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Big Data and Competition Law

Diplomová práce

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Abstrakt

Technologický vývoj v oblasti digitálních trhů, který se vysvětluje mj. pojmem „Big Data“, transformuje současnou ekonomiku. Přináší s sebou řadu ekonomických výhod, ale také společenské, ekonomické, etické a právní problémy a výzvy. Tato práce se zabývá otázkou, zda je současný právní rámec unijního soutěžního práva vhodný k řešení výzev spojených s Big Data, identifikuje problematické body a nabízí možná řešení. Za tímto účelem staví mj. na analýze soudní a rozhodovací praxe a soustředí se na tři konkrétní oblasti: roli algoritmů při implementaci protisoutěžních dohod *largo sensu*; zneužívající (vylučovací) praktiky dominantních soutěžitelů směřující k zamezení přístupu konkurentů k datům; a roli osobních dat v oblasti kontroly spojování soutěžitelů.

Abstract

Technological progress in the area of digital markets, often explained amongst others by Big Data, plays a transformative role in the contemporary economy. It brings about promises, but also perils, as it raises societal, economic, ethical and legal concerns. This thesis answers the question of whether the current legal framework of EU competition law is appropriate to address challenges brought about by Big Data, identifies the residual problematic points and discusses solutions. To this end, it builds on the analysis of existing case law and decision-making practice and specifically focuses on three main areas, namely the role of algorithms in facilitating explicit collusion, abusive practices of dominant undertakings seeking to hinder data access for their rivals and the role of personal data in merger control.

Sworn statement

I hereby declare that I prepared the **Big Data and Competition Law** Master's thesis independently and that I have not utilized any other sources than those listed in the bibliography and identified as references in the footnotes.

Brno 30 June 2019

.....
Martin Vejtasa

Poděkování

Děkuji vedoucímu diplomové práce prof. JUDr. Josefovi Bejčkovi, Csc., za jeho přístup, trpělivost a cenné připomínky, které mi pomohly sepsat tuto práci a upravit ji do konečné podoby.

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List of Abbreviations

Autoritat	– <i>Autoritat Catalana de la Competència</i> (Catalan Competition Authority)
Autorité	– <i>Autorité de la Concurrence</i> (French competition authority)
BKA	– <i>Bundeskartellamt</i> (German competition authority)
BMA	– <i>Belgische Mededingingsautoriteit</i> (Belgian competition authority)
CMA	– <i>Competition and Markets Authority</i> (United Kingdom's competition authority)
CJEC	– Court of Justice of European Communities
CJEU	– Court of Justice of the European Union
Conseil	– <i>Conseil de la concurrence</i> (Luxembourg competition Authority)
EC	– European Commission
ECJ	– European Court of Justice
ECMR	– European Community Merger Regulation
EU	– European Union
GDPR	– General Data Protection Regulation
Messenger	– Facebook Messenger (texting app)
OECD	– Organization for Economic Co-operation and Development
SIEC	– Significant impediment to effective competition
TFEU	– Treaty on the Functioning of the EU
UK	– United Kingdom
ÚOHS	– <i>Úřad pro ochranu hospodářské soutěže</i> (Czech competition authority)

1 Introduction

In 2016, two seminal papers spurred the debate on competition policy in the rapidly developing digital economy. One of these painted a grim picture of underenforcement where Big Data and personal data intersect in merger control,¹ while the other illustrated how the deployment of algorithms, driven by Big Data, may change the understanding of collusion.²

Around the same time, several national competition authorities acknowledged these concerns and issued papers addressing them,³ followed by an abundance of professional conferences on the issue.⁴ Accordingly, Big Data presents one of the most debated topics in competition law nowadays. Several additional arguments can be made to bolster that assertion:

- most recently, in February 2019, a study on digital markets was published under the auspices of the European Commission (“EC”). The role of data was among the debated issues as one of the three identified key characteristics of the digital economy;⁵

¹ STUCKE, M. E. *Big data and competition policy*. 1 ed. New York: Oxford University Press, 2016.

² EZRACHI, A.; STUCKE, M. E. *Virtual competition: the promise and perils of the algorithm-driven economy*. Cambridge, Massachusetts: Harvard University Press, 2016.

³ BKA; Autorité. *Competition Law and Data* [online]. 2016 [accessed 18. 2. 2019]; VAN TIL, H.; VAN GORP N.; PRICE, K. *Big data and competition* [online]. Rotterdam: ECORYS, 2017, s. 23 [accessed 18. 2. 2019]. Autoritat. *The Data-Driven Economy. Challenges for Competition* [online]. 2016 [accessed 29. 5. 2019].

⁴ C.f. What’s on? Agenda of the Big Data and Competition Law conference. *KNect365* [online]. 15 October 2019 [accessed 21. 6. 2019] and Data a ochrana hospodářské soutěže. *Unie podnikových právníků ČR a Česká Compliance Asociace* [online]. 14 June 2018 [accessed 21. 6. 2019].

⁵ Cf. CRÉMER, J.; MONTJOYE, Y. A.; SCHWEITZER, H. *Competition policy for the digital era* [online]. Luxembourg: Publications Office of the EU, 2019, s. 2 [accessed 21. 6. 2019].

- there has been recent enforcement activity regarding “digital giants”, such as Google⁶ or Facebook,⁷ within the European Union (“EU”), with Big Data at the heart of the rendered decisions.
- Some member states of the EU (Germany, Austria)⁸ have established new transaction value thresholds, allowing, amongst others, to scrutinize business models based upon the collection and use of Big Data.⁹ Most recently, Commissionaire Vestager announced the EU is considering those as well.¹⁰

As formulated by Commissionaire Vestager, “*we don't need a whole new competition rulebook for the big data world. Just as we didn't need one for a world of fax machines, or credit cards, or personal computers.*”¹¹ In a similar vein, the papers and studies mentioned above centre roughly around the same lines: there is no need for a revolution, but it is expedient to adapt current competition law instruments to address the challenges arising of Big Data.

In line with this statement, the aim of this thesis is to analyse whether the current framework of EU competition law is appropriate to deal with theories of harm related to Big Data, identify residual problematic points, and discuss possible solutions. As these issues are vast and limitation in space strict, three specific problems were selected (for the reasons specified below) to narrow down the scope, holding onto the differentiation between the three pillars of competition law, i.e. collusion, abuse of dominant position and merger control.

⁶ Decision of the EC of 27. 6. 2017 *Google Search (Shopping)*, Ref. No. AT.39740; Decision of the EC of 18. 7. 2018 *Google Android*, Ref. No. case AT.40099 (not published at the time of writing).

⁷ Decision of the BKA of 6. 2. 2019 *Facebook*, Ref. No. B6-22/16.

⁸ Germany/Austria: Merger notification rules updated for digital economy transactions. *Competition Policy International* [online]. 2018 [accessed 25. 6. 2019].

⁹ Cf. CRÈMER; DE MONTJOYE; SCHWEITZER, op. cit., s. 110-116.

¹⁰ CONNOR, CH. Vestager: EU is considering value-based thresholds. *GCR.com* [online]. Law Business Research, issued 19. 6. 2019 [accessed 26. 6. 2019].

¹¹ VESTAGER, M. “Competition in a big data world”. *Ec.europa.eu* [online]. EC, issued 17. 1. 2016 [accessed 21. 6. 2019].

- How can algorithms be used to facilitate explicit collusion? Is the framework of art. 101 (1) Treaty on the Functioning of the EU (“TFEU”) particularly the rules on liability, appropriate to address these situations? If not, what changes should be made?
- What are the ways dominants may utilize to hinder data access for competitors? Is the framework of art. 102 TFEU prepared to address them? If not, what changes should be considered?
- Are the issues pertaining to personal data considered in merger control and how? Is the framework of Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (“ECMR”) sufficient to address all competitive issues pertaining to personal data? If not, what changes should be made?

These particular issues were selected as they were, to some extent, already scrutinized in decision-making practice, allowing for analysis to be made and general conclusions to be drawn. This requirement rendered some other related matters out of the scope of this thesis. This applies to the issue of algorithms and tacit collusion or the limits posed by art. 101 (1) TFEU to data pooling.¹²

Moreover, some abusive practices of “digital giants” unrelated to Big Data will not be addressed here.¹³ This applies to certain exclusivity arrangements hindering innovation (*Google AdSense* and *Google Android*),¹⁴ preferential treatment which reduces quality (*Google Shopping* decision),¹⁵ or most favored nation clauses, which may raise barriers to entry and impede competition¹⁶ (*Amazon e-books*¹⁷).

¹² LUNDQVIST, B. Competition and Data Pools. *Journal of European Consumer and Market Law* [online]. 2018, vol. 7, iss. 4, s. 146-154 [accessed 30. 4. 2019]. CRÈMER; DE MONTJOYE; SCHWEITZER, op. cit., s. 73-98.

¹³ On corresponding discussion, see OECD. *Rethinking Antitrust Tools for Multi-Sided Platforms* [online]. 2018, s. 101-148 [accessed 1. 6. 2019].

¹⁴ *Google Search (Shopping)* and *Google Android*, respectively.

¹⁵ *Google Search (Shopping)*.

¹⁶ For a description of how MFN clauses lead to anti-competitive effects, see EZRACHI; STUCKE, op. cit., s. 139-143.

Moreover, given the lack of decision-making practice, the issue of Big Data driven behavioral discrimination (as a form of an exploitative abuse)¹⁸ will also not be addressed in this thesis.

Finally, in merger control, Big Data has been long recognized as a source of market power and scrutinized as such.¹⁹ However, as a recent study found, the EC has analyzed these issues in depth in previous cases using sound theories of harm.²⁰ In contrast, the treatment of the narrower category of personal data has been met with criticism, particularly as competition authorities tended to discharge these issues by surrendering them to data protection law.²¹ For this reason, this thesis exclusively focuses on the role of personal data in merger control.

The three research questions above presuppose the understanding of the concept of Big Data and its competitive significance, i.e. how it drives market power. For this reason, the thesis is structured into five parts. First, the concept of Big Data is explained. Second, elements of Big Data driving market power are identified. These two chapters will serve as a part of the analytical framework for the subsequent chapters. Third, the question of explicit collusion and algorithms within the framework of art. 101 (1) TFEU is dealt with. Fourth, the thesis focuses on the practices of dominants hindering data access. Fifth, the role of personal data in merger control is elaborated on.

The thesis is based on research and analysis of the relevant academic bibliographies and studies of international organizations, competition authorities, and governmental bodies. It uses deductive

¹⁷ See JONES, A.; SUFRIN, B. *EU Competition Law*. 6 ed. New York: Oxford University Press, 2016, s. 779-780; cf. Decision of the EC of 4. 5. 2017 e-books, Ref. No. AT.40153.

¹⁸ On this issue, see BOTTA, M. WIEDEMANN, K. *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* [online]. 2018, s. 48-58 [accessed 21. 6. 209].

¹⁹ Decision of the EC of 11. 3. 2008 *Google/DoubleClick*, Ref. No. COMP/M.4731, para 269; Decision of the EC of 9. 1. 2014 *Publicis/Omnicom*, Ref. No. COMP/M.7023, para 628 and Decision of the EC of 18. 2. 2010 *Microsoft/Yahoo!*, Ref. No. COMP/M.5727, para 192.

²⁰ CRÈMER; DE MONTJOYE; SCHWEITZER, op. cit., s. 110.

²¹ E.g. STUCKE; GRUNES, op. cit., s. 81 *et seq.*

and descriptive methods to form the theoretical background of the thesis. Furthermore, it utilizes analytical, comparative and inductive methods in respect of case law and decision-making practice, in order to identify problematic parts and deductive methods to draw general conclusions.

2 Understanding Big Data

There is no universally accepted definition of “Big Data”.²² Nevertheless, for competition law analysis, it is irrelevant whether an individual case concerns “big” data or „regular“ data.²³ The former is used as a buzzword describing the recent developments in digital technologies and markets.²⁴

Big Data explains why and how have data become crucial in the contemporary economy (often described as data-driven) and fosters an understanding of such developments, i.e. of data-driven innovation and new business models,²⁵ where data confers (major) competitive advantages.²⁶ Big Data is relevant for numerous economic sectors, such as advertisement, health care, logistics,²⁷ telecommunications or insurance.²⁸ Accordingly, understanding of the concept is crucial for a discussion on related challenges for competition policy.

