convention, the "TRIPS" Agreement and the World Intellectual Property Organization (WIPO) Internet Treaties.

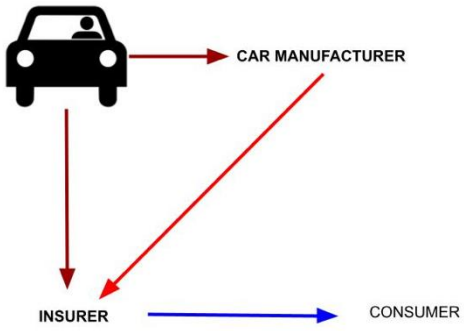
[240] Not all data is stored after use within the car's system and the type of data may differ between different models and brands.

The data that is generated by consumers when driving that is relevant for telematics insurance consists of functional data and behavioural data. Depending on what purpose insurers have there is value for them in being able to obtain historical and/or real-time data either directly from the car (offline) or from the car manufacturers server (online). Having access to behavioral data will allow them to search for instances that indicate harsh braking, speeding or otherwise information that correlates to driving behaviour. However, connected cars innovative potential is even greater when insurers can obtain access to data in real time. With this they can make direct premium adjustments in response to driving behaviour which contributes to more accurate insurance for consumers, some argue would even help reduce moral hazard when drivers know their actions will have a direct effect on how much they must pay.

Acknowledging the benefits and potential risks direct access brings including for consumer safety and privacy but also to their investments, car manufacturers remain hesitant to facilitate uncontrolled access to both functional and behavioral data generated and stored in the car or on their servers.

The next section analyzes whether the Database Directive is fit for purpose to balance between the interests of car manufacturers and insurers based on the understanding that without adequate protection car manufacturers lack the incentive to invest in the further development of connected cars and to making data available for further use by third parties.

Figure IX Car data access and data flows



4.2.1 Database protection for car data collection

4.2.1.1 The notion of a 'database'

The first question is whether a collection of car data including sensor generated data falls under the definition of what constitutes a database making further the distinction between historical and real time data.

Article 1(2) of Directive 96/9/EC on the legal protection of databases (hereinafter Database Directive) defines a database as "a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means".[241]

What follows from the analysis is that the offline and online collection generally meet these requirements, which have been further defined in the recitals and caselaw.[242]

To meet the requirement for data to be arranged *in a systematic or methodical way* data does not need to be stored in an organized manner as long as there is a means enabling retrieval of the data.[243] With the legal requirement for certain data to be made accessible via the OBD port in combination with the data being considered personal data both the offline and online collection of personal data to be of value will be stored in a systematic way or at the very least be made retrievable. In the case of the car this can be done via an OBD reader in combination with specific software where data is encrypted. Given the requirements for lawful processing of personal data the car manufacturer must have systems in place that allow consumers to gain access and have the data made available in a *structured, commonly used and machine-readable format* which requires the data if not arranged at least to be stored in an organized manner so that this is possible. [244]

To meet *the requirement for independency*, the data must be separable without losing their value of information. A film is therefore not a database because the elements (sound, images) when taken on their own out of context are considered to have lost their value.[245] Relevant for the assessment of car sensor generated data is that *the autonomous informative value* must be assessed in the light of the value of the information for a third party interested in the data.[246] As a result, much if not all of the data the car sensors generate both functional and behavioral will meet this requirement. Data generated (which can be a small or large amount) by the car sensors on for example the use of braking, speed and the steering wheel has value according to insurers because it provides them with information about the driving behavior of the consumer. Functional data may have value also for some insurers but more obvious for direct competitors of the car manufacturer because it may relay information about the design and functioning of the car systems that is valuable from a competition perspective.

The requirement for data to be *individually accessible is met* when taking into consideration that this is a necessary condition for the car to function as well as a legal requirement again to facilitate repair and maintenance and comply with the GDPR access rights. the car manufacturer who invests in making its database available for third parties will ensure the data meets their use requirements which for insurers includes having access to individual data.[247] With respect to how much data is 'individual' this includes a combination of data.

---

[241] The Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases. (Hereinafter Database Directive)

[242] The definition has a wide scope confirmed in case law. OPAP, C 444/02, ECLI:EU:C:2004:697; Ryanair, C-30/14, ECLI:EU:C:2015:10; See in general Derclaye (2008) *The Legal Protection of Databases A Comparative Analysis*. Cheltenham, UK; Northampton, MA: Edward Elgar.

[243] Recital 21 Database Directive

[244] Art. 15, 20 and recital 68 GDPR See further chapter 5

[245] Recital 21 Database Directive

[246] Verlag Esterbauer, C-490/14, ECLI:EU:C:2015:735, para. 27; Ryanair, C-30/14, ECLI:EU:C:2015:10

[247] Note that the Database Directive does not give a specific threshold.

As the function of a database is to enable users to search for information there is some uncertainty whether the collection of data in the car (offline) and/or the collection of car data on the car manufacturers server constitutes a database under the definition of the Database Directive since this has not been the main purpose of the collection of car data. However, with the growing awareness and subsequent use of car generated data the collection and storage will likely increase including making the data available for use beyond the connected car functionality.

The offline storage of car data is meant to serve the functioning of the connected car and in compliance with regulation to facilitate repair and maintenance. As a result of legislation data is made available via the OBD port to be read out with a special device. To facilitate this the data must be stored and available in such a way that it enables users to access and search for the relevant data.

Whereas some data communication from the car to the server is necessary for connected car functions, other data and storage thereof is mainly used by the car manufacturers for other purposes. For the data to have value it needs to be arranged in a way that allows for further processing and information retrieval. Car manufacturers use the data for product development and marketing analysis and are increasingly making the data (in)directly accessible for drivers and third parties. For the data to be useful for further processing it must meet user requirements which in case of insurers means being able to access individual data. Looking at the pricing model for car data is another clear indicator that independent car data does not lose its value for users when taken independently.[248]

Based on the understanding that both the offline and online collection is a database under the definition of the database directive, the next sections question whether the car manufacturer has the right to refuse access for insurers to obtain car data from the offline and/or online database.[249]

4.2.1.2 The legal qualification of a database

Under Article 3(1) of the Directive, *"databases which, by reason of the selection or arrangement of their contents, constitute the author's own intellectual creation"* are protected by copyright.[250] According to the ECJ a database is original if "through the selection or arrangement of the data which it contains, its author expresses his creative ability in an original manner by making free and creative choices and thus stamps his 'personal touch'.[251] Given the functional purpose for the collection of sensor generated data stored either within the car or on the car manufacturers server it is unlikely that these will meet the threshold of originality. Instead, the offline and online car database may qualify as a non-original database.

Acknowledging the value and easy of copying also of non-original databases the Directive has

[248] See for an example of car data pricing Available at https://www.caruso-dataplace.com/pricing/ [accessed 14 February 2022)

[249] Whereas the reader is reminded that the UK is no longer part of the EU therefore what follows in terms of regulation may differ with respect to the protection of UK Databases. Databases created in the UK before 1 January 2021 will continue to be protected in all EEA member states. UK sui generis databases created after that date will not attract protection in EEA member states. Available at https://www.gov.uk/guidance/sui-generis-database-rights. (Accessed 01 April 2022)

[250] Recital 15,16 Database Directive

[251] Recital 30,31 Database Directive. Footbal Dataco, C-604/10, ECLI:EU:C:2012:115, para. 38. Infopaq International, C-5/08, ECLI:EU:C:2009:465, para. 45; Painer, C-145/10, ECLI:EU:C:2011:798, para. 89

introduced a new Sui Generis right for database protection to stimulate the making thereof.[252] Under the scope of the Sui Generis right; the maker of a database, has the exclusive right to prevent the extraction and/or re-use of the whole or of a substantial part of the contents of that database.[253] The Sui Generis right arises automatically, without any formal requirement, the moment the database is completed or disclosed to the public.[254]

Although the Commission stated that in principle the Sui Generis right is limited in the context of machine-generated data, in its recent evaluation on the Directive it was acknowledged that within the context of the new data economy, increasingly more datasets may come to be considered databases.[255]

The legal qualification of the offline and online collection as a database does not automatically mean that the database maker is granted the rights of protection under the Directive as the next section shows this is only the case when a substantial investment is made.[256] This is in line with the aim of the Directive namely to provide protection against unfair competition making parasitical competing products and users who may cause [..] *significant detriment, evaluated qualitatively or quantitatively, to the investment.*[257] Given the purpose of the Database Directive, only when the car manufacturer has made substantial investments does this justify being granted rights to protect their database against 'unlawful' access by insurers.[258]

4.2.1.3 The 'substantial investment' requirement

Databases for which there has been qualitatively or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents receive protection under the sui generis right.[259] The Court of Justice of the European Union (ECJ) determined that in relation to non-creative databases, only investments in the means which enable existing information to be captured and collected in a database can be protected.

---

[252] Recital 12 Database Directive

[253] Article 4 Database Directive

[254] Recital 48 of the Database Directive states that: '*Whereas the objective of this Directive, [..] protection of databases as a means to secure the remuneration of the maker of the database.*; Recital 38,39, 42 Database Directive.

[255] European Commission (2017) *Building a European data economy;* European Commission. (2021) *Inception Impact Assessment.* Available at *https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases/F2660225_en* (Accessed 01 March 2022) See Drexl (2017) p. 273; Derclaye E and Husovec, M, (2021) *Sui Generis Database Protection 2.0: Judicial and Legislative Reforms* European Intellectual Property Review (EIPR) - Forthcoming;

[256] Art7(1) Database Directive

[257] Recital 42 Database Directive

[258]Fischer R, et.al (2018) *Study in Support of the Evaluation of the Database Directive 96/9 on the legal protection of databases,* Final report, DG Connect; See for an in-depth analysis Derclaye E (2005). *Databases sui generis right: what is a substantial investment?* International Review of Intellectual Property and Competition Law. Vol. 36, Nr. 1.

[259] Svenska Spel AB, C-338/02, ECLI:EU:C:2004:696, para. 27; Oy Veikkaus Ab, C-46/02, ECLI:EU:C:2004:694, para. 37.

Applying the criteria developed by the ECJ it is uncertain whether the car manufacturer meets the formal requirements for database rights to arise in either the offline or online database of car data. Arguably the data collected by car manufacturer is the *by-product* of what is the focal product namely to provide consumers with a connected car and the investments are not directed at developing a database to access data.[260] However, this has been changing because many car manufacturers are providing additional services for consumers based on the data as well as provide the data for third party innovations. While the ECJ gives a narrow interpretation, what is argued for here is that the car manufacturers have reached the required level of investment to be granted the Sui Generis Right to the offline and online database, based on the following considerations.[261]

The consideration whether investments were substantial does not include investments made by the car manufacturer in the means to generate data through the car sensors, it does however, include the investments made to obtain the data.[262] The car does not just generate data used within the car for certain functions, it also gets sent to the car manufacturers server where it is likely to be prepared for further processing. This could be considered to fall under the scope as an investment made in *obtaining* the data independent of the resources used to create the data.[263]

According to the ECJ investment in *the obtaining* of the contents refers to the resources used to seek out existing materials and collect them in the database but does not cover the resources used for the creation of materials which make up the contents of a database. This means that the investments in the car sensor technology and generally the development of the car and systems to enable the collection generation and communication of data falls outside of the investments for consideration.

Investments made by the car manufacturer that are considered include investments of resources in the gathering; checking, correcting and updating of data already existing in the database; and to provide users with the convenience of having access to high quality data this will require investments in the verification and presentation of the data.[264] Furthermore, when the car manufacturer provides a dashboard for drivers or otherwise user interface for third parties the making of user interfaces also requires significant investments to be taken into consideration. If the collection is merely the result of being a by product and no subsequent investments have been made by the car manufacturer without there being a (substantial investment) to protect there is no justification for granting car manufacturers

---

[260] See further on this point Kerber, W. and Frank, J. (2017) *Data Governance Regimes in the Digital Economy: The Example of Connected Cars.*

[261] British Horseracing Board Ltd v William Hill Organization Ltd, C-203/02, (2004) ECR I-10415 ; Fixtures Marketing Ltd v Svenksa AB, C-338/02, (2004) ECR I-10497; Fixtures Marketing Ltd v Organismos Prognostikon Agonon Podosfairou EG C-444/02, (2004) ECR I-105449; Fixtures Marketing Ltd v Oy Veikkaus Ab C-46/02, (2004) ECR I-10365.

[262] The British Horseracing Board and Others, ECLI:EU:C:2004:695, C-203/02, paras. 31-32; OPAP, C-444/02, ECLI:EU:C:2004:697, para. 41; Oy Veikkaus Ab, C-46/02, ECLI:EU:C:2004:694,para. 41 and Svenska Spel AB, C-338/02, ECLI:EU:C:2004:696, paras. 24-25.

[263] See the statements of the European Court of Justice in Fixtures Marketing; British Horseracing; Svenska and OPAP.

[264] *Connected Car data must be acquired, cleaned, secured, and stored in a secure system and normalised to a consistent format to present it to more standardised formats.* Otonomo, *Making Connected Car Data Useful*, Available at <https://otonomo.io/blog/connected-car-data/> (Accessed 14 June 2020)

rights to control access.[265] If on the other hand the investments meet the threshold the car manufacturer is granted sui generis rights based on which they have, albeit limited, the opportunity to control access to car data.[266]

Based on the understanding that car manufacturers can meet the threshold; the next sections discuss the scope of protection for car manufacturers to control and refuse access by insurers. What follows from the analysis is that there is a need for reform in terms of balancing the interests of car manufacturers with insurers access (4.2.2) and consumer welfare (4.2.3).

4.2.2 The scope of protection: exemption for lawful users

The rights granted to the database owner to limit access based on their need for an incentive to invest must be adequately balanced against the interests of the free flow of (personal data) for others.[267] There is one mandatory exception to the rights for database protection in the case of for lawful use which cannot be excluded by contracts.[268]

Being granted Sui Generis rights car manufacturer can only protect their database against what is considered unlawful use by insurers which includes when use conflicts with the normal exploitation of the database or when use would unreasonably prejudice their legitimate interests.[269] This is the case if the extraction of car data constitutes a substantial part or when it is an insubstantial part but done *repeatedly and systematic* that the result leads to also obtaining a substantial part.[270]

The right of the car manufacturer is limited by the right of insurers as lawful users to e*xtract* and *re-use* an insubstantial part of the contents of that database, and to do so for any purpose.[271] This raises the relevant question whether accessing sensor generated data by insurers would constitute *unlawful extraction.*

Ryanair vs PR Aviation

---

[265] Similarly, to that Ryanair's database of flights data and in analogy The British Horseracing Board and Others, C-203/02, ECLI:EU:C:2004:695 and OPAP, C-444/02, ECLI:EU:C:2004:697,

[266] '*The right [...] shall run from the date of completion of the making of the database'* Art 10(1) Database Directive.

[267] *'to safeguard the position of makers of databases against misappropriation of the results of the financial and professional investment';* Art 7, 8 Recitals 39, 40, 48 Database Directive.

[268] Art 15 Database Directive.

[269] The Database Directive introduces further three optional exceptions for Member States to implement: for use for private purposes of a nonelectronic database: illustration for teaching or scientific research, public security/administrative or judicial procedure reasons

[270] These lawful user rights must be interpreted broadly. The British Horseracing Board and Others, ECLI:EU:C:2004:695, C-203/02, para. 51.

[271] Art.7 Database Directive.

In the Ryanair case the ECJ was given the opportunity to clarify the scope of protection for databases under the Database Directive.[272] Ryanair had made their database containing flight information publicly available which through screen scraping was used by PR Aviation. According to Ryanair this was in breach of their terms of use whereas PR Aviation argued that these terms were invalid under the Database Directive. Article 15 of the Database Directive declares any contractual provisions that prohibit lawful use of a Sui Generis Database to be null and void.[273]

The ECJ however held that as the Ryanair database did not meet the criteria for protection under the Database Directive, article 15 did not apply. As a result, Ryanair could exclude the use of screen scraping and PR Aviation was in breach of the terms and conditions. As a result of this decision the owner of a database can do more to restrict use and access by third parties to databases that are not protected under the Directive.[274] The decision has raised critical concern about whether the Database Directive is fit for purpose and calls for reform.[275]

The ECJ has had another opportunity recently, to provide more clarity over the scope of protection granted by the Sui Generis rights.

4.2.3 The scope of protection: balancing interests

In *CV-Online Latvia versus Melons* CJEU clarified that when assessing infringement of the sui generis right it depends whether:

- the obtaining, verification, or presentation of the contents of the database concerned attests to a substantial investment; and
- the extraction or re-utilization in question constitutes a risk to the possibility of redeeming that investment. [276]

The Court confirms that the purpose of the sui generis right is; *to ensure that the person who has taken the initiative and assumed the risk of making a substantial investment [..] receives a return on his or her investment by protecting him or her against the unauthorised appropriation of the results of*

[272] The decision has however been met with much criticism. See Borghi, M. and Karapapa, S., (2015). *Contractual Restrictions on Lawful Use of Information: Sole-Source Databases Protected by the Back Door?.* European Intellectual Property Review. 37 (8), 505-514; Bottis M. (2015) *How Open Data Become Proprietary in the Court of Justice of the European Union.*Katsikas S, Sideridis A. (eds) (2015) *E-Democracy: Citizen Rights in the World of the New Computing Paradigms*. 1st ed. Springer International Publishing

[273] Art 15 Database Directive.

[274] Borghi and Karapapa (2015). Telematics insurers can as lawful users extract and use insubstantial parts of the car manufacturers database under database protection. This however raises the question what amount of data constitutes as either a qualitative or quantitative insubstantial part to be considered lawful

[275] Which has been acknowledged by the European Commission. (2021) *Inception Impact Assessment: "Data Act & amended rules on the legal protection of databases"*

[276] *CV-Online Latvia versus Melons* Judgment of 3 June 2021, C-762/19, ECLI:EU:C:2021:434.

that investment; And that the objective is [..]*to stimulate the establishment of data storage and processing systems which contribute to the development of an information market.*[277]

The protection of a database is only justified if there has been a substantial investment in the obtaining, verification, or presentation of the contents of that database.

[..] it is necessary to strike a fair balance between, on the one hand, the legitimate interest of the makers of databases in being able to redeem their substantial investment and, on the other hand, that of users and competitors of those makers in having access to the information contained in those databases and the possibility of creating innovative products based on that information.[278]

According to the Advocate General the main criterion for balancing the legitimate interests at stake must be this potential risk to the substantial investment of the maker of the database concerned, namely the risk that that investment may not be redeemed.[279]

Recital 47 states in particular that *'protection by the Sui Generis right must not be afforded in such a way as to facilitate* ***abuses of a dominant position****, in particular as regards the creation and distribution of new products and services.'*[280]

Insurers are (not yet) in direct competition nor does their use aim at a reproduction of the database provided by car manufacturers, instead their use enables them to develop a product for which there is consumer demand. By refusing access car manufacturers are limiting the opportunity for the telematics insurance market to further develop and innovate to the detriment of consumers.[281]

What follows is that the scope of protection is limited to only protect the interests of the car manufacturer when it comes to their investments. The car manufacturer has to show that the use is a risk that they will not be able to redeem their investments in the making of the database. Whether telematics insurance indeed poses a threat for the car manufacturer not being able to monetize such data and redeem a return on their investment in that database is unlikely. More importantly is that the refusal to provide optimal access to car data is detrimental for consumer welfare.

4.2.4 The role of the Database Directive for innovation

What has become clear is that if the collection of data does not qualify for database protection, then the car manufacturer has more control over who may access and use car data. The CJEU decision in Ryanair v PR Aviation has affirmed that the owners of non-protected databases can contractually

---

[277] Recitals 40 and 41 of the Database Directive; *Innoweb* (Case C-202/12)

[278] CV-Online Latvia versus Mellons para. 41, AG Opinion paras 3, 43

[279] AG Opinion para 43, 46

[280] Recital 47 Database Directive

[281] Hugenholtz B (2005) *Abuse of Database Right Sole-source information banks under the EU Database Directive*, in Que F & Shelanski H (eds.)(2005) *Antitrust, patents and copyright: EU and US perspectives*, Cheltenham: Edward Elgar, pp. 203-219.

exclude lawful users from access because such databases are not covered from the legislation that declares this kind of contract null and void.[282]

Following the CV-Online Latvia versus Melons decision under article 102 TFEU car manufacturers are no longer granted the right to protect their investments against use if their behavior is found to be abusive.[283] Taking this decision in combination with the consequences of the Ryanair case that makes a distinction between protected and non-protected databases the latter gives more protection for car manufacturers to maintain control over who can access car data.[284]

If this is indeed the case it only emphasis the urgent need to consider a reform of the database directive to better respond to the challenges digitization brings and ensure it becomes fit for its purpose to stimulate the development of databases that will enable innovation. [285] Whereas now the incentive is stronger for car manufacturer to argue the Sui Generis right does not apply and instead rely on alternative means of protection for example through Trade Secrets protection.[286]

4.3 The role of the EU Trade Secrets Directive

This part contains two sections *4.3.1 Trade secrets protection: Scope and 4.3.2 Trade Secrets protection: key elements.*

With the Trade Secret Directive, the EC has acknowledged that in order to incentivise research and development and the investment to enable innovation, there needs to be a stronger protection when commercially information has value in being kept confidential.[287] Given the uncertainty over data ownership and limited control granted via intellectual property laws, car manufacturers may want to prevent car data from becoming publicly available by keeping car data confidential as trade secrets.[288]

4.3.1 Trade secrets protection: Scope

[282] Ryanair Ltd v PR Aviation BV (C-30/14) EU:C:2015:10 (15 January 2015).

[283] "Whereas, in the interests of competition between suppliers of information products and services, protection by the sui generis right must not be afforded in such a way as to facilitate *abuses of a dominant position*, in particular as regards the creation and distribution of new products and services[..] Recital 47 Database Directive. Hugenholtz (2005) p 217

[284] See Derclaye and Husovec (2021) Borghi, and Karapapa (2015).

[285] Whereas authors have proposed solutions for the EC to consider including to favor consumers and competitors when balancing the Sui Generis rights and to convert into a regulation. Derclaye and Husovec (2021). Borghi, and Karapapa, (2015)

[286] Derclaye and Husovec (2021) n 45

[287] Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure. *(Hereinafter Trade Secrets Directive).*

[288] For the detailed analysis on Personal Data as Trade secrets in the context of Connected Cars see Van den Boom, F. (2020) *Car data controls – balancing interests under The Trade Secrets Directive*, International. Journal Technology Policy and Law, Vol 3 Nr 3.

The objective of the Trade Secrets Directive is to achieve a smooth-functioning internal market by establishing a sufficient and comparable level of redress across the internal market providing rules for the protection against the unlawful acquisition, use and disclosure of trade secrets.[289]

Trade secrets are one of the most commonly used forms of protection of intellectual creation and innovative know-how by businesses, yet at the same time they are the least protected(...).[290] Harmonising the protection of trade secrets in the EU was necessary because not all member States were considered to have adequate regulation in place; and these differences challenge adequate protection.[291]

4.3.2 Trade Secrets protection: key elements

The Trade Secrets Directive harmonizes the definition of trade secrets in accordance with the existing internationally binding standards.[292]

Article 2(1) of the Directive states that: 'Trade Secret' means information which meets all of the following requirements:

- it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;
- it has commercial value because it is secret;
- it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret;

The Directive does not create an exclusive right to know-how or information. [293]

Car data under the scope of protection

Referring to the distinction between historical and real-time data whereas the latter creates the most interesting opportunities for innovation it depends whether both qualify under the scope of the directive for protection.

The first element states that a trade secret applies to information. Recital 14 further clarifies the need for a homogeneous definition of a trade secret without it being restrictive in that it

---

[289] Article 1 Subject matter and scope; Recital 36, Trade Secrets Directive; See for an overview of the different views on trade secrets Tait Graves C, (2007) '*Trade Secrets as Property: Theory and Consequences*', 15 Journal Intellectual. Property. L. 39 p. 66, citing Pamela Samuelson (1989) *Information as Property: Do Ruckleshaus and Carpenter Signal a Changing Direction in Intellectual Property Law?*' 38 CATH. U. L. REV. 365, 374–75, 365, pp. 374–75

[290] Art 1, Recital 1, Trade Secrets Directive,

[291] Harmonising the definition of trade secrets in accordance with international standards such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). De Wolf & Partners (2016). Recital 6,7 Trade Secrets Directive.

[292] The Paris Convention, states that its members must assure protection against acts of unfair competition and specifically against any act of competition contrary to honest practices in industrial or commercial matters that constitutes an act of unfair competition. Article 10bis (2). See Falce (2015) *Trade Secrets - Looking for (Full) Harmonization in the Innovation Union*, Max Planck Institute for Innovation and Competition, Munich.

[293] Article 3 Trade Secrets Directive. Independent discovery of the same know-how or information should remain possible. Mars UK Ltd v Teknowledge Ltd, [2000] FSR 138 (Ch D) 14

can cover know how, business information and technological information.294 What is not covered is trivial information and the experience and skills gained by employees in the normal course of their employment.295 Important to note here is that neither technical data nor personal data is excluded from trade secret protection.296

Most car data will be considered technical information under the definition. Much of the data that car manufacturers would want to protect is data generated and communicated from the sensors, cameras, and microprocessors in the car. Manufacturers will be hesitant to share this data as it can be used by their competitors to gain insights into the functioning and design of the car. [297] Furthermore, customer information, is mentioned, which can be obtained from car data. *One could argue that sensor data is trivial depending on the amount of (time) and information it contains when obtained in real-time. A millisecond of data may not contain much value whereas trip data will provide valuable information on both the car and the driver's use.*

The second requirement is that the information has value because it is kept secret.298 The value for a car manufacturer in not sharing car data lies in the fact that it gives them a competitive and strategic advantage when they can keep their competitors from obtaining the information without having to invest in the technology. By monetizing (access to) car data they can obtain a return on their investment. 299 The proliferation of data marketplaces where through contractual agreements with data providers and users the data is shared illustrates the value of (access to) data especially when this constitutes personal data.300

Thirdly the information must not be 'generally known among or readily accessible within the circles that normally deal with the kind of information in question".301 In line with the purpose of trade secret protection to enable people to derive profit from their creation or innovation the relevant circle includes who could use the information to gain a competitive

---

[294] Business information extends *'beyond technological knowledge to commercial* data' Recital 1 of the proposal COM (2013) final. What constitutes as *a business secret* is further defined in case law: ECJ judgment of 18 September 1996, CaseT-353/94 paragraph 87; ECJ judgment of 30 May 2006, Case T-198/03 paragraph 71. SWD (2013) 471 final, Annex 4, Section A4.2, p.112. For a critical analysis Wachter S and Mittelstadt B (2018) *A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI,* Columbia Business Law Review.

[295] Recital 14, Falce (2015) p. 959 n.12

[296] As confirmed by the EDPS referring to the relevance of the protection of personal data as trade secrets may include personal data. For a narrower view Aplin (2014) n.11 and What constitutes as a business secret is further defined in case law: ECJ judgment of 18 September 1996, CaseT-353/94 (Postbank v Commission), paragraph 87; ECJ judgment of 30 May 2006, Case T-198/03 (Bank Austria Credit anstalt v Commission), paragraph 71. SWD (2013) 471 final, Annex 4, Section A4.2, p.112. Wachter and Mittelstadt (2018)

[297] Ptolemus (2016) *Global Usage-based Insurance Study*, Free abstract, Available at https://www.ptolemus.com/ubi-study (Accessed 05 December 2018)

[298] Art 4 Trade Secret Directive. Value is considered proven when the information has been misappropriated by a

third party On value see Aplin (2014) p.10

[299] Scheiblich C, Raith T(2014) *The extended vehicle*, The ExVe ISO 20078, Daimler AG,GSP/O–CLEPA Aftermarket Conference, Brussels

[300] On the value of personal data see Malgieri G. and Custers B., (2017) *Pricing privacy the right to know the value of your personal data*, Elsevier p. 302

[301] The data can still fall under protection when it is part of a protected data collection.

advantage from its disclosure or use.302 For car data, this would include other car manufacturers and aftermarket product and service providers such as repair and insurance companies. One could argue that the car owner/driver is excluded from the relevant circle because they normally don't use car data in a commercial context.303 As secrecy is not absolute it depends on the circumstances whether information has become generally known or readily accessible.[304]

Data as Trade Secrets are not obtained just by looking at the car. One must either have permission to access the car, car communications and/or data storage.[305] The fact that the driver knows or would have access to the same information the car manufacturer seeks to protect does not lead to a loss of trade secret protection for other holders of the data. If however a competitor wants to obtain (access to) the car data by having the driver submit an access request one could argue differently. It remains uncertain whether the process of obtaining information through a data subject access request falls under the scope of readily accessible.

The fourth element for car data to fall under trade secret protection is that the holder of the secret must take reasonable steps to protect its secrecy.[306] Whether this is an objective assessment looking at industry standards of practice or subjective assessment based on circumstances is not clear from the Directive.[307]In general steps include establishing internal policies on how to manage and disclose trade secrets making sure that IT security systems and technology are kept up to date.[308]

As this research is about telematics insurance use of car data, the focus is on real time access to data from which information can be obtained which means that the analysis is about a data set, which can

---

[302] Recital 1 Directive. This interpretation is proposed by Aplin (2014) p.9, 14. On the importance of trade secrets for businesses in the digital economy. Baker and Mckenzie (2017) *Protect and Preserve: The Rising Importance of Trade Secrets'* Available at https://www.bakermckenzie.com/-/media/%EF%AC%81les/insight/publications/2017/trade-secrets (Accessed 20 January 2019)

[303] The driver knows detailed information about their own driving and may have access to some of their vehicle's data. See for example the client portal for BMW Available at www.bmw-connecteddrive.com. (Accessed 1 December 2018)

[304] The scope and level of protection this offers is unclear. Relevant in this regard is the case of Douglas v Hello! Ltd [2005] EWCA Civ 595; and Aplin (2014) who argues for a case when the vehicle owner has a commercial interest in their personal data

[305] Reverse engineering can be understood as '*the process of ascertaining knowledge from a product or artefact and a lawful means of acquiring trade secret information except when otherwise contractually agreed.'* If the information can only be obtained through reverse engineering and not further communicated the data should not be considered as readily accessible. Aplin (2014) p 11. Reverse engineering is an important factor in maintaining balance in intellectual property law. Samuelson P and Scotchmer S, (2002) '*The Law and Economics of Reverse Engineering'* 111 Yale Law Journal 1

[306] Falce (2015)

[307] Idem

[308] Hull J (2019) *Protecting trade secrets: how organizations can meet the challenge of taking "reasonable steps.* Wipo Magazine 5

be small, and not individual data as such.[309] Both historic and real time car data are not excluded from trade secret protection if all the requirements are met.

If we apply the criteria to car generated data a relevant distinction must be made concerning the types of data that can be obtained namely between *a) functional data* that contains information about the car, the way it is designed and what sensors it contains and their functioning; and *b) behavioural data* which is data that contains information about the driver and the way they are using the car. With respect to behavioural (personal) data, what follows from the analysis is that personal data is not excluded as such from trade secret protection.[310] Both types of data are valuable for car manufacturers and insurers for telematics insurance purposes.

If we apply the criteria for trade secret protection to these types of data it is most likely that if the car manufacturer has taken reasonable steps to protect the disclosure that this data will fall under the scope of protection as trade secrets. Considering that car data will hold information about what sensors the car has and how well they function this is valuable business information not only for the car manufacturers but also for their competitors who would benefit from knowing what sensors work best.[311] The car manufacturer has an interest in keeping this information secret as it creates a business advantage.[312] The value of behavior data is obvious from the fact that it is increasingly being requested by insurers to improve their risk analysis and from being monetized by car manufacturers.

Not only to protect their investments but also to be compliant with the GDPR; The car manufacturer will have taken measures to prevent functional data to become available for example using encryption or limiting what data can be accessed through the OBD port. Important to note is that although some of the data within the dataset that can be obtained via the OBD port does not mean that the dataset can not qualify for trade secret protection as long as the car manufacturer has taken adequate means, which may include contractual and technical means using non disclosure agreements and encryption.[313]

---

[309] Whereas 'small' is relative considering how much data sensors generate every second of driving. See on how much data is generated by different sensors, Wright S (2021) *Autonomous cars generate more than 300 TB of data per year,* Available at https://www.tuxera.com/blog/autonomous-cars-300-tb-of-data-per-year (Accessed 01 February 2022)

[310] As confirmed. European Commission, (2013) *Impact Assessment accompanying the document proposal for a Directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure'* Commission Staff Working Document 813 final. Lemley M, (2011) *'The surprising Virtues of Treating Trade Secrets as IP Rights'* in Dreyfuss R and Strandburg K (eds) (2011) *The Law and Theory of Trade Secrecy* , Edward Elgar Publishing Limited. Drexl et al (2016) Position *Statement of the Max Planck Institute for Innovation and Competition*. Max Planck Institute for Innovation and Competition

[311] Recital 14 makes clear that the value can be actual or potential. Whereas the threshold for value is low. See Sousa e Silva N, (2014) *What exactly is a trade secret under the proposed directive*? 9 Journal of Intellectual Property Law & Practice

[312] On the protection and value of unstructured data in Iot context see Grützmacher M, (2016) *'Dateneigentum – ein Flickenteppich*' Computer und Recht 485, 488.; And in the context of online platforms controlling access to (user) data see Graef I,(2015) *Market Definition and Market Power in Data: The Case of Online Platforms'*. 38 World Competition Law and Economics Review p 482

[313] Knaak R et.al. (2014) *Comments of the Max Planck Institute for Innovation and Competition,* International Review of Intellectual Property and Competition, 957

With respect to the measure requirement, it has been argued that the measures taken for the protection of personal data will also play a role here as they contribute to the required threshold for secrecy.[314] Furthermore, despite there not being a clear threshold definition the requirements of secrecy and commercial value are generally understood as being low so most if not all technical data when the car manufacturers have taken reasonable measures can be protected as trade secrets under the Trade Secrets Directive.[315] In the context of telematics insurance the value of data access further lies in the fact that car manufacturers have the advantage over insurers who will have to invest for example in aftermarket products such as USB dongles or develop an app to obtain a similar set of data.

Personal data as trade secrets

Since both functional and behavioral data can be protected as a trade secret the next question is about the scope of protection it grants to car manufacturers controlling access.

Car manufacturers could use trade secrets protection for the car data they collect, although the level of protection with that control is limited.[316] The Directive does not create an exclusive right to the data protected as a trade secret allowing for a balanced approach between the interests of car manufacturers and the other stakeholders by allowing lawful acquisition, use and disclosure of trade secrets.[317]

Only when (a) a trade secret exists; (b) the car manufacturer is the trade secret holder; and (c) the trade secret has been acquired unlawfully, is being unlawfully used or disclosed, or unlawful acquisition, use or disclosure of the trade secret is imminent can they rely on the protection.[318]

Another important consideration is that The Trade Secrets Directive does not affect the responsibilities and rights that apply to personal data such as the right to access and data portability.[319] Whether car data can be protected as a trade secret depends in part on the interpretation of the rights of data subjects granted by the GDPR considering that telematics data relevant for insurers is personal data.[320]

Whereas functional data can be protected against unlawful access by any means considered reasonable, if the data(set) contains personal data, the car manufacturer has to comply with the GDPR.

---

[314] For example, in case of machine-to-machine communication, the reasonable measures requirement could be fulfilled by tools such as encryption of data. See Surblyte G (2016) *Data-Driven Economy and Artificial Intelligence: Emerging Competition Law Issues* In: Wirtschaft und Wettbewerb, Vol. 67, Issue 3, pp. 120-127

[315] Although recital 14 excludes trivial information from protection, others argue that even trivial information could have commercial value; and that until it is known to the last competitor secrecy is kept. See Zech H, (2016) *A legal framework for a data economy in the European Digital Single Market: rights to use data*, 11 Journal of Intellectual Property Law & Practice 465; Pires de Carvalho N, (2008) *The TRIPS Regime of Antitrust and Undisclosed Information*, Kluwer Law International, 929-930

[316] For a detailed analysis see Van den Boom, (2020).

[317] Art 3, Trade Secrets Directive.

[318] Art 11(1) Trade Secrets Directive on the conditions of application and safeguards.

[319] Art 15, 20 GDPR and Recital 35 Trade Secrets Directive.

[320] On the relation between the Trade Secrets Directive and the GDPR requirements in the context of telematics insurance see in more detail Van den Boom, (2020).

The GDPR gives the driver certain access rights to personal data held by the car manufacturer which will impact the scope of trade secret protection for such data.[321]

Both data protection and trade secrets protection rights are not absolute meaning that there needs to be a balancing of interest of the car manufacturer in protecting data and the driver also in having their data protected but also to ensure its processing is lawful and fair. In the context of telematics insurance this research focusses on access to (personal) data so the question is whether car manufacturers can control access by trade secret protection or whether they need to give access to the driver who may request the portability of the data to make it available for insurers.

The scope of trade secret protection for car data.

Obtaining a trade secret is unlawful through unauthorized access to or copying of files which contain trade secrets, or through dishonest commercial practices. To protect the data, the car manufacturer has the right to take (preventive) measures. The rights are balanced against others which could lead to having to endure the loss of trade secrets in favour of enabling data sharing to help achieve important policy aims. For example, where the data is publicly made available as 'open data' a collection thereof to be protected as a trade secret would go against public policy.

To protect their trade secrets car manufacturers may take preventive measures.[322] Important where the trade secrets include personal data is that they are required to comply with the GDPR to take security and confidentiality measures. The EDPB in its guidelines states with respect to connected car manufacturers that they must [..*] put in place measures that guarantee the security and confidentiality of processed data [..].*[323] Examples of such measures that would also contribute to the requirements for trade secret protection are technological measures such as encryption and non-disclosure agreements that protect both trade secrecy and consumer privacy. They could also through the design of the car prevent car data from being accessible by closing off the car access points and/or minimizing what data is communicated outside of the car.

The Directive specifically limits the right of the trade secret holder in specific cases for revealing misconduct, wrongdoing, or illegal activity (…). Recent scandals in the car industry about car

[321] See further Chapter 5.

[322] Article 4 Trade Secrets Directive.

[323] European Data Protection Board (EDPB) Guidelines 01/2020 on processing personal data in the context of connected vehicles and mobility related applications.

emissions,[324] unethical testing on animals,[325] employee monitoring and surveillance[326] and price discrimination illustrate this need for exceptions.[327]

Another important exception is the right of data subjects with respect to access to personal data. Recital 34 specifically mentions that the Directive respects fundamental rights and observes the principles including the right to respect for private life, and the right to protection of personal data.[328] Recital 35 goes on to state that that the rights of the data subject apply when their personal data is being processed when taking steps to protect a trade secret.[329] The recital furthermore mentions that the directive *should not affect* the rights and obligations, in particular, the rights of the data subject to access their personal data.

Neither the trade secrets directive, nor the GDPR states a clear prevalence in case of conflict between the two, which has raised concern and subsequent call for reform. As a result, in cases where car data qualifies both as personal data and meets the requirements to be protected as a trade secret there is uncertainty which rights prevail in a case of conflict. For example, between the rights of the car manufacturer to refuse access to a collection of car data in order to protect its trade secrets held therein versus the rights of the driver to obtain access when this collection includes personal data. This question is further analysed in chapter 5 which looks at trade secret protection for car data that includes personal data and the scope of protection it provides taking into consideration the data subject rights to access and data portability. What is argued for here based on the analysis is that car manufacturers can take measures that will allow data portability without trade secrecy being lost.

Despite its limitations however, and especially in the absence of adequate intellectual property rights for car manufacturers to protect their investments in and to benefit from controlling (and monetising) car data, the use of trade secrecy is only expected to grow.[330]

---

[324] On access needs: Thompson G et.al (2014) *In-Use Emissions Testing of Light-Duty Diesel Vehicles in the United States,* Final Report, Center for Alternative Fuels, Engines & Emissions, West Virginia University. Available at www.theicct.org (Accessed 09 June 2021) and Tufekci Z, (2015) *Opinion Volkswagen and the Era of Cheating Software,* The New York Times Available at https://nyti.ms/1L5wnHN (Accessed 09 June 2021) Ewing, (2016) *Researchers Who Exposed VW Gain Little Reward From Success,* Available at https://nyti.ms/2a8HWxB (Accessed 8 December 2018)

[325] New York Times (2018) *Monkeys and a Beetle: Inside VW's Campaign for 'Clean Diesel* Available at https://nyti.ms/2Fh7wjd (Accessed 23 December 2018)

[326] Rainie L, and Duggan M (2016) The *state of privacy* Available at http://pewrsr.ch/1Ok0R7A (Accessed 08 December 2018)

[327] Various examples of vehicle data being used to improve urban life can be found in the context of smart city developments

[328] The EDPS recommended that measures against unlawful practices should not restrict the rights of the data subject (…) in particular his or her right to access the data being processed and to obtain rectification, erasure or blocking of the data where it is incomplete or inaccurate. Proposed amendment of the article on lawful acquisition, use and disclosure of trade secrets. Opinion of the European Data Protection Supervisor, (2014)

[329] Note that it does not refer to the situation where the personal data is the trade secret.

[330] See Bengtsson H (2017) *Protection and Disclosure of Know-How: International Report,* Springer; Van den Boom (2020).

Although EU harmonisation of trade secrets protection has generally been welcomed, there is criticism whether the Trade Secrets Directive is fit for purpose in light of its aims to generate more investments in innovation, more collaborative research and more legal certainty in its current form.[331]

4.4 Insights: who controls car data access, controls take-up of Telematics Insurance.

What follows from the analysis of the intellectual property rights framework with respect to the allocation of control over access to in car generated data confirms the general consensus that *The existing intellectual property laws do not provide a satisfactory framework for the management of data as such*.[332]

The car manufacturers, through contractual agreements, are mostly in control over who can use car data – a position they can strengthen, albeit limited, becoming the owner of the database that contains the car data, either via the Sui Generis rights being granted for the database, or by protecting the data itself as a trade secret. Due to the lack of copyright and uncertainty over the scope of protection granted via the Database Directive, it is expected that the use of trade secrets may become increasingly important for car manufacturers to protect their investments and competitive advantage.

When car data collections contain personal data, such a collection can still be protected through trade secret protection against those who have obtained the data unlawfully. However the scope of the right for the car manufacturer is limited in the case of car data as much if not all the data they seek to protect is also personal data. As a result the car manufacturer must comply with the GDPR including the access rights for consumers. How to balance between the different interests is not clear from the regulation therefore there is an urgent need for the EC to clarify. When protection of the stakeholders' interests is adequate this will also contribute to improving data sharing. However, following the analysis of the legal framework, clarity is needed to ensure regulatory fitness balancing the different interests involved.[333]

[331] Confirming the call for more clarity and legal certainty. Aplin (2014) *A critical evaluation of the proposed EU trade secrets Directive*' King's College Legal Studies Research, Paper no 2014–25; Bengtsson (2017).

[332] De Wolf & Partners (2016) p. 12.

[333] On the position of car manufacturers. Available at www.*CarDataFacts.eu* (Accessed 9 May 2021) and Klein (2020*).*

III DATA FOR COMPETITION

In the context of the research question about regulatory fitness to improve take-up of telematics insurance, the following five parts look at the role of competition law to remedy market failure as a result of the current situation.

4.5 Car manufacturers as Data Gatekeepers looks at the potential market failure stemming from the current situation where car manufacturers control the connected car ecosystem and data value chain; *4.6 Driven by car data:* describes data as an essential resource for telematics insurers. Inadequate access to car data could constitute a "refusal to deal" under the scope of the Competition Law essential facilities doctrine when in-car generated data, controlled by the car manufacturer, has become necessary to compete in the telematics insurance (relevant) market, looking at the key requirements to establish abuse under Article 102 TFEU; *4.7 Article 102 TFEU scope* looks at data as an essential facility for telematics insurance and if a duty to supply third party access to car generated data can be established as a remedy; *4.8 Article 102 TFEU key elements* analyse whether the car manufacturer has a duty to remedy market failure when access has become essential; *4.9 Case law developments* confirms the uncertainty as a result of different threshold interpretations for the exceptional circumstances to establish a mandatory license to supply.

4.10 Markets driven by data control – Establishing a car manufacturer's duty to supply to drive innovations forward. Following the analysis, a duty for car manufacturers to supply car data can be established as a remedy for telematics insurers upon refusal.

4.5 Car manufacturers as Data Gatekeepers

In reference to Chapter 2, the discussions between the key stakeholders in the connected car ecosystem which led to a call upon the European Commission to intervene to unlock the value of car data use for innovations focused on three possible ways to provide car data.[334]

Based on the understanding that to unlock the full potential of connected car data the most optimal situation is to facilitate direct access to most if not all data generated car data in real time, except when this would compromise car safety, security, and privacy. Having non-discriminated access will ensure innovation, fair competition, and benefits to be shared amongst all stakeholders involved, which raises the question whether this is how the market will develop or needs regulatory intervention. If the latter is the case, the question is whether competition law remains fit for purpose to indeed prevent or remedy any market failure as a result. w6ckmhwxka667

Despite the different ways by which stakeholders in the connected car data ecosystem can obtain relevant information for telematics insurance the concern is that the car manufacturers are

[334] These options are to obtain data via a) direct access to the in-car generated data; b) indirect remote access by having the data sent from the car to a third-party server; c) indirect access by obtaining the data from the car manufacturer who has obtained the data from the car: (extended vehicle)

increasingly moving towards ensuring a dominant position controlling who can enter and share the benefits of the connected car data value chain ultimately to the detriment of consumer welfare.[335]

"(...) we will pool together all products and services for the individual mobility of our customers and gradually build them into an all-embracing BMW Ecosystem."[336]

Consequences for the market

When the server access model advocated by the car manufacturers becomes the preferred solution for in-car data governance this may limit the innovative potential the connected car ecosystem brings to the value chain.[337] Concerns about car manufacturers being able to accumulate the data consumers generate through their use of connected cars include having the advantage of developing more accurate insights, and doing so more profitably, compared with other users who are refused data access either under the same conditions or altogether.

The opportunity for anti-competitive behaviour by the car manufacturers has already raised concern amongst independent car repair and maintenance shops, and the same issues are likely to arise for telematics insurers. Independent insurers may find themselves at a competitive disadvantage when they are not given access to the car data under the same conditions as car manufacturers and their preferred partners have.[338]

Considerations about the way the market may develop the concerns amongst stakeholders about the risk of inaccessibility and unfair advantages include the following:

– Car manufacturers may redesign their cars in such a way that the means to gain access will be closed off or limited. In case of the OBD port this will negatively affect telematics insurers who have invested in and rely on the OBD port for their telematics products[339]

– Car manufacturers may discriminate providing a competitive advantage to those who are willing to accept access on their terms and conditions

– When car manufacturers venture into the insurance market and start offering car insurance directly to their consumers they have the added advantage of reaching the customer first as well as

[335] For a discussion on economic freedom and consumer welfare as two conflicting goals of Competition Law see Gormsen L (2007) *The Conflict between Economic Freedom and Consumer Welfare in the Modernisation of Article 102 TFEU,* European Competition Journal 329: Kerber W (2018), '*Data Governance in Connected Cars: The Problem of Access to In-Car Data*', JIPITEC 310, para 1.

[336] BMW Press Release (2018) *Focusing on the customer: the BMW Group's digital Ecosystem.* Available at https://tinyurl.com/jbbh6zds; and BMW Press Release (2020) *Now your BMW can join in the festive celebrations.* Available at <https://tinyurl.com/3un6v6af> (Both Accessed 7 July 2021)

[337] See C-ITS Platform (2016) *Final Report;* Kerber (2018)

[338] For example, when they cannot obtain data with the same quality, frequency, or being charged more. Kerber W, and Gill D. (2019) *Access to Data in Connected Cars and the Recent Reform of the Motor Car Type Approval Regulation*, JIPITEC 244, para 1.

[339] This risk was mentioned by insurers and representatives from the insurance industry during the interviews and conference meetings. Van den Boom (2020) *Interviews with Insurance industry stakeholders.*

benefiting from the wealth of data not just from a single car but possibly the data from their entire fleet of cars [340]

Car manufacturers have ventured into the insurance market either in collaboration with existing insurers or proposing to develop their own insurance products (see the example below) to offer directly to consumers.

Box Example

TESLA, Inc INSURANCE

Because TESLA "knows" its cars best, with Tesla Insurance the company is said to be able to leverage the advanced technology, safety, and serviceability of its cars to provide insurance at a lower cost. [341] And this can be said for most advanced car manufacturers who could benefit from competitive advantages offering direct insurance to their consumers.

Holding dominance over car data enables car manufacturers to become (more) successful than insurers in their own market. Their competitive advantages (and potential for anti-competitive behaviour) include the following:

- Being able to *eliminate fees* taken by traditional insurance carriers, Tesla argues they can offer car insurance to any Tesla car owner up to 20% lower rates compared with traditional car insurance.[342]

- Having access to *better quality and variety of data* through built-in sensors in comparison with the data available through apps and dongles provides the car manufacturer with more accuracy and greater potential for claims transformation, including reducing costs of claims handling when this can be automated.

- The *feedback loop from insurance data back into design and manufacturing* can lead to car design changes in response to medical costs and repair data, so future cars can be built in a way that could lower repair costs and increase safety. This in turn will help lower indemnity payments, which should lead to better loss ratios, which should lead to lower customer

[340] Bart E, (2020) *Car Manufacturers are challenging traditional auto insurers: Who will win the tech race?* Available at https://www.Milliman.com (Accessed 19 January 2021)

[341]Tesla, Inc. is an American electric car and clean energy company who has begun to offer insurance to a selected group of its consumers Available at https://www.tesla.com/support/insurance (Accessed 19 January 2021)

[342] Tesla Insurance's FAQs '*How is Tesla Insurance coverage less expensive than other mainstream insurance?'* Tesla Insurance. Support. Available at https://www.tesla.com/support/insurance (Accessed 19 January 2021)

premiums, which should then lead to more competitive pricing and insurance market for any car maker that can recognise these improvements more quickly than its competitors.

- Due to their existing relationships with their prospective policyholders and the likelihood that the insurance would be sold to the driver at the same time the car is purchased, car manufacturers may further benefit from *reduced costs* for advertising, for example.[343]

The abuse of dominance by car manufacturers to refuse access to telematics data would result in fewer insurers being able to enter and compete in the telematics insurance market for the car manufacturer brand specifically, and without access to insights obtained through analysis of car data, the general car insurance market generally. This would reduce consumer choice for affordable high-quality insurance products and services.[344]

Although not all insurers are currently making use of the opportunity to develop telematics products and services and those that do may differ in their access needs, the way the market develops will not only impact the telematics market but the traditional car insurance market as a whole.[345] Given the potential for rapid changes in digital markets, only when being afforded direct in-car data access will unlock the full potential of the connected car ecosystem for insurers.[346] The next section therefore looks at the role of EU Competition Law, focusing on Article 102 TFEU which deals with unilateral conduct of dominant firms and the prohibition of abusive behaviour of such firms, to safeguard fair and equal access to the in-car data and resources.[347]

4.6 Ensuring Car Data access to drive innovation

Based on the concerns regarding access to car data, key challenges posed for Competition Law to regulate for fair competition to enable innovations that contribute to consumer welfare are to establish whether there is a need for regulatory intervention to intervene in a way that is appropriate and effective taking into consideration the different interests at stake.[348]

---

[343] See for a similar discussion regarding the connected car ecosystem between suppliers involved in the supply chain. Available at https://tinyurl.com/3kppxb4u (Accessed 19 January 2021) BMW replacing the ability to integrate other services with their own, for example BMW Intelligent Personal Assistant. Available at https://tinyurl.com/jbbh6zds (Accessed 19 January 2021)

[344] Consumer organisations BEUC and FIA argue that consumer welfare is at risk when consumers are no longer provided with choice and high-quality products and services.

[345] Ma et al.(2018) '*The use of context-sensitive insurance telematics data in auto insurance rate making',* Transportation Research Part A 113 243–258.

[346] The car manufacturer would be at an advantage being able to promote and sell its services and that of preferred partners directly to the driver.

[347] Identified issues include data as a competitive advantage or entry barrier in digital markets; market definition and dominance with respect to data; disruptive versus sustaining innovation; role of data protection and intellectual property regimes; economic trade-off in essential facilities cases. See Graef, (2016).

[348] For the role and critical views on the benefits of data for competition, Available at https://hbr.org/2020/01/when-data-creates-competitive-advantage (Accessed 19 January 2021); Lambrecht & Tucker (2015); Junqué de Fortuny et al. (2013)

Currently, in-car data is controlled by the car manufacturers, who do not grant access, without their permission, to most if not all the data the connected car is able to generate.[349] Because for telematics insurers car data is an essential resource, they have become increasingly dependent either on the consumer's car manufacturers to facilitate access either directly or indirectly to the data the consumer's car generates. [350]

This is similar to the call to facilitate fair access by other users including by aftermarket service and repair shops citing challenges hindering their ability to innovate and improve their products and services to compete in the digital market where data has become an essential resource.[351]

Based on the understanding that the car manufacturers' control over data leads to unfair advantages when there is no objective justification to refuse access, Competition Law should provide an adequate remedy for insurers. The question is whether Article 102 TFEU is fit for purpose to remedy market distortions in the context of digital markets. If refusing access to car data falls under the scope as an abuse of dominance by the car manufacturers, the essential facility doctrine establishes a duty upon the car manufacturers to facilitate fair access for third parties including for telematics insurers.

The focus of the remaining parts is the question whether the car manufacturer can refuse to provide non-discriminatory access for telematics insurers to car data or if this constitutes an abuse under EU Competition Law within the scope of Article 102 TFEU.[352] Key issues relevant for the evaluation and interpretation of the scope of Article 102 TFEU presented here are the challenges for the commission to: establish *car data as an essential resource*; the *relevant (data) market* and their *refusal to data as unjustified abuse* of the car manufacturer. These issues will be discussed further in more detail.

4.7 Article 102 TFEU scope

This part contains two sections: 4.7.1 Data as an essential facility for telematics insurance and 4.7.2 Establishing a duty to supply third party access to car generated data.

---

[349] Example BMW and Ford provide remote access to car data based on the driver's consent for a fee through data sharing platforms or via their own websites. Available at <https://bmw-cardata.bmwgroup.com/thirdparty/public/home (Accessed 19 December 2020)

[350] Various stakeholders including CLEPA and The European Parliament call upon the Commission to publish a legislative proposal that ensures a level playing field on access to in-car data and resources, protecting consumer rights and promoting innovation and fair competition. European Parliament (2018) 'A European strategy on Cooperative *Intelligent Transport Systems.*' Available at https://www.europarl.europa.eu/doceo/document/TA-8-2018-0063_EN.html (Accessed 19 December 2020)

[351] See EU legislation specifically covering the fair access to repair and maintenance information by independent repairers. Kerber and Gill (2019); Verhauwen A and Gerstein J(2020) *On 'The Obligation To License Standard Essential Patents In The Supply And Exploitation Chain: Selection Right Of The SEP Holder vs. FRAND-Everyone's Right*, Journal of the Licensing Executives Society, Volume LV No. 4

[352] The Court of Justice's judgment in Commercial Solvents v Commission held that the requirement of an effect on trade between Member States would be satisfied where conduct brought about an alteration in the structure of competition in the internal market; ECJ, judgement of 19.04.2018, C-525/16, WuW,321, para. 24, MEO. *The conduct of the dominant undertaking shall not distort competition in an upstream or downstream market, i.e., competition between suppliers or customers of that undertaking.*

Article 102 TFEU prohibits "Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States."[353]

Some relevant examples of abusive behaviour by the car manufacturer may include:

– imposing unfair prices and/or unfair trading conditions which would limit production markets or technical development including for telematics insurance

– discriminating by providing preferential treatment in terms of latency and overall data quality access for insurance companies they have partnered with

– making contracts subject to supplementary obligations to buy car insurance with their connected car; or to require users to adhere to certain high standards of safety and privacy[354]

– imposing limits upon data sharing platforms and marketplaces to only sell data at a certain price and/or for specific users[355]

4.7.1 Data as an essential facility for telematics insurance

The main question here is whether article 102 TFEU can be used to challenge the car manufacturers control over who can access car data.

When a dominant undertaking refuses to give access to a facility (car data) which competitors or customers need in order to be able to enter and/or compete in the telematics insurance market this is dealt with under the essential facilities doctrine.[356] When a telematics insurer is unable to obtain the consumer's car data they cannot provide them with telematics insurance, so data has become an essential resource. As different scenarios exist today, understanding their position within the business ecosystem will contribute to the analysis whether the car manufacturer is indeed under a duty to supply.[357]

Scenario I

Currently most car manufacturers are only active in the upstream market providing access to data for the downstream market which is the (telematics) insurance market. Car manufacturers and telematics insurers are therefore not in direct competition. Instead, the insurer is a customer of the car manufacturer for telematics data. The potential market failure stems from insurers not being able to enter the market or compete fairly when the supply of data is insufficient.

Scenario II

Some car manufacturers have become active in the downstream market of consumer car insurance,

---

[353] Antitrust Regulation. Council Regulation No 1/2003.

[354] Article 102 TFEU.

[355] As confirmed by the courts similar to the exception found in Article 101(3) a restriction of article 102 is justified when a refusal has *economic efficiencies.* Whish and Bailey (2018)

[356] Speech of Competition Commissioner Vestager (2016) *Competition in a big data world*. Available at <https://ec.europa.eu/commission/20142019/vestager/announcements/competition-big-data-world_en.> (Accessed 08 June 2020)

[357] Graef I (2019) *Rethinking the essential facilities doctrine for the EU digital economy.* (preprint)

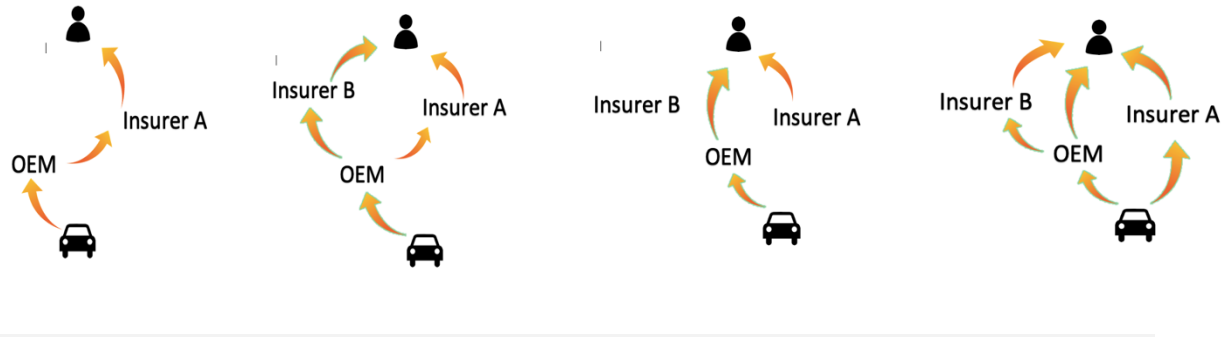
working together with an existing insurance company to sell brand specific insurance to their customers. Becoming both a car data supplier as (in)direct competitor with independent insurers.

Scenario III

Instead of being in indirect competition on the downstream market, car manufacturers can develop and start offering telematics insurance to consumers themselves. This puts them in direct competition on the downstream market with insurers including telematics and traditional insurers and insurers they may have worked with in the past but have now withdrawn supply.[358]

Figure VIII illustrates three access scenarios found in the telematics insurance market (SCENARIO I-II-II) and a fourth scenario which illustrates the most ideal situation where there is fair competition for all insurance providers based on non-discriminatory access to car data. (SCENARIO 0)

Figure V Connected car data access scenario's



I II III 0

SCENARIO

I. Car manufacturer (OEM) is not active on the downstream telematics insurance market: Insurer A is a car data customer and not a competitor of the OEM. Insurer A does not have premium access to car data

II. OEM is also active on the insurance market as a supplier of car data to and (indirect) competitor of Insurer A through Insurer B. Insurer B has premium access to car data.

III. OEM is active on the insurance market as a supplier and direct competitor to Insurer A having integrated fully in the downstream market providing its own insurance.[359] Insurer B no longer has premium access.

0. Insurers have the option to obtain direct non-discriminatory access to car data (Insurer A) or to obtain controlled access via the OEM (Insurer B)

[358] A history of dealing is an important factor in deciding whether a refusal to deal is legitimate.

[359] The EC in Sea Containers v. Stena Sealink, ruled that 'a company in a dominant position may not discriminate in favour of its own activities in a related market, without objective justification.' (OJ L para. 66, 15/8 (1993) Commission Decision 94/19/EC (1994) O.J. (L 015) 8 (relating to a proceeding pursuant to Article 86 of the EC Treaty (IV/34.689- Sea Containers v. Stena Sealink–Interim Measures).

Telematics insurers argue that because data has become essential to enter and compete on the market providing non-discriminatory access to data is necessary to ensure fair competition.[360]

The "essential facilities" doctrine specifies when the owner(s) of an "essential" or "bottleneck" facility must provide access, at a reasonable price to other parties in either the upstream or a downstream market (or both).[361] In other words, Article 102 TFEU would ensure access for telematics insurers as "consumers" in the downstream market (scenario I) or as "competitors" when the car manufacturer has become integrated in the downstream insurance market (Scenario II and III).

4.7.2 Establishing a duty to supply: third party access to car generated data

The objective of Article 102 TFEU is to protect competition as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources.[362] A dominant undertaking has a competitive advantage if they control and use an essential facility but do not grant their competitors access to that facility under equal terms. Without having an objective justification this is an infringement.[363]

Under Article 102 TFEU a duty to provide access to a facility arises if the effect of the refusal to supply on competition is *objectively serious enough.*[364] Meaning that when, without access there is, in practice, *an insuperable barrier to entry* for competitors or if without access competitors would be subject to *a serious, permanent and inescapable competitive disadvantage*.

The car manufacturer currently controls car telematics data from their brand of cars.[365] Being able to obtain telematics data from the car manufacturer is therefore essential for telematics insurers who need the data to develop and offer telematics insurance products for which there is a consumer market. Depending on how the relevant market is defined refusing or restricting access by the car manufacturer may ultimately eliminate competition in the market of telematics insurance when no real alternatives for insurers to obtain such data exists. Although there are alternatives for insurers to

---

[360] This was mentioned by different interview participants including the telematics insurers and academic experts. Van den Boom (2020) *Interviews with Insurers and Industry experts.*

[361] The ECJ developed three conditions for a refusal to deal to be anticompetitive: ECJ, 26 November 1998, Oscar Bronner v. Mediaprint, C-7/97, (1998) ECR I-7791.

[362] Article 1(3) Council Regulations (EC) No 1/2003; Graef, I. (2016a) *EU competition law, data protection and online platforms: data as essential facility.* Alphen a/d Rijn: Kluwer Law International. Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union.

[363] Art 102 TFEU; ECJ, 26 November 1998, Oscar Bronner v. Mediaprint, C-7/97, (1998) ECR I-7791.

[364] The test is objective, meaning the car manufacturer does not need to know or consider the specific business circumstances or intentions of the insurer as Competition Law aims to protect competition not competitors. Which the EU has been criticised for. Kroes N, (2005) *'Preliminary Thoughts on Policy Review of Article 82'*, Speech at the Fordham Corporate Law Institute in New York Available at http://europa.eu/rapid/press-release_SPEECH-05-537_en.htm?locale=en (accessed 16 August 2021)

[365] The undertaking does not have to be dominant on both markets, but the arguments for a duty to provide access will be stronger if they are.

obtain telematics data what is argued for here is that these are not sufficient to ensure fair competition and facilitate digital innovations compared to having non-discriminatory access to in-car data and resources.

The following scenarios have been identified

SCENARIO O

Stakeholders have non-discriminatory access. This is argued for as the optimal situation for all stakeholders to ensure fair competition

SCENARIO I

The car manufacturer (OEM) is not active in the insurance market. When they control but do not give access to insurance companies, insurers may not be able to provide consumers with telematics insurance. As long as alternatives such as aftermarket devices are available fair competition is possible and it is unlikely insurers can "force" car manufacturers to facilitate access.

SCENARIO II

The OEM has (indirectly) become active in the downstream insurance market through insurer B. Unless they provide premium access to both insurers; insurer B has a competitive advantage over Insurer A. This could constitute abuse and fall under the scope of Article 102 TFEU.

SCENARIO III

The OEM has fully integrated into the insurance market and may decide to no longer provide access for either insurer A or premium access to insurer B. Given the unfair advantage car data brings for the OEM this may result in market failure.[366] The lack of competition may reduce consumer choice and make insurance unaffordable. This could be remedied through Article 102 TFEU establishing a duty upon car manufacturers to supply car data access.

The essential facilities doctrine has until now mostly been applied in cases that involved access to physical infrastructures such as railroads and to intellectual property.[367] What follows from the analysis is that such a duty for car manufacturers towards telematics insurers may be established with respect to car data but that clarification is required about key requirements of Article 102 TFEU for it

[366] The cases on telecommunications show that, in general, a company in a dominant position in one market may not use its power to extend its dominance or monopoly into other markets. Posner R(1974)., *Exclusionary Practices and the Antitrust Laws*, 41 U. CHI. L. REV. 506, 523–24

[367]In Commercial Solvents and United Brands, the ECJ seems to have interpreted a duty to supply by firms in a dominant position broadly. OECD (1996) *The Essential Facilities Concept*, Roundtables on Competition Policy. Available at https://www.oecd.org/competition/abuse/1920021.pdf (Accessed 12 August 2020); Graef (2015) '*Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition: Law and Economics Review, Vol. 38, No. 4 pp. 473–506.

to provide a successful remedy against market failure.[368] Those relevant for telematics insurance are discussed in the next parts.[369]

4.8 Article 102 TFEU key elements to establish a duty

This part contains 4 sections: *4.8.1 Defining The relevant market; 4.8.2 Establishing Dominance; 4.8.3 Competition and dominance; 4.8.4 Objective justifications to refuse access*

4.8.1 Defining the relevant market

Market definition is used as an important tool for the assessment of competitive restraints faced by the relevant market players.[370] In order to define the boundaries of what is the relevant market to establish dominance, the EC identifies what is the relevant product market and geographical market as follows:

– *for the product market* the EC considers whether there are products and services that are interchangeable or substitutes because of their characteristics, price and/or intended use by consumers, and

– *for the geographical market the* EC defines the supply and demand area of the products or services looking at where the competition conditions are sufficiently homogeneous to be distinguished from neighbouring areas which have "appreciably different" conditions[371]

When the relevant market is not adequately defined, this may lead to telematics insurers not being able to remedy anti-competitive conduct to the detriment ultimately of consumers. Especially when putting too much weight on market share as the decisive factor, establishing dominance in digital markets has become problematic.[372] A problem with defining *the relevant product market* in the context of digital platforms was acknowledged and is currently being discussed under the reform

---

[368] With regard to exclusionary abuses, the objective of Article 102 TFEU is the protection of competition on the market as a means of enhancing Consumer welfare and of ensuring an efficient allocation of resources. On the need for clarification see Graef, (2011) *Tailoring the Essential Facilities Doctrine to the IT Sector: Compulsory Licensing of Intellectual Property Rights after Microsoft*, Cambridge Student Law Review, Vol. 7, No. 1, pp. 1-20,

[369] Graef (2016b), *Reform of Competition Law fit for digital age.* Available at <https://ec.europa.eu/competition/consultations/2020_market_definition_notice/index_en.html(2016b)> Accessed 07 June 2020)

[370] The objective '(...) is to identify those actual competitors of the undertakings involved that are capable of constraining those undertakings' behaviour and of preventing them from behaving independently of effective competitive pressure.' Commission Notice on the definition of relevant market for the purposes of Community Competition Law (97/C 372 /03. The German Bundeskartellamt launched an investigation on Facebook in a similar case. See '*Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*'. Available at: <https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html> (Accessed 13 August 2020.)

[371] Commission Notice on the definition of relevant market for the purposes of Community Competition Law 97/C 372 /03

[372] See on the concept of data markets Jones Harbour P and Koslov T (2010) *'Section 2 In A Web 2.0World: An Expanded Vision of Relevant Product Markets'* 76 Antitrust L.J. 769–797. and in the context of Competition Law abuse of dominance Inge Graef (2015) '*Market Definition and Market Power in Data: The Case of Online Platforms'* World Competition 38, no. 4 pp 473–506.

currently taking place with respect to Competition Law to deal with the challenges posed by digitisation and rise of digital platforms.[373] Instead what is argued for with respect to new digital economies is to have a looser definition of what is the relevant product market to better reflect the dynamic scope of the new digital economy.[374]

With respect to telematics insurance the EC when establishing the market must take into consideration relevant characteristics of the EU automotive and consumer car insurance market.

A minimum level of car insurance is mandatory in the EU.[375] Although this gives insurers some leverage over car manufacturers considering that if a consumer cannot obtain affordable insurance they are unlikely to buy a car, however some car manufacturers have now ventured into insurance, providing brand specific insurance either directly to consumers or indirectly working together with existing insurance companies as preferred partners.

The insurance market is still regarded as predominantly a national market, in part due to the absence of EU harmonisation with respect to the regulation thereof, but also because this enables governments to account for differences between the member states in terms of social, economic and environmental factors including crime rates, road and weather conditions and public opinion towards privacy, for example.[376]

The high cost, lifespan and brand loyalty leads to consumers as well as insurers increasingly being locked into brand-specific ecosystems reducing their ability and desire to switch quickly to a competing car and/or brand. Therefore, there may be limited competition from other car brands once a consumer has chosen a specific brand and a pressure for insurers to be able to enter the connected car ecosystem of each brand in order for them to reach brand-specific consumers.

In addition, both the automotive and insurance industry experience competitive pressure including the expansion from new non-traditional data-intensive companies like Google and Apple entering into the market.

Taking aspects of both the automotive and car insurance market into consideration defining what is the EU telematics insurance market for consumers on which to establish dominance leads to the following:

Insurance markets are still largely national.[377] In the absence of EU harmonisation of insurance law, insurance products differ between member states in terms of cost and coverage which is reflected in

---

[373] On the reform of market definition Available at <https://ec.europa.eu/competition/consultations/2020_market_definition_notice/index_en.html> (Accessed 05 October 2020)

[374] Still taking a narrow interpretation by the Commission see its decisions in Case No COMP/M.5727 – Microsoft/Yahoo! Search Business, 18 Feb 2010 and Case No COMP/M.7217; 3 Oct 2014, section 4.

[375] Interim Report on the Business Insurance Sector Inquiry of 24 January 2007, Available at <https://ec.europa.eu/commission/presscorner/detail/en/IP_07_1390> (Accessed 05 January 2020)

[376] Telematics helped to reduce the high rate of car theft in Italy and fraudulent whiplash claims in the UK for example.

[377] EU regulatory framework on insurance Available at <https://ec.europa.eu/competition/sectors/financial_services/insurance.html> (Accessed 05 May 2020)

the take-up of telematics. The relevant geographic market is defined to the national market given the differences between Member States.

What follows from the analysis is that the relevant geographic market for telematics insurance to reflect the differences between member states can be defined as the national market for consumer car insurance.[378] For example, despite the minimum EU wide harmonisation for what is mandatory, Member States differ as to what coverage insurers offer. Other relevant differences that specifically affect the take-up of telematics insurance are the costs. In the UK opting for telematics insurance is the only way young drivers can get insurance that is somewhat affordable, whereas in the Netherlands there is less of an incentive given that premiums are low enough that most people prefer not to have their insurer access to their driving data.[379]

Following the analysis, the relevant market could be defined as *in-car data and resources from consumer X in the relevant Member State* given that the conditions of competition are different from other member states within the EU.

The definition could be less narrow in scope to reflect the current situation in most Member States where the development and adoption has not been widespread. As a result, with some exceptions – notably Italy – in most Member States the market share for telematics insurers is not sufficient for them to be able to already compete with traditional car insurers who do not incorporate telematics data. As this is expected to change over the next few years a redefinition of the relevant market is recommended on a case-by-case basis to take into consideration whether for example to broaden the definition to include all car insurance and/or both commercial and non-commercial car insurance.

4.8.2 Establishing Market Dominance

If the car manufacturer has developed an ecosystem around the connected car in which they have a leadership position this may indicate their dominance but not necessarily. A case-by-case analysis will be necessary to understand the role and behaviour of the parties involved within the respective ecosystems to determine if dominance exists in a particular situation.[380]

---

[378] Environmental factors for example have led to large differences in market adoption of telematics insurance where compared with Italy most member states are yet to adopt telematics insurance. This in part is due to differences in insurance legislation as much as social and environmental factors including people's opinions on privacy but also crime rates and regulated insurance pricing. Van den Boom (2020) *Interviews with insurers and insurance industry representatives*

[379] See decision Ardonagh Group/Bennetts Motorcycling Services merger inquiry of the CMA in where it considered the impact of a merger on the distribution of motorcycle insurance to private (non-commercial) customers in the UK. The CMA would not go as far as to segment it according to type of customer or method of customer acquisition but took differences in the distribution of motorcycle insurance to different types of customers into account in its competitive assessment. Consideration 9, CMA decision 16 September 2020.ME/6882/20. Available at https://assets.publishing.service.gov.uk/media/5f61e048e90e072bc4ec884b/_Ardonagh_Bennetts_Summary_.pdf (accessed January 2021)

[380] See chapter 2, where the different positions are discussed. Although ecosystem leaders are often dominant this is not always the case.

Only when a car manufacturer holds a position of dominance can they be considered to have a duty under Article 102 TFEU to provide access to an essential facility. Which is the case if they are at least considered to be dominant in *a substantial part* of the common market.[381]

The EC in its guidelines states that a dominant undertaking "(...) has a special responsibility not to allow its conduct to impair genuine undistorted competition on the common market". [382] The Court of Justice in United Brands v Commission laid down the test of what is meant by a dominant position by stating that it *(...) relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its Consumers.*[383]

To establish dominance in the relevant market the Commission uses a combination of several factors.

Market shares

To assess whether a company holds dominance in the relevant market the Commission considers market share to be a good indicator.[384] Generally having a low market share is a good proxy of the absence of substantial power, (i.e. dominance) and the higher the share especially when held over a long time the more likely a company has substantial market power to be considered dominant.[385]

Where the car manufacturer holds a large share of the supply of data for any given market where car data has become an important resource, their position to control access based on the fact that they control the design and data communications through their agreements with consumers for the car's connectivity functions, is likely to be considered dominant when the market is defined as narrow as being brand (and possible consumer X) specific data.[386]

Using market shares however is increasingly being criticised as not being effective to establish dominance when it comes to digital markets and platform dominance. It may therefore not be suitable

---

[381] Dominance in a single member state is generally considered to be sufficient.

[382] Communication from the Commission – Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (2009/C45/022): para. 1.

[383] Definition by the Court of Justice in Case 27/76 EU:C:1978:22, para. 65; Case 85/76 Hoffmann-La Roche v Commission EU:C:1979:36, para. 38, and confirmed in subsequent judgments.

[384] Speech held by then Competition commissioner Kroes (2005) Available at https://ec.europa.eu/competition/publications/cpn/2005_1_1.pdf (Accessed 05 May 2020)

[385] Communication from the Commission, *Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings* (2009/C45/022): paras. 14 and 15; Market shares of 40% or more are considered (with other factors) evidence of dominance. For example, Microsoft Corp. v Commission ECLI:EU: T: 2005:149.; AstraZeneca AB v Commission EU: T:2010:266. Whereas below it becomes unlikely and depends more heavily on other factors. See Virgin/British Airways OJ (2000) L 30/1. For an analysis see Pier Parcu et al. (2017) Abuse *of dominance in EU Competition Law emerging trends* 110–113.

[386] Provided that other factors analysed in the assessment (such as entry barriers, customers' capacity to react, etc.) point in the same direction. See EC guidelines on market definition note 10 ; Case 85/76 Hoffmann-La Roche & Co. v Commission (1979) ECR 461, paras. 39–41; Case C-62/86 AKZO v Commission (1991).

ECR I-3359, paragraph 60; Case T-30/89 Hilti v Commission (1991) ECR II-1439, paragraphs 90, 91 and 92; Case T-340/03 France Télécom v Commission (2007) ECR II-107, para 100.

when dealing with anti-competitive behaviour from the car manufacturers when it comes to data-based innovation that rely on data.[387] In the Microsoft/Skype merger for example, the General Court acknowledged that *potential competition* forms a better indicator of dominance in such cases.[388]

Restraints on dominance

Important in establishing whether the car manufacturers may hold a dominant position, besides looking at market shares, is whether there are *competitive restraints* that control their behaviour.[389] The main sources for such restraints come from the substitutability of demand; of supply and the potential for competition.[390] Note that the following considerations are only indicative, as it is beyond the scope of this research to provide a detailed (economic) analysis whether these constraints exist in practice with respect to the connected car ecosystem.[391]

Demand substitution is considered to be the most immediate and effective.[392] In essence the EC considers market definition to be about identifying what are the *effective alternative sources of supply* for the customers of the undertakings involved in terms both of *products/services* and of *geographic location* of suppliers.[393] Depending on the how the EC will define the relevant market, the following insights are relevant to consider whether there are alternatives to data access for insurers to obtain telematics data from other specific data suppliers or alternatives to the use of car data for their specific purposes:

Alternative suppliers of car data

As described in Chapter 2, several alternatives to the supply of in-car data by the car manufacturer exist. Independent data sharing platforms such as Otonomo, for example, provide car data for

[387] Mandrescu, D. (2018) Applying (EU) *competition law to online platforms: Reflections on the definition of the relevant market(s)* World Competition: Law and Economics Review, Vol. 41, No. 3.

[388] In the context of online consumer communications services see Graef I (2016) '*EU competition law, data protection and online platforms: data as essential facility*'. Kluwer Law International. 8.

[389] Commission Notice (1997) *on the definition of relevant market for the purposes of Community competition law.* n 13.

[390] Because it depends on the conditions for market entry potential competition, is not taken into account. *Commission* Notice (1997)

[391] Considerations are based in part on the insights gained through the interviews and personal conversations with the interview participants (see Appendix A) from the different stakeholder communities. Van den Boom (2020) *Automotive, Insurance, Consumer Stakeholder interviews*

[392] According to the EC; ' *A firm or a group of firms cannot have a significant impact on the prevailing conditions of sale, such as prices, if its customers are in a position to switch easily to available substitute products or to suppliers located elsewhere.'* Commission Notice (1997) With respect to cars, consumers are unlikely to switch because of the costs and brand loyalty.

[393] If substitution is enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas are included in the relevant market. This would be done until the set of products and geographical areas is such that small, permanent increases in relative prices would be profitable. The equivalent analysis is applicable in cases concerning the concentration of buying power, where the starting point would then be the supplier, and the price test serves to identify the alternative distribution channels or outlets for the supplier's products.

telematics insurers but are also dependent on car manufacturers for their supply of the data.[394] As mentioned in Chapter 2, smartphones are widely used by telematics insurers and considered a valid alternative; however, it does not compare to having access to car data and resources equal to that which car manufacturers have. In both these instances the car manufacturers still have control because either they provide the data in a useful form and/or enable access to the data through the design of the car. What follows from this analysis is that there are no real alternatives to the data supply by car manufacturers at the moment.

Alternatives to the supply of car generated data

The question of whether there is an alternative to the data itself is relevant to determine whether data can be replicated. What is argued for here is that this is not the case for car data relevant for telematics insurance, as their policy and premium is based on actual data generated by the consumer when they drive.[395] There are however other ways to duplicate some of the data car manufacturers hold. Already mentioned is the use of aftermarket devices and, for example, smartphones which have built-in sensors that can record some of the data relevant for telematics insurance. However, data obtained this way is not identical to the data held by the car manufacturers in terms of quality and accuracy nor does it fully enable the innovative potential that access to in-car generated data and resources can bring for insurers. Alternatives are available but too limited depending on specific demands from the insurers. If we consider the need for telematics insurers for access to high quality data, then in the absence of adequate means for direct data portability there are currently no real substitutes for car manufacturer supply.