²² Cf. EZRACHI; STUCKE, op. cit., s. 15; GRUNES; STUCKE, op. cit., s. 15.

²³ VAN TIL; VAN GORP; PRICE, op. cit., s. 23.

²⁴ BKA; Autorité, op. cit., s. 4-5.

²⁵ For elaboration, see OECD. Exploring data-driven innovation as a new source of growth: Mapping the policy issues raised by “big data”. *OECD Digital Economy Papers* [online]. Paris: OECD Publishing, 2013, no. 222, s. 3-4 and 12-19 [accessed 18. 2. 2019].

²⁶ For elaboration, see KUPČÍK, J; MIKEŠ, S. Discussion on big data, online advertising and competition policy. *European Competition Law Review*. 2018, vol. 39, iss. 9, s. 394-395.

²⁷ OECD, 2013, op. cit., s. 4.

²⁸ BKA; Autorité, op. cit., s. 3.

2.1 Volume, Velocity, Variety, and Value

The concept of „data“ can be plainly defined as „*information collected for use*“.²⁹ Some authors emphasize in that respect that data only becomes useful when it is structured, processed and interpreted.³⁰

Big Data can be understood as „*large amounts of different types of data, produced high-speed from multiple sources, whose handling and analysis require new and more powerful processors and algorithms*“.³¹ The key aspects of the concept are thus volume, velocity, and variety.³² Importantly, „*what is behind variety and velocity is primarily data analytics; that is the capacity to process and analyze unstructured diverse data in (close to) real-time*“.³³ Thus, the concept is not about data only, it is inextricably intertwined with data analytics.

Frequently, an element of “value” is added to the definition. Unlike volume, variety, and velocity referring to the technical properties and processing technologies,³⁴ value emphasizes the socioeconomic dimension of Big Data. It is the value to be extracted that ultimately motivates the accumulation, processing, and use of data.³⁵ In turn, the larger the volumes of diverse data and the better the capability to process and analyze it, the higher the value (Fig. 1).³⁶ These elements are frequently referred to together as the 4 V's of Big Data.³⁷

²⁹ Data. In: *Cambridge Academic Content Dictionary*. 1 ed. New York: Cambridge University Press, 2019.

³⁰ VAN TIL; VAN GORP; PRICE, op. cit., s. 19.

³¹ BKA; Autorité, op. cit., s. 4.

³² EZRACHI; STUCKE, op. cit., s. 15.

³³ OECD. Data-driven Innovation: Big Data for Growth and Well-being. *OECD-iLibrary* [online]. Paris: OECD Publishing, 2015, s. 449 [accessed 18. 2. 2019].

³⁴ OECD, 2013, op. cit., s. 12.

³⁵ *Ibid.*, s. 12.

³⁶ For this „mutually reinforcing“ relationship, see GRUNES; STUCKE, op. cit., s. 22-24.

³⁷ *Ibid.*, s. 19 et seq.

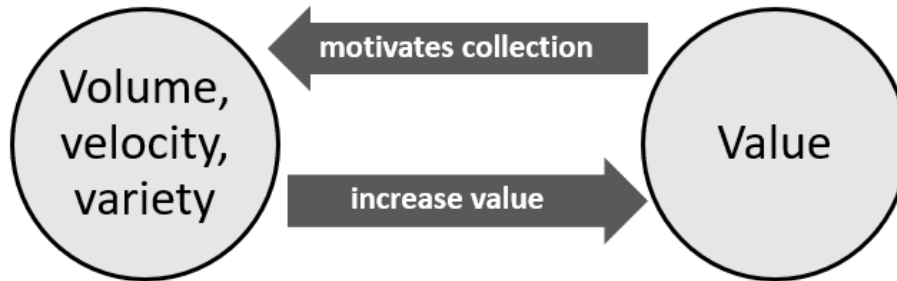


Fig. 1 Mutually reinforcing relationship inherent to Big Data³⁸

2.2 Typology of (Big) Data

Based on the underlying information, it can be differentiated between data related to individuals (shopping preferences), economic entities (production costs of a certain good) or objects (current position and speed of a car).

Based on data's capability to provide value, a differentiation between structured data (e.g. customer's data broken down to names, addresses, age, etc.) and unstructured data can be made.³⁹

Data can also be differentiated based on the way it is gathered on volunteered, inferred and observed. Volunteered data refers to data provided voluntarily and intentionally, e. g. when signing up for a newsletter. It tends to be persistent (an e-mail, a document posted online). Observed data refers to data provided by users unintentionally. It is acquired by tracking their activity and tends to be "dynamic", such as "likes" on social media platforms or a search query. Finally, inferred data encompasses data obtained by analyzing the observed data (consumer preferences).⁴⁰

³⁸ Author.

³⁹ BKA; Autorité., op. cit., s. 5-7.

⁴⁰ SIVINSKI, G.; OKULIAR, A.; KJOLBYE, L. Is big data a big deal? A competition law approach to big data. *European Competition Journal* [online]. 2017, vol. 13, issue 2-3, s. 200 [accessed 19. 2. 2019].

2.3 Economic Characteristics of (Big) Data

Data is non-rivalrous,⁴¹ meaning one dataset can be used by multiple undertakings concurrently.⁴² Data can also be made exclusive,⁴³ despite initial doubts in the literature.⁴⁴ This means that although some data is ubiquitous, low cost, and widely available,⁴⁵ this is not always the case. Excludability of data may be facilitated by several factors, e.g. the costs pertaining to Big Data collection,⁴⁶ practices of undertakings hindering data access (chap. 5),⁴⁷ legal regulation (data protection law),⁴⁸ contractual restrictions⁴⁹ or presence of data brokers.⁵⁰ Moreover, as shown in chap. 2.2, data is heterogeneous. As a result, some data, such as simple volunteered data, will likely not be excludable (names, addresses). In contrast, some other rare data (health data) or inferred data (navigation data) will be likely exclusive.

Finally, even where alternative data sources exist, the question of the substitutability arises, especially where the use of a dataset for a certain business model depends upon its richness and variety.⁵¹ Data's value may also diminish over time. Depending on the data'

⁴¹ On non-rivalry, see HUBBARD, R.; O'BRIEN, P. *Economics*. 5 ed. Boston: Pearson, 2015. s. 154.

⁴² VAN TIL; VAN GORP; PRICE, op. cit., s. 20-21.

⁴³ On non-excludability, see HUBBARD; O'BRIEN, op. cit., s. 154.

⁴⁴ Cf. TUCKER, D.; WELLFORD, H. Big Mistakes Regarding Big Data. *Antitrust Source*. American Bar Association [online]. 2014, vol. 14, no. 2, s. 3 [accessed 18. 3. 2019] or SOKOL, D.; COMERFORD, R. Does Antitrust Have a Role to Play in Regulating Big Data? *The Cambridge Handbook of Antitrust, Intellectual Property, and High Tech* [online]. Cambridge University Press, 2017, vol. 1, s. 297-300 [accessed 18. 3. 2019].

⁴⁵ Cf. TUCKER; WELLFORD, op. cit., s. 7.

⁴⁶ BKA; Autorité., op. cit., s. 38 *et seq.* and GRUNES; STUCKE, op. cit., s. 47.

⁴⁷ VAN TIL; VAN GORP; PRICE, op. cit., s. 27.

⁴⁸ CERVANOVÁ, A. Data jako zdroj tržní síly? Jak ovládání dat ovlivňuje postavení soutěžitelů na trhu a nakolik je relevantní pro soutěžní právo – část I. *PravniProstor.cz* [online]. 2018, s. 5 [ac-cessed 21. 6. 2019].

⁴⁹ *Google/DoubleClick*, para 183 and 257.

⁵⁰ VAN TIL; VAN GORP; PRICE, op. cit., s. 26.

⁵¹ Decision of the EC of 14. 5. 2008 *TomTom/Tele Atlas*, Ref. No. COMP/M.4854, para 22. See also BKA; Autorité, op. cit., s. 44-47 and GRUNES; STUCKE, op. cit., s. 134-137.

nature and intended use, some datasets may depreciate rapidly (e.g. data in the context of nowcasting),⁵² while others have a more permanent value (e.g. consumer's names or job positions).⁵³ For certain business purposes, it is instant access to data that makes the dataset exclusive.⁵⁴

2.4 Final Remarks and Summary

Big Data is a point of reference for recent technological developments in digital markets and is commonly defined by the 4 V's, i.e. volume, velocity, variety, and value. It is heterogeneous and can be differentiated based on several factors. Finally, it is a non-rival good that is ubiquitous, low cost and widely available, and its value may depreciate over time. However, it can be made exclusive (by virtue of numerous reasons). These characteristics will be utilized for analysis of decision-making practice in chap. 4 and 5.

⁵² VAN TIL; VAN GORP; PRICE, op. cit., s. 22.

⁵³ BKA; Autorité, op. cit., s. 50.

⁵⁴ VAN TIL; VAN GORP; PRICE, op. cit., s. 27. See also the story of Twitter Firehose in STUCKE; GRUNES, op. cit., s. 47-49.

3 Big Data and Market Power

Big Data brings an abundance of economic benefits (e.g. for machine learning, AI, tailored products, efficiency),⁵⁵ but also raises competition concerns.⁵⁶ The underlying presumption is that Big Data facilitates long-term market power.⁵⁷ This chapter discusses, first, factors related to Big Data which may increase market power. Secondly, it describes factors that can counter such effects.

3.1 Network Effects and Big Data

The digital economy is characterized by multi-sided markets (“platforms”) and (one-sided) networks.⁵⁸ These produce network effects, which drive market power,⁵⁹ increase switching costs,⁶⁰ raise barriers to entry⁶¹ and may cause a monopolization process, or else a “tipping” of a market to one undertaking.⁶²

⁵⁵ Cf. OECD, *Big Data: Bringing Competition Policy to the Digital Era* [online]. 2016, s. 7-9 [accessed 21. 6. 2019].

⁵⁶ cf. BKA, Autorité, op. cit., s. 3; Autoritat. *The data-driven economy. Challenges for competition* [online]. 2016 [accessed 19. 2. 2019]; VAN TIL; VAN GORP; PRICE, op. cit., s. 19.

⁵⁷ On “market power”, see Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03), para 8. For elaboration of its relevance for EU competition law, see BLANCO, O. L. *Market Power in EU Antitrust Law*. Oxford: Hart Publishing, 2012.

⁵⁸ Some business models combine both elements. On definitions, see BKA. *The Market Power of Platforms and Networks: Executive Summary* [online]. 2016, s. 1-2 [accessed 21. 6. 2019].

⁵⁹ On the concept of multi-sided platforms, see OECD, *Multi-Sided Platforms*, op. cit., s. 9- 2 and 29-99.

⁶⁰ BKA, op. cit., s. 13.

⁶¹ JONES; SUFRIN, op. cit., s. 343-344.

⁶² BEJČEK, J. „Digitalizace Antitrustu“ – móda, nebo revoluce? *Antitrust*. 2018, roč. 2018, č. 3, s. IV.

Direct network effects arise when demand for a product increases as others use the product (a texting app).⁶³ Indirect network effects mean value of a product increases the more complementary products there are (DVD players and a variety of DVDs). In the context of platforms, the value of a product for one group of users increases its value for another group of users and vice versa (users of Facebook.com and advertisers).⁶⁴

These „traditional“ network effects can be amplified by scope and scale network effects facilitated by Big Data. Network effects from the scale of data centre around positive feedback loops, i.e. the more users use a product (search engine), the more data its provider obtains. In turn, data is used to improve the quality of the product (more relevant search results),⁶⁵ which subsequently attracts new users (Fig. 2),⁶⁶ which in turn attracts advertisers.