Other suppliers beside the car manufacturer for the specific consumer car data may be able to have a disciplinary effect on the competitive behaviour of the car manufacturer. However, it seems currently unlikely they will be able to meet the conditions required, which is to obtain and market the car data quickly without significant costs or risks from price changes. [396]

Chapter 2 discussed different means to obtain car data for insurers to develop telematics. While there may not be an issue with accessibility for insurers yet, there are clear indications that this could change quickly and therefore should be of concern.[397] Based on experiences in other markets where digital platforms can be found to have become monopolies and the characteristics of the digital economy including strong network effects, these options may not remain available for insurers or sufficient to compete with the access provided for by the car manufacturers. Considering the need for non-discriminating access under the same conditions as the car manufacturer may be the only way to

[394] Available at https://otonomo.io/data/ (Accessed 02 May 2020) A non-exhaustive review of car data providers show they all rely on their data supply from the car manufacturers. When asked about this dependency, several data providers as well as other experts within the automotive connected car ecosystem confirmed that this dependency is a concern. Van den Boom (2020) *Interviews with Automotive Industry stakeholders.*

[395] Analysis of EU merger cases shows that the EC thus far remains reluctant to accept data to be unique. Gris B and Ashall S (2020) '*European Union and United States: Antitrust and Data*'. Global Data Review Insight Handbook Available at https://globaldatareview.com/insight/handbook/2021 (Accessed 05 May 2020)

[396] Commission Notice (2017).

[397] Various insurers from the Netherlands and the UK did not consider data access to be of concern. Platforms were aware of the potential abuse of dominance by the car manufacturers controlling supply of car data. Van den Boom (2020) *Interviews with Insurers and Car Data platforms*

obtain adequate access in the future in a way that is both reliable enough for insurers to develop and continue to provide for accessible and affordable insurance.

Despite what is argued for here, courts may be reluctant to agree that there are no valid substitutes for the access provided by the car manufacturers. Many telematics insurers rely on aftermarket telematics devices and smartphones and consider these as sufficient for them to obtain the minimum data they need for their analysis. Others however argue these means and the data including the frequency with which the data can be obtained are not sufficient – or will not be in the long run – to compete fairly when car manufacturers venture into the insurance market either directly or indirectly teaming up with an insurer, giving them the advantage in having likely better access.

Without the opportunity to obtain non-discriminatory access under the same terms and conditions (including price) as the car manufacturer and (potential) selected insurers, telematics insurers will find themselves at a competitive disadvantage with car manufacturer preferred insurance providers. And as the relevance of car data for improving risk analysis and premium pricing is expected to rise, insurers who cannot obtain access may no longer be able to compete fairly and leave the market. This may ultimately lead to a loss of consumer choice for affordable insurance and negative impact on consumer welfare.

The competitive pressure from only telematics insurers would be limited unless consumers were to switch brands because they cannot obtain insurance for a specific car. When, as predicted, telematics insurance has become the only way for consumers to obtain affordable car insurance whether the car manufacturer supplies the data telematics insurers require, is likely to become a decisive factor for most consumers to decide what car to buy.

Alternatives for consumers for telematics data-based insurance

When because of a refusal to provide access, telematics insurers no longer offer insurance for brand-specific cars, unless the car manufacturer ventures into insurance downstream market themselves, consumer X would not be able to obtain affordable mandatory car insurance, and switch to a competitive brand.

Looking at the (telematics) insurance market as it exists today it will be difficult to argue that there is no alternative for consumers in most EU member states, with Italy as the obvious exception, as traditional forms of consumer car insurance still dominate the market.[398] In the UK, on the other hand, for many young people telematics is the only affordable insurance. This therefore would have an influence on whether a specific car brand is covered. When no alternatives to obtain telematics data for insurers exist, more consumers will switch to telematics insurance this will limit their choice to those brands that do provide adequate access and/or lead to more car manufacturers to venture into telematics insurance markets themselves.

4.8.3 Competition and dominance

[398] Deloitte (2016).

As mentioned, a large market share can be highly indicative of dominance and used as a proxy for how much competition is possible within the market.[399]

If the car manufacturer has a large market share, insurers are pressured to offer insurance to their customers to remain profitable. If on the other hand a car manufacturer has fewer customers, insurers may not be interested in investing in providing insurance for these cars if the price is too high to obtain the data. When insurance is made mandatory, customer choice will be determined by whether their car is covered, thus posing a constraint on the behaviour of car manufacturers towards insurers' willingness to cover their brands.

Looking at the market for car manufacturer data and the downstream market for insurance, market entrance and competition is possible between the car manufacturer and alternative data suppliers such as (automotive) data platforms and (insurance) telematics companies.

Alternatives to the data provided by the car manufacturer for insurers comes from data obtained through independent telematics devices and smartphones. Suppliers of these data and devices, depending on the needs of the insurer for whom this data may be adequate to provide their products and services, are in a position to enter the market and compete with the car manufacturer.[400] If the car manufacturer decides to raise their prices, telematics insurers can switch to another data supplier or no longer offer telematics insurance. Unless this eliminates the opportunity for consumers to obtain any insurance for their cars, the car manufacturer is unlikely to change its behaviour depending on whether there are sufficient alternatives for consumers to obtain affordable insurance. This is something which needs to be determined case by case.

Improving data portability

A possible means to address the challenges is to establish a greater role for data portability: a solution that has not been fully explored nor utilised by insurers yet, to obtain the data directly from the consumer. The General Data Protection Directive (GDPR) article 20 gives consumers the right to request data portability. It aims to empower citizens with more control regarding their personal data.[401] Broadening the scope of the existing right to data portability or establishing a new right could provide insurers with an alternative means to obtain car data and be a potential remedy when a car manufacturer does not provide access to car data.

4.8.4 Objective justifications to refuse access

The purpose of article 102 is to balance between the freedom to conduct business and to ensure fair competition. As data may also be received and generated by car companies resulting from

[399] Commission Notice on the definition of relevant market for the purposes of Community Competition Law (97/C 372 /03) A denial of access constitutes an abuse if it impairs the competitive possibilities of other companies, absent justification. Moreover, dominant firms or 'powerful' firms are prohibited from unfairly hindering other firms or treating them differently, absent facts justifying such differentiation OECD (1996) *'Roundtables on Competition Policy*.Available at www.OECD.com (Accessed 08 April 2021) Graef (2014) p 503.

[400] Telematics insurers who have built their telematics products on this data consider it sufficient. Whereas others raised concern about the continuous supply of Car Manufacturer's to these platforms in the future. Van den Boom (2020) *Interviews with Insurers and Car Data platforms*

[401] Article 20 GDPR and detailed analysis thereof Chapter 6; Kerber (2018) '*Data Governance in Connected Cars: The Problem of Access to In-Car Data*' JIPITEC 310) para 1.

competition on merits, Competition Law should not be used to require car manufacturers to provide access where it diminishes their incentives to develop and innovate and bring new and better products to the market.[402]

Despite the fact that Article 102 TFEU does not mention any exceptions, when the car manufacturers can argue they have an "objective justification" this is recognised by the Commission and the courts as being valid.[403] The burden of proof that they have an objective justification lies on the car manufacturers.[404] An objective reason may be either technical or commercial.[405]

A car manufacturer's refusal to grant access is *objectively necessary* when it ensures effective competition on the downstream market or to produce substantial efficiencies that outweigh or counterbalance any anticompetitive effects on consumers.[406] The question of whether conduct is justified or not is assessed based on the principle of proportionality.[407]

The main arguments given by car manufacturers why they refuse to provide direct and uncontrolled access refer to their responsibility and liability to ensure high level safety and security of the car and to protect privacy.[408] However, what follows from the analysis is that, when third parties are legally compliant and provide high levels of protection for privacy, car safety and security equal to that of the car manufacturer, they should not be refused access on these grounds.

Refusing access: safety concerns

In the discussions on access to in-car data and resources, some of the arguments provided by the car manufacturers and their representatives for why controlled access is necessary that have to do with car security are in contrast with the fact that several car manufacturers already provide access to third

---

[402] Akman,P (2012) '*The Concept of Abuse in EU Competition Law. Law and Economic Approaches'*. Hart Publishing; Simina Duca B (2020), *'Scope of Article 102 TFEU Protection of Competition or Protection of Competitors?* Stanford-Vienna European Union Law Working Paper No. 46; Barnett T (2007) *Statement on European Microsoft Decision.* Available at https://www.justice.gov/archive/atr/public/pressreleases/2007/226070.htm (Accessed 08 August 2019)

[403] Kroes (2005); Wish (2018), Chapter 5 p. 9.

[404] Case T-201/04, Microsoft v Commission.

[405] In the *Commercial Solvents* case the Courts explained that the intention of an upstream firm to vertically integrate into the downstream activity was not an 'objective reason' for it not to continue to supply the downstream firm. Judgment of the Court of 6 March 1974. – Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v Commission of the European Communities. Joined cases 6 and 7–73.

[406] And consistent with the Commission's Guidance on Article 102 TFEU Enforcement Priorities, paras. 28–31, On the concept of objective justification, Opinion of AG Jacobs in Case C-53/03 Syfait EU:C:2004:673, paras 71–72. However, stating it's in their best commercial interest to do so is not enough. Wish (2018) p. 619.

[407] AG Cosmas, C-344/98, Masterfoods.

[408] Also, a firm's reputation or quality may suffer (this might be accepted as a legitimate business reason but is very fact-specific). See OECD (2017), *Technology and innovation in the insurance sector.* Available at www.OECD.com (Accessed 05 April 2020)

parties. As confirmed by the court, it is not up to a company to set higher safety standards for others beyond what is required by law.[409]

Refusing access: privacy concerns

A refusal to grant access to data as an essential facility which would otherwise be prohibited could in theory be justified if it is necessary for the protection of consumer privacy.[410] According to the ECJ the protection of fundamental rights including privacy is a legitimate interest which, in principle, *justifies a restriction of the obligations arising from Community law.*[411]

Car manufacturers have argued that their gatekeeper position and refusal to provide uncontrolled access to in-car data and resources is necessary for the protection of the privacy of car passengers.[412] However, privacy to justify a refusal has been met with much criticism from different stakeholders including insurers and privacy scholars. Based on insights from ongoing research, other parties besides the car manufacturer can provide at least equal levels of protection and compliance with the GDPR requirements with respect to the protection of personal data as the car manufacturer provides. Although the risk for privacy and whether compliance with the GDPR requirements in practice does provide adequate protection against the risk and consequences of privacy breaches should not be disregarded, third parties including insurers can provide adequate levels of protection similar to the level of privacy protection car manufacturers provide. Although the court has not yet addressed this matter, a refusal by the car manufacturer to supply personal data because of privacy should not be accepted when the insurer is compliant with the GDPR.

Whereas these arguments to refuse access based on privacy and safety consideration may not be considered sufficient to justify refusing access to car data it remains to be seen whether a case before the courts would be successful for telematics insurers to gain access.

Refusing access: intellectual property protection

In Volvo v. Veng and Renault v. Maxicar the ECJ recognised that refusing to license intellectual property may fall under article 102 TFEU.[413] These cases concerned a refusal from a car manufacturer to grant independent repairers a license to use the protected design of the car manufacturers to produce spare parts.[414] The court considered whether given the circumstances of each case a mandatory licensing of IP was justified. In subsequent cases the Court developed the exceptional circumstances test to decide upon a mandatory license relevant for the question on access for

---

[409] Judgment of the Court of First Instance (Second Chamber) of 12 December 1991. Hilti AG v Commission of the European Communities.Case T-30/89.

[410] Judgment of the Court (First Chamber) of 14 October 2004. Omega Spielhallen- und Automatenaufstellungs-GmbH v Oberbürgermeisterin der Bundesstadt Bonn. Case C-36/02 Omega, ECLI:EU:C:2004:614, para. 35.

[411] The courst stated that *'If the exclusionary effect (...) goes beyond what is necessary in order to attain those advantages, that system must be regarded as an abuse.'* Case C-95/04, British Airways v Commission; And effective competition must not be eliminated by removing all or most existing sources of actual or potential competition. Case C-209/10, Post Danmark.

[412] Cowen T (2021) '*Privacy Fixing' After Texas et al. v Google and CMA v Google (Privacy Sandbox*): Approaches to Antitrust Considerations of Privacy.

[413] Volvo v. Eric Veng (1988) Case 238/87, ECR 6211; *(Hereinafter Volvo Case 238/87)* Renault v. Maxicar (1988) Case 53/87 ECR 6039 (H*ereinafter Renault Case 53/87)*

[414] Volvo Case 238/87; Renault Case 53/87

telematics insurers to data. How this applies to the question of access for telematics insurers will be discussed in more detail in the next section.

4.9 Case law developments

This part contains two sections: 4.9.1 contains the relevant case law that established the exceptional circumstances test; 4.9.2 applies the case law to the telematics insurance case;

4.9.1 The exceptional circumstances test

If refusing access to data qualifies as abusive by a dominant car manufacturer as a form of compulsory license they could be ordered not to enforce their IP rights. This however must be balanced against the rights of the IP holder who despite being in a dominant position may decide whether or not to provide access. According to caselaw only in exceptional circumstances where this is considered abusive can the car manufacturer be ordered to provide access.

Such abusive conduct according to the European Court of Justice includes arbitrary refusals to supply spare parts to independent repairers, unfair price fixing or stopping the productions for cars that are still in production.[415]

In Magill the European Court of Justice established that only in exceptional circumstances the refusal to license is abusive.[416] The case concerned the refusal from television companies to use their information to publish a television guide. The ECJ established three conditions that need to be present for its decision.

First, since the broadcasting companies were the only sources of the information, they *prevented the appearance of a new product* for which there was potential consumer demand and for which there was no actual or potential substitute.[417]

Second, there was *no justification for the refusal* to license on the basis of either the activity of television broadcasting or that of publishing television magazines.[418]

Third, the broadcasting companies reserved to themselves the secondary market of weekly television guides by *excluding all competition* on that market, since they denied access to the information which was indispensable for the compilation of such a magazine.[419] The Court considered these as the main three factors to establish whether a refusal constitutes abuse that falls under the scope of article 102 (then 89) TFEU.[420]

.

In IMS Health the ECJ further specified the condition that competition on a downstream market must be eliminated.[421] Which is the case when three cumulative conditions are met: *1) that that refusal is*

---

[415] Volvo Case 238/87

[416] Joined Cases C-241 & C-242/91 P, Radio Telefis Eireann v. Comm'n of the Eur. Cmtys., 1995 E.C.R. 1-743 (*hereinafter Magill).*

[417] Ibid paragraph 54.

[418] Ibid paragraph 56.

[419] Ibid paragraph 57.

[420] Further clarified in Bronner, Case C-7/97, [1998] ECR I-07791. See also opinion of Advocate General Jacobs in this case.

[421] Case C-418/01 IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG (2004) ECR I-0000. *(Hereinafter IMS Health*)

preventing the emergence of a new product for which there is a potential consumer demand, 2) that it is unjustified and 3) such as to exclude any competition on a secondary market".[422] It is sufficient that a potential or even hypothetical market can be identified.[423]

In a later case concerning Microsoft, however, the ECJ appears to have interpreted the criteria somewhat differently by establishing a lower standard to establish a mandatory license.[424] It was argued that Microsoft abused its dominant position on the market for operating systems by not disclosing information necessary for its competitors to offer alternative servers to run on the Microsoft operating system.[425] On appeal the Court upheld the decision that this was the case following the Commission's application of the four conditions (as below) established in previous cases.[426]

On the requirement of indispensability, the Court agreed that competitors should be able to interoperate on an equal footing with the Microsoft systems for them to remain viable in the market. Although some degree of interoperability was still possible this was not sufficient.[427]

On the requirement of elimination of competition: Both in the Magill and IMS Health competition was not possible because of the refusal.[428] In the case concerning Microsoft, competition was not fully eliminated because competitors could still achieve a minimum level of interoperability and therefore compete. Although in Magill and IMS Health the refusal would (likely) lead to an elimination of competition, the Court in Microsoft found that this requirement was also met because there was a risk of elimination. Taking into consideration the significant network effects on the market,[429] the Court argued that it would go against the objective of Articile 102 TFEU if the commission could only intervene when all competition on the market would have been eliminated.[430]

On the new product requirement: In previous cases it was essential that the refusal would negatively impact a new product to become available for consumers. In Microsoft however the court considered that there could be other factors for example a limitation on technical development as a result of the

---

[422] Taylor S.M. (1995) Copyright *versus Right to Compete: The Judgment of the ECJ in Magill,* 1(3) Comp. Telecomm. L. REv. 99

[423] The Court confirmed that it is decisive that two different stages of production can be identified and that these stages are interconnected in the sense that the upstream product is indispensable for the supply of the downstream product. IMS Health (2004); Brinker I, (2004) *Essential Facility Doctrine and Intellectual Property law: Where Does Europe Stand in the Aftermath of "IMS Health" Case?,* 31 Fordham Corp. L. Inst. 137

[424] Case T-201/04, Microsoft v. Commission (2007) E.C.R. I1-3601 on appeal from Microsoft Decision, (2005). paras. 345-347.

[425] Case COMP/C-3/37.792, Microsoft Decision, (2005)

[426] Microsoft v. Commission (2007)

[427] Establishing a lower standard for indispensability see Graef (2012) p 7

[428] Ahlborn, C et al (2005) *An Antitrust Analysis of Tying: Position Paper*, GCLC Research Papers on Article 82 EC; Ahlborn, C and Evans, D.(2008) *The Microsoft Judgment and its Implications for Competition Policy Towards Dominant Firms in Europe*, Antitrust Law Journal, Vol. 75, No. 3,

[429] Microsoft v. Commission (2007) para 897.

[430] Idem para. 439.

refusal which are similar to the prevention of a new product.[431] Both fall under the scope of Article 102(b) TFEU as they cause consumer harm. The Court held that there was a limitation of technical development because the refusal to license discouraged Microsoft's competitors from developing new systems if they could not obtain the required interoperability information. Because consumers were locked into the service this also reduced consumer choice.[432]

*On the absence of an objective justification requirement***;** The court did not agree that intellectual property rights always constitute an objective justification, nor that the mandatory license would have a negative impact on Microsoft incentives to innovate. The Court did state that it is common practice to disclose interoperable information to enable follow-up innovations which contribute to its value proposition improving consumer welfare.[433]

The court upheld the decision of the Commission for a mandatory license for Microsoft of its IP to competitors. Although the exceptional circumstances test established in Magill and IMS Health were followed, the threshold standard appears to have been lowered by taking a more broad interpretation of the requirements of indispensability, elimination of competition and the prevention of the appearance of a new product.[434] The Court referred to the special challenges posed for competition on markets in the 'new economy' that come from direct and indirect network effects and consumer lock-in.[435]

What follows from the analysis that there has not been a uniform application of the test to establish abuse is that it remains uncertain whether article 102 TFEU provides a remedy against refusal by car companies in the context of telematics insurance. [436] Proposed solutions to deal with this is to only apply the broader Microsoft case interpretation in case the market has characteristics and effects similar to those identified by the Court for IT markets. [437] This would be the case for car data and telematics insurance markets that are also vulnerable to network effects and consumer lock-in therefore the less strict interpretation established in Microsoft would be justified. In other markets that lack these effects the stricter interpretation established in Magill and IMS Health should be used.

4.9.2 Access mandate for car data

When we consider the connected car ecosystem and a refusal by car manufacturers to provide access to in-car generated data, telematics insurers argue that they require access under the same conditions car manufacturers have in order to develop and compete fairly on the telematics insurance market. Whether a refusal to provide access can be remedied under the essentials facility doctrine and would lead to a mandatory license depends on whether the four conditions established in Magill and IMS Health are met.

---

[431] Idem para 664. Ahlborn, Evans (2008) p 20

[432] Microsoft v. Commission (2007) para 439

[433] Idem para 702 and 710

[434] Ahlborn, C, and Evans, D. (2009). *The Microsoft judgement and its implications for competition policy towards dominant firms in Europe,* Antitrust Law Journal, 75(3), 887–932; Graef (2012) p 8

[435] Microsoft v. Commission (2007) para 392,562, 650-652, 702

[436] Ahlborn and Evans (2009). *The Microsoft judgement and its implications for competition policy towards dominant firms in Europe,* Antitrust Law Journal, 75(3), 887–932; Graef (2012)

[437] See for example Ahlborn and Evans (2009); Graef (2012) p 9;

However, given the characteristics of the connected car ecosystem, what is argued for here is that the broader interpretation of the court in Microsoft apply and have been met based on the following analysis:

As discussed in the previous sections data has become an essential facility for telematics insurance which is not a new product but which cannot be developed without the data. The standard set in Microsoft for the requirement for a 'new' product or factors that would limit the development thereof has been met. One could even argue that there are new insurance products for which there is a demand such as real time monitoring and driver assistance that a refusal to provide data for prohibits. With respect to the refusal by dominant car companies to provide access to data there is a risk that this will *eliminate competition* on the market for telematics insurance.

Although there are alternatives to obtain data these are not sufficient for telematics insurers to compete and remain viable on the market for (telematics) car insurance. The informational value of car data is so high that without it it will be difficult for insurers who do not have access to data under the same conditions as preferred insurers to make an accurate risk assessment and given the specific characteristics of insurance markets, adverse selection may lead to insurers no longer being able to remain profitable. Because insurers have yet to agree on what are the ultimate factors to use for their risk assessment to be most accurate it seems unlikely now that all competition will be eliminated but there is a serious risk it could be so in the future. In light of the purpose of article 102 TFEU the Commission should not need to wait to intervene until all competition is eliminated.

Although the protection of consumer privacy, safety and commercial interests through intellectual property protection are all valid arguments in the case of telematics insurance it will be difficult for car manufacturers to show that their refusal to provide non-discriminatory access to car data is *objectively justified.* Following the reasoning of the court in the Microsoft case, sharing data is common practice in business ecosystems for third parties to develop products and services that contribute to the value proposition for consumers which benefits all stakeholders involved when more consumers decide to switch car brands.

IV CONCLUSIONS AND RECOMMENDATIONS

4.10 Markets driven by data control

Given the many stakeholders involved in the connected car ecosystem and data value chain it is not surprising that there are conflicting interests between the car manufacturer, the consumer and telematics insurer. Two such conflicts were the focus of analysis here, namely the question of who controls access to car data and whether this is problematic *(data under control)* and on the question how to improve access when there is a market failure as a result *(data for competition).*

What follows from the analysis is that a lack of ownership rights in car data for consumers grants control to the car manufacturer as holder who can strengthen their position as data gatekeepers, although limited through their Sui Generis Rights as database owners and/or through the protection of data as trade secrets. As this may lead to market failure when refusing adequate access for telematics insurers a remedy is provided for under Competition Law. When the conditions are met, under Article 102 TFEU, the car manufacturer may have a duty to supply data. Although what follows from the analysis is that the relevant legal framework contains all the necessary elements to improve the take-up of telematics insurance through the allocation of rights and responsibilities when it comes to access

to car data; clarification is needed about the scope of the regulations discussed to provide legal certainty for stakeholders concerning the scope to improve compliance and consumer welfare.

The evaluation presented in this chapter has led to the following key insights for consideration:

– Intellectual property law is not sufficient given its limited scope to provide for data ownership in the context of data and the uncertainty that remains about the interpretation of key rights and responsibilities for the stakeholders towards each other in terms of access to and protection of data

– The Trade Secrets Directive is likely to grow in importance, giving car manufacturers rights to control access, but the scope thereof is limited and again there is a need to clarify the rights and responsibilities regarding access and use

– Competition Law plays an important role to facilitate the take-up of digital innovations. It is fit for purpose when article 102 TFEU provides a remedy against market failure as a result of inadequate access to data as an essential resource. What is needed is however is clarification of the requirements to establish a duty to supply connected car data as an effective remedy for telematics insurers under Article 102 TFEU when this has become an essential resource[438]

438 The EC in that respect has been reluctant rather than pro-active in addressing the issue of data governance; this has clearly resulted in abusive behaviour, most notably by dominant digital platforms.

CHAPTER 5: PRIVACY BEHIND THE WHEEL

The collection and use of consumer data beyond what is functional has raised serious concerns in terms of privacy and data protection. The focus of this chapter is on the General Data Protection Regulation (GDPR) as the relevant legal framework to address these concerns, which covers the relationships between the three key stakeholders involved in telematics insurance. This chapter looks predominantly at the car manufacturer (as data controller) and consumers (as data subjects) in terms of processing the personal data generated through the use of connected cars and making it available for telematics insurers (as subsequent data controllers).

Based on the understanding that relevant connected car data is personal data, this chapter focuses on the regulatory fitness of the GDPR to ensure its aim on the free flow of personal data to facilitate innovations while safeguarding the privacy of consumers.

This chapter contains 6 parts: *Part 5.1 The EU General Data Protection Regulation* introduces the GDPR as the main legal framework to regulate the processing of car data for telematics insurance purposes. Part *5.2 GDPR: Data protection principles* looks at the requirements and challenges for lawful processing. Part *5.3 GDPR lawful grounds for processing* looks at informed consent as the most appropriate ground for processing to ensure consumer empowerment. Part *5.4 Consumer control over connected car data* analyses whether the rights of consumers concerning transparency, data access and profiling provide effective protection and empowerment. Part *5.5 Facilitating Car Data sharing* looks at the challenges and opportunities to improve access for telematics insurance purposes. Part *5.6 The limits of control over data* analyses whether the GDPR provides a balanced approach. It considers whether car manufacturers can lawfully refuse data subject rights including the right to data portability. Whereas this could empower consumers to have more control over who can process personal data.

5.1 The EU General Data Protection Regulation

This part contains two sections: 5.1.1 The GDPR: Personal data processing; 5.1.2 The GDPR: Additional requirements for different types of data.

As discussed in the previous chapters, despite the potential benefits, a large-scale deployment of connected cars and telematics insurance specifically, poses new challenges to the protection of personal data and privacy.[439] The collection and processing of unprecedented amounts of data especially location data will disclose information about where and how a car has been driven, which may reveal the driver's daily habits, characteristics, and preferences.[440] Unrestricted and indiscriminate access to these data could result in loss of privacy.

The privacy concerns related to connected cars include a lack of information given to the driver about the processing of personal data necessary for them to give informed consent.[441] Furthermore, there is a serious risk for excessive data collection and further processing for purposes that may cause harm or consumers may not agree with.[442] The European Data Protection Board (EDPB) has published specific guidelines for public consultation to address these risks.[443]

The Guidelines focus on the processing of personal data generated through consumer use of connected cars and mobility apps. They make a distinction between types of data and where it is being processed. Where data is exchanged between the car and connected personal devices such as smartphones is out of the analysis presented here.

The following image (Figure VI) shows the types of data and data processing and where they may take place. [444]

---

[439] See in general Article 29 Working Party (2014) on the impact of the development of big data on the protection of individuals with regard to the processing of their personal data in the EU; EDPD (2020) *Guidelines on processing personal data in the context of connected car ecosystems.* Available at https://edpb.europa.eu/our-work-tools/documents (Accessed 6 May 2020)

[440] Article 29 Working Party (2017) *Opinion on Processing personal data in the context of Cooperative Intelligent Transport Systems,* p 9.

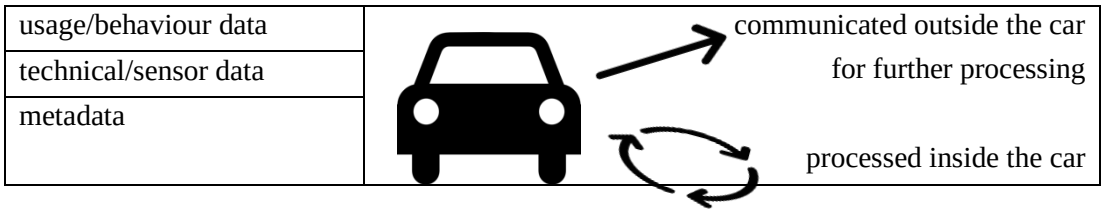
[441] Without being able to control how the car and its connected equipment interact, it is difficult for the user to control the flow of data, its subsequent use, and to prevent potential function creep. EDPD (2020) *Guidelines* n. 42–44.

[442] WP29 (2016) *Guidelines on consent under Regulation 2016/679. In the context of telematics insurance,* WP 259 rev.01; EDPD *(2020) Guidelines* n 51–55 p 11.

[443]The European Data Protection Board (EDPB) has replaced WP29, as the advisory body from 25 May 2018; The final guidelines were not yet available at the time this research was conducted so have not been taken into account. Available at <https://edpb.europa.eu/our-work-tools/documents/public-consultations/2020/guidelines-12020-processing-personal-data_en (Accessed 6 May 2020)

[444] Adapted from the EDPB Guidelines I/2020 which refers to (*i) car usage data: e.g. the driving style, speed, distance covered; (ii) car technical data e.g. data relating to the wear and tear on car parts, engine coolant temperature, engine RPM, tyre pressure, or data collected by cameras that may concern driver behaviour, as well as information about other people who could be inside; or (iii) metadata e.g. car maintenance status.*

Figure VI Car Data types and processing



Various stakeholders, however, have heavily criticised the EDPB understanding of the industry and interpretation of relevant General Data Protection Regulation (GDPR) requirements, confirming the need for clarification to which this chapter aims to contribute.[445]

5.1.1 The GDPR: Personal data processing

The EC, with the General Data Protection Regulation (GDPR) lays down general rules to protect individuals in relation to the processing of their personal data, and to ensure the free movement of such data within the EU.[446] The GDPR is therefore relevant as it applies to the processing of connected car data specifically for telematics insurance purposes. The right to the protection of personal data for connected car consumers is not an absolute right but must be balanced against other fundamental rights including the right for car manufacturers and insurers to conduct a business in accordance with the principle of proportionality. [447,]

Despite the aim to create consistent data protection rules throughout the EU, there is some flexibility for Member States to strike an appropriate balance to create an environment of legal certainty from which not only consumers, but organisations can benefit.[448]

While "processing" is broadly defined by the GDPR as *"any operation or set of operations which is performed on personal data"* which will include all relevant use for connected car and telematics insurance purposes, the question whether and what connected car data falls under the scope as personal data has led to some discussion.[449]

---

[445] Public consultation responses: Available at <https://edpb.europa.eu/our-work-tools/documents/public-consultations/2020/guidelines-12020-processing-personal-data_en> accessed May 2020.

[446] 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 (GDPR). Replacing Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, OJ 1995 L 281.

[447] Art 23 GDPR; Recital 4 GDPR; CJEU, Joined cases C-92/09 and C-93/09, *Volker und Markus Schecke GbR and Hartmut Eifert v. Land Hessen* (GC), 2010.

[448]Art 1; Recitals 1–-4, 10 GDPR. EU Agency for Fundamental Rights (FRA) and the Council of Europe (CoE) *Handbook on European data protection law*, 2018, p 30 ; For a critical analysis see Gonzàlez Fuster and Scherrer, (2015) *Big Data and Smart Devices and Their Impact on Privacy*' (Study for the LIBE Committee 5

[449] Article 4. (1) and (2) GDPR.

"Personal data" under the definition of the GDPR means *any information relating to an identified or identifiable natural person*. ("data subject").[450] The discussion about car data has mainly focused on whether technical or sensor-generated car data could be seen as personal data. The general consensus, which is confirmed here, is that car data relevant for telematics insurance purposes is personal data.[451]

This is based on the following considerations of the key elements of the definition namely information, relates to and identification:

Under the GDPR *"any information"* can be personal data.[452] This includes data providing any sort of information available in whatever form or medium on which the information is contained.[453] Even technical data about a physical object and its functioning, such as data about the car's engine, may also qualify as personal data if it can be linked and relates to the driver.[454]

Information can be considered to "relate" to an individual when it is about that individual. Relevant for the discussion is that a person can be directly or indirectly identifiable for example through an identifier such as their name, an identification number, location data, or one or more factors specific to their identity.[455]

The Article 29 Working Party considers that three elements are relevant to establishing whether data relates to an individual: *content, purpose* or a *result* of the processing.[456] These elements are present when the data provides information about a particular person, and/or the data is used with the purpose to evaluate or influence the status or behaviour of an individual, and/or when the data is likely to have an impact on the person's rights and interests, taking into account all the circumstances.[457]

These elements are present with respect to what car data is processed for telematics insurance because the data should relate to the driver of the car. Car data, such as speeding and cornering, is used to determine whether the driver has a safe driving style, and time and location data is relevant because driving late at night or through an unsafe neighbourhood is likely to increase the risk of an accident or theft of the car. Finally, this data is not only used to identify the driver, but also to decide upon their

---

[450] Art 4.(1) GDPR; WP29 Opinion 4/2007 on the concept of personal data pp 6,9.

[451] Confirming the EDPB Guidelines I/2020 and EC-commissioned TRL report by McCarthy M et al. (2017) Access *to In-car Data and Resources,* Final Report Available at <https://ec.europa.eu/transport/sites/transport/files/2017-05-access-to-in-car-data-and-resources.pdf> Accessed 17 June 2018)

[452] This includes any sort of statements about a person. WP29 *Opinion 4/2007 on the concept of personal data*, p 6.

[453] This includes sound and image data, for example, voice recordings or video surveillance to the extent that individuals are recognisable. WP29 *Opinion 4/2007 on the concept of personal data*, p 6.

[454] Bygrave L, (2003) *Digital Rights Management and Privacy. Legal Aspects in the European Union*' in Eberhard Becker et al. (eds) (2003) *Digital Rights Management*, LNCS 2770, 418–446, 420. Similarly, data about processes or events such as the functioning of a machine may also be considered as relating to an individual WP29 *Opinion 4/2007*, p 9.

[455] WP29 (2005) *Working document on data protection issues related to RFID technology* p 8.

[456] WP29 *Opinion 4/2007* p 10.

[457] It is sufficient if the individual may be treated differently from other persons as a result of the processing of such data, the impact does not have to be major. WP29 *Opinion 4/2007* p 11.

insurance. If their car data reveals that they have been driving badly, broken their curfew or caused an accident, this data will be used by their insurance company to decide upon their insurance.[458]

A natural person can be considered "identified" or "identifiable" when he or she is distinguished from all other members of a group or not yet been identified but identification is nevertheless possible. Identification is possible through "identifiers", pieces of information which hold a close relationship with the individual.[459] Examples include direct identification of the driver by their name or indirectly through the car registration number or Car Identification Number (VIN).[460] It depends on the context of the situation whether a certain identifier can achieve identification.[461]

The European Court of Justice, in Breyer v Germany, ruled that a dynamic IP address may constitute personal data in the hands of a controller, but only when they have the legal means to identify the data subject with additional data.[462] However, this does not exclude information when this is held by another party, as long as there is a way for the data controller to gain legal access to this information.[463] This decision has relevance on whether car identification numbers (VIN) qualify as personal data which has not been the case in all member states.[464] However, as long as there is a legal way to gain access to the car registration system to relate the VIN to the car owner, VIN data is personal data even when the number and means to identify the car owner are in separate hands.

When car data is collected for telematics, the data is collected with the specific purpose to identify whether the car driver is a good driver and to provide them with more personalised insurance accordingly. The purpose of the data collection is therefore not only to identify but also to make decisions about the driver and his insurance. The data would be useless for this purpose if a link between the data and the driver could not be established. Because this link can be direct or indirect, information about the car falls under the scope also. If the data is used for other purposes that do not require identification, measures should be taken to minimise the risks of re-identification.[465]

5.1.2 The GDPR: processing different types of data

---

[458] For example, to increase premiums or cancel their insurance coverage. WP29 *Opinion 4/2007* p 12.

[459] Data defined as biological properties, physiological characteristics, living traits or repeatable actions whose features and/or actions are both unique to that individual and measurable. Examples include fingerprints, and voices which may be used in cars for identification. WP29 *Opinion 4/2007,* p 8.

[460] Defined by the WP29 as *a combination of significant criteria which allows the individual to be recognized by narrowing down the group to which they belong such as age, occupation, place of residence.* WP29 *Opinion 4/2007* pp 12–13. Confirmed by the EDPB in its *Guidelines I/2020*

[461] Recital 24 GDPR and Poullette et al, (2004) *Report on the application of data protection principles to the worldwide telecommunication networks*, T-PD Committee, point 2.3.1, T-PD.

[462] Case C-582/14: Patrick Breyer v Bundesrepublik Deutschland; Niemann, F and Schubler, L. (2016). *CJEU decision on dynamic IP addresses touches fundamental DP law questions*, Bird & Bird. Available at www.twobirds.com (accessed 7 June 2020) Zuiderveen Borgesius , (2017) *Breyer Case of the Court of Justice of the European Union: IP Addresses and the Personal Data Definition.* Case Note, European Data Protection Law Review, Volume 3, Issue 1. p 13.

[463] Case C-582/14: Patrick Breyer v Bundesrepublik Deutschland.

[464] This was mentioned during a meeting with the Association of European Vehicle and Driver Registration Authorities (EReg) group. Van den Boom (2019) *Scoping interviews with Automotive industry stakeholders.*

[465] For some examples WP29 (2017) Opinion p 6.

Because not all types of data pose the same level of risk for consumer privacy, the GDPR acknowledges this through different processing requirements. Special attention therefore must be paid to certain types of car data that may pose a higher risk for consumer privacy because processing may require additional more strict measures to be taken by the car manufacturer and/or telematics insurer.[466]

Non-personal and anonymised data

If the car manufacturer has taken measures to ensure identification is no longer possible the data is no longer considered personal data.[467] Obtaining car data for the purpose of anonymisation, however, means the data is still personal data which does fall under the scope of the GDPR.

The effectiveness of the process to remove identification depends on several factors.[468] To determine whether identification is possible, all reasonable means that are likely to be used either by the controller or by any other person should be taken into account.[469] Objective factors to determine whether a means is reasonable include the cost and time of conducting identification, but also the intended purpose, the way the processing is structured, the controller, the interests at stake for the individuals, the risk of breaches of confidentiality and technical failures.[470] The test is dynamic, therefore it depends not only on the available technology at the time of processing but also future technological developments which are relevant, especially when data is stored for long periods of time.[471] Non-personal (anonymised) data, however, would not enable insurers to take into account the consumers' personal driving behaviour and style so this data is not adequate for most if not all telematics insurance purposes and excluded for further analysis.[472]

Special categories of personal data: Pseudonymised data

In order for compliance with the GDPR data protection principles (see 5.2) when direct identification is no longer required, data it may be required to pseudonymise the data.[473]

Pseudonymisation is defined as "the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and

---

[466] Art 9 and Recitals 46; 51;52–56 GDPR See recital 75 GDPR which considers a higher risk in cases (...) where personal aspects are evaluated, in particular analysing or predicting aspects concerning (...) behaviour, location or movements, in order to create or use personal profiles.

[467] Recital 26 GDPR; CJEU, C-434/16, Peter Nowak v. Data Protection Commissioner, 2017; ICO Anonymization: managing data protection risk code of practice Available at www.ICO.com (accessed 9 June 2018).

[468] Article 29 Working Party *Opinion 4/2007 on the concept of personal data* p 18, and Article 29 Working Party, *Opinion 05/2014 on Anonymization Techniques*. On the challenges of see Botta M, and Wiedemann K, (2018) *EU Competition Law Enforcement Vis-À-Vis Exploitative Conducts in the Data Economy Exploring the Terra Incognita*, Max Planck Institute for Innovation & Competition Research Paper No. 18-08. p 32.

[469] Recital 26 GDPR; For more about identification and online identifiers see the EC Impact Assessment, p 24.

[470] Considering all objective factors and the available technology at the time. Recital 26 GDPR.

[471] WP29 Opinion 4/2007, p 15.

[472] WP29 'Example 14' in WP29 *Opinion 4/2007*, p 16.

[473] Article 25 GDPR. Recital 28 GDPR; EDPB guidelines 201904 *data protection by design and by default* v2.0. Av Available at <https://edpb.europa.eu/our-work-tools/documents _en (Accessed 6 August 2020)

organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person".[474]

Pseudonymised data is still personal data, as it is information on individuals who are indirectly identifiable, but it is subject to less strict conditions because it reduces some of the risks for consumers.[475] As long as there is a lawful means for telematics insurers to obtain the relevant information from pseudonymised data for the insurance purposes, such data is included in the further analysis. This is the case, for example, when they can obtain lawful access via the car manufacturer through the Car Identification Number (VIN).

Special categories of personal data: Sensitive data

The collection of connected car data may include driving data such as speed and location data and sensor data about the status of the engine, tire pressure etc. When this data is analysed, it can reveal sensitive information about the driver. This is especially so when collecting Global Positioning System (GPS) data as the constant monitoring of drivers' movements and location shows their daily routine which could reveal information that they may not want to share including about their health, political and/or religious beliefs.[476]

Given the harmful impact on a data subjects privacy the processing of such data may have the GDPR prohibits the processing with some exceptions.[477] Relevant in the context of the connected car and telematics insurance is that processing is allowed when the data subject has given their explicit consent for a specific purpose; when they have made the data public and/or when the data is necessary for a legal claim.[478] Member States may limit or have additional requirements with respect to the processing. It is therefore important to continue to monitor the developments and regulatory responses by member States.[479] Especially also with respect to the use of biometric data such as voice and/or fingerprints recordings which are increasingly being introduced in modern cars for identification and other monitoring purposes.[480]

Special categories of personal data: Criminal convictions and offences

The data collected through telematics devices may also include data related to criminal convictions and offences such as traffic violations. If such data falls within the meaning of Art. 10 GDPR processing is generally forbidden. When the car manufacturer would be processing such data it would require authorisation or be processed under control of a relevant authority.[481] In most cases however

---

[474] For examples of techniques WP29 *Opinion 4/2007 on the concept of personal data,* p. 17. EDPB Guidelines 01/2020.

[475] Art 4(5); Recital 28/29 GDPR 'Personal data which have undergone pseudonymization, which could be attributed to a natural person by the use of additional information should be considered to be information on an identifiable natural person'.

[476] Recital 35 GDPR. Article 29 Working Party Opinion 03/2017 C-ITS. Geolocation data is considered sensitive data which cannot collected without consumer consent, according to the Dutch Data Protection Authority. Available at https://autoriteitpersoonsgegevens.nl/en/news/following-report-dutch-dpa-tomtom-provides-user-better-information (Accessed 17 June 2020)

[477] Art 9 GDPR, Recital 51 GDPR

[478] Art 9(2)a-j.

[479] Art 9 (4)

[480] EDPB Guidelines 01/2020.

[481] Article 10 GDPR.

car manufacturers have opted for technological measures to make sure such data is either not collected, stored or communicated further without additional security measures.[482]

5.2 GDPR: Data protection principles

Under the GDPR, data processors, must ensure that in addition to specific requirements, their processing of personal data is compliant with the data protection principles.[483]

Car data as personal data falls under the GDPR, which means that processing of such data by the car manufacturer, as data processor is only permitted when they comply with their requirements. This means that processing car data which is considered personal data, must be:

- processed lawfully, fairly and in a transparent manner
- collected for specific, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date. Every reasonable step must be taken to ensure that personal data that is inaccurate is erased or rectified without delay
- kept in a form which permits identification of persons (data subjects) no longer than is necessary for the purposes for which the data is processed
- processed in a manner that ensures appropriate security of the data.

The data controller determines the purposes and means of the processing of personal data, and is held accountable for compliance with the GDPR requirements.[484]

In the context of the connected car ecosystem and processing for telematics insurance; both the car manufacturer and the telematics insurer will be considered as data controllers towards the consumers as the data subject who generated personal data through their driving. They both may make use of data processors who act on their behalf for example when a telematics insurer outsources the telematics risk analysis.[485]

Given the broad scope of the GDPR definition, it will cover most if not all car data processing with the notable exception when the data remains within the car and for example not sent to the car manufacturers server or accessed by the telematics insurer.[486]

The following sections focus primarily on key requirements relevant for the question of whether the GDPR is adequate to facilitate access for telematics insurers to personal car data generated by consumers when this is controlled by the car manufacturer. The analysis is therefore on the GDPR

---

[482] As advised by WP29 *Opinion 03/2017 on C-ITS.*

[483] Article 5(1) a-f and further Art 6-11; Recital 39 GDPR.

[484] Articles 4(7), 24,26 recitals 74,79,81 GDPR; Article 29 Working Party *Opinion 1/2010 on the concepts of 'controller' and 'processor'* (WP 169)

[485] Also, the car manufacturer may act as a data processor when providing consumer data. When relevant for the analysis this distinction will be made clear. Art 4(8), 28,29 Recitals 79,81 GDPR.

[486] Kerber (2018)

requirements for lawful processing by the car manufacturer in relation to consumers for the purpose of making the data available for telematics insurance purposes. Where relevant the GDPR requirements for the telematics insurers as subsequent users are also discussed.

5.3 GDPR lawful grounds for processing

This part consists of 3 sections: 5.3.1 Telematics processing based on Informed Consent; 5.3.2 Telematics processing based on Contractual Necessity; 5.3.3 Telematics processing based on Legitimate Interest.

The GDPR provides an exhaustive list of six legal grounds on which processing of personal data may take place for non-sensitive data (article 6) and for special or sensitive categories of data (article 9).[487]

In the context of telematics insurance, the key legal grounds that have been identified are: a) informed consent; b) contractual necessity and/or c) when there is a legitimate interest to do so.[488]

Given that having a legal ground for processing is a precondition for telematics insurers to be granted access by the car manufacturer to connected car data the following analysis will discuss the appropriateness of each of these for data processing by telematics insurers. The insights gained are also relevant with respect to car manufacturers and other third parties including (telematics) data sharing platforms. For the question of whether the GDPR facilitates the uptake of telematics insurance it is important whether such use beyond the initial purpose for which car data was collected is possible (*see section 5.5.2)*

5.3.1 Processing based on informed Consent

Definition
Art 6(1a) states that the processing of personal data is lawful if the data subject has given consent for one or more specific purposes.[489] For consent to be valid it must be freely given, specific, informed and unambiguous.[490] Relevant further for the decision whether to rely on consent as a legal basis for the processing of car data is that consumers have the right to withdraw their consent at any time, which can be problematic for products and services that require continuous access. [491] The consequence of not complying with the requirements is that consent will be invalid and can be in breach of Article 6 of the GDPR.

---

[487] Article 6 GDPR.

[488] A survey of industry and policy documents in combination with what the interview participants from the automotive and insurance industry used in practice confirms the focus on these three grounds confirming the WP29 and EDPB guidelines. Although outside of the scope Article 5(3) of the ePrivacy Directive requires consent in reference to connected cars as IoT devices (terminal equipment) under the scope of the directive.

[489] Article 7 GDPR further clarifies the conditions for consent.

[490] If the data subject has no real choice, feels compelled to consent or endures negative consequences if they do not consent, consent is not a valid ground. WP29 (2016) guidelines on consent p 5 See for further clarifications and examples recital 32 and 42 GDPR.

[491] ' *The withdrawal of consent shall not affect the lawfulness of processing based on consent before its withdrawal. [..] It shall be as easy to withdraw as to give consent.'* Art 7 (3) GDPR

Key Criteria

Considering that to make a well-informed decision whether to consent to the processing consumers need adequate information, the GDPR contains a list of information that needs to be made available. This includes what data is collected, the processing and impact on privacy when consumers either consent to or refuse processing. [492] The WP29 states that *If the controller does not provide accessible information, user control becomes illusory.*[493] Providing consumers with adequate information further enables them to exercise the rights they have granted by the GDPR such as access and data portability, effectively.[494]

It is important to identify what type of data is processed, how and for what purpose, also to identify whether *specific consent* is required (see 5.1.1).[495] As mentioned, this may be the case when the data reveals for example a traffic violation and as the use of innovative sensor technology increases more data can be collected including gestures and voice data which may require additional protection.[496]

The information to be provided in case of telematics insurance should cover all the insurer's processing activities carried out for the same purpose or purposes.[497] When the processing has multiple purposes consent should be requested for all of these purposes. For a car manufacturer to collect the data for purposes necessary to provide connected car services, as well as to share it for telematics insurance purposes they would have to request consent from consumers for both separate purposes.[498]

That it can be difficult at times to specify all the particular purposes for which the data will be used has been acknowledged.[499] This is the case for example when considering that car data besides telematics insurance may facilitate future innovations some of which are not yet known. As a result for any new purpose consent must be requested again. Following the principle of purpose limitation,

---

[492] Recital 42 GDPR: *' For consent to be informed, the data subject should be aware at least of the identity of the controller and the purposes of the processing for which the personal data are intended.'* Article 29 Working Party (2007), *Working Document on the processing of personal data relating to*

*health in electronic health records; E*xplanatory Report of Modernised Convention 108, para 42. Available at https://search.coe.int/cm/Pages/result_details.aspx?ObjectId=09000016807c65bf (Accessed 06 October 2020)

[493] WP29 (2016) *Guidelines on Consent,* p12

[494] WP29 (2016) *Guidelines on Transparency* P.6; Villalon (2015) *"the requirement to inform the data subjects about the processing of their personal data, which guarantees transparency of all processing, is all the more important since it affects the exercise by the data subjects of their right of access to the data being processed, [..]*Opinion AG Cruz Villalon, 9 July 2015 (1) Case C-201/14 Smaranda Bara and Others; Court of Justice of the European Union: Judgment in Case C-201/14 / Smaranda Bara and Others; paragraph 74.EC Impact assessment on the reform of the data protection regulatory framework, 2012 p. 21.

[495] Article 29 Working Party Guidelines on consent under Regulation 2016/679 p 11.

[496] Member States may maintain or introduce further conditions, including limitations. Article 9(1) and (2) a) and e) GDPR. However, there are limitations.

[497] 'For consent to be informed, the data subject should be aware at least of the identity of the controller and the purposes of the processing for which the personal data are intended.' Recital 42 GDPR.

[498] See further, Soussan G, et al (2016) p. 24 mentioning the example of 'insurance link' investigation where data collected for fraud could not be used for policy quotation purposes.

[499] WP29 Opinion 03/2013 on purpose limitation; FRA (2018).

balancing the need to protect consumers against unknown purposes is likely to outweigh the inconvenience of having to obtain additional consent or use a new legal ground when additional purposes do become known.[500]

Considerations

The request for consent from consumers needs to be in clear and plain language, intelligible and easily accessible.[501] What this means for telematics insurers is that they should pay special attention to the fact that this type of insurance is still relatively new for most people and avoid jargon.[502] If their target group are young drivers, for example, more easy-to-understand information about the insurance product will be necessary for them to understand what the requirements are and potential negative consequences.[503]

Consent must be freely given by consumers, and this is not always possible.[504] If we look at telematics insurance and the processing of personal data from connected cars, the processing is necessary for the provision of a product (the connected car) or a service (telematics insurance). As both cannot be provided without the processing of personal data one can argue that consumers do not have a free choice whether to give consent because of the negative consequences.[505] If consumers refuse consent for processing car manufacturers cannot receive what is necessary for providing connected car services. In the case of telematics insurance, refusing to provide car data would make it in some instances impossible for the insurer to conduct their risk assessments and provide consumers with a more personalised insurance premium based upon their driving profile. In these cases, what is argued is that consent cannot be freely given because personal data is required to provide the consumer with specific products and services and the processing ground of contractual necessity is more appropriate.[506]

Another situation is when it is not possible to s*eparate the different purposes* for which data is processed. For example, when data processing is done for a) risk assessment and b) data anonymization, if consumers are not given the choice to consent to a or b separately, consent is not the appropriate ground for processing. Similarly, when processing of personal data is necessary for the performance of a contract, a different legal ground for processing should be relied upon.[507]

---

[500] Article 5(1)(b); recital 39 GDPR.

[501] WP29 (2016) Guidelines on Consent, p 13 See also WP29 Opinion 15/2011 on the definition of consent (WP 187) pp.19–20.

[502] WP29 Opinion 15/2011 p 19.

[503] This includes for example making it clearer to consumers of telematics that their premium could increase as well as be cancelled as a result of bad driving scores. See General Accident Telematics Car Insurance Terms and Conditions 'If a score of below 50 is recorded [. . .] we reserve the right to cancel your policy [..]Available at https://help.generalaccident.com/media/ 1090/telematicsterms.pdf. (Accessed 01 January 2020) See further van den Boom F (2021) p

[504] For examples Recital 43 GDPR.

[505] On the challenges for understanding privacy risks by consumers see Solove (2006) p 505. Specific regarding privacy concerns and telematics: see Mataija P and Van Schoubroeck (2016) *Telematics insurance: legal*

concerns and challenges in the EU insurance market. Available at https://core.ac.uk/display/153424514 (Accessed 01 January 2020) More generally see Tene and Polonetsky (2013), p. 239

[506] see recital 42 GDPR; Explanatory report of Modernised Convention 108, para 42.

[507] Recital 43 GDPR.

When consumers refuse to give consent to their car data being processed by telematics insurers, insurers may refuse to provide them with insurance. Although now alternative affordable insurance products are available that do not require car data this may change in the future.[508]

Another important consideration for insurers when deciding what legal ground to use is that consumers have *the right to withdraw* their consent at any time. This should be as easy as giving consent.[509] The withdrawal of consent does not affect the lawfulness of processing before the consumer withdraws its consent.[510] The right to withdraw gives consumers a tool to control the processing of personal data. It does create some challenges for insurers who rely on having access to the data stream at any time and who are required to have a process in place to respond to such a withdrawal. Where the product or service relies on reliable data sharing consent may not be the appropriate ground.

When consent is the legal basis consumers also have *the right to data portability*, which is discussed in more detail below (5.6.2).[511] In some situations having to provide a copy of the data under processing can be a problem for insurers for example, in cases where the data falls under the scope of IP or trade secrets protection. If this is the case the insurer may consider the use of a different legal ground for lawful processing. There is some concern about the right for consumers to data portability because this may negatively impact the incentive for companies to innovate and invest in interoperability and data sharing opportunities.[512]

If all the conditions are met, what follows from the analysis is that consent is one of the main legal grounds for processing car data in the context of connected cars and telematics insurance.[513] What is argued for here is that the requirements for valid consent provide an adequate framework to balance between the interests of stakeholders involved. Consumers when informed can decide who may process personal data for products and services that best meet their needs. Companies are encouraged to provide consumers with good quality products and are kept from anti-competitive behaviour through the consumer right for withdrawal and data portability.[514] However, in practice consumers are often not made sufficiently aware and/or informed of the fact that their data is collected and processed

---

[508] Article 7(4) GDPR.

[509] Art 7(3); art 17 (1)b GDPR; Recital 42; Explanatory Report of Modernised Convention 108, para 42.

[510] Article 7 GDPR.

[511] Art 20 GDPR.

[512] Kerber W, Schweitzer H, (2017), '*Interoperability in the Digital Economy*' (Journal of Intellectual Property, Information Technology and Electronic Commerce Law, MAGKS, Joint Discussion Paper Series in Economics, No. 12. This issue was also raised during the interviews with Automotive and Insurance industry stakeholders Van den Boom (2020) *Interviews with experts from the Automotive industry and Insurance Industry*.

[513] The EDPB in its guidelines considers consent one of the main grounds for processing. *Guidelines 1/2020 on processing personal data in the context of connected cars and mobility related applications.* The appropriateness of consent in an online environment has further been confirmed: EC(2012) *Impact assessment on the reform of the data protection regulatory framework*, p 21 and WP29 *Guidelines on consent under Regulation 2016/679.*

[514]Which needs to be monitored for its potential impact on incentives to innovate and collaboration between companies

or what the effects are on their privacy when they have given consent.[515] Following from the analysis and interviews is that there remains uncertainty about how the requirements for consent to be valid should be interpreted in practice.[516] Therefore, what is needed to improve legal certainty for compliance and adequate protection of consumers is a clarification to address the concerns raised about the use of consent.[517]

The role for consent-based processing, to help consumers make better informed decisions about what insurance to take needs to be improved. What is recommended is to confirm the requirement for a broad range of information to be given to consumers for them to understand what they (want to) consent to.[518] To give more guidance to processors and controllers on how to obtain valid consent and to improve the enforcement for non-compliance. Special attention should be given to the use of data portability providing more guidance how to respond to a request and helping consumers in case of non-compliance to enforce their rights against car manufacturers. These recommendations contribute to ensuring consumers privacy is protected without stifling car data innovations and uptake of telematics insurance.

In response to the question when to use consent as lawful ground for processing; although consent is the first ground mentioned in the GDPR this does not mean it is the main legal ground for processing personal data. Article 6 GDPR does not give a hierarchy in terms of legal ground so there is no preference as such. When processing meets the specific criteria of the legal grounds mentioned they can be used for processing car data.

---

[515] See for specific telematics insurance examples Van den Boom F (2021) p 294 and for example challenges in the context of Iot devices, Mik, E (2020) *The Disappearing Computer: Consent and Disclosure in the World of Smart Objects,* European Journal of Consumer Law; Noto La Diega G, Sappa C, (2020) *The Internet of Things at the intersection of data protection and trade secrets. Non-conventional paths to counter data appropriation and empower consumers'* 3 European Journal of Consumer Law 419-458. Specifically on the severe consequences to be explained when consumers would withdraw consent for example it may not be possible to obtain new coverage with a new provider on similar terms, e.g. the loss of "no claims bonus" for motor insurance. Soussan et al. (2016) p. 20

[516] This is already a well-documented issue and continues to raise concern despite experiments to improve, See for example Godwin A, (2016) Brave new world: digital disclosure of financial products and services, *Capital Markets Law Journal*, Volume 11, Issue 3, Pages 442–457; and in the context of smart cities see Edwards, L (2016) *Privacy, Security and Data Protection in Smart Cities: A Critical EU Law Perspective* ,European Data Protection Law Review, Lexxion. From the interviews: Participants from the insurance industry for example disagreed even amongst themselves with how much information consumers should be given, whereas many of the car consumers I spoke to said they felt that they didn't know what data was collected and how it was used by insurers for their insurance premium. Van den Boom (2020) *Interviews with Insurers and Industry experts* and based on informal conversations with participants of conferences held in 2019-2021

[517] Grouped under three data processing stages Van Ooien et al. have identified a list of threats to individual control over personal data processing which consumers should be made aware of. See van Ooijen and Vrabec (2016), p. 95; Van den Boom F (2021) p 229

[518] This includes for example making it clearer to consumers of telematics that their premium could increase as well as be cancelled as a result of bad driving scores. See General Accident Telematics Car Insurance Terms and Conditions 'If a score of below 50 is recorded [. . .]

we reserve the right to cancel your policy [..] Available at https://help.generalaccident.com (Accessed online January 2022) Van den Boom F (2021)

It is therefore only a normative recommendation for processing car data for telematics insurance when there is indeed a choice between several legal grounds including using consent for processing.[519] Although in line with what is argued for by the Commission, the EDPB and the CNIL for example, other DPA's, industry and academic experts may argue differently and advise against the use of consent.[520] There remains uncertainty over what the specific conditions for consent to be valid are and whether it is possible to meet them in practice.[521]

Depending on the circumstances other grounds mentioned in article 6 GDPR instead of consent are therefore recommended for the lawful processing of car data. The following sections recommend processing in specific cases on the basis of contractual necessity (5.3.2) or when there is a legitimate interest (5.3.3).[522]

5.3.2 Processing based on contractual necessity

Definition

Art 6(1)b) GDPR states that processing personal data without consent is lawful when (…) necessary for the performance of a contract to which the data subject is a party or in order to take steps at the request of the data subject prior to entering into a contract.[523] Processing personal data before a contract is established based on the processor's own initiative or that of a third party does not fall under the scope for which this is a legitimate ground.[524]

Criteria

To decide however whether this is the appropriate legal basis for processing car data the key test is whether in a specific case processing of car data is necessary.[525] In other words, if the service could not be provided without car data, then the processing is justified based on contractual necessity. Necessity is given a narrow interpretation.[526]

The decision whether contractual necessity is the appropriate legal ground includes the question whether there is a less intrusive way to process the data; if processing for these purposes is what the

---

[519] https://www.cnil.fr/en/sheet-ndeg15-take-account-legal-basis-technical-implementation

[520] The UK's Information Commissioner's Office (ICO) for example with respect to the GDPR recommended to only use consent when no other lawful ground existed. ICO Guide, *Lawful basis for processing* Available at https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/lawful-basis-for-processing/ (Accessed online January 2022)

[521] Recital 43 for example states that consent is not valid where there is a *clear imbalance* between the data subject and the controller. There is still uncertainty how broad to interpret this in practice.

[522] Art 6 GDPR makes it clear that *at least one* of the legal grounds must apply but does not give a preference for any of the legal grounds mentioned. The recommendations therefore are normative.

[523] Recital 44 GDPR.

[524] ICO Guide

[525] Necessity has its own 'independent meaning ' and must be interpreted accordingly. See CJEU, Case C-524/06, Heinz Huber v Bundesrepublik Deutschland, 18 December 2008, para 52.

[526] CJEU, Joined Cases C-92/09 and C-93/09, Volker und Markus Schecke GbR and Hartmut Eifert v Land Hessen, 9 November 2010. CJEU, Case C-13/16, Valsts policijas Rīgas reģiona pārvaldes Kārtības policijas pārvalde v Rīgas pašvaldības SIA 'Rīgas satiksme', para 30.

consumer reasonably would expect and for companies to be aware that when they offer several services they may need a different legal basis for some of these purpose.[527]

Considerations

In practice, this means for car manufacturers in the context of telematics insurance that they must be able to explain the reasons for generating the data in the first place, as most contracts will be about the connected car and data needed for its functioning. However, arguing for innovations to be enabled will depend on whether the contract also includes making data available for telematics insurance.

Similarly, telematics insurers must be able to explain why processing the car data for insurance purposes is necessary to provide and manage consumers' insurance policies. It is not necessary to show that the data is *essential* for the purpose, which both with respect to connected cars and telematics insurance would be unlikely given that a connected car without personal data processing may still function as a (albeit awfully expensive) car, and car insurance has been and is still predominantly provided without the use of connected car data.

Whereas for some processing purposes such as the need for personal data for a more accurate and personal risk assessment, in other cases it may not be so clear whether the processing of certain data is necessary.[528] Therefore there remains a need for clarification of the requirements under which contractual necessity is the appropriate ground for processing personal data in the context of the connected car.

Considering that car data is necessary for some if not all of the services provided by telematics insurers, they do not need consumers to consent to the processing of personal data when the consumer requests a quote, applies for an insurance policy and/or to manage their existing insurance policy.[529]

If, however, the necessity of the use of car data cannot be proven, for example, because there are other reasonable and less intrusive ways, processing of car data for the purpose based on this ground would be prohibited unless there is a different ground available.[530]

Similar to the considerations for the legal basis of consent, the consumer, based upon their right to data portability, may request a copy of the data or have it transmitted to a third party. This provides the consumer with control over the processing. Which is why the following ground is considered to be the least appropriate because it does not grant consumers this right. It does however acknowledge both that data protection is not an absolute right, and the importance of products and service such as insurance by respecting the freedom to conduct a business.[531]

---

[527] See for further clarification the EDPB: Guidelines 2/2019 on the processing of personal data under Article 6(1)(b) GDPR in the context of the provision of online services to data subjects.

[528] Especially since there is a lack of consensus amongst telematics insurers about what data is necessary to include in their risk assessments. Note that this information is kept confidential.

[529] For the performance of the ConnectedDrive agreement BMW processes (...) *car status information, position and movement data, user profile, environmental information and sensor information.*

[530] "Necessary" does not mean that the processing must be essential for the purposes of performing a contract or taking relevant pre-contractual steps ICO Guide, *Lawful basis for processing*

[531] Articles 56 and 57 of the Treaty on the Functioning of the European Union.

5.3.3 Processing based on Legitimate interest [532]

Definition
Art 6(1)f) GDPR states that processing is lawful if [..]necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child . [533]

Criteria
Processing of personal data from connected cars without consent from the driver can be lawful if the insurer has a legitimate interest. This interest can be their own interest in processing or the interests of a third party and can be any interest except when it is unlawful or unethical.

The legitimate interest ground can be a lawful basis for processing car data when all the conditions (discussed below) are met. It is considered the most flexible legal ground for processing because it can, in principle, be used for any reasonable purpose through any means. For it to be an appropriate ground the following aspects should be taken into consideration by the insurer to decide whether to rely on this ground for processing car data. If it turns out that processing was not legitimate because any of the criteria were not met they will face serious fines and be obligated to delete all data.[534]

What makes this an attractive ground for processing purposes where data has become a valuable asset is that it does not grant consumers the right to data portability. However, insurers are advised to facilitate data portability not only because this contributes to more fair competition when consumers can have their data being ported to other providers but also because it may help to show compliance with the criteria for legitimate interests to be lawful. The WP29 specifically recommends facilitating data portability as an additional safeguard that will help the decision to 'tip' in favour of the data controller.[535]

In addition to having to meet all the criteria for lawful processing insurers should consider the fact that consumers have the right to object to processing because of their situation.[536] If they receive an objection, the insurer must demonstrate their legitimate interest overrides the reasons for the data

---

[532] G. Zanfir-Fortuna, (2018) Processing personal data on the basis of legitimate interests under the GDPR: Practical Cases, Nymity.

[533] Art 6(1)f and Recitals 47–49 GDPR; Article 29 Working Party Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC.

[534] If therefore the insurer is unsure whether they will meet the criteria for lawful processing based on legitimate interest they are advised to refrain from using this ground. Article 83(5)(a). Article 17(1)(d).

[535] Art 6(1)f GDPR; WP29, Opinion 06/2014 on the Notion of Legitimate Interests. The more safeguards used to more likely the balance will be decided in favour of the data controller. Zanfir-Fortuna, (2018)

[536] Once the data subject exercises this right, the controller must interrupt or avoid starting the processing, unless it can demonstrate “compelling legitimate grounds” that override the interests or rights and freedoms of the data subject, or for the establishment, exercise or defence of legal claims. Article 21(1) GDPR; Recital 47 GDPR. and WP29, Opinion on legitimate interests, p. 45. Case C-398/15 Manni, para. 47-49.

subject to object. The European Data Protection Board has defined a "compelling" interest to be the case when being able to achieve their legitimate interest is essential for the data controller.[537]

The Court of Justice of the European Union in the Rigas case and subsequent cases confirmed a three-step approach to decide whether the legitimate interest ground can be used for lawful processing.[538] Following the ICO guidance on the three steps balancing test, the insurer should consider whether it can meet the three conditions (discussed in more detail below). [539] First: the purpose of processing must be a legitimate interest; Second: the processing of personal data must be necessary to achieve the purpose and Third: the processing should not cause unjustified harm to the rights and freedoms of the data subject.

I The Legitimate interest

When insurers have an interest in processing personal car data that is legitimate, they may lawfully do so under article 6(1)f of the GDPR if all other conditions are met. A legitimate interest can be their own for example to improve the accuracy of their risk assessments or for the detection of fraud, or the interests of others.[540]

As already noted, it can be any interests as long as it is not unlawful or unethical. The insurer has to be able to clearly define what these interests are to be able to balance them against the interests of the driver therefore the interests cannot be hypothetical but must be real and related to current or at least near future activities.[541]

II The Necessity test

The processing of personal car data must be necessary to achieve the legitimate interest. This means that any data that is not directly linked to achieving the interests of the insurer should not be processed under this ground.[542] Insurers as data controllers must assess whether there is a less intrusive way by which these interests can be achieved instead of processing of the data.[543]

---

[537] EDPB Guidelines 2/2018 on Derogations of Article 49 under Regulation 2016/679" (25 May 2018).

[538] CJEU, Case C-13/16 Valsts policijas Rīgas reģiona pārvaldes Kārtības policijas pārvalde v Rīgas pašvaldības SIA 'Rīgas satiks, 4 May 2017. Note that this decision was taken under the directive (C-13/16, 4 May 2017).; Case C-398/15 Camera di Commercio, Industria, Aritigianato e Agricoltura di Lecce v. Salvatore Manni, judgment from 9 March 2017.

[539] ICO Guide, *Lawful basis for processing* Available at https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/lawful-basis-for-processing/legitimate-interests/ (Accessed 6 January 2022)

[540] Case C-13/16 Rigas, para. 29. Other examples include for direct marketing; ensuring network and information security; preventing unauthorized access and damage to computer and electronic communication systems. See recital 47 GDPR. On the balance of legitimate interests see Case C-131/12 Google Spain SL, Google Inc. v Agencia Española de Protección de Datos (AEPD), Mario Costeja Gonzalez, judgement of 13 May 2014.

[541] Article 29 Working Party, "Opinion 6/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46", April 9, 2014, p. 13.

[542] Case C-13/16 Rigas, para. 30.

[543] European Data Protection Supervisor, Assessing the necessity of measures that limit the fundamental right to the protection of personal data: A toolkit April 11 2017, p.5.

Considering the processing of car data, it will depend on the situation whether the insurer is successful in establishing their need for specific car data. To illustrate, this is the different approach insurers take towards the collection of GPS data for telematics insurance. Some insurers do not collect GPS data referring to privacy considerations, some only collect such data for a limited time, whereas other telematics insurers argue that without being able to continuously process location data they cannot provide their services or at least some of their services as their risk assessment would not otherwise be as accurate or even possible. The issue of legitimate tracking of GPS data was raised in a case in Germany concerning a private detective agency. The German court decided that processing GPS data can only be done with a strong legitimate interest which was not present given the motives for tracking were primarily economic and personal. Even though the company took mitigating actions the interests of their clients were not strong enough to overrule the rights of the data subject.[544]

If the insurer can argue it is necessary for them to process personal car data to achieve what is a legitimate interest the final step is to balance their interests with the rights and freedoms of the data subject

III The balance of interests

Whether the processing by the insurer of personal car data for a legitimate interest is lawful will finally depend on the impact it has on the interests or fundamental rights and freedoms of the consumer.[545] Important for the insurer is to have adequate safeguards in place to reduce the risk for harm to the consumer. The WP29 has given further guidance on how to conduct the balancing test.[546]

A first assesment is made based on what is the source and the nature of the legitimate interest of the insurer against what is the impact processing will have on the consumer. To understand what impact processing may have on the rights and freedoms of the consumer it is important to look at the likelihood and severity of the negative impact including possible damage which may be physical, material, or non-material such as damage to their reputation. Relevant information to be considered is whether the consumer could reasonably expect the processing of personal data based on the relationship they have with the data controller. For example, consumers may reasonably expect their car data to be used by their telematics insurer when they have been in an accident to identify whether their insurance claims are fraudulent.[547] Recital 47 indicates that if the individual does not reasonably expect the processing, their rights may override the legitimate interests. For those purposes consent or contractual necessity would be considered more appropriate.[548]

---

[544] Decision on Surveillance of Persons by Means of Vehicle-Mounted GPS Devices - Supreme Court of Germany Press Office. Available at >http://juris.bundesgerichtshof.de (Accessed 6 June 2021)

[545] Case C-13/16 Rigas, para. 32. Such balancing; "depends in principle on the specific circumstances of the particular case" and that " the seriousness of the infringement [..] can vary depending on the possibility of accessing the data at issue in public sources.; In the Google Spain it was stated that the fundamental rights of the data subject generally overrule economic interests of the controller to have access to the personal data. Case C-131/12 case C-131/12, Google Spain SL, Google Inc. v Agencia Española de Protección de Datos (AEPD), Mario Costeja González. (Google/Spain Case C-131/12).

[546] WP29 Opinion 6/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46, p. 33

[547] Recital 47 GDPR.

[548] EPBD considers only consent and contract to be appropriate in the case of connected cars personal data processing

Following the decisions of the CJEU in ASNEF processing of data from non-public sources compared to public sources will be a more serious infringement of the data subject's rights. [549] In the Google Spain case, the Courts stated that the fundamental rights of the data subject including not having their personal data used for profiling generally overrule the legitimate interest of the data controller and the public interest to have access to information.[550]

After the first assessment it could be that the interests of the insurer do not override the potential harm caused by processing for the consumer. However, the final decision may be in favour of the insurer if they have suitable safeguards in place to reduce the undue impact on the consumer that processing for a legitimate interest may have. Whether a safeguard is suitable depends on the nature of the data, the purpose and duration of processing. Examples of relevant safeguards include facilitating data portability. The better safeguards the insurer has in place to reduce the possible negative impact processing for legitimate interest may have on the consumer will help the outcome of the balance to be in their favour. What follows from the three steps is that only when harm caused by processing on the rights and freedoms of the consumer that cannot be offset by safeguards to the interests of the consumer override those of the telematics insurer.

The Dutch DPA in a case concerning Google considered that even if Google had demonstrated the necessity of specific data processing operations for specific purposes, it failed the second assessment by not having adequate safeguards in place to ensure that the combining of data was strictly limited to what was necessary.[551]

Practical guidance

The Article 29 Working Party and the national DPAs have adopted guidance for specific processing purposes including on the use of personal data for profiling, processing of employee data and for financial services which are relevant for insurers to consider.[552]

With respect to profiling insurers should take into consideration when balancing their interests: the level of detail of the profile that is required; how comprehensive they need the consumer's profile to be: the impact profiling has on the consumer; and what safeguards they can put in place to ensure fairness, non-discrimination and accuracy in the profiling process.[553] The Spanish DPO has published guidance for financial services on the use of legitimate interest for specific purposes including for the processing of personal for the analysis of credit risk scores.[554]

In their guidance on processing employee data the WP29 considers that consent can rarely be freely given, and legitimate interests can be used by companies for processing personal data. Relevant in the

---

[549] The court further stated that Member-states can adopt guidelines on how to balance the different interests. CJEU, Joined Cases C-468/10 and C-469/10 ASNEF and FECEMD v. Administraction de Estado, judgment of 24 November 2011. para. 46. Zanfir-Fortuna, (2018) p 8-10

[550] Google/Spain Case C-131/12

[551] Dutch Data Protection Authority (2013) Investigation into the combining of personal data by Google, Report of Definitive Findings (accessed online)

[552] WP29 2016/679, Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation adopted on 6 February 2018, p. 14. Zanfir-Fortuna, (2018) p 8-10

[553] WP29 Guidelines 2016/679, p. 14.

[554] The Spanish Data Protection Agency (AEPD) further suggested that financial institutions may be able to process personal data on the basis of pursuing legitimate interests for preventing fraud; and for the security of the financial institution's network or system, see AEPD Gabinete Juridico (Informe 0195/2017) P4; Leow G, Lim S,(2019) Examining the Proposed Legitimate Interests Basis in Singapore's Personal Data Protection Act: Comparisons with European Data Protection Regulations

case of telematics insurance is that the WP29 advises to put in place geographical; data-oriented and time related limitations when monitoring people. Relevant mitigation measures include not to record data in specific places; not to record specific data such as personal communications and to use sampling instead of continuous monitoring.[555]

What follows from the analysis of the three steps test is that insurers can use the legitimate interest as a lawful ground for processing car data when the conditions are met. However, the purposes for which this is the appropriate basis are limited and in most cases consent and contractual necessity should be used. This confirms the recommendations of the EDPB and others.

The legitimate interests ground could be used when the consumer has an insurance policy with the insurer, they can reasonably expect the processing of car data for purposes that have to do with safety, security, marketing, risk analysis and insurance fraud.[556] With respect to insurance fraud the purpose would be for the insurer to be protected against misuse which is also in the best interest of society that fraud gets prevented. The conditions and necessary safeguards for personal data to be processed however requires insurers to balance their necessity to achieve the legitimate interest against the potential negative impact the processing may have on the fundamental right to privacy of the consumers.[557]

Despite that it is a lawful ground for processing there are serious concerns about the use of legitimate interest as a ground for processing car data for telematics insurance purposes. The assessment of whether the criteria have been fulfilled is initially made by the car manufacturer or telematics insurer but can be challenged by others in court. As a result, the lawfulness of processing and risk for having to pay high fines makes the use of this ground uncertain and therefore problematic.[558] Another important argument against the use of legitimate interest is the limited protection it offers for consumers offered when data is processed on the basis of legitimate interest.[559] Without being informed about and requested to consent consumers may not be aware of their data being used and the consequences including the impact on their privacy processing may have. Subsequently they may not be able to understand or be aware of their right to object. And a final important concern and argument for legitimate interests not being the appropriate ground for processing is the lack of the right to data

[555] WP29 Opinion 2/2017 *on data processing at work*.

[556] Recital 51 GDPR; See for a practical example BMW ConnectedDrive platform use of legitimate interest as a lawful ground for processing personal data for securing product quality and developing new products and services. BMW ConnectedDrive Privacy policy. Available at https://www.bmw.co.uk/en/footer/legal/privacy-policy.html (Accessed June 2021)

[557] See for example Swedish Data Inspection Board v. Amos Forest Service AB - Appeal No. 13555-13 - Administrative Court of Appeal in Göteborg on the processing by gas stations of personal data to identify people who leave without paying where the courts concluded that despite the legitimate interest the intrusiveness of the measures proposed including the risk of inaccuracy, the comprehensive system and number of companies involved was not proportional to the purpose.

[558] WP29 Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC.

[559] The Dutch DPA stated [..]"*careful data processing requires that data subjects be actively informed about the recording of personal data relating to them and the specific purposes for which these data are collected and processed*.' Dutch DPA (2013) Investigation into the combining of personal data by Google, Report of Definitive Findings Available at http://www.dutchdpa.nl/Pages/pb_20131128-google-privacypolicy.aspx (accessed 6 June 2021)

portability.[560] Not only from the perspective of the consumers being protected against lock in, companies benefit from the opportunity for fair competition and innovation potential that data portability brings including car data being processed for purposes that would also be lawful because there is a legitimate interest.[561] Where the aim is to help achieve EU policy concerning road safety and enable beneficial innovations, restrictions on car data access and sharing should be avoided unless necessary and not otherwise overruled by fundamental rights.[562]

[560] Art 20 GDPR; whereas the EDPB in its guidelines on connected vehicles recommends that data processors [..['should facilitate data subjects' control over their data including to obtain consent in all cases where data portability takes place considering the possible sensitivity of the vehicle-usage data (e.g., journeys made, driving style). EDPB Guidelines 1/2020 p20

[561] WP29, Guidelines on the right to data portability

[562] See CNIL (2018) Compliance package for a responsible use of data in connected cars; Available at https://www.cnil.fr/en/connected-vehicles-compliance-package-responsible-use-data (Accessed 12 June 2021)

Table II Examples of GDPR legal grounds for telematics processing purposes

The main grounds used for connected car and telematics insurance processing purposes Art 5 (1) a and 6 (1) a of the GDPR		
Consent Art 6(1) a	Contractual necessity Art 6 (1) b	Legitimate interest Art 6 (1) f
- for profiling to make recommendations and personalise experiences. - for marketing - for research - for data monetisation	- to consider the application and facilitate the user's purchase of insurance policies. - In the case of online insurance and services, to provide the user with quotations online based on the details provided. - policy management such as claims handling and renewal, - to offer renewal and replacement policies.[563]	- for developing risk acceptance criteria, - for pricing models and calculating policy renewal quotations. - for detecting fraud developing fraud scoring models - for marketing - research and product innovations.[564]
Further processing		
not allowed	if compatible	if compatible
-	-	-
data subject rights		
- data access - data portability - to withdraw -	- data access - data portability - x	- data access - x - x

[563] The EDPB Guidelines gives further examples. And for specific Insurance processing purposes see <https://drivesmartinsurance.co.uk/telematics/> (Accessed 9 December 2021)

[564] See for examples from practice on the use of car data : *How we use your information* available at <https://www.rac.co.uk/privacyrights> and Ford's Connected Car policy available at <https://www.ford.co.uk/useful-information/connected-car-privacy-policy> (Accessed 3 December 2021)

5.4 Consumer control over connected car data

This part contains 3 sections: 5.4.1 Consumer information rights: 5.4.2 Consumer data access rights 5.4.3 Consumer rights with respect to Profiling.