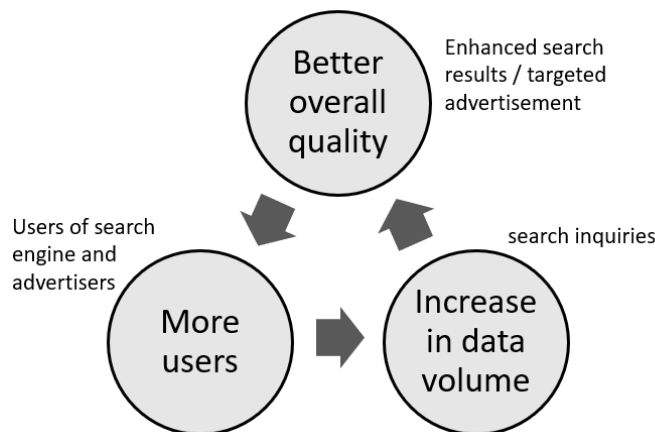


Fig. 2 Network effects from the scale of data (simplified)⁶⁷

These effects may entrench dominance by raising barriers to entry, as illustrated e.g. by the struggle of Yahoo! and Bing to compete

⁶³ Decision of the EC of 3. 10. 2014 *Facebook/WhatsApp*, Ref. No. COMP/M.7217, paras 127-130.

⁶⁴ These are bilateral indirect networks effects. However, they can also work one way only (unilateral network effects).

⁶⁵ STUCKE; GRUNES, op. cit., s. 172-181.

⁶⁶ Cf. OECD, 2015, op. cit., s. 184 and EZRACHI; STUCKE, op. cit., s. 133-134.

⁶⁷ Author.

with Google Search despite significant investments⁶⁸ or by the failure of Google+ to compete with Facebook.com.⁶⁹

Network effects from scale may further reinforce the network effects advantage. Quality of a product (Google Search) may be further improved using user data from other sources affiliated with its provider (Google Maps, Gmail, YouTube). This serves to build detailed profiles and offer personalized search results on the one hand (Fig. 3) and better-targeted advertisement on the other.⁷⁰

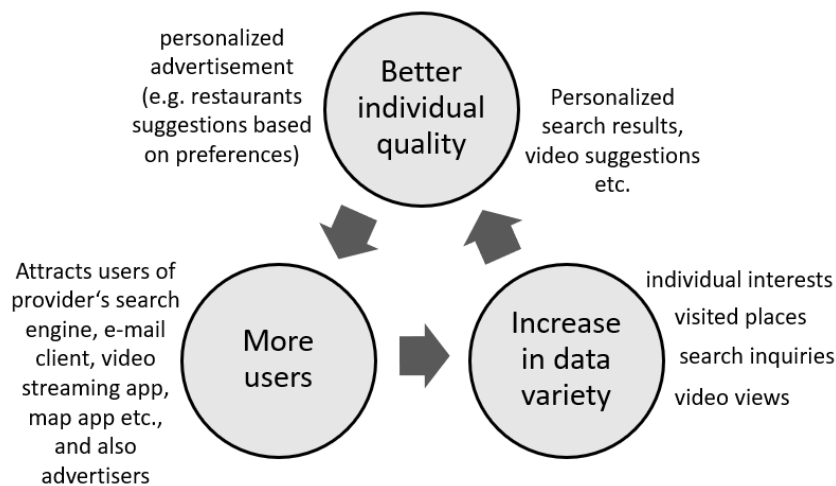


Fig. 3 Network effects from the scope of data (simplified)⁷¹

3.2 Economies of Scale and Scope, Feedback Loops

Setting up a platform or a network often entails high fixed, but low variable costs, giving rise to economies of scale. Furthermore, the complementary assets needed to collect, analyse and use Big Data (e.g. hardware, data analytics) are also subjected to economies of scale and scope.⁷² These effects may be further enhanced by positive

⁶⁸ BKA, Autorité, op. cit., s. 172-182 *et seq.*

⁶⁹ WELCH, CH. Google begins shutting down its failed Google+ social network. *TheVerge.com* [online]. Vox Media, issued 2. 4. 2019 [accessed 25. 5. 2019].

⁷⁰ STUCKE; GRUNES, op. cit., s. 186-189.

⁷¹ Author.

⁷² OECD, 2016, op. cit., s. 11.

feedback loops facilitated by Big Data, which are not (yet) exploited by new market entrants. More specifically, users of a product generate user data, which are in turn used to improve the quality of the service⁷³ (especially, but not exclusively, where platforms are involved; see above).

3.3 Single-Homing, Exclusive Data Access

Whether users tend to use one product only (single-homing) or two or more (multi-homing) impacts the possibility to benefit from positive feedback loops. Single-homing increases switching costs and barriers to entry and makes a market prone to tipping.⁷⁴

Where Big Data serves as an input or a component of a product, exclusive control over data access may give rise to barriers to entry. Such control cannot be seen as an indication of market power *per se*; a case-by-case assessment is expedient. An appraisal should determine which data is being collected, what is its competitive significance, how quickly it depreciates in time, whether it is possible to replicate the data or collect it from other sources and to what extent is such data substitutable.⁷⁵ A number of factors may affect such an appraisal (cf. chap. 2.3).

3.4 Countervailing Factors

There are factors that may counteract the impact of data-driven market power. For instance, the BKA acknowledges it may be countered by the tendency of consumers to multi-home (where switching costs are low)⁷⁶ and market dynamics, i.e. the possibility of new business models that could disrupt established market power.⁷⁷ This should

⁷³ VAN TIL; VAN GORP; PRICE, op. cit., s. 28-29.

⁷⁴ BKA, op. cit., s. 14.

⁷⁵ *Ibid.*, s. 17.

⁷⁶ *Ibid.*, s. 15-16.

⁷⁷ Cf. BKA; Autorité, op. cit., s. 29 and VAN TIL; VAN GORP; PRICE, op. cit., s. 31.

however not be taken for granted in digital markets and appraised on a case-by-case basis.⁷⁸

3.5 Final Remarks and Summary

Big Data, as a potentially excludable good (chap. 2.3), may facilitate market power by virtue of several factors. These rarely exist separately, but rather co-exist and mutually reinforce each other. Often, they relate to platforms and networks. As a certain degree of market power (or its increase) is a precondition for competition law to interfere with business operations of undertakings, the concepts and mechanisms described above will be utilized for analysis of decision-making practice in chap. 5 and 6, where appropriate. For the sake of simplicity, the findings of this chapter are summarized in Tab. 1 below.

Factors influencing market power related to Big Data	Effect on market power
Network Effects (in platforms or networks)	+
Economies of scale and scope, learning effects	+
Exclusivity of data access	+
Single-homing	+
Multi-homing	-
Market dynamics	-

Tab. 1 Factors related to Big Data impacting market power analysis

⁷⁸ BKA, op. cit., s. 17-19.

4 Big Data, Algorithms and Art. 101 TFEU

Big Data brings about challenges regarding inter alia enforcement of art. 101 (1) TFEU and most of the expressed concerns center around algorithms.⁷⁹ An algorithm is any set of rules that turns digital input into digital output, i.e. a decision-making software. Its quality depends on both the algorithm itself and the data it is fed.⁸⁰ Deployment of algorithms has become widespread especially in e-commerce.⁸¹

4.1 Regulatory Background

In EU competition law, each undertaking must determine independently its business strategies.⁸² Accordingly, Art. 101 (1) TFEU prohibits collusion (concertation) between undertakings⁸³ in the form of agreements, concerted practices and decisions by associations of undertakings.⁸⁴ Prohibited is concertation that has an appreciable restriction of competition as its object or effect and which affects appreciably the trade between member states⁸⁵ unless it is exempted by virtue of art. 101 (3) TFEU.⁸⁶

⁷⁹ See e.g. Autoritat, op. cit., s. 28-29; VAN TIL; VAN GORP; PRICE, op. cit., s. 38-41; Monopolkommission. *Algorithms and Collusion* [online]. 2018 [accessed 1. 5. 2019]; OECD. *Algorithms and Collusion: Competition Policy in the Digital Age*. [online]. 2017 [accessed 1. 5. 2019].

⁸⁰ OECD. *Algorithms and Collusion – Note from the European Union* [online]. 2017, Ref. No. DAF/COMP/WD(2017)12, s. 2 [accessed 21. 6. 2019].

⁸¹ Report from the Commission to the Council and the European Parliament: Final report on the E-commerce Sector Inquiry (COM(2017) 229). *Ec.europa.eu* [online]. EC, 2017, para 13 [accessed 21. 6. 2019].

⁸² Judgment of the CJEC of 16. 12. 1975 *Suiker Unie*, Ref. No. 40-48, 50, 54-56, 111, 1132 114/73, para 173.

⁸³ On definition, see JONES; SUFRIN, op. cit., s. 116-140.

⁸⁴ For the latter, see *ibid.*, s. 138-140.

⁸⁵ For the „by object“ and „by effect“ categories, see JONES; SUFRIN, op. cit., s. 192-239. For details on the other conditions, see *ibid.*, s. 170-177.

⁸⁶ For elaboration, see JONES; SUFRIN, op. cit., s. 239-256.

4.1.1 Agreements and Concerted Practices

The finding of an agreement requires evidence of concurrence of wills in any form.⁸⁷ The concept of concerted practices demands evidence of some reciprocal “collusive” contact,⁸⁸ which knowingly substitutes practical cooperation for the risks of competition⁸⁹ (e.g. information exchange).⁹⁰

Where collusive contact is found, a presumption is triggered that undertakings take exchanged information into account to determine their market behavior.⁹¹ In contrast, where undertakings engage in parallel conduct, there is no presumption such conduct stems from concertation unless there is no other explanation.⁹² This is based on the differentiation between explicit and tacit collusion (also tacit coordination, parallel conduct or conscious parallelism).⁹³

Tacit collusion refers to oligopolistic markets, where given specific market conditions (such as high market transparency),⁹⁴ undertakings may realize their interdependence and align their conduct⁹⁵ even without prohibited mutual contact or meeting of minds.⁹⁶ Nevertheless, this does not mean tacit collusion is desirable, as it leads

⁸⁷ Judgment of the General Court of 26. 10. 2000 *Bayer*, Ref. No. T-41/96, paras 67-72.

⁸⁸ Judgment of CJEC of 8. 7. 1999 *Hüls*, Ref. No. C-199/92 P, para 162; *Suiker Unie*, para 174.

⁸⁹ Judgement of the CJEC of 14. 7. 1972 *Imperial Chemical Industries*, Ref. No. 48-69, paras 64-65.

⁹⁰ Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (2011/C 11/01), paras 60-63.

⁹¹ *Hüls*, para, 162.

⁹² Judgment of the CJEC of 27. 9. 1998 *Wood Pulp*, Ref. No. C-89/85, C-104/85, C-114/85, C-116/85, C-117/85 and C-125-129/85, para 71.

⁹³ In this thesis, these terms are used interchangeably.

⁹⁴ On characteristics of market prone to collusion, see JONES; SUFRIN, op. cit., s. 650-661; cf. Horizontal Agreements Guidelines, paras 77-85.

⁹⁵ Cf. Horizontal Merger Guidelines, para 41.

⁹⁶ JONES; SUFRIN, op. cit., s. 650-651.

to the same results as concertation, e.g. higher prices or restriction of output.⁹⁷ This thesis focuses exclusively on explicit collusion.⁹⁸

4.1.2 Collusive Scenarios Related to Algorithms

Big data can be utilized to develop, perfect and utilize (pricing) algorithms. These may significantly benefit market participants and enhance competition,⁹⁹ as they bring efficiencies both on the supply and demand side. For instance, algorithms may reduce the costs of production, improve quality, lead to innovations and support consumer decisions.¹⁰⁰

However, algorithms can also be deployed to implement explicit collusion in a purely horizontal or vertical situation (chap. 4.2) and in a combined hub-and-spoke constellation (chap. 4.3). Furthermore, there are concerns algorithms may be designed to influence market conditions to facilitate tacit collusion (cf. chap. 4.1.1) or alternatively, they may do so on their own “will”, thereby blurring the line between the illegal and the lawful.¹⁰¹ These issues are however not addressed in this thesis.¹⁰²

4.2 Algorithms as Instruments of Collusion

An algorithm may serve to implement concertation, as it allows constant mutual monitoring, dynamic alignment of prices or swift identification and punishment of deviations. Concertation becomes

⁹⁷ *Ibid.*, s. 650.