Besides the processing of car data to comply with the principle of lawfulness, it also must comply with the principles of transparency and fairness.[565] Based on these principles consumers are granted specific rights that will enable them to control the processing of connected car data by telematics insurers and to challenge the stronghold car manufacturers currently have over the connected car data and access thereto.

In the context of the question whether the GDPR is fit for purpose, in the sense of facilitating the uptake of telematics insurance, key rights include information and data portability rights; whereas especially the latter is of particular interest as a potential solution to improve access and data sharing.[566]

5.4.1 Consumer information rights

With the purpose to become aware that their personal data may be collected and used, the principle of transparency requires that consumers are provided with information that is easily accessible and easy to understand, using clear and plain language.[567]

Together with the principle of fairness, only when consumers are adequately informed that processing is taking place, by whom and how and what their rights are when they understand the consequences do they have the means to take meaningful control over the processing of connected car data for both connected car and telematics insurance purposes.[568]

The information should be either given at the time of collection from the data subject or where the data is obtained indirectly within a reasonable period.[569] Furthermore what information is necessary depends on specific circumstances and context in which personal data is processed.[570] Relevant information to be provided also includes what rights data subjects have with respect to the processing of their personal data.

The GDPR contains specific information requirements which are different for when personal data is collected direct or indirectly from the consumer.[571] Both instances are relevant for the purpose of

---

[565] Art. 5 (1) a GDPR.

[566] Consumers should be able to switch between product and service providers which is problematic if they cannot take the data they have generated with them.

[567] Chapter 3, Art. 11-20 GDPR *Rights of the data subject*; and further specified in the recitals. On the importance of providing individuals with access to their data in usable format see Tene, O and Polonetsky, J, (2012) *Big Data for All: Privacy and User Control in the Age of Analytics*, 11 Northwestern Journal of Technology and Intellectual Property 239.

[568] Fairness goes beyond being transparent and includes compliance with ethical considerations, which is in line with the art 17 IDD general insurance principle to act in the consumer's best interest. (See sections part 3.3); FRA 2018.

[569] Article 13 and 14, Recital 61 GDPR.

[570] Recital 60 GDPR.

[571] Article 13 (directly); article 14 (indirectly): Recitals 60-62 GDPR.

telematics insurance use of connected car data considering that consumers have to be informed that connected car data is generated to enable the connected car services and subsequently when the data generated is used in the context of telematics insurance. Considering that at the moment the data is first collected by the car manufacturer before being made available for telematics insurers both have to comply with the information requirements by informing and keeping consumers informed about their processing activities.

When car data is obtained from the driver for the purpose of a contract it must be made clear whether the data is obligatory and what the consequences are for providing this data or not.[572] In the case of telematics insurance, having access to telematics data is a necessary requirement to be able to provide telematics insurance therefore when a consumer refuses to share such data they are unlikely to be able to obtain a telematics insurance policy. Whereas some telematics policies only require access for a limited amount of time; other policies require uninterrupted access to car data so when the connection is lost this can be a ground for cancellation.[573]

5.4.2 Consumer data access rights

The requirement for car manufacturers and telematics insurers to provide consumers with adequate information to make them aware and understand the purpose for processing taking place also includes informing them about the rights they have to verify and challenge the processing.[574] In order to do so they must have access to the data.

Article 15 GDPR reads as follows

1. The data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, access to the personal data and the following information:
    1. the purposes of the processing;
    2. the categories of personal data concerned;
    3. the recipients or categories of recipient to whom the personal data have been or will be disclosed, in particular recipients in third countries or international organisations;
    4. where possible, the envisaged period for which the personal data will be stored, or, if not possible, the criteria used to determine that period;
    5. the existence of the right to request from the controller rectification or erasure of personal data or restriction of processing of personal data concerning the data subject or to object to such processing;
    6. the right to lodge a complaint with a supervisory authority;
    7. where the personal data are not collected from the data subject, any available information as to their source;
    8. the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4) and, at least in those cases, meaningful information about the logic

[572] Recital 60 GDPR.

[573] With regards to the further processing of personal data for a different purpose in general, information must be given to the data subject before this takes place.

[574] 'A data subject should have the right of access to personal data which have been collected concerning him or her, and to exercise that right easily and at reasonable intervals, in order to be aware of, and verify, the lawfulness of the processing'. Recital 63 GDPR

> involved, as well as the significance and the envisaged consequences of such processing for the data subject.[…]

The right to access is important for the effective use of the other rights consumers have, including to check whether the information collected is correct, and to restrict processing in cases when they want to challenge processing.[575] For example, in the case of insurance claims the consumer may want to challenge the accuracy of sensor data obtained and/or used.[576] Without being able to receive adequate information: knowing what data is processed, by whom and how, their rights will be meaningless.

Balancing the different interests from consumers and data processors regarding the free flow versus consumer protection for personal data processing; a consumer request for access to certain information may however be refused if this would "*adversely affect the rights or freedoms of others*".[577] This would be the case if access leads to loss of the protection of intellectual property and trade secrets. [578] The car manufacturer or telematics insurer have to demonstrate why their interests override the interests of the consumer. Both car manufacturers and telematics insurers have expressed concern about espionage from their competitors gaining access to valuable business information kept confidential.[579]

Notably also *"the right to be forgotten"* which is another right granted to consumers, has gained much attention over how to comply with GDPR data subject requests in practice.[580] It is important for car manufacturers facilitating further use that they must take reasonable steps to inform subsequent users which are processing the data about the request to have the personal data erased.[581] Drivers themselves can request the insurer to delete their car data in a number of instances, for example when they switch to a different insurer, or when the driver objects to processing or believes their personal information has been unlawfully processed.[582] A request for erasure can only be refused when there is a compelling reason for example for the performance of a task carried out in the public interest or in the exercise of official authority – for archiving purposes in the public interest, scientific research historical research or statistical purposes where erasure is likely to render impossible or seriously impair the achievement of that processing; or for the establishment, exercise or defence of legal claims.

Understanding the scope of the rights for consumers in practice has led to considerable discussion of how to interpret the scope of these rights including what and in how much detail information must be

---

[575] Unless the processing activity does not override the driver's rights and interests, or if processing is for the establishment, exercise or defence of legal claims.

[576] See in this regard complaints received about telematics insurance by the UK financial ombudsman about the inaccuracy of dongles collecting data and/or the inaccuracy of sensor data as evidence for premium rises. Further examples are found in Recital 67 GDPR.

[577] Recital 63 GDPR.

[578] However, this cannot be used as an argument to refuse to provide all the information. Article 15, Recital 63 GDPR. See on the discussion about the scope of such refusal Van den Boom F, (2020)

[579] Interview participants (interviews 2020).

[580] Google/Spain, Case C-131/12; See further Ausloos et al., (2012) '*The Right to Be Forgotten in the Internet Era*, ICRI Research Paper No. 11.

[581] Article 17 (2) '*Taking into account available technology and cost of implementation of those steps.*' Recital 66 GDPR.

[582] Google/Spain Case C-131/12

given. For car manufacturers to comply, for example, would this require facilitating direct access to the car for telematics insurers to obtain some if not all of the data when consumers are driving? Especially for the purpose of facilitating innovative use and improving the take-up of telematics insurance, in addition to safeguarding the car manufacturers (incentives to) investments, there is discussion about real time access for insurers and access to critical data in terms of car safety and security.[583] See further part *5.5*.

5.4.3 Consumer rights with respect to Profiling

Being able to analyse and combine increasing amounts and types of data from different sources has allowed insurers to build detailed profiles of their consumers. This benefits both insurers and consumers as it enables insurance products and services to become more tailored towards the needs and demands of consumers. Telematics insurance is a good example as it is based on a person's actual driving making it fairer towards safer drivers when they do not have to pay for others who take more risk.

However, the use of increasingly advanced data processing and automated decision-making has also raised concern about the risks it poses. A good example is the growing awareness over bias and unlawful discrimination by insurers who may be charging some consumers higher premiums based on factors other than risk, such as their likelihood to switch to another insurer.[584] When insurance policies become increasingly individualised it will be much harder to compare and identify unlawful discrimination.

The use of car data by insurers to develop a risk profile of the driver falls under the GDPR definition of profiling namely to *evaluate personal aspects relating to the natural person, in particular, to analyse or predict certain aspects concerning that natural person's (...) behaviour, location and movement*.[585]

The use of automated decision-making is topic of many discussions about the lack of accuracy and contestability of algorithms.[586] Without effective human oversight and understanding of automated processes research has shown that there is a high risk for bias and unfair discrimination.[587] This could result in consumers not being able to obtain affordable insurance because the system classifies them as too high risk.

---

[583] See in more detail Van den Boom, (2020)

[584] Known as price discrimination or 'willingness to pay'. See Thomas, G (2012) *Non-Risk Price Discrimination in Insurance: Market Outcomes and Public Policy.* Geneva Papers Risk Insurance Issues 37 pp. 27–46

[585] Article 4(4) Council of Europe. The protection of individuals with regard to automatic processing of personal data in the context of profiling. Recommendation CM/Rec(2010)13 and explanatory memorandum. Council of Europe 23 November 2010.

[586] See generally Pasquale, F. (2019) *Black Box Society*, Harvard University press; O'Neill, C. (2016) *Weapons of math destruction, Crown Publishing Group*

[587] Barocas S, Selbst A (2016) *Big Data's Disparate Impact,* 104 California Law Review.

To protect consumers against such harmful effects the GDPR Article 22(1) gives the driver the right "not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her". [588]

Exceptions
Relevant for insurance processing is that, although profiling is generally prohibited, it is lawful, with sufficient safeguards, when the decision is either a) necessary for the entry into or performance of a contract; or b) based on the individual's explicit consent.[589]

Given the relevance of automated decision making for insurance purposes it is important to note that there has been much discussion about Article 22 and how to interpret the right to an explanation consumers have about the use.[590] Since there is still disagreement, developments in the discussion need to be closely monitored for any changes that may affect GDPR compliance.[591]

Before discussing the data portability right for consumers *(section 5.6.2)* as a possible solution to regain control over data, the next part will address the question whether the GDPR contributes to digital innovations by enabling further use of personal data.

The following analysis looks at the requirements for car manufacturers relevant for the question whether they can a) share car data for further use; and b) refuse to share (direct) access to data.[592]

5.5 Facilitating Car Data sharing

This part contains two sections: *5.5.1 Car Data Sharing: Challenges* and *5.5.2 Car Data Sharing Opportunities*

Relevant for the main research question whether the GDPR facilitates the take-up of digital innovation this section evaluates whether the GDPR allows for making available of connected car data for further use to insurers for telematics insurance and/or additional innovations. This section looks specifically at the data sharing requirements under the GDPR for the car manufacturer to facilitate access for telematics insurance purposes based on the personal data generated by the connected car when consumers are driving.

---

[588] Automated decision-making is the ability to make decisions by technological means without human involvement. Art GDPR.

[589] Recital 71 GDPR The third exception may also be applicable depending on whether there is a specific law for insurance authorised by Union or Member State law.

[590] See Goodman B and Flaxman S (2016) *EU Regulations on Algorithmic Decision-Making and a "right to Explanation*. Available at https://arxiv.org/abs/1606.08813v1 (Accessed June 2018); and in response Wachter et al. (2017) *Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation*, International Data Privacy Law. See for a good introduction to the discussion and references therein: Kaminski, M (2018), *The Right to Explanation, Explained*, U of Colorado Law Legal Studies Research Paper No. 18-24, Berkeley Technology Law Journal, Vol. 34, No. 1

[591] EC *Impact assessment on the reform of the data protection regulatory framework*. p 24. Especially there is criticism on the working party interpretations of the Article as a prohibition for the controller unless one of the three exceptions covered in Article 22(2) GDPR applies.

[592] Van den Boom, F (2020).

Considering insurers have a lawful ground to process consumers' car data, relevant for the question whether sharing by the car manufacturer is possible is that the GDPR also facilitates further use of data beyond the purpose for which it was initially collected.[593] This is very important in the context of unlocking the value car data has specially to facilitate its use for innovative purposes unknown at the time when the data was first processed.

As mentioned in Chapter 2, telematics insurers can obtain data either directly from the connected car or be granted access by the car manufacturer. A third option is where data is collected and made available via a digital platform. Considering that car data is generated for the connected car to function as such, the use of that data beyond what is necessary will be considered as processing for further use for which the GDPR requires compliance.

By facilitating the use of connected car data beyond its functioning, the GDPR enables future digital innovations and unlocked the full potential that car data brings. However, the benefits of the free flow again must be balanced against the risks for privacy including from storing and enabling access for not yet foreseen purposes.[594] The question is therefore whether the GDPR is adequate in terms of providing a framework in which to balance between the interests for the use of the data versus the protection thereof.

5.5.1 Car Data Sharing Challenges

The success of the connected car ecosystem and car data value chain depends on whether the GDPR is fit for purpose to facilitate data sharing for innovations including the take up of telematics insurance.

It will depend on finding the right balance between the interests for making (as much) car data accessible to serve the (future) needs of users on the one hand, while on the other restricting data sharing to what is necessary for its purpose to protect and empower consumers.

Edward Snowden: "The problem isn't data protection; the problem is data collection," [595]

First it is worth mentioning here that data which is not collected does not need to be protected. This is acknowledged and ensured in the GDPR data protection principles of purpose limitation and data minimisation and the art 25 requirements for data protection by design and by default. [596]

---

[593] Art 5(1) b GDPR CJEU, C-275/06, Productores de Música de España (Promusicae) v. Telefónica de España SAU (GC), 29 January 2008, paras 62–68.

[594] Based on the principle of storage limitation the data can, with some exceptions, not be stored for longer than is necessary for the purposes for which the personal data are processed. Art 5(1)e GDPR.

[595] Interview with Edward Snowden calling the data handling by companies 'a Faustian bargain' Ingham L, (2019) *Edward Snowden: 'The problem isn't data protection; the problem is data collection.'* - Verdict Encrypt, Issue 11 Thought Leaders. Available at: <https://tinyurl.com/s7wa685h> (accessed 11 October 2020)

[596] Art 5(1) b and e, recitals 39,50 GDPR; WP29 (2009) *Opinion 5/2009 on online social networking.*

With regard to the further processing of personal data for a different purpose in general, information must be given to the consumer before this takes place.[597] For example when the further processing by the insurer may lead to a rise in premium or worse, insurers are advised to make sure the driver is well informed of these consequences to allow them to decide whether they consent to such further processing of the data. One of the main challenges for further use is that the purposes for which personal data are processed should be explicit and determined at the time of the collection.[598] The principle of data minimisation specifically requires that only adequate, relevant car data can be collected limited to what is necessary for the purpose for which access is requested.[599] Given that new and innovative uses may not have been foreseen at the time of collection, the GDPR may pose limits on whether telematics insurers can access data processed by the car manufacturer for connected car purposes.

5.5.2 Car Data Sharing Opportunities

When data has been collected it depends on what legal ground if further processing is compatible or whether a new possibly different ground is required.

If the basis for the collection was *consent*, no further processing beyond what is covered by the original consent is possible. Whether this is problematic and in need of reform is not entirely straightforward. Having such a restriction on further use does not mean processing cannot be done it only protects the consumer against purposes they otherwise would not have consented to for example. Further processing will require a new request for consent unless a more appropriate legal ground applies.[600]

If data was collected based on *contractual necessity or legitimate interest*, it can be used for another purpose when it is considered compatible with the original purpose.[601] No separate legal basis would be required.

To determine whether the purpose for further processing is compatible with the original purpose the following is taken into consideration: the link between the purposes; the context and relationship between consumer and controller based on which the consumer could reasonably expect further use; the nature of the data, if it's sensitive data; the negative and/or beneficial consequences of the

---

[597] 'Further processing should not be unexpected, inappropriate or objectional for the data subject.' Explanatory Report of Modernised Convention 108, para. 68.Recital 61 and 62 GDPR; CJEU, C-201/14, Smaranda Bara and Others v. Casa Naţională de Asigurări de Sănătate and Others,1 October 2015, (*Bara*) paras. 28–46. and WP29 (2013) *Opinion 03/2013 on purpose limitation*; FRA (2018) pp 122-124;

[598] Recital 39 GDPR. The discussion about this issue takes part in the broader context of Big Data and the Internet of Things. See for the issues EDPS (2015), *Meeting the Challenges of Big Data*, 2015, Opinion 7/2015 and Article 29 Working Party *Opinion 8/2014 on the on Recent Developments on the Internet of Things*.

[599] Art 5(1)c; Recital 39 GDPR.

[600] EC *EU Rules for the protection of personal data inside and outside the EU*. Available at https://ec.europa.eu/info/law/law-topic/data-protection_en [Accessed 04 November 2021]

[601] Art 5(1) b; Recital 50 GDPR

processing for the consumers; and the use of appropriate safeguards such as encryption or pseudonymisation; [602]

Processing for further use of car data based on consent or if it could reasonably be expected can be lawful in a specific case. Further processing may include sharing car data from the car manufacturer to or between insurers for telematics insurance purposes. Examples of compatible further processing include direct sharing existing driving data and scores. This is convenient for consumers by not having to fill in a form and having the opportunity to obtain a more accurate premium. A further processing that may not be allowed is selling of car data by car manufacturers to advertisers, app developers and law enforcement for predictive policing. The purpose for which these companies may want to use car data is arguably not expected by consumers nor in their best interest.[603]

The nature of the data being shared

Special attention must also be paid when the data sharing would include location data which without adequate safeguards in place may reveal sensitive information about the driver based on monitoring of their movements.[604] It could for example show that the driver did not comply with his insurance policy and as a result, the insurer may decide to increase their premium or cancel their insurance.

The use of safeguards

Taking appropriate safeguards in both the original and intended further processing operations can increase whether further processing is considered compatibly such as ensuring the functional separation of the processing and guaranteeing confidentiality and security of the data, or obtaining informed opt-in.[605]

What follows from the analysis is that the GDPR provides a legal framework within which innovation can take place using car data already collected for a compatible purpose or with consent for a different purpose. Furthermore, because additional use of car data remains possible whether or not the purpose is compatible with the original purpose by obtaining consent from the consumers, the GDPR does not fully hinder innovation.

However, more clarity is needed on what will be considered as lawful further processing to help improve compliance and the incentives for companies to invest and facilitate car data sharing and innovations.

---

[602] The Article 29 Working Party specifically emphasises the need for a 'rigorous but balanced and flexible application of the compatibility assessment and has provided practical examples.' WP29 (2013) *Opinion on purpose limitation*, and Annex 4. FRA (2018) pp 124.

[603] More research is proposed to gain a better insight into what can reasonably be expected by drivers when making car data available through platforms. In this regard see WP29 (2009) *Opinion on online social networking.*

[604] On the potential negative impact see Barocas, S and Selbst, A (2016).

[605] Recital 50 GDPR The Article 29 Working Party states that allowing data subjects to have direct access to their data in a portable, user-friendly format may also help to balance the benefits of big data between large corporations and the individual and minimise unfair or discriminatory practices. For example, access to information about fuel consumption may enable the data subject to take an informed decision on monitoring and change driving habits. WP 203 Opinion 03/2013 on purpose limitation.

At the moment car manufacturers as well as insurers, in general remain hesitant to embrace the connected car ecosystem opportunities sharing and using connected car data brings.[606] This is in part caused by the legal uncertainty over the interpretations of their requirements concerning further use.

For consumers it is also necessary that these requirements are clarified to know the scope of their rights controlling the further use of connected car data. Considering the value this data has consumers should be able to control who can benefit from the monetisation thereof.[607]

5.6 The limits of control over data

This part has two sections: *5.6.1 Accountability for GDPR compliance* and *5.6.2 The right to data portability*

5.6.1 Accountability for GDPR compliance

To improve and ensure lawful access is granted the next section looks at the scope of control held by car manufacturers.

The GDPR principles with respect to integrity and confidentiality require that the data should be kept secure and confidential, and that unauthorised access must be prevented.[608]

Being held accountable for GDPR compliance and liable towards consumers, the car manufacturers have used their responsibility to ensure the safety and security of the car and privacy of the consumer as main reasons to refuse access to the connected car. Although the concerns from car manufacturers that uncontrolled access could compromise critical car safety systems which would put the car and its drivers at risk must be taken seriously, it is arguable whether these arguments are valid to refuse to share car data.[609]

As technology develops, safeguards for data exchange develop and improve too. It is the responsibility of, and industry good practice for, car manufacturers as well as telematics insurers to keep up to date with these developments and implement the required standards for safety and security. In practice, this could lead to some data not (yet) being made available if confidentiality, safety or security cannot be guaranteed.

However, the court made it clear that companies cannot require additional standards beyond what is already required by law. Therefore, only when a telematics insurer is not compliant with its lawful processing requirements to provide the required level of protection and security could these be considered as legitimate arguments not to provide (access to) data to this specific insurer. Protecting

---

[606] Asked what the main barriers were to making data available, legal uncertainty was mentioned as one of the key reasons by interview participants for not yet sharing access and making the data available. Van den Boom (2020) *Insurers and Car manufacturers*

[607] See EC *Impact assessment on the reform of the data protection regulatory framework*, p.21. A recommendation is to provide further guidance and examples what further processing complies with the GDPR to stimulate innovation and platform developments.

[608] 'Personal data should be processed in a manner that ensures appropriate security and confidentiality of the personal data, (...)' Article 32; Recital 39 GDPR.

[609] On platform security requirements see C-ITS Platform (2016) Final Report p 61.

confidentiality and trade secrets are often used to refuse access by default to all data but require adequate consideration by car manufacturers before they can be used.[610]

Another consideration when being presented with these arguments is that increasingly car manufacturers are making car data available via their own server or selling it to data sharing platforms, meaning that they consider it possible to do so without risk for safety, security and consumer privacy.[611] Furthermore research has shown that third parties are as capable to provide the same level of protection.[612]

Car manufacturers' economic interests to monetise and earn a return on their investments is a legitimate goal to control who can access and use car data. However, the GDPR does not grant car manufacturers the right to prohibit GDPR compliant processing by telematics insurers. or to refuse a legitimate request for access and/or data portability (as further discussed below) by consumers.

5.6.2 The right to data portability

The remaining part of this chapter looks at the role of the right to data portability for consumers to provide telematics insurers with access to car data.[613,] Although this could be a potential solution to challenge the current stronghold of the car manufacturers over connected car data by providing consumers with the means to control, in practice there is much discussion about the interpretation of its scope and whether the right to data portability is fit for purpose.[614]

Subject to conditions article 20 of the GDPR gives the data subject the right to data portability which consists of

a) the right to receive *a subset of* personal data in a structured, commonly used and machine-readable format, and
b) the right to have the data transmitted to another controller without hindrance from the controller to which the personal data have been provided. [615]

---

[610] On the discussion about access to car data see Kerber (2018); and why trade secrets should not be used to refuse all access Van den Boom (2020b).

[611] For example, BMW CARDATA Available at <https://aos.bmwgroup.com/apps/otp-public>; and Otonomo an independent platform which says to provide secure data management. Available at <https://otonomo.io/platform/> (Accessed 04 Jan. 2022).

[612] See FIGIEFA (2019) *Manifesto for Fair Digitalisation Opportunities.* Available at https://www.figiefa.eu/manifesto-for-fair-digitalisation-opportunities-2019/ (Accessed 04 October 2020)

[613] Although the EDPB in its guidelines argues for a broad interpretation of what data falls under the data that needs to be provided there is still discussion about what this means in practice Bapat A (2013) *'The new right to data portability'* Available at https://www.huntonak.com/images/content/3/1/v3/3122/The-new-right-to-data-portability-Bapat.pdf (Accessed 09 October 2020)

[614] See for proposals and call for reform to improve the role for data portability in terms of consumer empowerment. Engels, B. (2016). Data portability among online platforms. Internet Policy Review, 5(2). Available at: https://policyreview.info/articles/analysis/data-portability-among-online-platforms (Accessed 04 Jan. 2022).

[615] Recital 55, Recital 68 GDPR and WP29, Guidelines on the right to data portability, WP 242 rev.01 p. 4. Commission Staff Working Document (2017) 2, p. 11 and p. 47;De Hert P et.al (2018) *The right to data portability in the GDPR: Towards user-centric interoperability of digital services*. In Computer Law & Security Review 34.2.

The data controller is not allowed to place *"any legal, technical or financial obstacles to refrain or slow down access, transmission or re-use"*[616] Examples of such obstacles include fees, lack of interoperability, excessive delays or complexity, deliberate obfuscation or undue accreditation demands.[617] The data must be transmitted directly where technically feasible. [618] It is up to the receiving data controller to make sure data is not used without a legitimate purpose.

Data portability is not a general right, but it is limited to personal data which concerns the data subject and which they have provided to the controller based on either consent or on a contract, and the processing was carried out by automated means.[619]

According to the WP29 the right to data portability covers the following personal data:

- data actively and knowingly provided by the data subject, such as contact information, comments, and uploaded material, and
- data indirectly related to the data subject's activity or resulting from the observation of their behaviour including data from the conduct or use of a device or service such as telematics devices.[620]

The right to data portability will allow the driver to request the generated car data to be transmitted to a third party. According to the Article 29 Working Party *"direct transmission from one data controller to another could [..]occur when communication between two systems is possible, in a secured way, and when the receiving system is technically in a position to receive the incoming data."*[621]

What follows from the interpretation is that when the car has become 'connected' under these conditions real-time data can be provided directly to any controller upon request by the consumer.[622]

---

[616] WP29 (2017) *Guidelines on the right to data portability*, p. 4. Commission Staff Working Document (2017) 2, p. 11 and p. 47

[617] WP29 (2017) *Guidelines on the right to data portability* Note that this could include requiring the data subject and subsequent data controllers to agree to a confidentiality agreement based on trade secret protection.

[618] Art 20(2) GDPR. The WP29 specified that a direct transfer is "technically feasible" when "*communication between two systems is possible, in a secured way, and when the receiving system is technically in a position to receive the incoming data*". WP29, Guidelines on the right to data portability 2017. That this could be problematic Janal (2017) para 1; Vanberg and Unver, 2017 n. 76; Graef et al (2013)

[619] Art. 20(3) and Recital 68. WP29 Opinion 6/2014 on legitimate interests); WP29 (2017) *Guidelines on the right to data portability*, p5

[620] Raw data processed by connected objects fall under the right. WP29 (2017) *Guidelines on the right to data portability*. Which is considered needed to achieve empowerment and market competition.' Janal (2017); Graef et al (2013) Vanberg A. (2018) *The right to data portability in the GDPR: What lessons can be learned from the EU experience?* Journal of Internet Law 21.7.

[621] WP29 (2017) *Guidelines on the right to data portability*: Vanberg (2018)

[622] See further on the interpretation of article 20 for such data controller-to-controller right to exists Vanberg (2018)

In the case of telematics insurance use of a dongle, consumers could request the data collected by a telematics insurer through the dongle to be provided to another insurer.[623]

Data not covered by the right, is derived data or inferred data, resulting from the analysis of that behaviour by the data controller.[624] Relevant in the context of telematics insurance is that the right to data portability would therefore not include the insurance scores of the driver based on the risk assessment of their use of the car.

The right to data portability allows data subjects to better understand and choose what data he or she is willing to provide to get a service, and be aware of the extent to which his or her right to privacy is respected.[625] Despite some discussion most agree with the extensive interpretation of the right to data portability.[626] The European Data Protection Supervisor (EDPS) confirms that in order to be effective, the right to data portability should have a wide scope of application (…).[627] Criticism on the broad interpretation mostly comes from concerns about the effect data portability may have on competition and somewhat contradictory on privacy. [628] Concerns about the latter focus for example on the fact that the receiving company may not have an equal high standard of privacy protection in place.

The right to refuse (trade secrets) data portability

To what extent the right of data portability can be limited or refused depends on the interpretation given to the scope of the exception mentioned in Article 20 (4) GDPR stating that the right to data portability cannot be used when it would *[…] adversely affect the rights and freedoms of others.* [629]

Given the potential role trade secret protection may have for car manufacturers to protect car data, it is important to note that trade secret protection is specifically mentioned in recital 63 of the GDPR as a right to take into consideration. [630]

The exception refers to the rights and freedoms of others which includes other data subjects as well as the data subject who is requesting access. Although argued by some, it would seem unlikely that the

---

[623] Allowing for data portability would avoid consumer lock-in in with a service provider.

[624] Including all data observed about the data subject and collected through the tracking and recording of the data subject WP29 (2017) Risk profiles developed based on telematics data would not be included. See Graef et.al (2013) n.51

[625] 'Art.20 does not limit portable data to those which are necessary or useful for switching services. WP29 (*2*017) p.5

[626] See De Hert, et.al (2018) In contrast the restrictive interpretation includes only personal data that the subject has *actively provided* in an explicit form See Malgieri 2016; Swire P, and Lagos Y (2013) *Why the Right to Data Portability Likely Reduces Consumer Welfare: Antitrust and Privacy*, Critique Public Law and Legal Theory Working, Paper Series No. 204, 347

[627] EDPS Recommendations on the EU's Options for Data Protection Reform (2015/C 301/01). De Hert et.al (2018)

[628] On the need for a broad interpretation for IoT; See Boardman R, et. al. (2017) *The Article 29 Working Party Issues Final Guidelines on the right to data portability.* Available at https://www.twobirds.com/en/insights/2017/global/article-29-working-party-issues-final-guidelines-on-the-right-to-data-portability (accessed 3 October 2020) For an economic analysis: Vanberg and Unver (2017)

[629] Important to note here that the right to obtain a copy under article 15 GDPR includes all personal data concerning the data subject where the right under article 20 GDPR is limited to personal data provided by based on contract or consent.

[630] Art 20(4) GDPR and Recital 68 GDPR

rights of the data controller are excluded from consideration.[631] But even if this is the case there can be third parties such as the car manufacturers' preferred insurance providers, who have lawfully obtained telematics data and who will have an interest in protecting secrecy of this data. When (access to) car data is licensed or sold to third parties they, as subsequent trade secret holders, can be considered to have a vested commercial interest in keeping the data from becoming publicly known and available to all.

To qualify as an *adverse effect* granting a request would have to create unjustified damage or illegitimate limitations.[632] The Trade Secrets Directive acknowledges that the loss of trade secret protection *´could have devastating effects on the legitimate trade secret holder, as once publicly disclosed, it would be impossible for that holder to revert to the situation prior to the loss of the trade secret´*. [633] The Directive provides useful factors to take into consideration when deciding how to balance the decision on how to respond to a request, looking at the value of a trade secret, the impact of granting access and the interests of third parties including, where appropriate, consumers.[634.] Since the GDPR does not state what the outcome of the consideration should be, it leaves the judgement about what the right response would have been ultimately open for the courts to decide on a case-to-case basis.[635]

Looking at the GDPR in the context of the Trade Secrets Directive, Recital 18 of the Directive states that´ *the treatment of the acquisition of a trade secret as lawful should be without prejudice to any obligation of confidentiality as regards the trade secret or any limitation as to its use that Union or national law imposes on the recipient or acquirer of the information.´* One could argue that the trade secret holder could pose additional measures upon the receiver of the trade secret through its terms of use or technical measures. Such a measure would benefit both car manufacturers to be compliant with the GDPR and provide a service to their car and data customers while still being able to protect trade secrecy and/or monetize the data. The driver will still obtain access and control over who they choose to share the subset of car data with for legitimate purposes.

Where personal data falls under trade secret protection there is discussion to what extend car manufacturers can refuse or take additional measures to protect the information from being shared.

---

631 Instead of referring to third-party defined in Article 4(10) which excludes the data subject, controller, processor (...) both article 15 and 20 refer to the rights and freedoms of *other*s which is a term not further defined in the GDPR. Recital 68 GDPR mentions specifically the right of the data subject to obtain the erasure of personal data and emphasis that a request for data portability does not imply ´the erasure of personal data provided for the performance of a contract [..]. ´

632 De Hert, et.al 2018; Van der Auwermeulen B (2017) *How to attribute the right to data portability in Europe: A comparative analysis of legislations* Computer Law & Security Review, Volume 33 ,p 57-7

633 The Trade Secrets Directive also acknowledges that trade secret protection could be used to pursue illegitimate intents including to unfairly delay or restricting access to the market, which would undermine the smooth functioning of the internal market. See Recital 22 Trade Secrets Directive in reference to empowering judicial authorities to adopt appropriate measures when a trade secret holder would act abusively or in bad faith and submit manifestly unfounded infringement applications

634 See Recital 21 Trade Secrets Directive which refers to the principle of proportionality, when taking measures, procedures and remedies to protect trade secrets.

635A possible reason why the GDPR does not provide further guidance on when this requirement is fulfilled may be due to uncertainty about the impact of this newly proposed right. De Hert, et.al 2018; Van der Auwermeulen, 2017 n.86

Data portability rights can only be refused when transmitting a copy to another controller would *adversely affect the rights and freedoms of others* and there is no alternative.[636] If the car manufacturer can successfully argue that data portability would result in the loss of trade secret protection this can be considered a valid ground to refuse a request based on Art 20 GDPR for Data Portability. [637] However, this should not be a reason to refuse to provide any data but only to take measures to maintain trade secret protection.[638] A full refusal is not a proportionate response when other measures can be taken to maintain trade secret protection. Such measures could include partitioning the data and use encryption and/or non-disclosure agreements for parts of the dataset that falls under the scope of protection. According to WP29 information can be provided in a form that would not give away information protected by the information release information covered by trade secrets and intellectual property rights.[639] This would still empower the data subject by providing them with information but to do so in a way that does not destroy secrecy therefore finding a balance between sharing of knowledge, protecting privacy, and enabling innovation.

Whether this interpretation of scope and requirements under the trade secret directive and the GDPR presented is correct remains to be seen, what is clear is that there is a need for more legal certainty how to balance between competing interests with respect to protection of and access to in-car data and resources is needed. With the call for a regulatory proposal the European Commission now has an opportunity to do so to provide all stakeholders involved with the necessary guidance to allow for beneficial use of car data. [640]

The next and final chapter concludes by bringing together the insights gained from the previous chapters to evaluate where improvements are necessary. It will also address the intersection of the GDPR the IDD, IP and Competition Law and how they can be better aligned to indeed provide the legal framework fit for purpose to regulate telematics insurance. In general, the research confirms existing evaluations including the need for further research to gain more insight to which this research responded.[641]

---

[636] One could argue that by making the data only accessible but not available to copy, the data subject is informed about the (detail of personal data for) processing without the risk for the vehicle manufacturer that this data is copied and shared for analysis to reveal sensitive business information. Whether this is permitted remains to be seen.

[637] Judgment of the Court (Third Chamber) of 25 January 2018 Maximilian Schrems v Facebook Ireland Limited and for case updates. Available at https://www.fbclaim.com/ui/register (accessed 18 August 2018). The WP29 considered that "*The right to data portability is not a right for an individual to misuse the information in a way that could be qualified as an unfair practice or that would constitute a violation of intellectual property rights."* WP29 (2017) Guidelines on the right to data portability

[638] EC impact assessment on the Directive and for an in-depth analysis why there is no clear prevalence between the GDPR and the Trade Secrets Directive, see Malgieri (2016)

[639] WP29(2017) Guidelines on the right to data portability, p12; Vanberg (2018) p 19

[640] Amendment No 20 The EC is urged to establish an adequate legal framework. European Parliament resolution of 13 March 2018 on a European strategy on Cooperative Intelligent Transport Systems (2017/2067(INI))

[641] COM (2020) *final two years of application of the General Data Protection Regulation,* 264

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

Driving telematics innovations forward

The main conclusion of this thesis is that, although key regulations are in place to provide a legal framework to regulate telematics insurance within the connected car ecosystem, in each case, regulators face challenges for the regulatory environment to be fully fit for purpose.

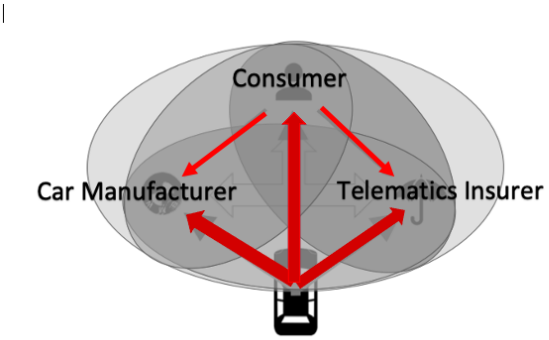
This final chapter contains three parts. *Part 6.1 Recommendations for clarification and reform* does so for key legal requirements and proposed solutions for the three main stakeholders. *Part 6.2 Coherence of the regulatory environment* looks at clarifications needed for the interaction between the GDPR and the IDD and Article 102 TFEU with a specific focus on whether consumer empowerment is taken seriously. Part *6.3 Changing lanes and shifting gears: proposals for further research* presents further research topics including the need to monitor the development of data governance initiatives by (non) governmental organisations and industry and concludes the chapter and research with some final remarks.

6.1 Recommendations for clarification and reform

This part contains in 3 sections recommendations for clarification and reform regarding *6.1.1 Telematics Insurers and Consumers; 6.1.2 Car manufacturers and Insurers; 6.1.3 Car Manufacturers and Consumers.*

The following figure shows the simplified relationships between the key stakeholders involved in telematics insurance based on personal data flows from the connected car.

Figure VI Connected car personal data flows



6.1.1 Telematics insurers and consumers

Based on the analysis in the previous chapters, what needs to be addressed is the *information asymmetry* between insurers and consumers in the context of telematics insurance stemming from the different interests they have for sharing information. Given the benefits of telematics insurance *for telematics insurers* and *consumers* (see chapter 3), there is an urgent need to improve trust by providing more clarity and legal certainty that their interests are adequately protected.

Key issues that require clarification specifically are as follows:

a) Whether insurance law is fit to ensure the interests of *telematics insurers* to develop and provide consumers with telematics insurance products and services.
b) Whether insurance law is fit to ensure the interests of *consumers* to be protected when insurers have access to the car data their driving generates.

The main regulation for insurance in the EU is the Insurance Distribution Directive which aims to improve consumer protection and to ensure fair competition by providing a level playing field within the insurance industry. The IDD does not harmonize insurance therefore national insurance law remains relevant. UK Insurance Law was included in the analysis as a national example to provide further insights into whether the legal framework is fit for purpose. [642]

I Clarification first issue: improving data access for telematics insurers

To remain competitive and provide consumers with accurate and affordable premiums, insurers need (access to) adequate information for their risk assessments. Based upon the understanding that insurers have a legitimate reason to use telematics data when they can show its relevance for telematics insurance, what follows therefore is that consumers are required to provide this information upon request. What is argued for in this thesis is to improve legal certainty by confirming that a duty to provide information from consumers to insurers exists and that this includes providing telematics data.

The example of national Insurance Law gave further insights to help understand and illustrate this first issue. To be more specific, based upon the UK Insurance Law doctrine for insurers and consumers to act in "Utmost Good Faith" towards each other, consumers are required to take *reasonable care* not to make a misrepresentation when giving information to insurers.[643] What must be understood as *reasonable care* in the context of facilitating access to telematics data, however, raises several key issues including the following:

The scope of the information duty for consumers

A first issue is how pro-active consumers have to be, in facilitating insurers to gain access to car data. In other words, it is not clear to what extent consumers are legally required to provide their insurer access or a copy of previous recorded car data; and/or if this includes consumers having to submit a data access or portability request with their car manufacturer to enable insurers' access to telematics data.[644]

Considering the novel opportunity for insurers to obtain access to real-time data there is an urgent need to confirm whether the duty applies both to historic car data and real time car data. Historic data

[642] The UK is no longer part of the EU, however, much of this research was concluded before the end of the transition period. The conclusions were based on the regulation as it was applicable at the time of writing.

[643] Similar 'Good Faith' or 'Fair Dealings' principles are found in EU and Member States regulations that apply to contracts. For a comparison see: Di Lorenzo A (ed) (2014) '*The Duty of Utmost Good Faith',* IBA Insurance Committee Substantive Project; Zimmerman R, and Whittaker S (eds) (2020) *Principle of Good Faith in Contract Law*, Cambridge University Press

[644] Art. 14, 20 GDPR.

is arguably more likely to already fall under the duty for consumers to inform insurers. Historic car data given its value to help insurers make an accurate assessment about the risk a potential new consumer poses, is relevant. Therefore, if an insurer is clear about their request for this data, consumers applying for insurers will have to provide this information. It will however improve legal certainty both for consumers and insurers to confirm this is the case.

Less obvious is the duty for consumers to provide insurers with access to real time car data after contract formation. In the period between formation and renewal, if real time data is shared, the insurer would be able to adjust premiums based on actual risk. That therefore a duty for consumers exists could be based on the legal requirement to confirm and provide the insurer with any information that would influence their risk assessment. Although this is not being done when the opportunity for insurers to process car data in real time increases, it would improve legal certainty to confirm the scope of the duty to include providing real-time data. This may also help facilitate the uptake of telematics insurance.

The consequences for refusing to provide data

A second issue is what the consequences are for consumers when they refuse to provide the insurer with access to certain data. [645] In other words, it remains unclear what the consequences are if a consumer is unwilling to share certain information with their insurer for example because they know that by doing so they may be charged a higher premium which consumers may consider unfair or consumers may contest the relevance of certain data because they disagree that the data is relevant for assessing their risk.

Guidance on the scope of the duty for both consumers and insurers towards each other is important a) to help improve the free flow of data relevant for insurance purposes while b) protecting consumers against too much data being made available.

II Clarification second issue: improving the protection of consumers' interests

There is a need for clarification on how the EU general insurance principle for insurers to always act *honestly, fairly and professionally* in accordance with *the best interests* of their customers must be understood in relation to the more specific requirements insurers have to comply with.[646] Key issues that need to be addressed are the following:

The scope of the product governance, oversight, and information requirements for insurers.

Concerning *the demands and needs test* there is uncertainty to what extent this requires insurers to analyse (more) personal information from potential consumers.[647] For example, information online and previous telematics recordings if available could be used to determine whether a person is within the target market for telematics insurance.[648] However, such profiling of consumers poses risks in terms of privacy and data protection. Guidance on how to conduct the test for it to be compliant would help improve legal certainty, compliance, and consumer protection by being better informed about telematics insurance products.

---

[645] The duty for consumers assumes information asymmetry in their favour, which may (no longer) be the case because of the use of automated decision making and profiling by insurers. See in more detail: Van den Boom, F (2021).

[646] Article 17 IDD.

[647] Taking into account the complexity of insurance products and knowledge of the consumers: *'Any contract proposed shall be consistent with the customer's insurance demands and needs'* Article 20 IDD.

[648] Which raises the question how far insurers are expected to go in terms of predictive analytics and identifying and responding to consumer needs and demands.

The role of the insurance product information document (IPID)

The IPID is intended to be a short, pre-contractual non-personalised summary document. The aim is to enable consumers to make an informed decision by having all the relevant information about the insurance product in a comprehensible form which also makes it easier to compare insurance products and providers. However, research indicates that the IPID is ineffective and may even lead to consumers becoming less informed. Therefore, clearer guidance is necessary for what information insurers should be provided as well as monitoring its impact on consumers to be protected from making wrong decisions.[649]

What is proposed is to develop specific IPID information requirements for telematics insurance products.[650] These would help insurers to know what the appropriate level of detail is to inform their target group, considering the complexity of and unfamiliarity with telematics insurance especially when targeting young drivers. This may require more detailed explanations to be provided about the terms and conditions especially with respect to policy cancellations given the detrimental impact this will have for consumers.

As privacy is a key deterrent for people from buying telematics insurance, more clarity could be given by adding information on how the insurers are compliant with the GDPR to the information document.[651]

6.1.2 Car manufacturers and telematics insurers

The second key challenge for regulating telematics insurance is the current position of the car manufacturers who in practice are the main gatekeepers when it comes to access to the data connected car consumers generate. What needs to be clarified therefore is the relationship between the car manufacturer and the insurers and whether the relevant laws provide sufficient means for insurers to obtain access to improve the take-up of telematics insurance.

Key issues that require clarification *for car manufacturers* and *insurers* are:

I. Whether regulation is fit to ensure the interests of car manufacturers to control access and use of telematics data: rights to control in-car generated data and resources.
II. Whether regulation is fit to ensure the interests of insurers to develop and provide consumers with telematics insurance products and services: rights to access and process in-car generated data and resources.

I: Clarification first issue: allocation of rights to control access and use of telematics data

The first question was considered in chapter 5. It looked at rights to telematics data under respectively *a) Copyright*; *b) the Database Directive* and *c) the use of Trade Secrets* to answer where the control over in-car data access and use is allocated and how this responds to the question of fitness.

---

[649] The FCA notes that communications should be simplified for consumers to make informed decisions not based on price considerations alone. FCA, (2016) *Smarter Consumer Communications Feedback Statem*ent (FS16/10)

[650] ABI (2017) *Insurance Product Information Document Implementation Guide*.

[651] The development of privacy icons is a good example. Available at <https://privacy-icons.ch/en/traffic-signs-for-data-protection/ (accessed 02 June 2020)

a) Confirmation that Copyright does not apply to telematics data

What follows from the brief analysis confirms the general understanding that sensor-generated data does not fall under the scope of copyright protection. A confirmation in the context of telematics insurance will provide legal certainty amongst stakeholders and help improve compliance.[652]

b) Clarification of the scope and application of the Database Directive.

It is unclear whether car manufacturers are granted Sui Generis rights and the application thereof in relation to telematics insurers seeking access to car data held by the car manufacturers on their server and/or database. In other words, under what conditions are car manufacturers held to provide access to and use of what telematics data they hold.[653]

- Clarification of the criteria to grant the *Sui Generis* rights and more specifically if car manufacturers fall under what is currently a narrow scope[654]
- Considering the characteristics of telematics data and the insurer's need to develop and provide telematics insurance, what is proposed here is to clarify insurers as lawful users so that they may obtain direct access to telematics data streams in real-time
- Clarification about the interpretation of the Ryanair decision and whether this allows for more restrictions on access to data by holders who do not fall under the scope of the Directive. This would contradict the purpose of the Directive to facilitate more access to data

c) Clarification of the scope of the Trade Secrets Directive

To improve the role of trade secrets to provide adequate protection of investments while ensuring access the EC should clarify whether connected car data falls under its scope and when access thereto would result in a loss of trade secrecy.[655]

- Recommended is a broad interpretation confirming that connected car data can be protected as a trade secret but that this should not be used as a blank refusal to provide access[656]
- Only in exceptional cases when protection thereof cannot be secured by the insurer should an access refusal based on the need to protect Trade Secrets be granted[657]

---

[652] The need for clarification was expressed by many of the interview participants including representatives from the insurance and automotive industry. Van den Boom (2020) *Interviews with Insurers, Car manufacturers, Consumer representatives.*

[653] To examine the Database Directive in support of the objectives of the digital act initiative was acknowledged by the EC (2021) *inception impact assessment for the digital act initiative.*

[654] European Court of Justice, 9 November 2004, case C-203/02, British Horseracing Board v William Hill Organization; European Court of Justice, 9 November 2004, case C- 338/02, case C- 46/02, case 444/02, Fixtures Marketing.

[655] Acknowledged by the EC (2021) *inception impact assessment for the digital act initiative. Available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12979-Civil-liability-adapting-liability-rules-to-the-digital-age-and-artificial-intelligence_en* (Accessed 02 December 2021)

[656] The EC is conducting a study of the automotive sector for clearer guidelines for companies on data sharing. EC (2021) *inception impact assessment for the digital act initiative.*

[657] Confirming the conclusions reached by Ausloos et al.(2019); Van den Boom (2020).

II Clarification second issue: Access to data held by car manufacturers as an essential resource for telematics insurance

With the aim to safeguard the correct functioning of the Single Market, EU competition policy should ensure that telematics insurers can enter the market and compete on equal terms. EU antitrust policy prohibits abuse of a dominant market position by one or more companies. Based on the analysis of the connected car ecosystem and the role data plays as a resource for telematics insurance, what follows from the analysis in Chapter 4 is to confirm in-car data falls under what is defined as an essential facility in EU competition law. If a car manufacturer in a dominant position, refuses to facilitate adequate access to telematics data, this will distort the telematics insurance market to the detriment of consumers.

a) Clarification of the role of article 102 TFEU

To improve access to telematics data and protection of the interests of the stakeholders the scope and requirements for establishing an abuse of dominance by car manufacturers under the doctrine of essential facilities must be clarified.[658]

More specifically:

- *The scope of the relevant market*
  What is proposed here in the context of connected cars and data. is a narrow scope given the characteristics of the insurance industry, being predominantly national, and the telematics insurance product for which data has become essential.
- *The criteria to establish abuse of dominance*
  Following the analysis what needs to be confirmed is whether car manufacturers have a dominant position concerning the data generated by their customers; and that by limiting access to telematics data for example by not providing real-time access to all the data, they are abusing their position to the detriment of consumers. When telematics insurers are not able to gain access to consumer car data that will allow them to enter and compete fairly on the telematics insurance market, they cannot provide the consumers of a specific car brand with the insurance product that otherwise would be in their best interest
- *The exceptions*
  To improve legal certainty, it must be confirmed that article 102 TFEU indeed allows for a justification of an abuse of dominance similar to the one provided for by article 101 TFEU

b) Clarification of the exceptions under Article 102 TFEU

To safeguard the car manufacturers incentives, a refusal to supply data can be justified but this should be strictly limited and only involve highly critical data. It should not be granted against lawful users who comply with their legal requirements.

In other words, the accountability of the car manufacturer to protect the consumer cannot as a rule justify refusing access, when the telematics insurer is compliant with their requirements for data processing under the GDPR. However, taking the consumer centric approach, this should be a case-by-case decision

---

[658] Which has not been formally recognised as such. See also Geradin, D (2004) '*Limiting the scope of Article 82 EC: What can the EU learn from the U.S. Supreme Court's judgment in Trinko in the wake in the wake of Microsoft, IMS, and Deutsche Telekom?*' ,41(6) Common Market Law Review 1519 ; Weber Waller S & Tasch W (2010) *Harmonizing Essential Facilities'*, (76(3) Antitrust Law Journal 741 p. 741–742. Graef I et al. (2015) '*Assessing data access issues in online platforms*' Telecommunications Policy, Vol. 39, No. 5, pp. 375–387.

especially when the arguments by the car manufacturer for refusal are based on providing for a higher level of consumer protection.[659]

c) *Improving access and fair competition for insurers*

Based on the analysis of the role data plays as a resource for telematics insurance, what follows from the analysis on competition law is the need to clarify the conditions to remedy market failure. This stems from the fact that car data has become an essential facility and that the telematics market, as well as the insurance market as a whole, may face distortion when the current position of car manufacturers as data gatekeepers, remains unchallenged.

Recommendations based on the analysis are, to improve the role of article 102 TFEU by clarifying the conditions of the essential facilities doctrine with a view to establishing a duty to supply upon car manufacturers. This is to remedy market failure and provide access to telematics data as an essential resource for telematics insurers to facilitate telematics insurance access and use.[660]

d) Monitoring recent EC Initiatives

Although the European Commission (EC) has been reluctant in the past to establish a duty to supply this seems to have changed. Especially with respect to large digital platforms, the EC with its new data strategy and subsequent reform of competition rules, aims to ensure that data can flow within the EU while respecting EU rules and values (including competition law and data protection).[661] The analysis presented here may contribute to the policy debate with sector specific insights for competition law to become better adapted to the challenges the digital economy brings.

6.1.3 Car Manufacturers and Consumers

The third and final issue, which this research considered key for regulating telematics insurance, is addressing the legal challenges stemming from the fact that data relevant for telematics insurance is personal data. Taking the *human-centric perspective*; the key concern is how to interpret the General Data Protection Regulation (GDPR) in such a way that it indeed ensures the uptake of innovations such as telematics insurance are beneficial for consumers.

For the GDPR to be considered fit for purpose the following key issues need clarification:

I Clarification of telematics data to fall under the scope of the GDPR "personal data".

a) Confirmation that car data is personal data

Recommended, ensuring the broadest protection for consumers, is to confirm that in the context of telematics insurance; any data the driver/consumer generates during their trip constitutes personal data

[659] In line with the human-centric approach for innovations to be beneficial, which is advocated here.

[660] European Commission (2018) *Cooperative, Connected and Automated Mobility*. Available at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-5349236_en (Accessed 02 February 2021)

[661] The European Digital Strategy includes a new framework for a single market for data. In December 2020 the EC published two specific proposals the Digital Markets Act (DMA) and the Digital Services Act (DSA).

and that location data, given its potential to reveal highly sensitive information, must be treated with precaution.

b) Clarification of scope of personal data protection.

Although there is a general understanding that data from connected cars fall under the definition of *personal data* confirming this by providing guidance on when and what car data falls under what category would improve legal clarity.

-

II Clarification of the lawful grounds for processing car data

To ensure a high level of protection, what data can be made available depends on the legal ground and whether the consumer is given adequate control over the decision whether to share personal data beyond its function within the car. What follows from the analysis is that *from a human-centric perspective* ensuring adequate protection for consumers *informed consent* should be considered when there is a choice between legal grounds, as the appropriate legal ground for processing in the context of telematics insurance. This however is a *normative* consideration based upon the proposed human-centric approach. The GDPR is neutral with respect to the grounds for processing (consent, contractual necessity, legitimate interest).

To improve legal clarity recommendations with respect to the GDPR requirements are:

a) Clarification of the requirements for informed consent and contractual necessity

Clarification of the requirements for processing on a) *consent* and b) *contractual necessity* for the purpose of telematics insurance to be complied with, by the car manufacturer for providing access and subsequent the insurer for processing based on further use thereof.

b) Clarification of the requirements for legitimate interest and limited appropriateness.

Clarification that processing for telematics insurance purposes based on *c) legitimate interest* is not in the best interest of consumers.[662] Although this is a normative argument for a human -centric approach, the GDPR does not facilitate adequate protection for consumers in terms of what rights they have to control data. Most notably consumers do not have the right to data portability for car data when processing takes place based on the legitimate interest legal ground.

III Clarification of the role of the data protection principles

a) *Clarification scope of the rights to information*

Confirming a broad interpretation as argued for, of the information to be given to consumers including in detail what personal information for which specific purposes and how this will affect them now and, in the future, is necessary. This will contribute to improve consumer protection by enabling them to make well-informed decisions whether to allow the processing of personal data for telematics insurance purposes.

b) Clarification exceptions to inform

---

[662] Article 13(1)(d) GDPR; WP29 Opinion 06/2014 *on the Notion of Legitimate Interests of the Data Controller under Article 7 of Directive 95/46/EC'.*

At the same time, it should be made clear when companies can refuse to grant access and/or give certain information.[663] Companies have the right to protect their interests by refusing to provide access including to prevent espionage and fraud. However, the current default by many companies is to refuse access without a specific motivation. This must be challenged, which is not something that should be left to the consumers given the power asymmetry that exists.[664]

IV Clarification of the role of data subject rights

For consumers to be in control over the personal data they generate, the role of *data subject rights* needs to be improved as follows:

a) *Clarification of the scope of data subject rights*

Necessary is a confirmation of the broader scope of information requirements to include most, if not all of the telematics data from cars and to have access in real time.[665] Having access by insurers to real-time data streams with no latency would improve the uptake of telematics insurance.[666] It further remains important to monitor the effect of there not being an obligation on the first controller, the car manufacturer, to create or adopt compatible processing systems, formats, industry standards and otherwise ensure interoperability.[667]

b) Clarification of the scope of the right to data portability.

What the scope of the right to data portability, as argued for in chapter 5, will enable is that with the permission of the consumer, telematics insurers can obtain direct real-time data access to the data streams generated through the car in motion.[668] Consumers would benefit from being granted more control over who can process personal data and for what purposes.[669] Data portability is also expected to stimulate

[663] Note that Art. 15 GDPR includes all personal data concerning the data subject where the right under Art. 20 is more limited.

[664] See in this regard Information Commissioner's Office (2019) *Update Report into Adtech and Real Time Bidding*, 18; and arguments put forward by Ausloos et al. (2019) p 299.

[665] Proposed is a broad interpretation of data observed and collected including raw data to fall under the right. For a specific discussion on data for risk profiles see Graef et al. (2013); Malgieri (2016); WP29 (2017) *Guidelines;* Janal R(2017) *'Data Portability A Tale of Two Concepts*', JIPITEC p 8.

[666] Art 20(2) GDPR. WP29 considers that: Direct transfer is '*technically feasible'* when communication between two systems is possible, in a secured way, and when the receiving system is technically able to receive the incoming data. WP29 (2017) *Guidelines on the right to data portability.* On why this could be problematic see Janal, R (2017); Graef et al., (2013*)* '*Putting the right to data portability into a competition law perspective*, The Journal of the Higher School of Economics, Annual Review 4.

[667] As confirmed by the EC '[..] the absence of an obligation to put in place technical interfaces for automated data exchanges, including in real time, can make it hard to offer certain services that require real time data flows[..]' EC (2021) inception impact assessment of the EU Data Act. Available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases_en (Accessed 05 November 2020)

[668] Confirming Ausloos et al. (2019)

[669] Recital 68 GDPR *' Data controllers should be encouraged to develop interoperable formats that enable data portability.* Ausloos et al., (2019) p 1.

competition amongst insurers on price and the quality of the insurance product and services including privacy This is consistently given by consumers as a reason not to opt for telematics insurance.[670]

Currently, however, it is still unclear whether the insurer can request

- data portability *on behalf of* the consumer.
- *any type* of data necessary for risk assessments.
- *real-time* data without latency and with high quality
- access through an *interoperable system*.[671]

Clarifying what data falls under the right for consumers and how to ensure that the right can be used effectively including the need to ensure interoperability would solve many of the problem's insurers are facing in terms of being able to obtain the data they need.

6.2 Coherence of the regulatory environment

This part contains three sections *6.2.1 Introduction: 6.2.2 The interaction of the GDPR and the IDD;* and *6.2.3 The interaction of the GDPR and Competition law*.

6.2.1 Introduction

Since privacy is one of the main reasons why people do not opt for telematics insurance the next section focuses on how the different regulations discussed interact with the GDPR.[672] The question is whether the legal framework in place is adequate to enable telematics insurance innovations while providing adequate protection measures for consumer privacy.

An inadequate framework would cause legal uncertainty amongst the different stakeholders as it would reduce protection and pose barriers for the further development and adoption of telematics insurance. It is therefore important to also consider the overall legal framework and whether the different rights and requirements stemming from the different laws and regulations complement and not contradict each other nor leave any challenges unregulated.

Based on the analysis to ensure access rights for insurers to personal data there is a need to clarify the rights and responsibilities to improve access for insurers and protection for consumer welfare as a result thereof. The next sections give insights into whether the different regulations *contribute to or contradict* the GDPR aiming to empower consumers with more control over the car data they generate.

---

[670] The EC requests feedback on its proposal for a Data Act where data portability is considered as one of the means to stimulate innovations. Available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases_enAccessed 05 November 2020)

[671] Confirming the EC who argue the same in their request for public feedback on the Data Act.

[672] Cisco (2019) Insurers and consumer representatives confirmed privacy concerns from consumers were a main reason not to opt for telematics insurance. Van den Boom (2020) *Interviews with Insurance and Consumer representatives.*

6.2.2 The interaction of the GDPR and the IDD

Looking at the EU Insurance Distribution Directive (IDD) and the General Data Protection Regulation (GDPR), both play an important role and can be complementary to ensure consumer protection is balanced against the need for insurers to be able to obtain and process data for insurance purposes.[673]

For the IDD to be considered fit for purpose in relation to the GDPR the following key issues need clarification:

I Clarification first issue: the need for a holistic approach

What follows from the analysis in chapter 3 on insurance law is that the IDD can help to improve compliance with the GDPR by reducing the risk of disproportionate interpretations of the scope of the GDPR in the context of insurance.[674] The advocated combined approach will provide a (more) balanced understanding of the different interests involved, and characteristics of, the insurance industry required for better compliance with the GDPR requirements.[675]

II Clarification second issue: the role for the IDD to improve GDPR compliance

The General Principle laid down in the IDD establishes a mutual duty for consumers and insurers to provide each other with relevant information in their best interest.[676] The IDD complements the GDPR with its aims to ensure consumer protection. *Consumers* have an interest in obtaining affordable information while being protected against misuse of personal data for purposes they do not agree with; while *insurers* have the interest to obtain as much information not only to improve their risk assessments, but also to optimise their processes and enable (future) innovations.

6.2.3 The interaction of the GDPR and Competition law

Personal data from consumers and the protection thereof is increasingly being acknowledged as part of the quality of products and services in the digital economy. The quality of a dataset from a provider for insurers depends in part on how detailed and up to date the information is about a person, whereas consumers may compare insurers based on the level of privacy and protection their products offer.

Confronted with the challenges posed by new business models such as the connected car ecosystem and innovations such as telematics insurance that rely on personal data, both the GDPR and Competition Law play an important role in the regulatory framework. [677] There is, however, a potential conflict between the aims of the GDPR and Competition law when it comes to the protection of personal data.[678]

---

[673] On the question of prevalence: '*The IDD (...) respects the fundamental rights and observes the principles recognized in the Charter of Fundamental Rights of the European Union.'* Recital 71 IDD

[674] The GDPR acknowledges the need for sector-specific interpretations of the requirements encouraging certification and codes of conduct. Article 40 GDPR specifically '*encourages the drawing up of codes of conduct intended to contribute to the proper application of this Regulation'.* Recital 98(1) GDPR.

[675] Chatzara, V (2019): *The interplay between the GDPR and the IDD,* Paper presentation at the 2019 8th AIDA Europe Conference. The need for a coherent application is also acknowledged by the EP to avoid competitive disadvantages for insurers. European Parliament (2017) p 10.

[676] Article 17 IDD

[677] See for a detailed analysis and references therein: Kerber (2018).

[678] ' The GDPR creates inherent trade-offs between data protection and other dimensions of welfare, including competition and innovation. OECD: *Consumer data rights and competition – Note by the European Union,*39; Gal M and Aviv O, (2020) '*The Competitive Effects of the GDPR*', Journal of Competition Law and Economics, p 3.

For Competition Law to be considered fit for purpose in relation to the GDPR the following key issues need clarification:

I Clarification first issue: balancing stakeholder interests

There are various interests at stake that may at times contradict with respect to the use and protection of personal data. Competition concerns have focused on the impact restricting the free flow of personal data has on competition and innovation, namely that it limits data sharing and competition in data markets. This may lead to more concentrated market structures and strengthen the position of gatekeepers. [679] Privacy concerns include the power and information asymmetries between consumers and industry and the lack of meaningful and effective means for consumers to control the personal data they generate.[680]

a) *Clarification of legitimate access limitations*

While the question of which interest *should* prevail is a normative question and not the topic of this research, still what is argued for here is that *for innovations to be beneficial, access limitations taken by the car manufacturers based on privacy and/or incentive motivations, namely trade secrets, should be the exception and not the rule.*[681]

II Clarification second issue: data access and market failure

What followed from the analysis in chapter 5 is that competition law plays an important role in the regulation of telematics insurance by enabling insurers to redress a refusal to provide them with access to in-car data under the scope of article 102 TFEU. When all conditions are met, which arguably is the case for the connected car manufacturer who holds dominance over in-car data and refuses to provide non-discriminatory access to the data generated by drivers/consumers, such refusal would limit competition and the choices consumers have to obtain affordable insurance products and services telematics insurers may provide.

a) Clarification of the scope of article 102 TFEU

Those car manufacturers who have maintained a position of dominance have a responsibility not to distort the market by refusing access to data while protecting their consumers from the harm caused when too much personal data is being shared. However, the analysis showed that, although the requirements before a duty is established require the different interests to be considered so that a balanced outcome can be reached, whether this is indeed the most optimal result remains to be seen.

As there is still much uncertainty about whether an insurer can remedy inaccessibility through Article 102 TFEU taking into consideration that insurers may be hesitant to bring a case before the court and instead

---

[679] Chivot and Castro (2019) *What the Evidence Shows About the Impact of the GDPR After One Year*, Center for Data Innovation; Gal and Aviv (2020).

[680] These concerns were raised during the interviews with insurance experts and consumer representatives, Van den Boom (2020) *Interviews with insurers, privacy experts and consumer representatives*. Gal and Aviv (2020).

[681] EC *impact assessment on the Trade Secrets Directive*. On the lack of prevalence between the GDPR and the Trade Secrets Directive, See Malgieri (2016); and advocating a similar interpretation: Ausloos, et al., (2019).

settle for less optimal means to obtain access, there is an urgent need to obtain a better understanding of the intersection of the GDPR and Competition Law.[682]

b) *Clarification of the scope of exceptions based on privacy considerations*

Under the GDPR a data access or data portability request by a consumer may be refused based on privacy considerations but it should not be or become a reason to refuse all access to all data.[683] Currently, the right only is granted for the data subject but there is increased discussion whether it should be expanded to include also requests by other parties who act on behalf of the individual. Whether such a broad interpretation of Article 20 GDPR is possible needs clarification.

For car manufacturers to justify a refusal that would otherwise constitute an abuse of dominance; the requirement is to provide adequate motivation why in a specific case access to in-car data to telematics insurers cannot be provided because of privacy concerns. Given that the insurer is acting in the best interest of and with the permission from consumers this should be treated as exceptional.

6.3 Changing lanes and shifting gears: proposals for further research

This part contains two sections *6.3.1 Further topics for research; 6.3.2 Back behind the steering wheel.*

6.3.1 Further topics for research

Due to the inherent limitations of any PhD research, there remains a need for further research to gain more necessary insights into the challenges, effectiveness of (proposed) solutions and reform that would contribute to the aims of a legal framework that is fit for purpose to regulate telematics insurance in Europe.[684]

I First topic: data access initiatives

There are several proposals that already show potential to facilitate access, including establishing Data Portability rights beyond the scope of the GDPR, IN SITU access rights and mandatory or FRAND licensing for specific types of data and datasets. .[685]

Another opportunity specifically for the insurance industry is improving *the standard insurance document (IPID)* to include information about privacy and data protection for consumers to help them not only compare but also incentivise companies to provide high levels of privacy and data protection. As noted,

[682] Confirming the need for EC Data Policy initiatives for reform. See also the ICO and CMA collaborative approach for effective data governance of digital ecosystems. Available at (Accessed 05 November 2020)

[683] Art.15,20 Rec.63,68 GDPR.

[684] EP Amendment No 20; European Parliament (2018) resolution on *a European strategy on Cooperative Intelligent Transport Systems*; EDPS (2015) *Recommendations on the EU's Options for Data Protection Reform*, C 301/01. De Hert et al (2018)

[685] Proposals to this effect also include non-personal data. Commission Staff Working Document (2017) *on the free flow of data and emerging issues of the European data economy*; Cesar J et al. (2017) *Data ownership in the context of the European data economy: proposal for a new right'* White Paper, Bird & Bird

where privacy increasingly becomes a buying consideration, companies that take their users seriously providing them with control over their data are likely to become more successful.[686]

II Second topic: effectiveness of enforcement

The effectiveness of enforcement is another topic for further investigation. This is important because even when laws and regulations are fit for purpose, without effective enforcement to protect the rights and to enforce responsibilities the full potential of the connected car and data value proposition will not be achieved.[687]

During the interviews, participants from the automotive and insurance industry expressed their concerns about newcomers entering the market and whether these "digital disruptors" must comply with the same laws and regulations.[688] Other stakeholders representing consumers referred to problems for enforcement of the GDPR data subject rights and processor responsibilities. Especially with respect to the enforcement of the data protection principles there is much concern how to enforce these in practice.[689]

III Third topic: EU policy initiatives

Car manufacturers, in response to being challenged, have argued against much regulatory intervention emphasising the overall effectiveness of the use of contractual agreements to address many of the challenges identified here. The European Commission (EC) on the other hand is taking a more pro-active approach proposing new regulations for data governance within the digital single market.[690]

These initiatives by the EC not only confirms the relevance of this research, but also its willingness to take a proactive approach to deal with the rapid changes that characterise ecosystems and digital innovations. By doing so the EC also responds to growing concern about the negative impact on society when most of the data is in the hands of only a few large platforms.

---

[686] Confirmed by survey results see for example Cisco (2019) *Consumer Privacy Study.* Available at https://www.cisco.com/c/dam/global/en_uk/products/collateral/security/cybersecurity-series-2019-cps.pdf (Accessed 5 December 2021) Deloitte Insights (2018) *Digital media trends survey: 'A new world of choice for digital consumers'*, Available at https://www2.deloitte.com/uk/en/insights/industry/technology/digital-media-trends-consumption-habits-survey-2018.html (Accessed 05 November 2020)

[687] During the interviews several insurers expressed their concern about new players such as Apple, Lemonade and Tesla as disruptors to the market. Van den Boom (2020) *Interviews with Insurers;* See also Ausloos J, et al.(2019), 283 para 1

[688] Insurers gave the example of the company Lemonade as a potential (digital) disruptor of the insurance market. Van den Boom (2020) *Interviews with Insurers;* Aziz A (2020) *The Power Of Purpose: How Lemonade Is Disrupting Insurance With Goodness,* Forbes

[689] Illustrating their concern, participants referred to news items about companies selling car data from unknowing consumers. A striking example are the practices of OTONOMO regarding the selling of car data. See Cox J (2021) *'Privacy Protecting' Car Location Data Seemingly Shows Where People Live, Work, and Go.* Available at https://www.vice.com/en/article/4avagd/car-location-data-not-anonymous-otonomo (Accessed 05 November 2021)

[690] Bakhoum M, (2018) *Personal Data in Competition, Consumer Protection and Intellectual Property Law*. (MPI Studies on Intellectual Property and Competition Law, vol 28. Springer; Debussche J, César J, Van Asbroeck B, De Moortel I (2019)*: Data Sharing Agreements,* Bird & Bird series no.17 Big Data & Issues & Opportunities.

At first blush the Data Governance Act and the Data Act especially could have a serious impact on the future of telematics insurance and should therefore be closely monitored.[691,]

The Data Governance Act (DGA) aims to reduce fragmentation in the legal and policy governance frameworks for data sharing. This is necessary to establish a data economy that is transparent, effective and accountable and for the creation of European data spaces. This includes to facilitate business to business (B2B) data sharing and improve the opportunity for individuals to share personal data. It will be interesting to see how these data spaces will be designed and whether this would indeed improve the effectiveness of the right to data portability consumers have under the GDPR.

The Data Act aims to ensure the value from being able to use data is shared fairly amongst businesses, consumers and the government, by providing the right balance between rights to access data and incentives to invest in data.[692] By promoting fairness, providing legal certainty, and ensuring data portability, the Data Act, like the DGA, addresses the lack of B2B data sharing.[693]. More specifically, and relevant with respect to the regulatory fitness of the legal and regulatory framework concerning telematics insurance, is that it confirms and subsequently will address the following:

- contractual unfairness where there is unequal bargaining power compromising competition; and ensure fair distribution of usage rights along the value chain, as the attribution of the rights to access and use such data is left to private contracts[694]
- issues concerning the protection of intellectual property (IP) rights and clarify the scope of the Database Directive concerning machine-generated data and cross-border data flows and data sharing
- *solutions in terms of codes* of conduct, harmonised standards, and possible mandates to address issues for users to switch between providers; to exchange data in real-time; and smart contracts to help facilitate automated data sharing and pooling as well as scaling them across sectors and borders[695]

The proposed EU policy concerning the governance of data and digital platforms will impact how access and use of data within the EU digital single market will be regulated.[696] The European

---

[691] Examples include data for self-driving cars OECD, (2019). *Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-use across Societies*, OECD Publishing, Ch 4, Annex 3

[692] EC (2020) *A European Strategy for data*, Available at https://digital-strategy.ec.europa.eu/en/policies/data-act (Accessed 05 December 2021)

[693] Data Protection Report (2021) *EU possible data act what can we anticipate from the inception impact assessment*, Available at https://www.dataprotectionreport.com/2021/07/eus-possible-data-act-what-can-we-anticipate-from-the-inception-impact-assessment-and-the-consultation/ (Accessed December 2021). EC (2020*) 2-year review of the GDPR.* Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1163 (Accessed 18 August 2020)

[694] As a relevant example of FRAND licensing see the Case between Nokia-Daimler: Available at https://www.juve-patent.com/news-and-stories/cases/first-win-for-nokia-and-arnold-ruess-in-ongoing-battle-with-daimler/ (Accessed 05 June 2020)

[695] EC *Impact assessment*; and EC (COM 2020) *2-year review of the GDPR.*

[696] For an analysis of the draft text see: Burwell, F (2021) '*Regulating Platforms the EU Way? The DSA and DMA in Transatlantic Context*' Wilson Center working paper.

Commission is currently also assessing the Trade Secrets Directive, with guidelines to be published at a later stage, which will include a study focusing on the automotive industry.[697]

Considering the EU legislative process, it will take some time and much discussion before the final versions of these initiatives will become ready for implementation. This provides all telematics insurance stakeholders with an opportunity to have their say and help shape the future of telematics regulations that takes into consideration their interests. Recommendations are for all stakeholders to contribute to the regulatory debate by sharing barriers, best practices and proposals for effective solutions.[698]

IV Fourth topic: stakeholder initiatives

Acknowledging that each industry has specific challenges, the analysis shows there is concern that legal uncertainties may stifle what would otherwise be beneficial innovations based on personal data and automated decision-making; there is a clear need for more research that looks at the specific challenges for the industries within the connected car ecosystem.

The identified lack of clarity and specific requirements on how to comply with the different regulatory regimes discussed in the previous chapters, also provides opportunities for the respective sectors to be proactive in terms of improving the clarity of the regulatory framework.

Stakeholder initiatives such as voluntary codes of conduct and guidelines should be promoted, as these are more likely to lead to industry adoption. Referring to codes of conduct the EDPB considers this an opportunity for *"(…) specific sectors to reflect upon common data processing activities and to agree to bespoke and practical data protection rules, which will meet the needs of the sector as well as the requirements of the GDPR."* And that such codes could be, *"(...) a practical, potentially cost-effective and meaningful method to achieve greater levels of consistency of protection for data protection rights".*[699]

An industry-wide approach, developing practical guidelines based on a shared interpretation of the scope, is recommended which could be done in the form of standard developments and/or industry-specific codes of conduct on thematic issues. The GDPR encourages this approach which it considers will enhance *transparency, compliance,* and *a proper application* of the GDPR.[700]

6.3.2 Back behind the steering wheel

[697] EC (2020) *Intellectual property action plan.* Available at https://ec.europa.eu/growth/industry/strategy/intellectual-property/intellectual-property-action-plan-implementation_en (Accessed 10 November 2021)

[698] EC (2017) *Communication on Building a European Data Economy* Available at https://digital-strategy.ec.europa.eu/en/library/communication-building-european-data-economy (Accessed 10 November 2021)

[699] See the EDPG (2019) Guidelines *on Codes of Conduct and Monitoring Bodies under Regulation* p 4, 7, 36 - 37; Van Ooijen and Vrabec (2019).

[700] Art. 40 and 41 and Recitals 98, 100 of the GDPR.

Although the analysis did not question the regulatory framework from a normative view, the EC itself emphasises *the need for technology to serve humankind*.[701] This is not only in the best interest of the consumers but equally important for insurers and car manufacturers to consider because without adequate consumer protection against risks and redress when harm may occur, consumers are unlikely to trust and choose to adopt otherwise beneficial innovations.[702]

Lastly, in addition to increase road-safety improving human-centric regulation, governance and design of the connected car ecosystem will help make mobility in general *more sustainable*.[703] Climate change is another one of those global challenges we face, and urgently need to take action against.

[701] See Commission's White Paper on Artificial Intelligence (2020) *A European approach to excellence and trust.* Available at https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en (Accessed 05 November 2020)

[702] Idem

[703] IPCC Report; Sustainable Mobility for All (2021) *Sustainable Mobility: Policy Making for Data Sharing.* Washington DC.

Vroem Vroem

The END

BIBLIOGRAPHY

Primary sources

Legislation

International

Agreement On Trade-Related Aspects Of Intellectual Property Rights (1995)

Berne Convention for the Protection of Literary and Artistic Works (1886)

Universal Declaration of Human Rights (1948)

World Intellectual Property Organization Copyright Treaty (1996)

World Trade Organization Agreement on Trade-Related Intellectual Property Rights (1994)

Universal Declaration of Human Rights (1948)

World Intellectual Property Organization Copyright Treaty (1996)

European

Treaty on the Functioning of the European Union (1957)

Treaty on European Union (2007)

Charter Of Fundamental Rights of The European Union (2000/C 364/01)

Directive (EU) 2016/680 on the protection of natural persons regarding processing of personal data connected with criminal offences or the execution of criminal penalties, and on the free movement of such data.

Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure.

Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC

Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs

Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union.

Directive 2002/92/EC of the European Parliament and of the Council of 9 December

2002 on insurance mediation

Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January

2016 on insurance distribution (recast)

Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, OJ 1995 L 281.

Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases

Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

Regulation (EU) 566/2011 on access to vehicle repair and maintenance information.

Regulation (EU) 692/2008 on emissions from light passenger and commercial vehicles.

National

Case Law

European

Case AstraZeneca AB v Commission EU: T:2010:266.

Case C-101/01, Criminal proceedings against Bodil Lindqvist, 2003.

Case C-201/14 Smaranda Bara EU:C:2015:638.

Case C-203/02 The British Horseracing Board Ltd and Others v. William Hill Organization Ltd (2004) ECR I-10415, paras 35–36;

Case C-203/02, British Horseracing Board v William Hill Organization; European Court of Justice, 9 November 2004, case C- 338/02, case C- 46/02, case 444/02,

Case C-209/10, Post Danmark.

Case C-275/06 Productores de Música de España (Promusicae) v Telefónica de España SAU, [2006] OJ C 212., 2.9.2006.,

Case C-30/14 Ryanair Ltd v PR Aviation BV EU:C:2015:10 (15 January 2015).

Case C-314/12 UPC Telekabel Wien GmbH v Constantin Film Verleih GmbH, Wega Filmproduktionsgesellschaft mbH [2012] OJ C 303, 6.10.2012.

Case C-338/02, Fixtures Marketing Ltd v Svenksa AB (Svenska), (2004) ECR I-10497;

Case C-362/14 Schrems EU:C:2015:627, Opinion of AG Bot.

Case C-362/14 Schrems EU:C:2015:650.

Case C-419/14 WebMindLicenses EU:C:2015:832.

Case C-434/16, Peter Nowak v. Data Protection Commissioner, 2017;

Case C-444/02, Fixtures Marketing Ltd v Organismos Prognostikon Agonon Podosfairou EG (OPAP), (2004) ECR I-105449;

Case C-46/02, Fixtures Marketing Ltd v Oy Veikkaus Ab (Oy Veikkaus), (2004) ECR I-10365.

Case C-479/04 Laserdisken ApS v Kulturministeriet [2005] OJ C 31, 05.02.2005.,

Case C-5/08 Infopaq International A/S v Danske Dagblades Forening ()

Case C-525/16, WuW 2018,321, para. 24—MEO.

Case C-582/14 Breyer:EU:C:2016:779.

Case C-582/14: Patrick Breyer v Bundesrepublik Deutschland.

Case C-604/10, Football Dataco Ltd and Others v.Yahoo! UK Ltd and Others, judgment of 1 March

Case C-613/14 James Elliott Construction EU:C:2016:821.

Case C-62/86 AKZO v Commission (1991).

Case C-696/15 P République Tchèque v Commission ECLI:EU:C:2017:595.

Case C-7/97, , Oscar Bronner v. Mediaprint, (1998) ECR I-7791.

Case C-70/10 Scarlet Extended SA v Société belge des auteurs, compositeurs et éditeurs SCRL (SABAM) [2010] OJ C 113, 1.5.2010.