⁹⁸ Terms „collusion“, „explicit collusion“ and „concertation“ are used interchangeably in this thesis, referring jointly to anticompetitive agreements, concerted practices and decision of associations.

⁹⁹ Monopolkommission, op. cit., s. 4.

¹⁰⁰ OECD, 2017, op. cit., s. 14-18.

¹⁰¹ Cf. BEJČEK, op. cit., s. V.

¹⁰² On this issue, see EZRACHI; STUCKE, 2016, op. cit., s. 56-81 and ŠMEJKAL, V. Cartels by Robots – Current Antitrust Law in Search of an Answer. *InterEuLawEast* [online]. 2017, vol. IV, iss. 2 [accessed 21. 6. 2019].

easier and cheating less profitable, as retaliation occurs instantly.¹⁰³ As such, algorithms may increase the efficiency and stability of collusion.¹⁰⁴ Nevertheless, as pronounced by Commissionaire Vestager, “companies can’t escape responsibility for collusion by hiding behind a computer program.”¹⁰⁵ This statement will be put to test in this chapter.

4.2.1 Algorithms in Horizontal Context

In a horizontal context, algorithms may implement a price-fixing agreement (Fig. 4).

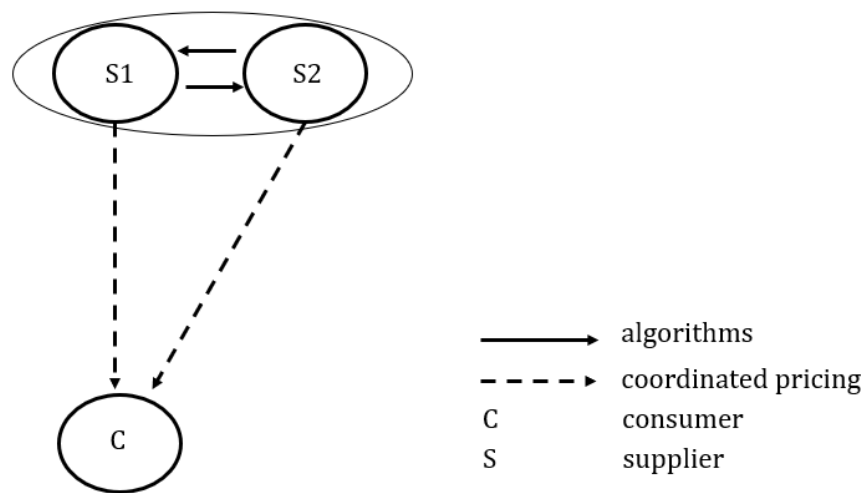


Fig. 4 Algorithms in a horizontal context¹⁰⁶

For instance, in 2016, vendors of posters and frames sold through Amazon Marketplace used an algorithm to implement their agreement not to undercut each other’s prices, as manual coordination proved too cumbersome.¹⁰⁷ Attribution of liability was a simple issue for the United Kingdom’s (“UK”) Competition and Market Authority (“CMA”)

¹⁰³ Cf. JONES; SUFRIN, op. cit., s. 654.

¹⁰⁴ EZRACHI; STUCKE, 2016, op. cit., s. 39-55.

¹⁰⁵ VESTAGER, M. Algorithms and Competition. *Ec.europa.eu* [online]. 2017 [accessed 26. 6. 2019].

¹⁰⁶ Author.

¹⁰⁷ Decision of the CMA of 12. 6. 2016 *Online sales of posters and frames*, Ref. No. 50223, para 3.62.

in this case, as it could rely on vast evidence of collusive contact.¹⁰⁸ Undertakings in question did not even attempt to “hide behind the computer program”. Interestingly, the operation of “algorithmic” collusion was not free of problems which necessitated extensive contact between employees of the undertakings in question, providing compelling evidence.¹⁰⁹

Algorithms may also be deployed for concerted practices, such as information exchange.¹¹⁰ As these practices are illegal “offline”, they arguably remain illegal also in an online environment,¹¹¹ although such a case has, to my knowledge, not yet appeared in practice. Moreover, if future algorithms could concert on their own “will”, without express instructions to do so, their users would arguably remain liable.¹¹² This would seem in line with the “compliance by design” policy proclaimed by Commissioner Vestager (chap. 4.3.5).

In my view, this would nevertheless be covered by the already anchored strict liability of undertakings for the acts of their employees,¹¹³ even where they act contrary to the instructions of employers.¹¹⁴ After all, it would be an act of an employee to develop a collusive algorithm. Nevertheless, to my knowledge, there has yet not been a case in practice which would put such a claim to the test.

4.2.2 Algorithms in Vertical Context

In vertical relations, algorithms could be used to monitor compliance of retailers with a fixed or minimum resale price. This would raise the efficiency and stability of resale price maintenance (“RPM”), which is a restriction by object (Fig. 5).¹¹⁵ Further, it could be used to monitor

¹⁰⁸ *Ibid.*, paras 3.94-3.102 and 5.18.

¹⁰⁹ *Ibid.*, paras 3.94-3.102.

¹¹⁰ OECD, 2017, op. cit., s. 27-31.

¹¹¹ OECD, *Note from the European Union*, op. cit., s. 7.

¹¹² *Ibid.*, s. 6.

¹¹³ Judgment of ECJ of 21. 7. 2016 *VM Remonts*, Ref. No. C-542/14, paras 22-24.

¹¹⁴ THOMAS, CH.; DE STEFANO, G.; JUBRAIL, D. Liability for anti-competitive behaviour by your employees and outside contractors. *Kluwer Competition Law Blog* [online]. 2016 [accessed 27. 6. 2019].

¹¹⁵ Guidelines on Vertical Restraints (2010/C 130/01), para 48.

compliance and punish deviations from price recommendations, thereby limiting incentives of retailers to deviate in the first place, which could turn an essentially allowed practice into a prohibited one.¹¹⁶

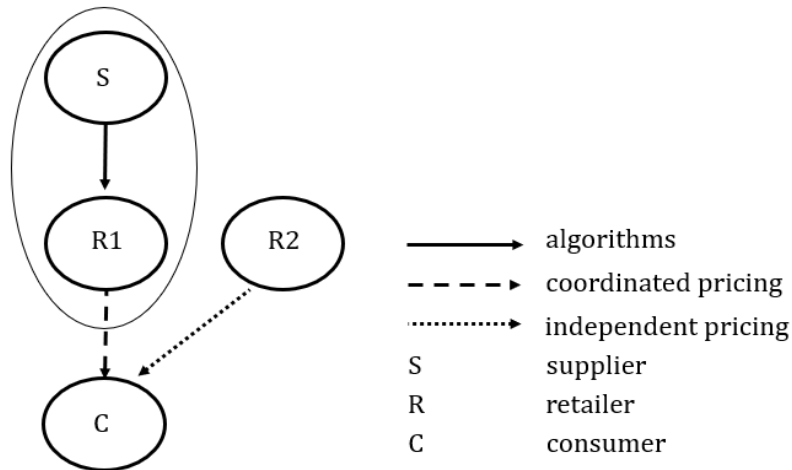


Fig. 5 Algorithms in the context of RPM¹¹⁷

Finally, where a retailer adheres to a fixed or minimum resale price and other retailers use algorithms to match his prices (use him as a focal point), the RPM may spread further (Fig. 6).¹¹⁸

¹¹⁶ Commission Staff Working Document accompanying the document: Report from the Commission to the Council and the European Parliament Final Report on the E-commerce Sector Inquiry (SWD(2017) 154). *Ec.europa.eu* [online]. EC, 2017, para 607 [accessed 21. 6. 2019].

¹¹⁷ Author.

¹¹⁸ Guidelines on Vertical Restraints, paras 227-228; cf. EC. Press release: Antitrust: Commission opens three investigations into suspected anticompetitive practices in e-commerce. *Europa.eu* [online]. EU, issued 2 February 2017, Ref. No. IP/17/201 [accessed 21. 6. 2019].

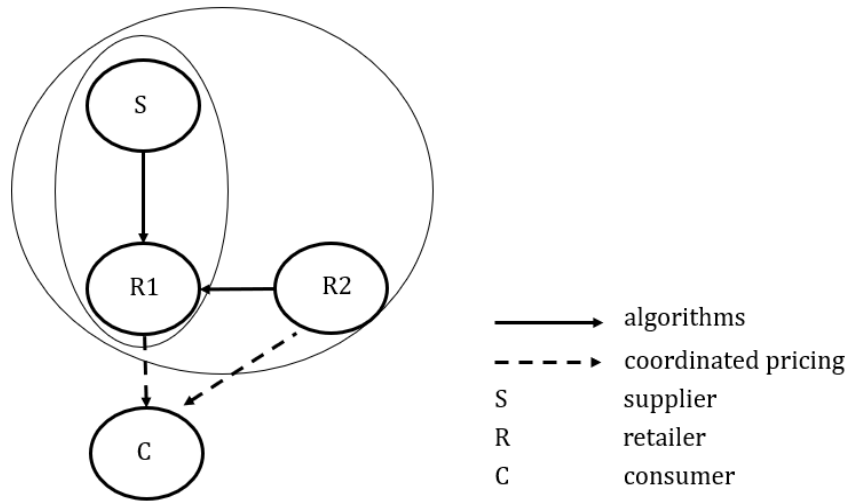


Fig. 6 Effects of RPM expanded by algorithms¹¹⁹

4.2.3 Webtaxi

An example of horizontal algorithmic collusion in the context of platforms occurred in June 2018. The Luxembourg *Conseil de la concurrence* (“*Conseil*”) issued a decision on a booking app Webtaxi, a platform connecting taxi companies with customers. The app calculates the fare, which is non-negotiable, based on e.g. current state of demand and supply, distance of a taxi from the customer and estimated travel time. The *Conseil* deemed Webtaxi a horizontal price-fixing agreement in a single paragraph, relying on contracts¹²⁰ between the undertakings in question (Fig. 7).¹²¹ Accordingly, again, there was no “hiding behind the algorithm” and the *Conseil* did not have to ponder upon the question of liability of undertakings for the “acts” of their algorithms.

¹¹⁹ Author.

¹²⁰ Cf. Guidelines on Vertical Restraints, paras 33-35.

¹²¹ Decision of Conseil of 7. 6. 2018 *Webtaxi*, Ref. No. 2018-FO-01, paras 77.

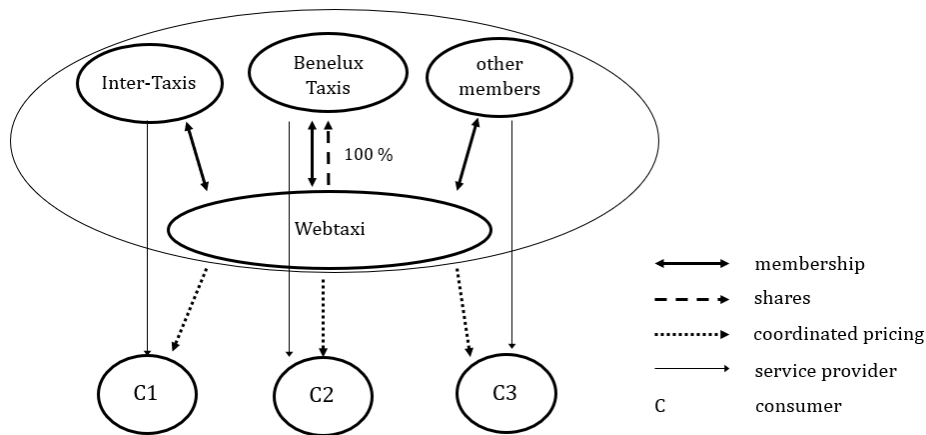


Fig. 7 The functioning of Webtaxi¹²²

By virtue of Luxembourg variation of art. 101 (3) TFEU, the *Conseil* nevertheless exempted Webtaxi from the prohibition. It found Webtaxi produces efficiencies, inclusive of cutting of pollution.¹²³ As a result, consumers benefit from lower prices, reduced waiting times and a better environment. Moreover, if individual price negotiations were allowed, the chosen taxi would not necessarily correspond to the nearest one. Finally, there was residual competition, as Webtaxi only covered 26 % of the market.¹²⁴

Normally, it is unlikely that restrictions of competition by object, such as fixing of prices, could satisfy the criteria of art. 101 (3) TFEU.¹²⁵ Nevertheless, Webtaxi illustrates that pricing algorithms may lead to such a result. In my opinion, this could inform the debates on compliance of similar platforms with competition law,

¹²² Author.