Case C-73/16 Peter Puškár v Finančné riaditeľstvo Slovenskej republiky and Kriminálny úrad finančnej správy EU:C:2017:253, Opinion of AG Kokott.

Case C-85/76 Hoffmann-La Roche & Co. v Commission (1979) ECR 461, paras. 39–41;

Case C-95/04, British Airways v Commission;

Case C-131/12, Google/Spain Case Google Spain SL, Google Inc. v Agencia Española de Protección de Datos (AEPD), Mario Costeja

Case No COMP/M.5727 – Microsoft/Yahoo! Search Business, 18 Feb.

Case No COMP/M.6314 – Telefónica UK/Vodafone UK/Everything Everywhere/JV, 4 Sep. 2012, paras

Case No COMP/M.7023 – Publicis/Omnicom, 9 Jan. 2014, paras 625-630.

Case No COMP/M.7217 – Facebook/WhatsApp, 3 Oct. 2014, para. 72.

Case T-30/89 Hilti v Commission (1991) ECR II-1439, paragraphs 90, 91 and 92;

Case T-340/03 France Télécom v Commission (2007) ECR II-107, para. 100.

Case T-79/12, Cisco Systems Inc. and Messagenet SpA v. Commission

Joined cases C-203/15 and C-698/15 Tele2 Sverige EU:C:2016:970.

Joined cases C-241/91 and C-242/91 Telefis Eireann and Independent Television Publications Ltd v. Commission of the European Communities (Magill) [1995] ECR I-743,

Joined cases Case C-363/14 Case Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v Commission of the European Communities. 6 and 7–73. Case C-363/14 Parliament v Council EU:C:2015:579.

Judgements of the European Court of Human Rights

X and Y v The Netherlands App no 8978/80 (ECtHR, 26 March 1985).

James and Others v The United Kingdom App no 8793/79 (ECtHR, 21 February 1986).

Leander v Sweden App no 9248/81 (ECtHR, 26 March 1987).

Gaskin v The United Kingdom App no 10454/83 (ECtHR, 7 July 1989).

Soering v The United Kingdom App no 14038/88 (ECtHR, 7 July 1989) .

Powell and Rayner v The United Kingdom App no 9310/81 (ECtHR, 21 February 1990).

Huvig v France App no 11105/84 (ECHR, 24 April 1990).

Margareta and Roger Andersson v Sweden App no 12963/87 (ECtHR, 25 February 1992).
Niemietz v Germany App no 13710/88 (ECtHR, 16 December 1992).

Otto-Preminger-Institut v Austria App no 13470/8 (ECtHR, 20 September 1994).

López Ostra v Spain App no 16798/90 (ECtHR, 9 December 1994).

Vogt v Germany App no 17851/91 (ECtHR, 26 September 1995).

Amann v Switzerland App no 27798/95 (ECtHR, 16 February 2000).

Rotaru v Romania App no 28341/95 (ECtHR, 4 May 2000).

Bensaid v The United Kingdom App no 44599/98 (ECtHR, 6 February 2001).

Peck v The United Kingdom App no 44647/98 (ECtHR, 28 January 2003) .

Moreno Gómez v Spain App no 4143/02 (ECtHR, 16 November 2004).

Mikulová v Slovakia App no 64001/00 (ECtHR, 6 December 2005).

Copland v The United Kingdom App no 62617/00 (ECHR, 3 April 2007).

KU v Finland App no 2872/02 (ECtHR, 2 December 2008).

S and Marper v The United Kingdom App nos 30562 and 30566/04 (ECtHR, 4 December 2008).

Uzun v Germany App no 35623/05 (ECtHR, 2 September 2010).

Von Hannover v Germany (No 2), App nos 20660/08 and 60641/08 (ECtHR, 7 February 2012).

MM v The United Kingdom App no 24029/07 (ECtHR, 13 November 2012).

MK v France App no 19522/09 (ECtHR, 18 April 2013).

Sabanchiyeva and Others v Russia App no 38450/05 (ECtHR, 6 June 2013).

Gobec v Slovenia App no 7233/04 (ECtHR, 3 October 2013).

LH v Latvia App no 52019/07 (ECtHR, 29 April 2014).

Satakunnan Markkinapörssi Oy and Satamedia Oy v Finland App no 931/13 (ECtHR, 27 June 2017).

Bărbulescu v Romania App no 61496/08 (ECtHR, 5 September 2017).

International

US

Case *Olmstead v United States 277 US 438 (1928) 474-475.*

Case *PeopleBrowsr, Inc. et al. v.Twitter, Inc. (PeopleBrowsr), No. C-12-6120 EMC, 2013WL 843032 (N.D. Cal. 6 Mar. 2013),*

UK

Case *Carter v Boehm (1766) 3 Burr 1905.*

Case *Keates v Cadogan (1851) 10 CB 591.*

Official documents

Action Plan for the Deployment of Intelligent Transport Systems in Europe' (Action plan) COM (2008) 886 final.

Article 29 Working Party, Advice Paper on Essential Elements of a Definition and a Provision on Profiling within the EU General Data Protection Regulation'

Article 29 Working Party, Guidelines on the Right to Data Portability'

Article 29 Working Party, Opinion 01/2012 on the data protection reform proposals'

Article 29 Working Party, Opinion 03/2013 on purpose limitation'

Article 29 Working Party, Opinion 04/2007 on the concept of personal data'

Article 29 Working Party, Opinion 05/2014 on Anonymisation Techniques'

Article 29 Working Party, Opinion 06/2014 on the Notion of Legitimate Interests of the Data Controller under Article 7 of Directive 95/46/EC'

Article 29 Working Party, Opinion 08/2001 on the processing of personal data in the employment context'

Article 29 Working Party, Opinion 09/2014 on the Application of Directive 2002/58/EC to Device Fingerprinting'

Article 29 Working Party, Opinion 15/2011 on the definition of consent'

Article 29 Working Party, Statement on the Impact of the Development of Big Data on the Protection of Individuals with Regard to the Processing of Their Personal Data in the EU'

Article 29 Working Party, Statement on the Role of a Risk-Based Approach in Data Protection Legal Frameworks'

Building a European Data Economy' (Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions) COM (2017) 9 final.

Comments received by Test Achats to EIOPA-CP-16-007: Consultation Paper on the proposal for the Implementing Technical Standards on a standardised presentation format of the Insurance Product Information Document (IPID) under the Insurance Distribution Directive (IDD)

Commission Decision 94/19/EC (1994) O.J. (L 015) 8 (relating to a proceeding pursuant to Article 86 of the EC Treaty (IV/34.689- Sea Containers v. Stena Sealink–Interim Measures).

Commission Delegated Regulation (EU) 2017/2358 of 21 September 2017 supplementing Directive (EU) 2016/97 of the European Parliament and of the Council with regard to product

Commission Implementing Regulation (EU) 2017/1469 laying down a standardised presentation format for the IPID, C/2017/5544, OJ L 209, 12.8.2017, pp. 19–23.

Commission Implementing Regulation (EU) 2017/1469 of 11 August 2017 laying down a standardised presentation format for the insurance product information document

Commission Implementing Regulation (EU) 2017/1469 of 11 August 2017 laying down a standardized presentation format for the insurance product information document (Official Journal of the European Union L 209/19)

Commission Notice on the definition of relevant market for the purposes of Community Competition Law (97/C 372 /03.)

Commission Recommendation 2011/750/EU on support for an EU-wide eCall service in electronic communication networks for the transmission of in-vehicle emergency calls based on 112 ('eCalls') [2011] OJ L 303/46.

Commission Recommendation on the implementation of privacy and data protection principles in applications supported by radio-frequency identification [2009] OJ L 122/47.

Commission Staff Working Document Executive Summary of the Impact Assessment

Commission Staff Working Document of 7 July 2017, Better Regulation Guidelines, SWD (2017)350,

Commission Staff Working Document on the free flow of data and emerging issues of the European data economy – Accompanying the document Communication Building a European data economy COM (2017): 9 final.

Commission Staff Working Document: accompanying the Communication - two years of application of the General Data Protection Regulation (2020)

Commission's Guidance on Article 102 TFEU Enforcement Priorities, paras. 28¬–31,

Communication - two years of application of the General Data Protection Regulation (2020)

Communication from the Commission to the European Parliament and the Council - Data protection rules as a trust-enabler in the EU and beyond – taking stock (2019)

Communication from the Commission to the European Parliament and the Council, Stronger protection, new opportunities - Commission guidance on the direct application of the General Data Protection Regulation as of 25 May 2018.

Communication: 'Europe on the move Sustainable Mobility for Europe: safe, connected and clean'. COM(2018)293

Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on

Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (Official

Directorate-General for the Information Society and Media (European Commission), Vision and challenges for realising the Internet of things (The Publications Office of the European Union 2010).

Draft Implementing Technical Standards concerning a standardised presentation format for the Insurance Product Information Document of the Insurance Distribution Directive of 7 February 2017, EIOPA-17/056

European Commission A Digital Single Market Strategy for Europe,

European Commission , Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (2009) OJ C 45/7.

European Commission , Online Platforms and the Digital Single Market. Opportunities and Challenges for Europe, , COM(2016) 288

European Commission , Study on 'Challenges for Competition Policy in a Digitalised Economy', July 2015,

European Commission , Study on Trade Secrets and Confidential Business Information in the Internal Market Final Study April 2013.

European Commission 'Guidelines on the Application of Council Directive 2004/113/EC to Insurance, in the Light of the Judgment of the Court of Justice of the European Union in Case C-236/09 (TestAchats)' (2011)

European Commission Communication: Shaping Europe's digital future 19 February 2020

European Commission Ethics of Connected and Automated Cars: recommendations on road safety, privacy, fairness, explainability and responsibility. Publication Office of the European Union: Luxembourg. (2020)

European Commission, Guidelines on the application of Article 81(3) of the Treaty (2004) OJ C 101/97.

European Commission, 'C - ITS Platform: Final Report' 140

European Commission, 'Commission Staff Working Document – Guidance on the Implementation/Application of Directive 2005/29/EC on Unfair Commercial Practices' (SEC (2009) 1666) (Brussels: European Commission, 2009)

European Commission, 'Cooperative, Connected and Automated Mobility (CCAM)'

European Commission, 'DG Internal Market and Services Working Paper. First evaluation of Directive 96/9/EC on the legal protection of databases', 12 December 2005,

European commission, 'Driverless Cars: The Future Smart Mobility Made Possible by High Performance Computers | Digital Single Market' (2017) Digital Single Market 2

European Commission, 'High Level Group on the Competitiveness and Sustainable Growth of the Automotive Industry in the European Union - Final Report' (2017)

European Commission, A Digital Single Market Strategy for Europe, Communication, COM, 2015, 192 final, 6 May 2015,

European Commission, A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility, (COM(2016)0766)

European Commission, C - ITS Platform Working Group 6, Access to in-Vehicle Resources and Data' (2015)

European Commission, EUROPE 2020. A strategy for smart, sustainable and inclusive growth, COM(2010)

European Commission, Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008) C 265/6.

European Commission, Impact Assessment on the modernisation of EU copyright rules, (Commission Staff Working Document 301, 2016)

European Commission, Proposal for a Regulation of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation), COM(2012) 11 final.

European Commission, Staff working paper, Impact Assessment report, SEC(2012) 72 final.

European Commission, Study on Trade Secrets and Confidential Business Information in the Internal Market, MARKT/2011/128/D (April 2013), pp.12 f., 23

European Commission. Inception impact assessment: Data Act (including the review of the Directive 96/9/EC on the legal protection of databases). (2021)

European Data protection Board, Guidelines 1/2019 on Codes of Conduct and Monitoring Bodies under Regulation 2016/679

European Data protection Board, Guidelines 1/2020 on processing personal data in the context of connected car ecosystems.

European Data protection Board, Guidelines 4/ 2019 data protection by design and by default v2.0

European Data Protection Supervisor, 'EDPS Opinion on Coherent Enforcement of Fundamental Rights in the Age of Big Data' (2016)

European Data Protection Supervisor, 'EDPS Opinion on Personal Information Management Systems. Towards More User Empowerment in Managing and Processing Personal Data' (2016) Opinion 9 / 2016 1

European Data Protection Supervisor, 'Opinion of the European Data Protection Supervisor on the data protection reform package', Brussels, 7 March 2012.

European Data Protection Supervisor, ‘Opinion on the proposal for a directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure’, 12 March 2014.

European Data Protection Supervisor, ISOR, Opinion 7/2015 Meeting the challenges of big data. A call for transparency, user control, data protection by design and accountability, 19 November 2015.

European Data Protection Supervisor, Opinion on the proposal for a directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure (Opinion) 2014

European Data Protection Supervisor, Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy, 2014 (Preliminary Opinion) 6

European Data Protection Supervisor,, ‘Report of workshop on Privacy, Consumers, Competition and Big Data’, 2 June 2014, p. 4,

European Data Protection Supervisory Opinion 7/2015 Meeting the Challenges of Big Data,

European Data Protection Supervisory Recommendations on the EU’s Options for Data Protection Reform (2015/C 301/01).

European Data Protection Supervisory, ‘Documenting Data Processing: The EDPS Guide to Ensuring Accountability’ (2018)

European Economic and Social Committee on the Proposal for a Directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure, COM (2013) 813 final 2013/0402

European Governance: A White Paper’ COM (2001) 428 final.

European Parliament (2017) Draft Report on FinTech: the influence of technology on the future of the financial sector (2016/2243 (INI)

European Parliament (2018) ‘A European strategy on Cooperative Intelligent Transport Systems’.

European Parliament resolution of 27 November 2014 on supporting consumer rights in the digital single market, 2014/2973(RSP),

European Parliament, resolution of 13 March 2018 on a European strategy on Cooperative Intelligent Transport Systems (2017/2067(INI));

European Union Agency for Fundamental Rights, ‘Big Data, Algorithms and Discrimination’

European Union Agency for Fundamental Rights, ‘Legislative Proposals on Interoperability and Fundamental Rights Implications - Opinion of the European Union Agency for Fundamental Rights’

First report on the implementation of the Data Protection Directive (95/46/EC)’ COM (2003) 265 final.

Impact Assessment accompanying the Communication from the Commission Action plan for the deployment of Intelligent Transport Systems in Europe and the Proposal for a Directive of the European Parliament and of the Council lying down the Framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes’ (Commission Staff Working Document) SEC (2008) 3083.

Impact Assessment Guidelines’ SEC (2009) 92.

Impact assessment on the reform of the data protection regulatory framework. EC 2012

Information and Communications Technologies for Safe and Intelligent Vehicles’ (Communication from the Commission to the Council and the European Parliament) COM (2003) 542 final.

insurance distribution (Official Journal of the European Union L 26/19)

Joint Committee of the European Supervisory Authorities, ‘Joint Committee Discussion Paper on the Use of Big Data by Financial Institutions’ (2016)

Journal of the European Union L 335/1)

National Commission for the Protection of Human Subjects of Biomedical Research , 'The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research: Appendix Volume II.'

On the free flow of data and emerging issues of the European data economy', SWD (2017).

On the Intelligent Car Initiative "Raising Awareness of ICT for Smarter, Safer and Cleaner Vehicles"' (Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions), COM (2006) 59 final.

On the Mid-Term on the implementation of the Digital Single Market Strategy: A Connected Digital Single Market for All' (Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions) COM (2017) 228 final.

Opinion 1/15, Passenger Name Records (PNR) :EU:C:2017:592.

oversight and governance requirements for insurance undertakings and insurance distributors

Promoting data protection by privacy-enhancing technologies (PETs)' (Communication from the Commission to the European Parliament and the Council) COM (2007) 228 final.

Proposal for a Directive of the European Parliament and of the Council laying down the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes' COM (2008) 887 final.

Safeguarding Privacy in a Connected World: A European Data Protection Framework for the 21st Century' COM (2012) 9 final.

Towards a thriving data-driven economy' (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions) COM (2014) 442 final.

White Paper on Artificial Intelligence – A European approach to excellence and trust. COM/2020/65 final

Working Document on the free flow of data and emerging issues of the European data economy SWD (2017) 2, p 11.

Books

Agre P & Rotenberg,M, Technology and Privacy: The New Landscape (MIT Press 2001).

Brown I and Marsden CT, Regulating Code: Good Governance and Better Regulation in the Information Age, MIT Press, (2013).

Brownsword R , K. Yeung, eds., Oxford Hart Publishing, 2008.

Brownsword R Rights, Regulation and the Technological Revolution. Oxford University Press (2008)

Brownsword R,Law 3.0_ Rules, Regulation, and Technology (Routledge (2020),

European Union Agency for Fundamental Rights and council of Europe , Handbook on European data protection law, 2018

Ezrachi A and Stucke M, Virtual Competition:, vol 2 (Harvard university press 2018)

Fuller L The Morality of Law. (1969) Yale University Press

Geiger C and Aplin T, 'Right to Property and Trade Secrets', Research Handbook on Human Rights and Intellectual Property (Edward Elgar Publishing 2015)

Glaser U, Basics of Grounded Theory: Emergence vs. forcing (Sociology Press 1992).

Khaitan T, A Theory of Discrimination Law Oxford University Press. (2015)

Marano, P. Rokas, I, Distribution of Insurance-Based Investment Products, (2019) Springer Nature Switzerland AG

Mayer-Schonberger, V. and Cukier, K., Big Data: A Revolution That Will Transform How We Live, Work and Think, London, John Murray, 2013.

O'Neill C, Weapons of Math Destruction (Penguin Random House 2019).

Pasquale, F. The black Box society: The secret algorithms that control money and information. Cambridge, MA: Harvard University Press. (2015).

Salter, M. and Mason, J. Writing Law Dissertations (Pearson Education Limited, 2007)

Whish R and Bailey, Competition Law, Ninth Edition, July 2018

Zuboff S The Age of Surveillance Capitalism. London:Profile Books, (2019)

Zuiderveen Borgesius, F. Improving privacy protection in the area of behavioural targeting, Alphen aan den Rijn: Kluwer Law International. (2015)

Publications

Acquisti A, Taylor C and Wagman L, 'The Economics of Privacy' (2016) 54 Journal of Economic Literature 442

Acquisti, A., Brandimarte, L., & Loewenstein, G. Privacy and human behavior in the age of information. (2015). Science, 347(6221), 509–514.

Akalu R, 'Privacy, Consent and Vehicular Ad Hoc Networks (VANETs)' (2018) 34 Computer Law & Security Review: The International Journal of Technology Law and Practice 37

Akerlof GA (1970) The market for "Lemons": Quality uncertainty and the market mechanism. The Quarterly Journal of Economics 84(3): 488–500.

Akerlof GA, 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism' (1970) 84 The Quarterly Journal of Economics 488

Alarie B, Niblett A and Yoon AH, 'Regulation by Machine', 30th Conference on Neural Information Processing Systems (2016)

Almeling, D. Seven reasons why trade secrets are increasingly important. Berkeley Tech Law, 2012, J 27:1091

Altman M et al, 'Practical Approaches to Big Data Privacy over Time' (2018) International Data Privacy Law

Ananny M and Crawford K, 'Seeing without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability' (2016) New Media & Society

Aplin, T. Right to property and trade secrets.2014 In: Geiger C (ed) Human rights and intellectual property: from concepts to practice. Edward Elgar, Northampton,

Arrow, K 'Theory of Discrimination' Working Papers 403, Princeton University, Department of Economics, Industrial Relations Section. (1971)

Asbroeck B Van and others, 'Data Ownership a New EU Right' (2017) <https://sites-twobirds.vuture.net/1/773/uploads/white-paper---data-ownership---a-new-eu-right-in-data.pdf> accessed 13 February 2018

Association of British Insurers, 'Selling Telematics Motor Insurance Policies' (2013) ABI good practice guide,

Athavale M and Borna S, 'Some Issues for Insurers on the Use of Event Data Recorders*' (2008) 31 Journal of Insurance Issues 1

Austin, R, "The Insurance Classification Controversy" (1983). Faculty Scholarship at Penn Law. 1395.

Autorité de la concurrence and Bundeskartellamt, 'EU Competition Law and Data' 2016, Competition Law and Data, .

Avgouleas E (2009) The global financial crisis and the disclosure paradigm in European financial regulation: the case for reform. Eur Company Financial Law Rev 6(4)

Avraham R, 'Discrimination and Insurance' (2017) Econonmic Research Paper No. E574

Ayuso M, Guillén M and Pérez-Marín M, (2016a). Telematics and gender discrimination: Some usage-based evidence on whether men's risk of accidents divers from women's. Risks, 4(2):10.

Ayuso M, Guillén M and Pérez-Marín M, (2016b). Using GPS data to analyse the distance travelled to the first accident at fault in pay-as-you-drive insurance. Transportation Research Part C: Emerging Technologies, 68:160 { 167.

Azzopardi M and Cortis D, 'Implementing Automotive Telematics for Fleet Insurance' (2014) 8 Journal of technology management & innovation 9

Azzopardi M and Cortis D, 'Implementing Automotive Telematics for Fleet Insurance' (2014) 8 Journal of technology management & innovation 9

Baecke P and Bocca L, 'The Value of Vehicle Telematics Data in Insurance Risk Selection Processes' (2017) 98 Decision Support Systems 69

Baecke P and Bocca L, 'The Value of Vehicle Telematics Data in Insurance Risk Selection Processes' (2017) 98 Decision Support Systems 69

Bair S and Wang KC, 'Can Vehicle Maintenance Records Predict Automobile Accidents ?' (2017) 79 567

Baker T and Simon J (eds) Embracing Risk: The Changing Culture of Insurance and Responsibility. (2002) Chicago: University of Chicago Press.

Baker T, 'Containing the Promise of Insurance: Adverse Selection and Risk Classification' (2002) 9 Conn Ins LJ 371.

Bapat, A. The new right to data portability, 2013, 13(3) P & DP 3.

Barabas C and others, 'Interventions over Predictions: Reframing the Ethical Debate for Actuarial Risk Assessment' http://arxiv.org/abs/1712.08238

Barocas S and Selbst A, 'Big Data ' s Disparate Impact' (2016) 104 California law review 671

Barone, G. and Bella, M. (2004) 'Price-elasticity based customer segmentation in the Italian auto insurance market', Journal of Targeting Measurement and Analysis for Marketing 13:pp 21–31

Barry L and Charpentier A (2020) Personalization as a promise: Can Big Data change the practice of insurance? Big Data & Society. DOI: 10.1177/2053951720935143

BBC News "Black boxes: Can you trust them to lower your car insurance? ", 9 November 2016. Accessed online March 2019 at > https://www.bbc.com/news/uk-england-37910773 <

Benkler Y, 'From Consumers to Users: Shifting the Deeper Structures of Regulation toward Sustainable Commons and User Access' (2000) 52 Federal Communications Law Journal 561

Bennett Moses L (2013) How to Think about Law, Regulation and Technology: Problems with'Technology' as a Regulatory Target. Law Innovation and Technology 5:1

Berendt B and Preibusch S, 'Better Decision Support through Exploratory Discrimination-Aware Data Mining: Foundations and Empirical Evidence' (2014) 22 Artificial Intelligence and Law 175

Berman F and Cerf VG, 'Social and Ethical Behavior in the Internet of Things' (2017) 60 Communications of the ACM 6

Bernardini C, Asghar MR and Crispo B, 'Security and Privacy in Vehicular Communications: Challenges and Opportunities' (2017) 1 Vehicular Communications 1

Bian Y and others, 'Good Drivers Pay Less: A Study of Usage-Based Vehicle Insurance Models' (2018) 107 Transportation Research Part A: Policy and Practice 20

Binns R, 'Algorithmic Accountability and Public Reason' (2018) 31 Philosophy and Technology 543

Black J , What is Regulatory Innovation? Black, Julia, Lodge, Martin and Thatcher, Mark, (eds.) Regulatory Innovation: a Comparative Analysis. Edward Elgar Publishing Ltd, Cheltenham, pp. 1-15.

Black J, Critical reflections on regulation. (2002) 27 Australian Journal of Legal Philosophy *1*

Bolderdijk et al., 'Effects of pay-as-you-drive car insurance on young drivers' speed choice: Results of a Dutch field experiment'. (Accident Analysis & Prevention, 43 (3) 2011) 1181–1186.

Bolognini L and Bistolfi C, 'Pseudonymization and Impacts of Big (Personal/Anonymous) Data Processing in the Transition from the Directive 95/46/EC to the New EU General Data Protection Regulation' (2017) 33 Computer Law and Security Review 171

Bordo, J. E. and Noel, P. J. (2008). Pay-as-you-drive auto insurance: A simple way to reduce driving-related harms and increase equity. The Brookings Institution. Discussion Paper.

Borghi M and Karapapa S, 'EU Contractual Restrictions on Lawful Use of Information: Sole-Source Databases Protected by the Back Door?' (2015) 37 European Intellectual Property Review 505

Bozdag E, 'Bias in Algorithmic Filtering and Personalization' (2013) 15 Ethics and Information Technology 209

Braithwaite J Rules and Principles: A Theory of Legal Certainty. Australian Journal of Legal Philosophy (2002) 27:47–82

Brkan M, 'Do Algorithms Rule the World? Algorithmic Decision-Making in the Framework of the GDPR and Beyond' (2018)

Brofeldt E and Kolding-Krøger C, 'The promised increase in customer protection under the IDD. Customers' demands and needs and comparable pre-contractual information in form of a standardised IPID', Paper presentation at 8th AIDA Europe Conference.

Brownsword, R, Scotford, E, and Yeung, K (eds) (2017): The Oxford Handbook of Law, Regulation and Technology, Oxford, Oxford University Press.

Bucher, T. The algorithmic imaginary: exploring the ordinary affects of Facebook algorithms, Information, Communication & Society (2017) Volume 20 (1);

Burri T, 'Machine Learning and the Law: 5 Theses' (2017)

Butler, P. (1993). Cost-based pricing of individual automobile risk transfer: Car-mile exposure unit analysis.Journal of Actuarial Practice, 1(1):51{84.

Buttarelli G and (European Data Protection Supervisor), 'Opinion 7/2015 - Meeting the Challenges of Big Data' 1

Bygrave L, 'Data Protection by Design and by Default : Deciphering the EU's Legislative Requirements' (2017) Oslo Law Review

Bygrave,L Automated Profiling: Minding the machine: Article 15 of the EC Data Protection Directive and Automated Profiling' (2001) 17(1) Computer Law & Security Review.

Calders, T & Verwer, S.'Three Naive Bayes Approaches for Discrimination-Free Classification' (2010) 21(2) Data Mining and Knowledge Discovery.

Carbone M, 'Connected Car & Insurance Views from the Observatory' (2018)

Carmichael L, Stalla-Bourdillon S and Staab S, 'Data Mining and Automated Discrimination: A Mixed Legal/Technical Perspective' (2016) 31 IEEE Intelligent Systems 51

Casey et. al, Rethinking Explainable Machines: The GDPR's 'Right to Explanation' Debate and the Rise of Algorithmic Audits in Enterprise (2018). Berkeley Technology Law Journal.

Castelvecchi D, 'Can We Open the Black Box of AI?' (2016) 538 Nature 20

Cather, 'Reconsidering insurance discrimination and adverse selection in an era of data analytics' (Geneva papers on Risk and Insurance, 45: 2020) 426–456.

Cavoli C and others, 'Social and Behavioural Questions Associated with Automated Vehicles A Literature Review' 1

Cavoukian A, 'Privacy by Design - The 7 Foundational Principles - Implementation and Mapping of Fair Information Practices' (2009) Information and Privacy Commissioner of Ontario, Canada

Chatzara, V. (2019): The interplay between the GDPR and the IDD, Paper presentation at the 2019 8th AIDA Europe Conference.

Chew et al., Regulating ecosystems, (Deloitte University Press 2015)

CLEPA, 'CLEPA Position Paper Open Telematics Platform' (2015) <https://clepa.eu/wp-content/uploads/2015/08/20150722_CLEPA_PP_Open_Telematics_Platform.pdf> accessed 26 November 2017

Coates, K., Competition Law and Regulation of Technology Markets, Oxford University Press, 2011.

Cockburn IM, Henderson R and Stern MIT S, 'The Impact of Artificial Intelligence on Innovation The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis' (2017)

Coeckelbergh M, 'Responsibility, Robots, and Humans: A Preliminary Reflection on the Phenomenology of Self-Driving Cars', Frontiers in Artificial Intelligence and Applications (2014)

Coglianese C, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 Georgetown Law Journal

Cohen, J., What Privacy Is For. Harvard Law Review, Vol. 126, 2013,

Colaert V,European Banking, securities and insurance law: cutting through sectoral lines? Common Mark Law Rev 52:1579–1616

Conners, J & Feldblum, S (1998). Personal Automobile: Cost Drivers, Pricing, and Public Policy. contestability: case studies and data access remedies. Centre on Regulation in Europe

Cradock E, Stalla-Bourdillon S and Millard D, 'Nobody Puts Data in a Corner? Why a New Approach to Categorising Personal Data Is Required for the Obligation to Inform' (2017) 33 Computer Law and Security Review 142

Crawford, K & Schultz,J, Big Data and Due Process: Toward a Framework to Redress Predictive Privacy Harms (2014) 55 Boston College Law Review

Custers B and Schermer B, 'Responsibly Innovating Data Mining and Profiling Tools: A New Approach to Discrimination Sensitive and Privacy Sensitive Attributes', Responsible Innovation 1: Innovative Solutions for Global Issues (Springer Netherlands 2014)

Custers B.., Calders T., Schermer B., Zarsky T. Discrimination and Privacy in the Information Society. Nr. 3 Heidelberg: Springer. 2013

Custers, B. The Power of Knowledge; Ethical, Legal, and Technological Aspects of Data Mining and Group Profiling in Epidemiology (Wolf Legal Publishers 2004).

Custers, B., van Der Hof, S., Schermer, B., Appleby-Arnold, S., & Brockdorff, N. (2013). Informed consent in social media use-the gap between user expectations and EU personal data protection law. SCRIPTed, 10, 435–457.

Daly A, 'Privacy in Automation: An Appraisal of the Emerging Australian Approach' (2017) 33 Computer Law and Security Review 836

Davis, J. (Protecting consumers from overdisclosure and gobbledygook: an empirical look at the simplification of consumer credit contracts. (1977). Virginia Law Review, 63(6), 841–920.

De Streel, A, Larouche, P, 'Disruptive innovation and competition policy enforcement', Note for OECD Global Forum on Competition, DAF/COMP/GF(2015)7, 20 October 2015,

De Winter JCF and others, 'Will Vehicle Data Be Shared to Address the How, Where, and Who of Traffic Accidents?' (2019) 7 European Journal of Futures Research

De Wolf & Partners Legal study on Ownership and Access to Data – Final Report Luxembourg, (2016) Publications Office of the European Union, p 6.

DeAngelis, P 'Racial Profiling and the Presumption of Innocence · Netherlands Journal of Legal Philosophy · Eleven Journals' (2014) Netherlands Journal of Legal Philosophy

Derikx, S., de Reuver, M. & Kroesen, (2016) Can privacy concerns for insurance of connected cars be compensated? Electronic Markets, Volume 26, Issue 1, pp 73–81 | 26: 73.

Derikx, S., de Reuver, M., Kroesen, M., Bouwman, H. (2015). Buying-off privacy concerns for mobility services in the Internet-of-things era. Proceedings of the 28th Bled eConference, Bled, Slovenia, 7–10 June.

Desyllas, P. and Sako, M. Profiting from business model innovation: Evidence from pay-as-you-drive auto insurance. 2013 Research Policy, 42(1):101–116

Determann, L No One Owns Data, 2018. UC Hastings Research Paper No. 265.

Di Lorenzo (ed) The Duty of Utmost Good Faith, (2014) IBA Insurance Committee Substantive Project.

Dijksterhuis et al., 'In-car usage-based insurance feedback strategies. A comparative driving simulator study' (2016) Ergonomics 59(9)) 1158–70.

Donada and Attias D, ‘Food for thought: Which organisation and ecosystem governance to boost radical innovation in the electromobility 2.0 industry?’ (2015) International Journal of Automotive Technology and Management.

Doshi-Velez, F, and Mason K. Accountability of AI Under the Law: The Role of Explanation. 2017. Berkman Klein Center

Drechsler L and Benito Sanchez JC (2018) The price is (not) right: Data protection and discrimination in the age of pricing algorithms. European Journal of Law and Technology 9(3): 1–31.

Drexl J et al., ‘Data Ownership and Access to Data - Position Statement of the Max Planck Institute for Innovation and Competition of 16 August 2016 on the Current European Debate’

Drexl, J. Designing Competitive Markets for Industrial Data - Between Propertization and Access, 2016 , Max Planck Institute for Innovation and Competition, Munich

Dreyfuss R and Strandburg K (eds.), The Law and Theory of Trade Secrecy , 2010, A Handbook of Contemporary Research, Edward Elgar Publishing

Dreyfuss R, Strandburg K and Lemley MA, ‘The Surprising Virtues of Treating Trade Secrets as IP Rights’, 2013 The Law and Theory of Trade Secrecy (Edward Elgar Publishing.

Duch-Brown N, Martens B and Mueller-Langer F, ‘The Economics of Ownership, Access and Trade in Digital Data’ (2017)

Edwards, L., & Veale, M. Slave to the algorithm? Why a 'right to an explanation' is probably not the remedy you are looking for. (2017) Duke Law and Technology Review, 16(1), 1–65.

EIOPA (2017a) Technical Advice on possible delegated acts concerning the Insurance Distribution Directive, EIOPA-17/048.

EIOPA (2017b) Opinion on monetary incentives and remuneration between providers of asset management services and insurance undertakings, EIOPA-BoS-17/295.

EIOPA (2018) Q and A on Regulation - Answers - Commission Implementing Regulations laying down Implementing Technical Standards, (EU) 2017-2359

EIOPA, Preparatory Guidelines on product oversight and governance arrangements by insurance undertakings and insurance distributors (2016)

Eling M and Kraft M, ‘The Impact of Telematics on the Insurability of Risks’ <http://apria2017.syskonf.pl/conf-data/APRIA2017/files/artykuły/PMS001099.pdf>

Elliot M et.L , ‘Functional Anonymisation: Personal Data and the Data Environment’ (2018) 34 Computer Law and Security Review

Emmett J. Vaughan and Therese M. Vaughan, The Fundamentals of Risk and Insurance (2008) 11th Edition

Eriksson M, ‘The Normativity of Automated Driving: A Case Study of Embedding Norms in Technology’ (2017) 26 Information and Communications Technology Law 46

Esayas SY, ‘Competition in (Data) Privacy: ‘Zero’-Price Markets, Market Power, and the Role of Competition Law’ (2018) International Data Privacy Law

Esayas SY, ‘The Idea of “emergent Properties” in Data Privacy: Towards a Holistic Approach’ (2017) International Journal of Law and Information Technology

European Automotive Manufacturers Association, ‘Access to Vehicle Data for Third - Party Services’

European Automotive Manufacturers Association, ‘ACEA Principles of Data Protection in Relation to Connected Vehicles and Services’

European Insurance and Occupational Pensions Authority (2019) Big Data analytics in motor and health insurance: A thematic review.

Evans BJ, ‘Much Ado About Data Ownership’ (2011) 25 Harvard Journal of Law & Technology 70

Ezrachi A, ‘EU Competition Law Goals and the Digital Economy’ (2018) SSRN Electronic Journal

Fagnant DJ and Kockelman K, ‘Preparing a Nation for Autonomous Vehicles: Opportunities, Barriers and Policy Recommendations’ (2015) 77 Transportation Research Part A 167

Falce, V. Trade Secrets - Looking for (Full) Harmonization in the Innovation Union, 2015 Max Planck Institute for Innovation and Competition, Munich

Farrelly R, 'Designing a Primary Personal Information Market as an Industry Platform : A Service Innovation Approach' 4526

Faure MG, 'The Limits to Insurability from a Law and Economics Perspective' (1995) 20 Geneva Papers on Risk and Insurance 454

Federal Trade Commission, 'Credit-Based Insurance Scores:; Impacts on Consumers of Automobile Insurance' (2007)

Federal Trade Commission, 'Data Brokers: A Call For Transparency and Accountability: A Report of the Federal Trade Commission (May 2014)' (ftc.gov, 2014)

Filipova-Neumann, L. and Welzel, P. Reducing asymmetric information in insurance markets: Cars with black boxes. Telematics and Informatics 2010, 27(4):394–403

Financial Conduct Authority Developing our approach to implementing MiFID II conduct of business and organizational requirements, (2015) Discussion Paper DP15/3

Floridi L and Taddeo M, 'What Is Data Ethics?' (2016) 374 Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences

Friedler SA and others, 'A Comparative Study of Fairness-Enhancing Interventions in Machine Learning'

Friedman S and Canaan M, 'Overcoming Speed Bumps on the Road to Telematics' (2014)

Friedman, D. et al. Some economics of trade secret law, 1991. J Econ Perspect 5(1):61

FTC, 'Protecting Consumer Privacy in an Era of Rapid Change. Recommendations for Business and Policymakers', March 2012, Report

FCA (Financial Conduct Authority) (2019) General insurance pricing practices. Market Study, MS18/1.2.

Gellert R, Vries KD, de Hert P, et al. (2013) A comparative analysis of anti-discrimination and data protection legislations. In Custers B, Calders T, Zarsky T, et al. (eds) Discrimination and

Gal M and Elkin-Koren N, 'Algorithmic Consumers, (2017) Harvard Journal of law and Technolocgy, Volume 30, No 2 Spring

Gasser U, 'A Layered Model for AI Governance' (2017) 21 IEEE Internet Computing 58

Gellert R and Gutwirth S, 'The Legal Construction of Privacy and Data Protection' (2013) 29 Computer Law and Security Review 522

Geradin, D., & Kuschewsky, M. Competition Law and Personal Data: Preliminary Thoughts on a Complex Issue 2013. SSRN Working Paper.

Gillespie T, 'The Relevance of Algorithms' 2014, Microsoft Research

Gomez A, 'Fundamental Rights Implications of Big Data: Privacy, Data Protection, Non-Discrimination, Security and Law-Enforcement' (2017) <http://www.europarl.europa.eu > accessed 8 March 2018

Goodman B and Flaxman S, 'European Union Regulations on Algorithmic Decision-Making and a "Right to Explanation"' 26 [online]http://arxiv.org/abs/1606.08813

Goodman B, 'A Step Towards Accountable Algorithms?: Algorithmic Discrimination and the European Union General Data Protection' 29th Conference on Neural Information Processing Systems (NIPS 2016), Barcelona, Spain. 1

Goodman, B., Flaxman, S.): European Union regulations on algorithmic decision-making and a "right to explanation". (2017) AI Magazine. 38(3)

Graef, I and Husovec, Martin and Purtova, Nadezhda, Data Portability and Data Control: Lessons for an Emerging Concept in EU Law (2018). German Law Journal vol. 19 no. 6, p. 1359-1398

Graef, I, Market Definition and Market Power in Data: The Case of Online Platforms (2015). World Competition: Law and Economics Review, Vol. 38, No. 4, p. 473-506.,

Graef, I. and van Bierlo, S. (2020) "Towards Smarter Regulation in the Areas of Competition, Data Protection and Consumer Law: Why Greater Power Should Come with Greater Responsibility," European Journal of Risk Regulation. Cambridge University Press, pp. 1–25.

Graef, I. Verschakelen, J. Valcke, P. Putting the right to data portability into a competition law perspective, 2013, Annual review, The Journal of the Higher School of Economics 53, 58

Graves, C. Diboise, J. Do strict trade secret and non-competition laws obstruct innovation ?

Guerrero-Ibáñez J, Zeadally S and Contreras-Castillo J Sensor Technologies for Intelligent Transportation Systems. (2018) Sensors. MDPI AG 18(4): 1212.

Hacker P, 'Personalizing EU Private Law: From Disclosures to Nudges and Mandates' (2017) European Review of Private Law 651

Halligan, R.M. Weyand, R.F. 'The Economic Valuation of Trade Secret Assets' (2006) J Internet L 19, 21.

Handel, P., Ohlsson, J., Ohlsson, M., Skog, I., & Nygren, E. Smartphone-based measurement systems for road vehicle traffic monitoring and usage-based insurance. (2014). IEEE Systems Journal, 8(4), 1238–1248.

Hann, I.-H., Hui, K.-L., Lee, S.-Y. T., & Png, I. P). Overcoming online information privacy concerns: an information-processing theory approach. . (2007)Journal of Management Information Systems, 24(2), 13–42.

Hargreaves I and others, 'EC Text and Data Mining: (2014) Report from the Expert Group'

Hawkes B, 'Code of Practice on Data Protection for the Insurance Sector (Approved by the Data Protection Commissioner under Section 13 (2) of the Data Protection Acts , 1988 and 2003)' (2013) 13 1

Heath, J. (2007). Reasonable restrictions on underwriting. In P. Flanagan, P. Primeaux, & W.Ferguson (eds.), Insurance ethics for a more ethical world (Research in Ethical Issues in Organizations, Volume 7), (pp.127-159). Emerald Group Publishing Limited,Bingley.

Heersmink R and others, 'Bibliometric Mapping of Computer and Information Ethics' (2011) 13 Ethics and Information Technology 241

Hildebrandt, M., Gutwirth, S. (eds.) Profiling the European Citizen. Cross Disciplinary Perspectives, pp. 271–291. Springer, Dordrecht (2008)

Hoeren, T. The EU Directive on the Protection of Trade Secrets and its Relation to Current Provisions in Germany, 9 (2018) JIPITEC 138 para 1.

Hofmann, A; Neumann, J K.; Pooser, D. Plea for Uniform Regulation and Challenges of Implementing the New Insurance Distribution Directive. Geneva Papers on Risk & Insurance - Issues & Practice. Oct2018, Vol. 43 Issue 4, p740-769. 30p.

Hood, J, Omar Hoda, Ryan Robinson Monetizing data in the age of connected cars, (2019) Deloitte Insights

Hoofnagle CJ, 'Berkeley Law Scholarship Repository Big Brother' s Little Helpers: How ChoicePoint and Other Commercial Data Brokers Collect and Package Your Data for Law Enforcement' (2003) 595 J. Int'l L. & Com. Reg

Hubaux JP, Čapkun S and Luo J, 'The Security and Privacy of Smart Vehicles' (2004) 2 IEEE Security and Privacy

Hugenholtz B, 'Abuse of Database Right. Sole-Source Information Banks under the EU Database Directive', (2005) Antitrust, patents and copyright: EU and US perspectives

Hugenholtz B, 'Data Property: Unwelcome Guest in the House of IP' Essays on Intellectual Property

Hunstad, L, Measuring and Modifying the Effect of Auto Rating Factors, Journal of Insurance Regulation, Volume 14, No. 2, Winter, 1995, pp 159-187.

Husnjak, S., Perakovi´c, D., Forenbacher, I., and Mumdziev, M. Telematics system in usage-based motor insurance. 2015 Procedia Engineering, 100:816–825.

Hynd D and others, 'Study on the Benefits Resulting from the Installation of Event Data Recorders' (2014)

Insurance Council of Australia (2015), Too Long; Didn't Read. Enhancing General Insurance

Insurance Council of Australia, (2017) Consumer Research on General Insurance Product Disclosures, Research findings report.

Introna L, ‘Disclosive Ethics and Information Technology: Disclosing Facial Recognition Systems’ (2005) 7 Ethics and Information Technology

Ippisch T, ‘Telematics Data in Motor Insurance : Creating Value by Understanding the Impact of Accidents on Vehicle Use’ (2010)

Issacharoff S, ‘Disclosure, Agents, and Consumer Protection’ (2011) Journal of Institutional and Theoretical Economics JITE

Janal, R. Data Portability - A Tale of Two Concepts, 8, 2017 JIPITEC 59 para 1.

Junqué de Fortuny, E., Martens, D., & Provost, F. (2013). Predictive modeling with big data: Is bigger really better?. Big Data, 1(4), 215–226.

Kahneman, D. (2011). Thinking, fast and slow. Penguin, New York.

Kaisler S and others, ‘Big Data: Issues and Challenges Moving Forward’, (2013) 46th Hawaii International Conference on System Sciences

Karanasiou A and Pinotsis D, ‘A Study into the Layers of Automated Decision-Making: Emergent Normative and Legal Aspects of Deep Learning’ (2017) 31 International Review of Law, Computers and Technology

Karapiperis D and others, ‘Usage-Based Insurance and Vehicle Telematics: Insurance Market and Regulatory Implications’ (2015) National Association of Insurance Commissioners & The Center for Insurance Policy and Research

Kaushik, A. Franzoni, L.A. The optimal scope of trade secrets law, 2014, Quaderni - Working Paper DSE N°1020

Kbi C and others, ‘Unraveling the Predictive Power of Telematics Data in Car Insurance Pricing’ (2017) Faculty of Economics and Business

Kellezi, P. et al. (eds.), Abuse of Dominant Position and Globalization Protection and Disclosure of Trade Secrets and Know-How, 2017 LIDC Contributions on Antitrust Law ,Intellectual Property and Unfair Competition, Springer International Publishing AG 2017 p 291-311

Kemper J and Kolkman D, ‘Transparent to Whom? No Algorithmic Accountability without a Critical Audience’ (2018) Information Communication and Society

Kerber W, ‘Governance of Data: Exclusive Property vs. Access’ (2016) 47 IIC International Review of Intellectual Property and Competition Law

Kerber, W and Schweitzer, H Interoperability in the Digital Economy (2017) Journal of Intellectual Property, Information Technology and Electronic Commerce Law,MAGKS, Joint Discussion Paper Series in Economics, No. 12-2017.

Kerber, W, Data Governance in Connected Cars: The Problem of Access to In-Vehicle Data, (2018) JIPITEC Journal of Intellectual Property, Information Technology and Electronic

Klein, R. Principles for Insurance Regulation: An Evaluation of Current Practices and Potential Reforms (2012)The Geneva Papers on Risk and Insurance - Issues and Practice, Volume 37, Issue 1, pp 175–199 (2012) 37: 175

Kleinberg J, Mullainathan S and Raghavan M, ‘Inherent Trade-Offs in the Fair Determination of Risk Scores’

Klemperer, PMarkets with consumer switching costs. . (1987). The Quarterly Journal of Economics, 102(2), 375-394.

Kohne, T. and Brommelmeyer, C. ‘The new insurance distribution regulation in the EU – A critical assessment from a legal and economic perspective’, (2018) 43 The Geneva Papers on Risk and Insurance – Issues and Practice. Vol. 43 Issue 4, p704-739.

Koops B and Leenes L, ‘“Code” and the Slow Erosion of Privacy’ (2005) 12 Michigan Telecommunications and Technology Law Review 115.

Koops, B. J., Newell, B. C., Timan, T., Skorvanek, I., Chokrevski, T., & Galic, M. (2016). A typology of privacy. University of Pennsylvania Journal of International Law Review, 38, 483.

Koufopoulos K, ‘Asymmetric Information, Heterogeneity in Risk Perceptions and Insurance: An Explanation to a Puzzle’ (2008) 402 Business 1

Kroll JA and others, ‘Accountable Algorithms’, vol 165 https://perma.cc/37VG-GQC6)

Lajunen, T., Karola, J., & Summala, H. (Speed and acceleration as measures of driving style in young male drivers. 1997). Perceptual and Motor Skills, 85, 3–16.

Lambrecht, A., & Tucker, C. E. (2015). Can big data protect a firm from competition?. SSRN.

Landes, X. (2015). How Fair Is Actuarial Fairness? Journal of Business Ethics , Vol. 128 (no. 3), 519-533.

Lehtonen T-K and Liukko J (2012) The forms and limits ofinsurance solidarity. Journal of Business Ethics 103(S1):33–44.

Martens B, ‘An Economic Policy Perspective on Online Platforms’ (2016) JRC Technical Reports 1

Martin K, ‘Ethical Implications and Accountability of Algorithms’ Journal of Business Ethics (2018)

McCarthy, M. et al. Access to In-vehicle Data and Resources. 2017, Study commissioned by European Commission CPR2419. Brussels.

McKinsey , Monetizing car data New service business opportunities to create new customer benefits Advanced Industries Report; (2016b)

McKinsey, Automotive Revolution – perspective towards 2030; (2016a)

Mckinsey, Competing for the connected customer – perspectives on the opportunities created by car connectivity and automation. Report; (2015)

Mendoza I and Bygrave LA, ‘The Right Not to Be Subject to Automated Decisions Based on Profiling’, (2017) EU Internet Law: Regulation and Enforcement

Mittelstadt B and Floridi L, ‘The Ethics of Big Data: Current and Foreseeable Issues in Biomedical Contexts’ (2016) 22 Science and Engineering Ethics 303

Mittelstadt B, Allo P, Taddeo M, et al. (2016) The ethics ofalgorithms: Mapping the debate. Big Data & Society. DOI: 10.1177/2053951716679679;

Moore TR, ‘Trade Secrets and Algorithms as Barriers to Social Justice’ 2017, Center for Democray and Technology.

Morgenstern, J.: Market structure and antitrust, (2019). Stigler committee on digital platforms

Morris DS, Schwarcz D and Teitelbaum JC, ‘Do Credit-Based Insurance Scores Proxy for Income in Predicting Auto Claim Risk?’ (2017) 14 Journal of Empirical Legal Studies 397

Moura, P. ‘The sticky Case of Sticky Data: An examination of the Rationale, Legality, and Implementation of a Right to Data Portability Under European Competition Law’ 2014,

Munoz C, Smith M and Patil D, ‘Big Data : A Report on Algorithmic Systems , Opportunity , and Civil Rights’ (2016)

Murray A (2013) Looking Back at the Law of the Horse: Why Cyberlaw and the Rule of Law are Important. SCRIPTed 10:310

NAIC, ‘Price Optimization White Paper’ (2015)

Narayanan A and Felten EW, ‘No Silver Bullet: De-Identification Still Doesn’t Work’ (2014)

Nemitz P, ‘Constitutional Democracy and Technology in the Age of Artificial Intelligence’

Newell S and Marabelli M, ‘Strategic Opportunities (and Challenges) of Algorithmic Decision-Making: A Call for Action on the Long-Term Societal Effects of “Datification”’ (2015) 24 Journal of Strategic Information Systems 3

Nissenbaum H, ‘Respecting Context to Protect Privacy: Why Meaning Matters’ (2018) Science and Engineering Ethics

OECD

(2020) The impact of big data and artificial intelligence (AI) in the insurance sector. Available at: www. oecd.org/finance/Impact-Big-Data-AI-in-the-Insurance-Sector.htm (accessed

(2013) ‘Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value’, OECD Digital Economy Papers, No. 220, 2013,

(2015) ‘Data-Driven Innovation. Big Data for Growth and Well-Being’, 6 October 2015, available at http://www.oecd.org/sti/data-driven-innovation-9789264229358-en.htm.

(2019). Enhancing access to and sharing of data: Reconciling risks and benefits for data reuse

Ohlsson, J., Händel, P., Han, S., Welch, R. (2015). Process innovation with disruptive technology in auto insurance: Lessons learned from a smartphone-based insurance telematics initiative BPM-Driving Innovation in a Digital World (pp. 85–101): Springer.

Ohm, P. ‘Broken promises of privacy: Responding to the surprising failure of anonymization’, 2010, UCLA Law Review, Vol. 57, No. 6, pp. 1701–1777

Oostveen M, ‘Identifiability and the Applicability of Data Protection to Big Data’ (2016) 6 International Data Privacy Law 299

Osborne Clarke LLP, ‘EC Legal Study on Ownership and Access to Data’ (2016)

Osborne Clarke LLP, ‘What EU Legislation Says about Car Data Legal Memorandum on Connected Vehicles and Data’ (2017) <http://www.osborneclarke.com/wp-content/uploads/2017/08/OSB100213

Paefgen J, Staake T and Fleisch E, ‘Multivariate Exposure Modeling of Accident Risk: Insights from Pay-as-You-Drive Insurance Data’ (2014) 61 Transportation Research Part A: Policy and Practice 27

Palmerini E and others, ‘RoboLaw Guidelines on Regulating Robotics.’ (2014)

Pander Maat, H., De Boer, N., & Timmermans, C. (2009). De gebruiksvriendelijkheid van hypotheekinformatie: Een lezersonderzoek. Utrecht: Universiteit Utrecht.

Pearce H, ‘Big Data and the Reform of the European Data Protection Framework: An Overview of Potential Concerns Associated with Proposals for Risk Management-Based Approaches to the Concept of Personal Data’ 26 Information & Communications Technology Law 312

Petit, J. Shladover, S. Potential Cyberattacks on Automated Vehicles. Intelligent Transportation Systems, 2014 IEEE Transactions on. PP. 1-11.

Pfitzmann A and Hansen M, ‘A Terminology for Talking about Privacy by Data Minimization: Anonymity, Unlinkability, Undetectability, Unobservability, Pseudonymity, and Identity Management’ (2010) Technical University Dresden

Pomerantz F and Aisen A, ‘Auto Insurance Telematics Data Privacy And Ownership’ (2015)

Pooley, J. ‘Trade Secrets The Other IP Right’ (2013) 3 WIPO Magazine 2.

Posner RA, ‘Values and Consequences: An Introduction to Economic Analysis of Law’ (1998) 53 Journal of Political Economy 13

Pound R., “Law in Books and Law in Action” (1910) 44 American Law Review 12.

Prince AER and Schwarcz D Proxy discrimination inthe age of artificial intelligence and Big Data. (2020) Iowa Law Review 105(1257): 1257–1318.

Prince, Anya and Schwarcz, Daniel B., Proxy Discrimination in the Age of Artificial Intelligence and Big Data (2019). Iowa Law Review, Forthcoming.

Puelz R and Kemmsies W, ‘Implications for Unisex Statutes and Risk-Pooling: The Costs of Gender and Underwriting Attributes in the Automobile Insurance Market’ (1993) 5 Journal of Regulatory Economics 289

Purtova N, ‘The Illusion of Personal Data as No One’s Property’ (2015) 7 Law, Innovation and Technology 83

Purtova, N., Property Rights in Personal Data. A European Perspective in Hugenholtz.B. (ed.) Information Law Series, Alphen aan den Rijn, Kluwer Law International, 2011.

Rainee L and Anderson J, ‘Code-Dependent: Pros and Cons of the Algorithm Age’ (2017)

Ramirez E and others, ‘Big Data: A Tool for Inclusion or Exclusion?’ 1

Ranchordás S (2014) Constitutional Sunsets and Experimental Legislation: A Comparative

Rathenau Instituut, ‘Human Rights in the Robot Age. Challenges Arising from the Use of Robotics, Artificial Intelligence, and Virtual and Augmented Reality’ (2017) Report

Rebert L and Van Hoyweghen I (2015) The right to underwrite gender. The Goods & Services Directive and the politics of insurance pricing. Tijdschrift Voor Genderstudies 18(4): 413–431.

Reddix-Smalls, B. Credit Scoring and Trade Secrecy: An Algorithmic Quagmire or How the Lack of Transparency in Complex Financial Models Scuttled the Finance Market 2011, 12 U.C. DAVIS BUS. L.J. 87, 117-18

Reddy AS, ‘The New Auto Insurance Ecosystem: Telematics, Mobility and the Connected Car, Cognizant Reports’

Reed C and Murray A, Rethinking the Jurisprudence of Cyberspace, Cheltenham: Edward Elgar Publishing (2018)

Reichman, J.H. Samuelson, P. Intellectual property rights in data? 1997, Vanderbilt Law Rev 50:51

Richards NM and Hartzog W, ‘Taking Trust Seriously in Privacy Law’ (2016) 18 Stanford Technology Law Review 431

Richman R, ‘AI in Actuarial Science’ (2018) Published online by Cambridge University Press

Rowe EA and Sandeen SK, Trade Secrecy and International Transactions : Law and Practice

Samuelson, P. Scotchmer, S. The law and economics of reverse engineering. 2002 Yale Law J 111:1575

Sandvig C and others, ‘Auditing Algorithms: Research Methods for Detecting Discrimination on Internet Platforms’ (2014) Data and Discrimination: Converting Critical Concerns into Productive: A preconference at the 64th Annual Meeting of the International Communication Association. Seattle

SAS Institute Inc., ‘The Connected Vehicle: Big Data, Big Opportunities’ (2016) SAS White paper 10

Sastry D, et al., ‘Data Protection and Data Sharing in Telematics’ (2003) 9 Mobile Networks and Applications

Schaeken, Willemaers, Gaetane, (2014) Client Protection on European Financial Markets – From Inform Your Client to Know Your Product and Beyond: An Assessment of the PRIIPs Regulation, MiFID II/MiFIR and IMD 2 Revue Trimestrielle de Droit Financier

Schermer B, ‘The Limits of Privacy in Automated Profiling and Data Mining’ (2011) 27 Computer Law & Security Review 45

Schoubroeck C Van, ‘Telematics insurance: legal concerns and challenges in the EU insurance market'

Schultz MF, Lippoldt DC, ‘‘Approaches to Protection of Undisclosed Information (Trade Secrets) – Background Paper’’ 2014, OECD Trade Policy Paper No. 162, 5,

Schwarcz D et al, ‘Insurance Agents in the Twenty-First Century: The Problem of Biased Advice’, Research Handbook on the Economics of Insurance Law (Edward Elgar Publishing 2015)

Schwartz, A. ‘The Corporate Preference for Trade Secret’ 2013, 74 Ohio State LJ 623

Schwarze R et. al, Is the Market Classification of Risk Always Efficient? : Evidence from German Third Party Motor Insurance (Centre for Analysis of Risk and Regulation 2005)

Scott Morton, F., Bouvier, P., Ezrachi, A., Jullien, B., Katz, R., Kimmelman, G., Melamed, A. D., &

Selentis DI, Yannis G and Vlahogianni EI, ‘Innovative Motor Insurance Schemes: A Review of Current Practices and Emerging Challenges’ (2017) 98 Accident Analysis and Prevention

Siegelman,P,‘Information & Equilibrium in Insurance Markets with Big Data’ (2014) 21 Conn.Ins.L. J .317 ,p.330.

Simina Duca ‘Scope of Article 102 TFEU: Protection of Competition or Protection of Competitors?’ (Stanford-Vienna European Union Law Working Paper No. 46 2020);

Simpson, M. The Future of Innovation: Trade Secrets, Property Rights, and Protectionism—An Age-Old Tale 2005, 70 Brooklyn Law Review 1121

Smethurst, G. Access to the vehicle and vehicle-generated data - "NEVADA Share and Secure Concept”* Verband Der Automobilindustry (VDA)

Smith, M. L., & Kane, S. A. (1994). The law of large numbers and the strength of insurance. Insurance, risk management, and public policy (pp. 1–27).

Solove, D. (2006). A taxonomy of privacy. University of Pennsylvania Law Review, 154, 477–560.

Sousa, E. What exactly is a trade secret under the proposed directive? , 2014, Journal of Intellectual Property Law & Practice, Vol. 9, No. 11

Spiekermann-Hoff S and others, 'The Challenges of Personal Data Markets and Privacy' (2015) 25 161

Stahl B, 'Morality, Ethics, and Reflection: A Categorization of Normative IS Research' (2012) 13 Journal of the Association for Information Systems 636

Standford 'Stanford Encyclopedia of Philosophy Computer and Information Ethics' 1 <https://plato.stanford.edu/entries/ethics-computer/#Aca> accessed 18 October 2017

Steppe R, 'Online Price Discrimination and Personal Data: A General Data Protection Regulation Perspective' (2017) 33 Computer Law & Security Review 768

Stigler, G.J. (1971) The Theory of Economic Regulation. The Bell Journal of Economics and Management Science, 2, 3-21.

Stiglitz J, 'The Contributions of the Economics of Information to Twentieth Century Economics' (2000) 115 The Quarterly Journal of Economics 1441

Stucke M and Ezrachi A, 'How Pricing Bots Could Form Cartels and Make Things More Expensive' (2016) https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and...

Stuyck, J. et al Confidence through fairness? The new Directive on unfair business-to-consumer commercial practices in the internal market. 2006 Common Mark Law Rev 43:107–152

Surblyte_ G Liability for the infringement of trade secrets in Lithuania , 2008. Justitia 69(3):41–5

Surblyte, G., The Refusal to Disclose Trade Secrets as an Abuse of Market Dominance - Microsoft and Beyond in DREXL, J. (ed.) Munich Series on European and International Competition Law, 28, Berne Stämpfli Publishers Ltd., 2011.

Swedloff R (2014) Risk classification's Big Data (r)evolution. Connecticut Insurance Law Journal 21(1): 339–374.

Swedloff, R. 'Risk Classification's Big Data (R)evolution' (2014) 21 Connecticut Insurance LawJournal 339, 341

Swire P, Lagos Y, 'Why the Right to Data Portability Likely Reduces Consumer Welfare: Antitrust and Privacy Critique' 2013, 72(2) Maryland Law Review 335 360.

Swire, P, 'Submitted Testimony to the Federal Trade Commission Behavioral Advertising Town Hall', 18 October 2007

Swiss re, 'The Autonomous Car: Risks and Opportunities for the Re/Insurance Industry' (2014)

Taddy M, 'The Technological Elements of Artificial Intelligence' (2018) in Agrawal, A., In Gans, J., & In Goldfarb, A. (2019). The economics of artificial intelligence: An agenda.

Taylor L and others, 'Philosophical Studies Series Group Privacy New Challenges of Data Technologies' <https://linnettaylor.files.wordpress.com/2017/01/groupprivacy.pdf> accessed December 2017

Taylor L, 'EU No Place to Hide? The Ethics and Analytics of Tracking Mobility Using Mobile Phone Data' (2016) 34 Environment and Planning D: Society and Space 319

Teece, 'Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance'. (Strategic Management Journal, 28 (13)) 1319–1350.

Tene O and Polonetsky J, 'Big Data for All: Privacy and User Control in the Age of Analytics' (2013) 11 Northwestern Journal of Technology and Intellectual Property Volume 240

Thierer AD, 'The Internet of Things and Wearable Technology: Addressing Privacy and Security Concerns without Derailing Innovation' (2014)

Thiery Y and Van Schoubroeck C, 'Fairness and Equality in Insurance Classification' The Geneva Papers,2006,31, (190–211)

Thomas R, ‘Non-Risk Price Discrimination in Insurance: Market Outcomes and Public Policy’ (2012) 37 Geneva Papers on Risk and Insurance: Issues and Practice 27

Timan,T. Newell, B. & Koops B-J. (Eds.), Privacy in Public Space: Conceptual and Regulatory Challenges 2017 Edward Elgar Publishing Limited.

Tolan S, ‘Fair and Unbiased Algorithmic Decision Making : Current State and Future Challenges’ [2018] Digital Economy Working Paper 2018-10; JRC Technical Reports.

Toledo T, Musicant O and Lotan T, ‘In-Vehicle Data Recorders for Monitoring and Feedback on Drivers’ Behavior’ (2008) Transportation Research Part C: Emerging Technologies 16 (3), 320-331

Townley, C. Morrison, E. and Yeung, K, Big Data and Personalised Price Discrimination in EU Competition Law (October 6, 2017). King's College London Law School Research Paper No. 2017-38.

Triaille J-P, Dusollier S and et al., ‘EC Study on the Application of Directive 2001/29/EC on Copyright and Related Rights in the Information Society’ (2013)

Troncoso, C., Danezis, G., Kosta, E., Balasch, J., & Preneel, B. (2011). Pripayd: privacy-friendly pay-as-you-drive insurance. IEEE Transactions on Dependable and Secure Computing, 8(5), 742–755.

Tselentis, D. I., Yannis, G., and Vlahogianni, E. I. (2016). Innovative insurance schemes: Pay as/how you drive. Transportation Research Procedia, 14:362 { 371.

UK Competition and Marketing Authority, ‘The commercial use of consumer data. Report on the CMA’s call for information’, June 2015,

UK House of Lords Science and Technology Select Committee, ‘Connected and Autonomous Vehicles: The Future?’ 2016. 66

UK House of Lords, ‘Online Platforms and the Digital Single Market’, 10th Report of Session 2015-16, 20 April 2016,

UK Office of Fair Trading, ‘Online Targeting of Advertising and Prices - A market study’, May 2010

Urquhart L, Sailaja N and McAuley D, ‘Realising the Right to Data Portability for the Domestic Internet of Things’ [2018] Personal and Ubiquitous Computing

Urs Gasser & Carolyn Schmitt, ‘The Role of Professional Norms in the Governance of Artificial Intelligence’ (2003) 18 International Sociology 395

Van Alstyne M, Brynjolfsson E and Madnick S, ‘Why Not One Big Database? Principles for Data Ownership’ (1995) 15 Decision Support Systems 267

Van Asbroeck Julien Debussche Jasmien César B, ‘Building the European Data Economy Data Ownership’ (2017) http://www.toreador-project.eu/. accessed 19 December 2017

Van Boom W, Garde A and Akseli O, The European Unfair Commercial Practices Directive (2014)

Van Boom, W.H., Desmet, P. & Van Dam, M “If It’s Easy to Read, It’s Easy to Claim”—The Effect of the Readability of Insurance Contracts on Consumer Expectations and Conflict Behaviour, . (2016) Journal of Consumer Policy| Volume 39, Issue 2, pp 187–197;

Van Caenegem, W. Trade secrets and intellectual property: breach of confidence, misappropriation and unfair competition. 2014 Wolters Kluwer, The Hague

Van de Voort M, Pieters W and Consoli L, ‘Refining the Ethics of Computer-Made Decisions: A Classification of Moral Mediation by Ubiquitous Machines’ (2015) 17 Ethics and Information Technology

Van den Boom F, ‘Vehicle data controls – balancing interests under The Trade Secrets Directive’ (Int. J. Technology Policy and Law, Vol 3 Nr 3 2020).

Van den Boom, F. (2020). Regulating Telematics Insurance. in P. Marano, K. Noussia (eds.), Insurance Distribution Directive, AIDA Europe Research Series on Insurance Law and Regulation 3,

Van der Auwermeulen, B. How to attribute the right to data portability in Europe: A comparative analysis of legislations, 2017 Computer Law & Security Review, Volume 33, Issue 1, 2017, pp. 57-72

Van der Sloot B, ‘How to Assess Privacy Violations in the Age of Big Data? Analysing the Three Different Tests Developed by the ECtHR and Adding for a Fourth One’ (2015) 24 Information and Communications Technology Law 74

Van der Sloot, B. Broeders B, & Schrijvers, E (eds.), Exploring the Boundaries of Big Data (Amsterdam University Press 2016).

Van Ooijen, I. & Vrabec, H.U. J (2019) , Does the GDPR Enhance Consumers' Control over Personal Data? An Analysis from a Behavioural Perspective, Journal of Consumer Policy, Volume 42, Issue 1, pp 91–107

Vanberg A D and Ünver MB, 'The Right to Data Portability in the GDPR and EU Competition Law: Odd Couple or Dynamic Duo?' (2017) 8 European Journal of Law and Technology 1

Vellinga N, 'From the Testing to the Deployment of Self-Driving Cars: Legal Challenges to Policymakers on the Road Ahead' (2017) 33 Computer Law and Security Review

Verhauwen and Gerstein J 'On The Obligation To License Standard Essential Patents In The Supply And Exploitation Chain: Selection Right Of The SEP Holder vs. FRAND-Everyone's Right' (les Nouvelles – Journal of the Licensing Executives Society, Volume LV No. 4 2020).

Vickrey W, 'Automobile Accidents, Tort Law, Externalities, and Insurance: An Economist's Critique' (2006) 33 Law and Contemporary Problems

Victor JM and others, '50. The EU General Data Protection Regulation : Toward a Property Regime for Protecting Data Privacy a Property Regime for Protecting Data Privacy' (2017) 123 513

Voigt, P (et al.),The EU General Data Protection Regulation (GDPR), A Practical Guide. 1st ed. 2017, Springer International Publishing, IX, 383

Wachter S, Mittelstadt B and Floridi L, 'Transparent, Explainable, and Accountable AI for Robotics' (2017) 2 Science Robotics

Wachter S, Mittelstadt B and Russell C, 'Counterfactual Explanations Without Opening the Black Box : Automated Decisions and the GDPR' [2017] SSRN Electronic Journal

Wachter, S and Mittelstadt, B and Floridi, L, Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation (December 28, 2016). International Data Privacy Law, 2017,

Wachter, S. Mittelstadt, B. A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI, 2018. Columbia Business Law Review, Forthcoming.

Wahlström J, Skog I and Händel P, 'Driving Behavior Analysis for Smartphone-Based Insurance Telematics', (2015) Proceedings of the 2nd workshop on Workshop on Physical Analytics

Warren S, and Brandeis L, 'The Right to Privacy' (1890) 4 Harvard Law Review 193

Weidner W, Transchel F and Weidner R, 'Telematic Driving Profile Classification in Car Insurance Pricing' (2016) 11 Annals of Actuarial Science 1

Weiss, S. Privacy threat model for data portability in social network applications 2009 International Journal of Information Management, 29 (4) pp. 249-254

Weitzner, D.; Abelson, H.; Berners-Lee, T.; Feigenbaum, J.;Hendler, J.; and Sussman, G. J. Information accountability. 2008. Communcations of the ACM.

Wendehorst C, 'Consumer Contracts and the Internet of Things', Digital Revolution: Challenges for Contract Law in Practice (Nomos 2016)

Werth R, 'Risk and Punishment: The Recent History and Uncertain Future of Actuarial, Algorithmic, and "Evidence-Based" Penal Techniques' (2019) 13 Sociology Compass

Wexler R, 'Life, Liberty, and Trade Secrets: Intellectual Property in the Criminal Justice System' (2017) SSRN Electronic Journal

Wiebe A, 'Protection of Industrial Data – a New Property Right for the Digital Economy?' (2017) 12 Journal of Intellectual Property Law & Practice 62

Wiener JB, 'The Regulation of Technology, and the Technology of Regulation' (2004) 26 Technology in Society 483

Wilkoff, N. Basheer, S. (eds.) Overlapping Intellectual Property Rights 2012, OUP Oxford, 57

World Economic Firum, 'Personal Data: The Emergence of a New Asset Class', January 2011, available at http://www3.weforum.org/docs/WEF_ITTC_PersonalDataNewAsset_Report_2011.

Yoo, C.S. When antitrust met Facebook, 2012 George Mason Law Review, 19 (5) pp. 1147-1162

Zanfir, G. The right to Data portability in the context of the EU data protection reform, 2012 International Data Privacy Law, 2 (3) pp. 149-162

Zarsky, TThe trouble with algorithmic decisions: An analytic road map to examine efficiency and fairness in automated and opaque decision making. . (2016). Science, Technology, & Human Values, 41(1), 118–132.

Zech H, 'A Legal Framework for a Data Economy in the European Digital Single Market: Rights to Use Data' (2016) 11 Journal of Intellectual Property Law & Practice 460

Zech H, 'Building a European Data Economy' (2017) 48 IIC International Review of Intellectual Property and Competition Law 501

Zech H, 'Data as a Tradeable Commodity – Implications for Contract Law' [2018] Proceedings of the 18th EIPIN Congress: The New Data Economy between Data Ownership, Privacy and Safeguarding Competition 1

Zuiderveen Borgesius F and Poort J, 'Online Price Discrimination and EU Data Privacy Law' (2017) 40 Journal of Consumer Policy 347

Zuiderveen Borgesius F, 'Breyer Case of the Court of Justice of the European Union: IP Addresses and the Personal Data Definition' (Case Note, European Data Protection Law Review 2017, Volume 3, Issue 1) 13.

Zuiderveen Borgesius F, 'Price Discrimination, Algorithmic Decision-making, and European Non-discrimination Law' (July 2, 2019). (European Business Law Review (Forthcoming)).

Zuiderveen Borgesius F, 'Singling out People without Knowing Their Names - Behavioural Targeting, Pseudonymous Data, and the New Data Protection Regulation' (2016) 32 Computer Law and Security Review 256

Zweig KA, Wenzelburger G and Krafft TD, 'On Chances and Risks of Security Related Algorithmic Decision-Making Systems' (2018) 3 European Journal for Security Research 181

Zwitter A, 'Big Data Ethics' (2014) Data & Society 1, no. 2

APPENDIX A -

Interview Participants

Profile: The participants were selected based on their knowledge and experience within or about the legal framework relevant for telematics insurance in Europe and the UK; and the key stakeholder communities: automotive, insurance and consumers.

Recruitment: Participants were identified within the researchers' network through personal introduction, desk research, meetings or through snowballing.

A total of 31 interviews were conducted. See Table 1 for a profile of the interview participants. Interviews were conducted between November 2019 and September 2021

Interview structure: Each interview was conducted in person, by phone or via Skype and lasted an average of 60 minutes.

Interview Guide

After a brief introduction of the research project, aims of the interview and ethics the following themes were explored: Understanding the connected car ecosystem, innovations in vehicle technology and data collection, Big Data and AI and telematics insurance specifically

PARTICIPANT INFORMATION AND CONSENT FORM

On file with Author

INDICATIVE RESEARCH QUESTIONS

- *Can you introduce your expertise/work in relation to connected cars, vehicle data and/or telematics insurance?*
- *Can you guide me through the data processing of data collection, data processing including the use of AI and analytics, outcome and use of data analysis and consequences of decisions made based on data?*
- *What in your opinion and experience are the main benefits of telematics over traditional insurance? Please include in your answer the role of insurance: information asymmetry, moral hazard and adverse selection.*
- *What in your opinion and experience are the main challenges posed by the deployment of Big Data and AI by insurers generally and specifically in the case of consumer insurance?*
- *Please elaborate on the following: concerns about data access, market access and competition, personal data and privacy, algorithm decision making and unfair discrimination,*
- *How would you describe the market in terms of access to data, the vehicle and (un)fair competition?*
- *Have you found difficulty (legal, technical, otherwise) with gaining access or obtaining*

quality data for a specific purpose?

- *What challenges do you face related to IP rights and trade secrets?*
- *With respect to privacy, what are the challenges you face in being GDPR compliant?*
- *Please share what solutions exist (legal or otherwise) and their potential to overcome the challenges and Proposed solutions to the issue: (self) regulation/ role of IP licensing*
- *Finally discuss what in your opinion is necessary to enable beneficial innovation while protecting the necessary interests of (...)*
- *Do you think we will have more or fewer data available in the future, please elaborate on why you think so and what would be the effect on innovations in Europe?*
- *For our next interview who would you recommend who is doing interesting things in the field and what would you like to know of them?*

Depending on the participant and their responses to the indicative questions, the researcher will prompt by raising and asking further elaborations on:

- *Obtaining data: access and control over data, data quality and necessity*
- *Processing data: selecting and accuracy of algorithms and automated decision making,*
- *Safeguards and other solutions proposed and taken with respect to the risks involved*
- *Challenges for competition, regulatory compliance, and ethics*
- *(availability and further need for) self-regulation, guidelines, codes of conduct*
- *Sector specific questions*

INDICATIVE FINDINGS

The following themes have emerged from the analysis of the interviews:

- *Many insurers are still in the initial stages of exploring telematics possibilities.*
- *Confidence that several hurdles identified can be overcome especially the technical issues with respect to data quality and data access are considered an opportunity for companies to innovate not a barrier as such that needs to be regulated.*
- *Despite the discussion about access, insurers do not mention it as a barrier as they consider the data to be available (for a price).*
- *There is no consensus about what vehicle data is necessary to collect, its predictive value and whether telematics data for vehicle insurance should be used at all.*
- *Analytics providers consider insurers too hesitant to embrace opportunities of analytics and big data.*
- *Uncertainty about compliance with the GDPR especially with respect to information that needs to be provided.*
- *Potential for the right to data portability some argue is very limited with respect to telematics data.*
- *The EU insurance market is very fragmented making it difficult to provide insurance*

solutions EU wide.

● *No consensus over whether smartphones, dongles or direct vehicle data access is the best, but there seems to be a growing understanding that the extended vehicle is not a viable solution to provide access to vehicle data and resources*

APPENDIX B - INFORMATION DISCLOSURE IDD/GDPR

The following provides an overview of what information should (upon request) be made available by insurers to the consumer:

Table

Information requirements under the IDD and the GDPR(Simplified)

Required under the GDPR:	*Required under the IDD*
Detailed and personalised information on What personal data being processed; Example: instead of stating (general) types of data, consumers should be given access to what specific personal data is being processed by the insurer in the context of their insurance. Otherwise it would not be possible for consumers to become aware or correct any mistakes the consumer cannot for example correct any mistakes in the data or object to certain data being used for purposes they do not agree with. What purpose and legal ground each data is used for Example: consumers may want to know whether their insurer uses certain data for purposes unrelated to the risk they seek to insure including the use of personal data for unfair price discrimination. Who provided what data Example: when decisions are made based on data obtained from third parties such as credit or fraud scores consumers have to right to obtain (upon request) detailed information about who these third parties are and what data they have provided in order to assess whether this data is correct. Exception: when it is not possible to identify the origin because various sources have been used, general information should be provided. W**hat processing takes place;** *Example:* whether profiling takes place information of such profiling and the consequences of such profiling Example: when algorithms are used consumers should be provided with information how these algorithms work and their reliability in order for them to understand, challenge but also change the outcome of decision making processes. If a consumer doesn't have access to what personal information led to what	Detailed information about key aspects of the insurance product The IPID only requires to inform consumers about the main characteristics for them to quickly understand and compare insurance products of different insurers. Relevant information on insurers 'internal processes, functions and strategies for designing and bringing products to the market, monitoring and reviewing them over their life cycle. May include target market and negative target market sectors and reasoning behind choices made why these are (not) appropriate product reviews to check if the product performance may lead to consumer detriment and, in case this occurs, what actions will be taken to change its characteristics and mitigate the detriment; characteristics of the target market and of the product distribution channels arrangements. The insurers risk assessment process Having access to detailed information regarding the analysis of their personal data and how this influences their risk score is relevant for a consumer to be able to understand what needs and demands the insurer has taken into consideration but also to challenge the decisions made by the insurer which may have a serious effect for consumers when they are for example refused insurance because of data they do not know and have no way of challenging whether the data and processes are lawful, accurate and fair. Relevant risks and circumstances which are related to the product and give rise to the risk of consumer detriment The process and outcome of the demands and needs tests For advice based insurance: as a minimum the analysis of the demands and needs of the consumer should be

decision they cannot change their behavior to reduce their risks for getting into an accident or challenge whether the outcome is based on algorithms that are biased. Detailed information explaining the risks and consequences of processing personal data and consequences when personal data is not or no longer provided; Example: for consumers to make an informed decision whether to buy insurance they must also know what the risks are. A good example is that some consumers protested their telematics insurance being cancelled as a result of them failing to maintain a good driving score. As a result they may no longer be able to obtain affordable insurance which given its serious impact is something consumers should be made aware of	made available for consumers to understand and challenge the appropriateness of the recommendations. In general (and proposed as a best practice) insurers should always make the demands and needs test based on which the insurer identified the products (negative) target markets available for consumers for them to challenge any decisions regarding the appropriateness of products. Information on possible conflict of interest/remuneration Consumers must be informed about any relationship between the insurer and distributor or *other circumstance* that could be an incentive not to be recommended those products which are not in their best interest.

APPENDIX C - GDPR RELEVANT KEY ELEMENTS

1 personal Data	**2 Processing purpose**	**3 Legitimate ground**
"Personal data" means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, (...) Special category including health, religion, sexuality and biometrics (voice) Criminal/offences	*"processing" means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, (...)* Insurance purposes include risk assessment/ premiums; policy/ claims management. Fraud detection; R&D; marketing	Consent Contract Legitimate interest Legal obligation Further processing Compatibility factors include Link with original purpose Context of collection Nature of the data Consequences Safeguards
4 Principles	**5 Data subject rights**	
Lawful, fair, transparent Purpose limitation Data minimisation Accuracy Storage limitation Integrity and confidentiality Accountability Privacy by design and default	Right to: transparency; information and access to personal data; rectification, erasure and right to data portability; right to object to processing and automated decision making.	