¹²³ Interestingly, at odds with the EC's focus on economic efficiencies, environmental gains can be considered within art. 101 (3) TFEU; cf. Communication from the Commission — Notice — Guidelines on the application of Article 81(3) of the Treaty (2004/C 101/08), para 48 *et seq.* and Decision of the EC of 24. 1. 1999 *CECED*, Ref. No. IV.F.1/36.718, 47-51.

¹²⁴ *Webtaxi*, paras 79-95.

¹²⁵ Guidelines on art. 81 (3) TFEU, para 46.

such as Uber,¹²⁶ which is facing a price-fixing class action in the US (compelled to arbitration).¹²⁷ Indeed, the efficiencies generated by Webtaxi are reminiscent of those brought about by Uber.¹²⁸

I would emphasize that Webtaxi differs, however, as it was from its very outset based upon contracts. In contrast, Uber connects individual drivers who separately and gradually join the platform. Some see it as a hub-and-spoke form of collusion (chap. 4.3).¹²⁹ Others argue that Uber is rather a price-fixing cartel *sui generis*, as it does not fit within any of the categories identified by case law so far.¹³⁰ Interestingly, the Czech *Úřad pro ochranu hospodářské soutěže* (“ÚOHS”) did not initiate proceedings with Uber as it considered it a single economic entity.¹³¹ In that respect, the members of Webtaxi also asserted they form a single economic unit.¹³² Unfortunately, the *Conseil* did not respond to this point and Webtaxi decision is thus of little use in the course of these debates.

4.3 Algorithmic Hub-and-Spoke

Hub-and-spoke is a form of collusion whereby competing undertakings (“spokes”) coordinate their conduct by exchanging sensitive information through a facilitator (a “hub”) operating either upstream or

¹²⁶ Cf. NOWAG, J. The UBER-Cartel? UBER between Labour and Competition Law. *Lund Student EU Law Review* [online]. 2016, vol. 3, p. 94-103.

¹²⁷ Decision of the US Court of Appeals (2nd circuit) of 17. 8. 2017 *Meyer v. Kalanick*, Ref. No. 16-2750-cv, 16-2752-cv.

¹²⁸ EZRACHI; STUCKE, op. cit., s. 50.

¹²⁹ NOWAG, op. cit., s. 98.

¹³⁰ Inter alia is it neither a facilitator nor a „hub“. Cf. KUPČÍK, J. Aplikace Uber z pohledu (nejen) soutěžního práva. *Právní rozhledy*. 2016, č. 13-14, s. 496-501.

¹³¹ Notice of ÚOHS to the complainant (Asociace koncesionářů v dopravě), Ref. No. ÚOHS-P0092/2017/KD-18554/2017/852/LDu. *Akt-cr.cz* [online]. ÚOHS, issued 11 July 2017 [accessed 21. 6. 2019].

¹³² Webtaxi, paras 66, 70-71. On “single economic unit”, see JONES; SUFRIN, op. cit., s. 125-137.

downstream (Fig. 8).¹³³ An algorithm provided by a third party (a platform or an independent developer) could be used to facilitate a hub-and-spoke (serve as the “hub”). According to the EC, the use of the same pricing algorithm could be caught by art. 101 (1) TFEU¹³⁴ in analogy to when competitors agree on the same pricing formula¹³⁵ or outsource their pricing to a common agent.¹³⁶

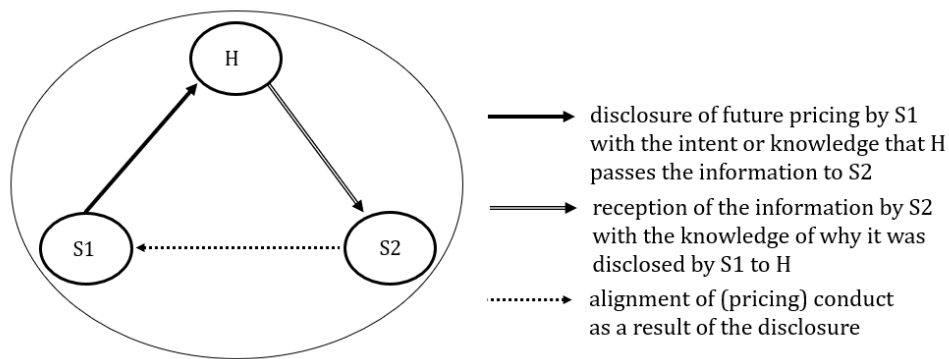


Fig. 8 Hub-and-spoke (one-way)¹³⁷

4.3.1 Hub-and-Spoke and Facilitator’s Liability

Where a third-party undertaking serves as a facilitator of concertation, it is liable for the infringement provided it is at least aware of the anticompetitive efforts of the members to the cartel. It is irrelevant that it operates on a different market¹³⁸ or that it only played a minor or passive role.¹³⁹ Liability of a hub for a hub-and-spoke

¹³³ United Kingdom’s case law suggests there is a need for two phases to be discernible for a hub-and-spoke to be established. Cf. Judgment of the Competition Appeal Tribunal of 20. 12. 2012 *Tesco*, Ref. No. 1188/1/1/11, paras 57-86.

¹³⁴ OECD, *Note from the European Union*, op. cit., s. 7.

¹³⁵ Judgment of the General Court of 8. 7. 2004 *Corus*, Ref. No. T-48/00, para 67.

¹³⁶ Decision of the EC of 11. 5. 1973 *Kali und Salz*, Ref. No. IV/791, art. 3.

¹³⁷ Author.

¹³⁸ Judgment of the ECJ of 22. 10. 2015 *AC-Treuhand II*, Ref. No. C-194/14 P, paras 35-9.

¹³⁹ Judgment of the General Court of 8. 7. 2008 *AC-Treuhand I*, Ref. No. T-99/04, paras 132-133.

arrangement can be arguably established in a similar vein.¹⁴⁰ The “spokes” (A and C) can escape liability by a public distance or a report to the authorities.¹⁴¹

The sole ECJ’s hub-and-spoke case of *Eturas* elaborates on liability principles in the context of platforms. It concerned an online travel booking system bringing together independent travel agents and customers. At some point, it dispatched a message to the agents explaining a 3 % cap on discounts offered to customers was introduced by the system, in order to “*normalize the conditions of competition*” (sic!).¹⁴² The ECJ was called upon to rule on whether the mere dispatch of such a message was enough to establish liability of its addressees. It answered in the negative, as some level of awareness of the content was needed.¹⁴³ The ECJ also introduced a new manner of avoiding liability of the spokes, namely by “*evidence of the systematic application of a discount exceeding the cap in question.*”¹⁴⁴

4.3.2 Partneo

The French case of Partneo illustrates how an algorithmic hub-and-spoke could be established. Between 2008 and 2013, five carmakers increased their revenues from sales of car parts by raising their prices by 15 % on average. This was enabled by Partneo, a pricing algorithm supposedly designed to identify and charge the highest price a customer is willing to pay. The producers licensed the algorithm from the same developer, Accenture (Fig. 9). The case is pending at the time of writing and publicly available information is scarce. However, Accenture allegedly persuaded the producers to use Partneo by showing them a price and revenue increases of their competitors

¹⁴⁰ There is no hub-and-spoke EU case law to this end. However, in *Eturas* (a hub-and-spoke), the ECJ did not strictly confine the liability conclusions of *AC-Treuhand* to facilitator scenarios. Cf. Judgment of the ECJ of 21. 1. 2016 *Eturas*, Ref. No. C-74/14, para 28.

¹⁴¹ *Eturas*, paras 41-50.

¹⁴² Cf. Guidelines on art. 81 (3) TFEU, para 47.

¹⁴³ *Eturas*, para 39-40.

¹⁴⁴ *Ibid.*, para 51.

achieved using the algorithm and even helped to coordinate prices among some of them.¹⁴⁵

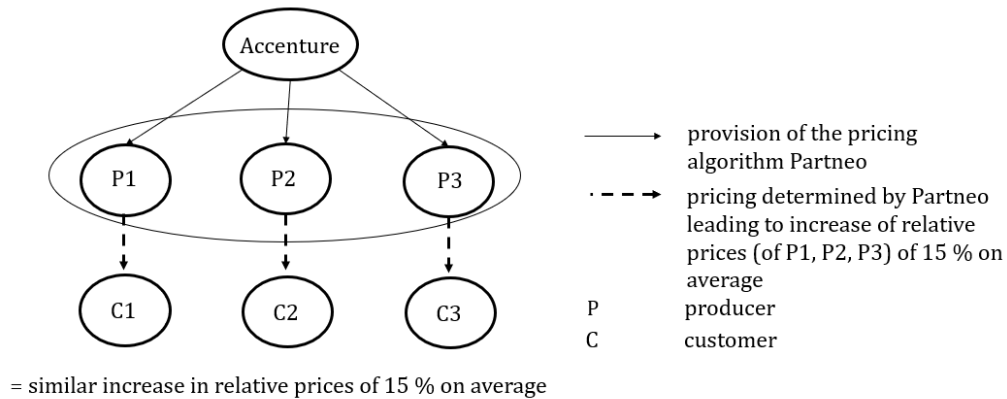


Fig. 9 The functioning of Partneo¹⁴⁶

If information exchange is evidenced, a hub-and-spoke (or facilitation of concertation) may be established. Accordingly, both the carmakers (spokes) and Accenture (hub) would be held liable. This is nothing new. Nevertheless, in this thesis, the case is used to illustrate one of the liability caveats of competition law when applied in the context of pricing algorithms, i.e. the “regulatory gap” situation.

4.3.3 Regulatory Gap

Suppose no collusive contact will be shown. Parallel conduct can only serve as proof of concertation where it cannot be explained otherwise (chap. 4.1.1). Here, however, the (independent) use of an identical algorithm explains parallel price increases. Thus, the presumption of concertation would not apply. This is correct, as mere conscious parallelism (use of a pricing algorithm) is not prohibited by law.¹⁴⁷

However, what if it would be proved by competition authority that the algorithm was in fact designed so that each user’s version of

¹⁴⁵ MANDRESCU, D. When Algorithmic Pricing meets Concerted Practices - the case of Partneo. *CoRe Blog* [online]. 2018 [accessed 5. 5. 2019].

¹⁴⁶ Author.

¹⁴⁷ To that end, cf. BEJČEK, op. cit., s. VI.

Partneo would communicate with those of others and collude?¹⁴⁸ Could the carmakers escape liability by alleging they did not know Partneo could do that, as Accenture concealed this from them?¹⁴⁹ In my view, the mere usage of an algorithm could be equated with a mere dispatch of a message as in *Eturas* and thus no concertation would be found. Similarly, the German *Monopolkommission* seems to consider such a situation a regulatory gap (Fig. 10). It even called for new rules on liability that would exclusively hinge on the acts of third-party developers.¹⁵⁰

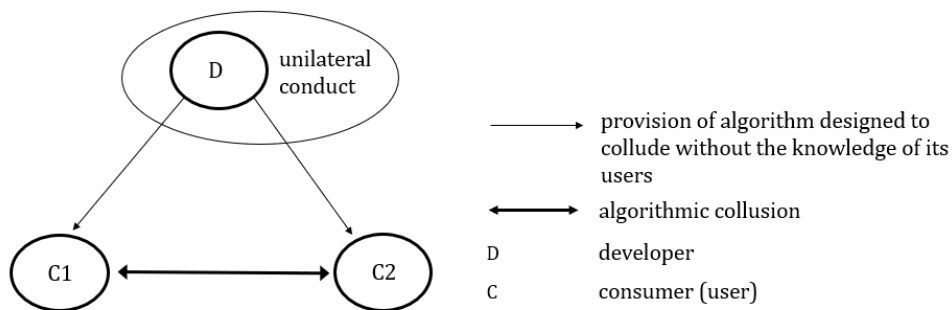


Fig. 10 Regulatory gap¹⁵¹

In my opinion however, liability for these situations could be established based on existing case law and “compliance by design” rule, if the interplay between the two is reconciled, as I attempt to do below.

4.3.4 Liability for Third-Party Service Providers

The rules on liability of third-party service providers were set up in *VM Remonts*.

The ECJ distinguished three scenarios in which liability may arise. The first concerns “false” self-employed persons and thus not an actual third party.¹⁵² The second scenario is relevant, as it concerns genuinely

¹⁴⁸ Cf. OECD, *Note from the European Union*, op. cit., s. 7.

¹⁴⁹ On the incentives of third-party developers to do so, see *Monopolkommission*, op. cit., s. 23.

¹⁵⁰ Cf. *Monopolkommission*, op. cit., s. 24-25.

¹⁵¹ Author.

¹⁵² *VM Remonts*, paras 22-27.

independent third-party providers. If the undertaking in question is aware that anti-competitive concertation is taking place and is willing to contribute to it, it will be liable for the acts of its contractors.¹⁵³ In my view, this may be the case where an undertaking acquires an algorithm knowing it facilitates concertation with its competitors and uses the third-party developer to disguise the concertation. This however still does not address the regulatory gap.

The third option goes further. Liability can arise where an undertaking “*could reasonably have foreseen the anti-competitive acts [...] and was prepared to accept the risk which they entailed.*”¹⁵⁴ It is uncertain what exactly the “reasonable foreseeability” entails, but some authors argue it seems to rely on the concept of a prudent trader¹⁵⁵ used by the ECJ.¹⁵⁶ Accordingly, it would require some active conduct on the part of undertakings to ensure their contractors act in compliance with competition law. This brings us to “compliance by design”.

4.3.5 Compliance by Design

In 2017, Commissioner Vestager delivered a speech on the imperative of compliance by design: “*pricing algorithms need to be built in a way that doesn't allow them to collude.*”¹⁵⁷ Moreover, “*businesses also need to know that when they decide to use an automated system, they will be held responsible for what it does. So they had better know how that system works.*”¹⁵⁸ I am of the view that this fits in well with the liability of undertakings for acts of their employees, who developed a collusive algorithm and deployed it in purely horizontal or vertical relations (chap. 4.2.1), even if they did not deliberately instruct it to collude.¹⁵⁹

¹⁵³ *Ibid.*, para 33.

¹⁵⁴ *Ibid.*, para 33.

¹⁵⁵ VEENBRINK, M. Liability in competition law: as incredible as a children's story – a commentary on Case C-542/14 VM Remonts. *Radboud Economic Law Conference & Blog* [online]. 2016 [accessed 15. 5. 2019].

¹⁵⁶ Judgment of the ECJ of 18. 7. 2013 *Schindler*, Ref. No. C-501/11 P, para 58.

¹⁵⁷ VESTAGER, M., 2017, op. cit.

¹⁵⁸ *Ibid.*

¹⁵⁹ OECD, *Note from the European Union*, op. cit., s. 7.

To my mind, the “you should had known your algorithm” rule would also seal off the hub-and-spoke regulatory gap situation described above. It would not matter the algorithm in question was designed by Accenture, as the producers would simply be responsible for “what it does” notwithstanding they were not aware of how it functions.

However, I am of the view this would go too far and contradict the case law regarding involvement of a third-party service provider. Indeed, if the mere usage of an algorithm was equated with a mere dispatch of a message as in *Eturas*, it could not establish liability on itself. Similarly, if the “reasonable foreseeability” rule formulated in *VM Remonts* was adhered to, the mere usage of a problematic algorithm could not automatically establish liability.

It is my reckoning the “reasonable foreseeability” in *VM Remonts* should be read to demand some positive action. Accordingly, there should always be a possibility to avoid liability by evidencing some positive steps (equated with the concept of a prudent trader) had been taken. For instance, if an undertaking had demanded from the developer and assured itself that the algorithm had embedded functions designed to prevent collusion (RPM, price-fixing),¹⁶⁰ it should not be held liable for “what the algorithm does”.

4.3.6 Regulatory Suggestions

The hub-and-spoke scenario reveals a regulatory gap where competition authority (first) proves an algorithm provided by a third-party developer (or a hub) is used to facilitate explicit collusion. The Commissionaire Vestager’s proposals seal off the gap. However, I am of the view that to reconcile them with relevant case law (*Eturas* and *VM Remonts*), a presumption on the liability of undertakings for anti-competitive acts of its service providers should be established. Interestingly, AG Wathelet in his opinion in *VM Remonts* suggested such a presumption.¹⁶¹ The widespread use of pricing algorithms,

¹⁶⁰ Cf. GARDNER, J.; ANTHONY, M. H. Online algorithms: a new feat for the antitrust offender. *Competition Law Blog* [online]. 2018 [accessed 2. 6. 2019].

¹⁶¹ Opinion of AG Wathelet of 3. 12. 2015 *VM Remonts*, paras 63-65.

particularly in the e-commerce sector,¹⁶² would in my view seem an appropriate opportunity to reconsider this suggestion.

As I see it, there should be a presumption that where an undertaking uses a collusive algorithm acquired from a genuinely independent contractor, it had been aware of its functioning. Consequently, the mere usage of such an algorithm would trigger liability, unless the presumption would be rebutted by the undertaking. This would be possible by showing conduct worthy of a prudent trader, i.e. that some positive steps were taken to ensure the adopted algorithm was not problematic from the standpoint of competition law.

It is my reckoning rebuttal should be successful e.g. where an undertaking had demanded from the developer and assured itself that the algorithm had embedded functions designed to prevent collusion (RPM, price-fixing). To my view, the presumption would further reinforce the imperative of “compliance by design”, as third-party algorithm developers would be closely scrutinized by their clients acting as prudent traders. As a result, the rules would deter developers from collusive designs in the first place.

4.4 Partial Conclusion

Algorithms may facilitate concertation both in horizontal relations (price-fixing) and vertical relations (RPM). A platform may serve to that end. Furthermore, algorithms can be deployed in a hub-and-spoke setting and act as facilitators of collusion.

In most of these situations, collusive contact or an agreement will be found to establish liability, which makes it a “no-brainer” from an enforcement perspective.¹⁶³ Accordingly, the legal framework of 101 (1) TFEU is sufficient, as the challenge remains the same, i.e. evidencing collusive contact or agreement.

However, if provided by a third-party (a hub or a developer), a “collusive” algorithm could escape scrutiny, where the “collusive design” is concealed from its users. In that regard, I am of the view

¹⁶² Report from the Commission to the Council and the European Parliament: Final report on the E-commerce Sector Inquiry (COM(2017) 229), para 13.

¹⁶³ Cf. EZRACHI; STUCKE, *op. cit.*, s. 5.

the current legal framework is not appropriate to address such a situation (a regulatory gap). Accordingly, a rebuttable presumption on liability for collusive algorithms provided by a third-party should be introduced. Elaboration of this conclusion and additional comments are provided for below in chap. 7.1.

5 Hindering (Big) Data Access and Art. 102 TFEU

In digital markets, there are fears that dominant undertakings could use their market power to limit (chap. 5.2) or block (chap. 5.3) data access for competitors and thereby cement their dominance and impede competition (cf. chap. 3.3). These concerns have materialized in decisions directed at digital super-platforms, such as Google or Facebook. This chapter analyses the conduct they used to hinder data access.

5.1 Regulatory Background

Art. 102 TFEU prohibits any abuse¹⁶⁴ by one or more undertakings of a dominant position held within at least a substantial part of the internal market¹⁶⁵ if it appreciably affects trade between member states.

Dominance refers to economic strength enabling undertaking to behave to an appreciable extent independently of its competitors, customers, and consumers and thus to prevent effective competition.¹⁶⁶ It is commonly equated with significant market power (chap. 3.1)¹⁶⁷ and may be held both individually and collectively.¹⁶⁸

Dominant undertakings have a special responsibility not to impair genuine undistorted competition.¹⁶⁹ Some of their practices

¹⁶⁴ JONES; SUFRIN, op. cit., s. 290.

¹⁶⁵ In that regard, see Commission Notice — Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty (2004/C 101/07).

¹⁶⁶ Judgment of the CJEC of 14. 2. 1979 *United Brands*, Ref. No. 27/76, para 65; cf.. *Hoffmann La Roche*, para 38.

¹⁶⁷ 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/C 45/02), para 10.

¹⁶⁸ Judgment of the General Court of 10. 3. 1992 *Flat Glass*, Ref No. T-68/89, T-77/89 and T-78/89, paras 357-358.

¹⁶⁹ Judgment of the CJEC of 9. 11. 1983 *Michelin I*, Ref. No. 322/81, para 57.

are subjected to a rebuttable presumption that they have this effect (“by object” or *prima facie* practices), such as exclusive dealing or loyalty rebates.¹⁷⁰ Nevertheless, all unilateral conduct can be objectively justified.¹⁷¹ Normally, it is distinguished between exclusionary and exploitative abuses, sometimes also discriminatory abuses.¹⁷²

5.2 Limitation of Data Access for Competitors

Exclusionary abuses are based on a principle that art. 102 TFEU does not protect less efficient competitors.¹⁷³ However, it precludes a dominant from further weakening the structure of a market by competing else than on the merits¹⁷⁴ with the effect of hindering the existing level of competition or its growth.¹⁷⁵ Hindering data access by a dominant qualifies as an exclusionary abuse, as illustrated by the cases below.

5.2.1 Google Android

In 2018, Google was fined by the EC for three practices aimed at maintaining the dominance of Google Search, two of which hindered data access for its competitors.¹⁷⁶

First, Google was paying large mobile device manufacturers and mobile network operators if they had exclusively pre-installed

¹⁷⁰ Judgment of the ECJ of 6. 9. 2017 *Intel*, Red. No. C-416/14 P, para 138 *et seq.*; Cf. COLOMO, P. I. The Future of Article 102 TFEU after *Intel*. *SSRN Papers* [online]. 2018, s. 10 [accessed 15. 5. 2019].

¹⁷¹ Guidance Paper, para 29.

¹⁷² Judgment of the CJEC *Continental Can*, Ref. No. 6-72, paras 20-27.

¹⁷³ Judgment of the ECJ *Post Danmark I*, Ref. No. C-209/10, para 21 and *Intel*, para 133.

¹⁷⁴ The standard of “competition on the merits” depends on the specific abuse under scrutiny. Cf. JONES; SUFRIN, op. cit., s. 363-364.

¹⁷⁵ *Hoffmann La Roche*, para 91; *Michelin I*, para 70; *Post Danmark I*, para 25.

¹⁷⁶ Google Android (decision not published at the time of writing). See EC. Press release: Antitrust: Commission fines Google €4.34 billion. *Europa.eu* [online]. EU, issued 18 July 2018, Ref No. IP/18/4581 [accessed 21. 6. 2019]

Google Search on their entire portfolio of Android devices. These payments did not qualify as competing on the merits as they could not have been matched by competing search engines.¹⁷⁷ Therefore, the theory of harm was of a fidelity rebate,¹⁷⁸ which is a *prima facie* abuse under art. 102 TFEU,¹⁷⁹ as recently confirmed in *Intel*.¹⁸⁰

Another issued was tying.¹⁸¹ The EC found Google only allowed mobile device manufacturers to pre-install Google Play on their devices on the condition they would also pre-install Google Search app and Google Chrome browser. Manufacturers complied as Google Play was considered a “must-have”.¹⁸² The practice was illegal, as it led to foreclosure stemming from the so-called “status quo bias”, i.e. because users generally tend to stick with the pre-installed choice.¹⁸³

Both the tying and the rebate served Google to, amongst others, prevent rival search engines from “collecting more data from smart mobile devices, including search and mobile location data, which helped Google to cement its dominance as a search engine.”¹⁸⁴ In my view, this shows the theory of harm was related to scale and scope network effects (chap. 3.2). In short, the more data Google has, the better its search engine and its position in advertising. Concurrently, as rivals of Google were prevented from data inflow, they could not benefit from such effects, improve their products and thus compete with Google on equal footing.

In my view, the decision shows that in hindering data access for rivals, dominants may be eager to exploit consumer biases. Thus, as the EC did in Google Android, competition authorities shall make use of behavioral economics¹⁸⁵ in appraisals of anti-competitive practices and be especially cautious where the status quo bias is at stake.

¹⁷⁷ *Ibid.*

¹⁷⁸ On rebates, see JONES; SUFRIN, op. cit., s. 434-473.

¹⁷⁹ *Hoffmann La Roche*, para 89; cf. JONES; SUFRIN, op. cit., s. 438-443.

¹⁸⁰ *Intel*, para 137.

¹⁸¹ Cf. JONES; SUFRIN, op. cit., s. 473.

¹⁸² Cf. Guidance Paper, para 36.

¹⁸³ On “status quo bias”, see ZAMIR, E., TEICHMAN, D. *Behavioural Law and Economics*. New York: Oxford University Press, 2018, s. 48-50.

¹⁸⁴ EC. Press release: Antitrust: Commission fines Google €4.34 billion, op. cit.

¹⁸⁵ ZAMIR; TEICHMAN, op. cit., s. 380-389.

Notice this is not an entirely new issue, as the status quo bias was also an element of the *Microsoft (Tying)* commitment decision.¹⁸⁶ In my opinion, Google Android shows another possible dimension in this historical case. By tying Microsoft with Internet Explorer, Microsoft leveraged its market power into the market for web browsers. However, it could have also secured for itself an inflow of user data via Internet Explorer, which could have had Microsoft's search engine as a default option. This would allow it to benefit from scale network effects (chap. 3.2) and thus better compete with rivals, including Google Search.

Thus, in my view, where data is involved, competition authorities should be ready to look beyond the tied product market, as there may be additional long-term competitive harm connected to data and scale network effects.

5.2.2 Google AdWords

The more time consuming and costly it is to switch to another product or service, the harder is it for an undertaking to attract users.¹⁸⁷ One of the concerns expressed in 2012 by the EC towards Google centered around its AdWords platform (now Google Ads). The platform inter alia allows advertisers to pay for their ads to be displayed in Google search results and to manage their marketing campaigns.

The concern was that Google engaged in abusive exclusive arrangements¹⁸⁸ with software developers. Google obliged them not to develop and market tools that would allow the transfer of search advertising campaigns to other platforms for search advertising.¹⁸⁹ Some advertisers would then stick with AdWords only because they would find it too cumbersome to reinsert manually their campaigns

¹⁸⁶ Cf. Decision of the EC of 16. 12. 2009 *Microsoft (tying)*, Ref. No. COMP/C-3/39.530, paras 99-107.

¹⁸⁷ STUCKE; GRUNES, op. cit., s. 291-292.

¹⁸⁸ JONES; SUFRIN, op. cit., s. 430. See also BKA; Autorité, op. cit., s. 19.

¹⁸⁹ ALMUNIA, J. Statement of VP Almunia on the Google Antitrust Investigation (speech). *Europa.eu* [online]. Brussels: Press Room, issued 21 May 2012.

to competing platforms.¹⁹⁰ In other words, by exclusivity, Google hindered data portability and artificially increased switching costs for its users. Subsequently, Google offered commitments to cease to impose such restriction.¹⁹¹

In my view, this shows that Google made use of omission bias pertaining to customers.¹⁹² Moreover, by exploiting the bias, Google not only directly impeded competition by hindering data portability, but also prevented rivals to benefit from user data to improve their services and thus entrenched its market power.

5.2.3 Facebook

In February 2019, German *Bundeskartellamt* (“BKA”) found that Facebook abused its dominant position by extensively collecting personal data (whenever its users went online)¹⁹³ in breach of General Data Protection Regulation¹⁹⁴ (“GDPR”).¹⁹⁵ These were not only being obtained via the Facebook.com platform but also from other sources, such as third-party websites with embedded “Like” and “Share” buttons.

The case was grounded in exploitative business terms abuse¹⁹⁶ and built exclusively upon German law.¹⁹⁷ The terms were abusive

¹⁹⁰ GRAEF, I. *Data as Essential Facility: Competition and Innovation on Online Platforms*. Leuven, 2016. Dissertation. KU Leuven, Faculty of Law, p. 51-52.

¹⁹¹ EC. Press release: Antitrust: Commission seeks feedback on commitments offered by Google to address competition concerns. *Europa.eu* [online]. EU, issued 25 April 2013, Ref. No. IP/13/371 [accessed 21. 6. 2019].

¹⁹² Cf. ZAMIR; TEICHMAN, op. cit., s. 48-50.

¹⁹³ See *Facebook*, para 963.

¹⁹⁴ 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).

¹⁹⁵ Cf. Art. 3 (3) of Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty

¹⁹⁶ Cf. Art. 102 (a) TFEU and JONES; SUFRIN, op. cit., s. 572-573.

¹⁹⁷ The BKA argued there is yet no comparable EU case law. Cf. *Facebook*, para 914.

as they both infringed upon GDPR and presented a manifestation of Facebook's market power. The case was criticized for incorporating data protection into competition law,¹⁹⁸ although abuse by means of exploitative business terms is not a novel facet in EU competition law.¹⁹⁹

I am of the view the criticism overlooks a point, namely that the case had also an exclusionary level. The BKA noted the illegal data collection gave Facebook a competitive edge over its rivals, increased barriers to entry and Facebook's market power.²⁰⁰ In my opinion, these effects could arguably qualify the practice as an exclusionary abuse, as they were achieved by infringing upon GDPR, which hardly qualifies as competing on the merits.²⁰¹ This illustrates that GDPR may serve a benchmark of competition on the merits where its breach leads to exclusionary effects.²⁰² Accordingly, competition authorities should be aware that personal data collection may cause foreclosure and should not rely on data protection law to solve it (cf. chap. 6.1.2).

Moreover, it is my reckoning the *ne bis in idem* principle would not preclude such a conclusion. GDPR would merely serve to gauge what data collection policies are abusive. Prosecuting exclusionary effects arising thereof goes beyond enforcement of data protection law. It follows the legal interests protected are different²⁰³ and therefore, the *ne bis in idem* principle would not prevent concurrent liability under GDPR and art. 102 TFEU.²⁰⁴

¹⁹⁸ Cf. LAMADRID, A. The Bundeskartellamt's Facebook Decision - What's not to like? Well... *Chillin'Competition* [online]. 2019 [accessed 25. 5. 2019].

¹⁹⁹ O'DONOGHUE, R; PADILLA, J. *The Law and Economics of Article 102 TFEU*. 2 ed. Oxford: Hart Publishing, 2013, s. 646-657.

²⁰⁰ Cf. *Facebook*, paras 885-888.

²⁰¹ Cf. *Hoffmann La Roche*, para 91.

²⁰² To this effect, see also NAZZINI, R. Privacy and Antitrust: Searching for the (Hopefully Not Yet Lost) Soul of Competition Law in the EU after the German Facebook Decision. *Competition Policy International* [online]. 2019 [accessed 22. 5. 2019]

²⁰³ Cf. Judgment of the CJEC of 7. 1. 2004 *Aalborg Portland*, Ref. No. C-204/00 P, para 338 and Judgment of the ECJ of 14. 2. 2012 *Toshiba*, Ref. No. C-17/10, para 97.

²⁰⁴ Cf. VOLMAR M. N.; HELMDACH, K. O. Protecting consumers and their data through competition law? Rethinking abuse of dominance in light of the Federal Cartel Office's

5.3 Refusal to Supply

All undertakings have the right to choose their trading partners and to dispose freely with their property.²⁰⁵ Where exceptional circumstances arise however, a dominant must supply a product or a service or grant access to its facility, or else it will abuse its position.²⁰⁶ These exceptional circumstances were translated into a legal test²⁰⁷ (essential facility doctrine),²⁰⁸ which balances undertaking's incentives to innovate with impending harm to competition.²⁰⁹ There are however also refusals to supply outside essential facility doctrine.²¹⁰

A dominant may commit abuse by refusing data access, as evidenced by three national cases, namely *CHAPS* (decision not published),²¹¹ *GDF Suez*²¹² and *Cegedim*.²¹³

5.3.1 GDF Suez

Since 2007, French consumers could have decided between regulatory tariffs offered as a matter of law exclusively by GDF Suez ("GDF")

Facebook investigation. *European Competition Journal*. 2018, vol. 14, iss. 2-3, s. 210-213.

²⁰⁵ Guidance Paper, para 75.

²⁰⁶ Access can be mandated as a behavioural remedy; cf. art. 7 of Regulation 1/2003.

²⁰⁷ Conditions of this test were relaxed in Judgment of the General Court Microsoft, Ref. No. T-201/04. See EZRACHI, A. *EU Competition Law: An Analytical Guide to the Leading Cases*. 6 ed. Oxford: Hart Publishing, 2018, s. 283-286.

²⁰⁸ The ECJ never expressly referred to „essential facility doctrine“, as it originated in the US and underwent different developments. See JONES; SUFRIN, op. cit., s. 500.

²⁰⁹ See Opinion of AG Jacobs of 28. 5. 1998 *Bronner*, Ref. No. C-7/97, para 57 and O'DONOGHUE; PADILLA, op. cit., s. 515-516.

²¹⁰ Guidance Paper, para 77.

²¹¹ Decision of ÚOHS of 22. 12. 2015 *CHAPS*, Ref. No. S669/2013 (not published). See ÚOHS. Press release: Společnost CHAPS zneužila dominantního postavení, pokuta činí 2 199 000 Kč. *UOHS.cz* [online]. ÚOHS, issued 7 January 2016, Ref. No. 16/001/HS001 – S669/2013 [accessed 26. 6. 2019].

²¹² Decision of the Autorité of 9. 9. 2014 *GDF Suez*, Ref. No. 14-MC-02, para 147.

²¹³ Decision of the Autorité of 8. 7. 2014 *Cegedim* Ref. No. 14-D-06, para 191.

and unregulated market offers from GDF or other suppliers. There were claims that GDF uses its comprehensive²¹⁴ consumer database from the regulated market (consumer files, website, consumer platform, etc.) to provide tailored market offers, which gives it an incomparable advantage and entrenches its dominance.²¹⁵

The French *Autorité de la concurrence* (“*Autorité*”) considered the database irreplaceable on reasonable financial terms and within acceptable time frame.²¹⁶ It also considered it a legacy of GDF’s former status as a regulatory monopoly and thus not a result of a particular innovation.²¹⁷ Accordingly, the use of the database was not considered competition on the merits.²¹⁸ As it was causing foreclosure,²¹⁹ the *Autorité* ordered GDF to provide consumer contacts and consumption data to competitors. Personal data were to be shared on an opt-out basis to comply with data protection law.

The decision illustrates a dominant cannot justify its refusal to grant access to personal data by claiming impending breach of data protection law. In my view, an analogy to such reasoning may be drawn from *Deutsche Telekom*. Here, the dominant attempted to justify margin squeeze by explaining its prices were subject to price regulation. The ECJ was not persuaded, as the undertaking nevertheless still had scope to adjust its prices.²²⁰ By analogy, where a dominant is able to grant access to data in a fashion compliant with GDPR, data protection rules cannot serve as objective justification.²²¹

In *GDF Suez*, the solution was an opt-out system. In my view, this would not be permissible today under GDPR, which defines consent as a clear affirmative action,²²² meaning an opt-in system would

²¹⁴ *GDF Suez*, para 137.

²¹⁵ *Autorité*. Press release: The *Autorité de la concurrence* orders GDF Suez to grant its competitors access to some of the data in its historic file. *Autoritedelaconcurrence.fr* [online]. *Autorité*, issued 9 September 2014 [accessed 21. 6. 2019].

²¹⁶ *GDF Suez*, para 153.

²¹⁷ *Ibid*, para 147.

²¹⁸ *Ibid*, para 168.

²¹⁹ *Autorité*, 2014, op. cit.

²²⁰ Judgment of the ECJ of 14. 10. 2010 *Deutsche Telekom*, Ref. No. C-280/08 P, para 88.

²²¹ GRAEF, op. cit., s. 270-271.

²²² Art. 4 (4) GDPR.

be necessary. However, in general, there may be other GDPR compliant ways to share personal data. For instance, anonymization renders data out of the scope of GDPR,²²³ which would be a solution where this would not eliminate data's competitive significance. Alternatively, access to personal data may be granted based on interest balancing anchored in art. 6 (f) GDPR or by virtue of carrying out a task in public interest under art. 6 (e) GDPR. Naturally, such solutions would render a prior consultation with data protection authorities desirable.²²⁴

5.3.2 Cegedim

The case of *Cegedim* pertained to a French provider of medical information databases, who had been refusing to sell its database OneKey to customers who were concurrently using software from Euris, a competitor of Cegedim in a neighboring market for customer relationship management.

The *Autorité* first considered whether the conditions of refusal to supply were fulfilled. Although they were not,²²⁵ it subsequently found abuse in the form of exclusionary discrimination applying both art. 102 (c) TFEU and French law.²²⁶

In my view, the EC would probably tend to assess such a situation in line with rules on exclusive dealing, rather than to approach it as a matter of discrimination under art. 102 (c) TFEU.²²⁷ Nevertheless, the case illustrates that the dominant's freedom to choose his business partners is not only limited by the essential facility doctrine, but also by discriminatory refusal involving secondary line injury.²²⁸

²²³ Cf. Rec. 26 of GDPR.

²²⁴ CRÈMER; DE MONTJOYE; SCHWEITZER, op. cit., s. 104-105.

²²⁵ *Cegedim*, para 191.

²²⁶ *Ibid.*, paras 159, 219-220.

²²⁷ Cf. Guidance Paper, para 77.

²²⁸ Cf. Art. 102 (c) TFEU; Judgment of the ECJ of 19. 4. 2019 *Meo*, Ref. No. C-525/16, paras 24 and 27; JONES; SUFRIN, op. cit., s. 559-560.

5.4 Partial Conclusion

Dominant undertakings may deploy multiple (abusive) methods of hindering data access for their competitors. These include tying, exclusivity arrangements, hindering data portability, excessive collection of personal data, discrimination in access to data and refusal to supply data access.

Nevertheless, analysis of existing case law suggests the legal framework of art. 102 TFEU is sufficiently robust to capture such practices. No regulatory problems were identified in this respect and there is, therefore, no need for adaptation of art. 102 TFEU to the Big Data world. However, some general remarks and recommendations for competition authorities can be made. These are formulated below in chap. 7.2.

6 Personal (Big) Data and Merger Control

Personal data means “any information relating to an identified or identifiable natural person.”²²⁹ Privacy, as a dimension of product quality, refers for the purposes of this chapter to the control users have over their data, how much of it is collected, how is it used and safeguarded.²³⁰ This chapter ponders upon the role of these two intertwined concepts in EU merger control.

6.1 Regulatory Background

Concentrations of undertakings with community dimension need to be notified to the EC for clearance,²³¹ which is not granted if they would significantly impede effective competition („SIEC”)²³² unless commitments or remedies (structural and behavioural) are proposed and approved.²³³

A merger may SIEC by producing non-coordinated (unilateral) or coordinated effects, which both lead to price increases, reduction in choice, quality or innovation.²³⁴ Coordinated effects arise where the concentration changes the market so that firms begin to coordinate their behavior (cf. chap. 4.1.1).²³⁵ Coordinated (unilateral) effects have a different appraisal framework, depending on whether a horizontal or a non-horizontal merger is scrutinized.

6.1.1 Coordinated Effects

²²⁹ Art. 4 (1) GDPR.

²³⁰ Cf. OECD. *Quality Considerations in Digital Zero-price Markets* [online]. 2018, s. 7 [accessed 4. 6. 2019].

²³¹ Art. 4 (1) ECMR.

²³² Art. 2 (3) ECMR and Horizontal Merger Guidelines, para 22.

²³³ ECMR, art. 6(2) and 8(2) and Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01). See also JONES; SUFRIN, op. cit., s. 1195 *et seq.*

²³⁴ Horizontal Merger Guidelines, paras 8, 24, 39.

²³⁵ *Ibid*, paras 39-57.

Horizontal mergers concern actual or potential competitors. In these cases, the EC analyses whether the merger will not eliminate an important competitive constraint. This covers both creation and strengthening of a dominant position and anti-competitive effects by undertakings not enjoying such a position²³⁶ (e.g. where two close competitors merge).²³⁷

Non-horizontal mergers are generally less problematic. They concern mergers between undertakings active on different relevant markets, i.e. vertical (upstream and downstream markets) and conglomerate, i.e. closely related markets. They may raise concerns if they change the ability and incentives to compete (by foreclosure) and thus cause consumer harm²³⁸

The non-coordinated effects of vertical mergers refer to foreclosure by raising downstream rival's costs (input foreclosure) or access to a consumer base (consumer foreclosure).²³⁹ In contrast, conglomerate mergers may lead to foreclosure by leveraging market power from one market to another by means of exclusionary practices (tying).²⁴⁰

6.1.2 Privacy as an Element of Competition

In *Asnef-Equifax* (2006), the ECJ argued that issues of the sensitivity of personal data are not a matter for competition law, but for data protection.²⁴¹ The case concerned data pooling and art. 101 (1) TFEU and for the reasons below, I am of the view it should be confined to its facts and should not have relevance in merger control.²⁴²

²³⁶ Recital 25 of ECMR. See also Judgment of the General Court of 7. 3. 2017 *United Parcel Service*, Ref. No. T-194/13, para 722.

²³⁷ Horizontal Merger Guidelines, paras 28-30.

²³⁸ Non-horizontal Merger Guidelines, paras 11-15.

²³⁹ *Ibid*, paras 11-14, 30-77.

²⁴⁰ *Ibid*, paras 93-118.

²⁴¹ Judgment of the ECJ of 23. 11. 2006 *Asnef-Equifax*, Ref. No. C-238/05, para 63.

²⁴² For an elaborate critique of the stark separation, see COSTA-CABRAL, F.; LYNSKEY, O. Family ties: the intersection between data protection and competition in EU Law. *Common Market Law Review*. 2017, vol. 54, iss. 1, s. 11-50.

First, privacy can play a role in competition as a dimension of product quality and as a consumer choice (see below chap. 6.2). Regarding the former, data protection law only sets the lowest threshold and does not solve the degradation of privacy (product quality) above that minimal threshold.²⁴³ In respect of the latter, consumer choice may be circumscribed where a merger eliminates a privacy-oriented business model from the market. In that respect, data protection lacks appropriate (structural) remedies.

Secondly, market forces alone fail to address privacy as product quality or consumer choice.²⁴⁴ This can be explained by information asymmetries (privacy is difficult to gauge and value)²⁴⁵ and consumer biases. These include the status quo bias described in Google Android above, the “free effect” (consumers make irrational choices where a product is free) and the privacy paradox (consumers value privacy but do not behave accordingly).²⁴⁶ Moreover, consumers lack viable alternatives.²⁴⁷ They are also accustomed and resigned to privacy exploitation, which renders a privacy-oriented market entry unlikely (“dysfunctional equilibrium”).²⁴⁸

Thirdly, undertakings may have economic incentives to diminish privacy. This is the case especially in markets where free products are provided in exchange for personal data, such as search engines or social networks (“zero-price markets”).²⁴⁹ These are subsequently monetized through advertising. Low privacy means more data to be harvested and more profits to be made. It also reduces costs, as privacy requires

²⁴³ Cf. ESAYAS, S. Y. Competition in (data) privacy: zero-price markets, market power, and the role of competition law. *International Data Privacy Law*. 2018, vol. 8, no. 3, s. 192.

²⁴⁴ Cf. Horizontal Merger Guidelines, paras 64-67.

²⁴⁵ OECD. *Zero-price Markets*, op. cit., s. 24-25. See also STUCKE; GRUNES, op. cit. s. 58-61; Autoritat, op. cit., s. 21.

²⁴⁶ OECD, *Zero-price Markets*, op. cit., s. 25-27.

²⁴⁷ STUCKE; GRUNES, op. cit., s. 61-66. Cf. Horizontal Merger Guidelines, para 31.

²⁴⁸ FARRELL, J. Can Privacy be Just Another Good? *Journal on Telecommunications and High Technology Law*. 2012, vol. 10, s. 258.; STUCKE; GRUNES, op. cit. s 66. Cf. Horizontal Merger Guidelines, paras 68-75.

²⁴⁹ See OECD, 2018, *Zero-Price Markets*, op. cit., s. 4-6.

investments.²⁵⁰ Indeed, personal data is frequently conceptualized as the new “currency”.²⁵¹ In turn, firms collecting more data may be seen as those charging the higher “price” for their “free” services.²⁵²

6.2 Personal Data in Merger Control

Issues pertaining to personal data were scrutinized in merger control twice by the EC, namely in *Microsoft/LinkedIn* (2016, conditional approval)²⁵³ and *Facebook/WhatsApp* (2014, unconditional approval).

6.2.1 Microsoft/LinkedIn

In *Microsoft/LinkedIn*, personal data were mentioned in two contexts. First, the EC analyzed concerns related to vertical input foreclosure. Microsoft could supposedly restrict access to LinkedIn’s personal data which could serve as an input for machine learning in another market. The EC argued data protection regulation would limit Microsoft’s usage of this data.²⁵⁴ This shows data protection may form the economic and legal background of the merger appraisal.²⁵⁵

Secondly, privacy was an element of the conglomerate appraisal.²⁵⁶ There was a concern that Microsoft could leverage its market power by tying its products with LinkedIn (a social network). As the market for social networks (a zero-price market) was prone to “tipping”,²⁵⁷ this could lead to the marginalization of LinkedIn’s competitor (Xing) offering a better level of privacy. This would “restrict consumer choice

²⁵⁰ Autoritat, op. cit., s. 21.

²⁵¹ Cf. Preliminary Opinion of the European Data Protection Supervisor: Privacy and competitiveness in the age of big data. *Edps.europa.eu* [online]. 2014, para 10 [accessed 31. 5. 2019]. See also *Google Shopping*, para 320.

²⁵² Cf. *Facebook/WhatsApp*, para 102.

²⁵³ Decision of the EC of 6. 12. 2016 *Microsoft/LinkedIn*, Ref. No. M.8124.

²⁵⁴ *Ibid*, para 255.

²⁵⁵ cf. Judgment of the ECJ of 14. 3. 2013 *Allianz Hungária*, Ref. No. C-32/11, paras 46-7.

²⁵⁶ *Microsoft/LinkedIn*, para 350.

²⁵⁷ *Ibid.*, paras 306, 332, 338-347.

in relation to this important parameter of competition".²⁵⁸ The decision entailed commitments to offset these concerns.²⁵⁹

This demonstrates privacy as a consumer choice can be sufficiently protected where the conglomerate framework is utilized. In my view, the reason for this could be that the EC's Guidelines specifically incorporate the wider concept of "consumer harm" into the tying analytical framework.²⁶⁰ As shown below, this is not the case with the horizontal appraisal framework.

6.2.2 Facebook/WhatsApp

The *Facebook/WhatsApp* decision concerned two communications apps (a zero-price market) and privacy was again mentioned twice. First, appraising the horizontal aspect, the EC noted that Facebook Messenger ("Messenger") and WhatsApp were not close competitors.²⁶¹ Among the reasons noted were differing privacy policies. Messenger was free of charge but paid for by user data collected and monetized through advertising.²⁶² In contrast, WhatsApp was mostly free of charge but intended to make profits by charging a small fee in the future, as it did not collect user data for monetization.²⁶³ Nevertheless, the EC saw the two apps as complementary products, arguing that 60-70 % of Messenger users were also active on WhatsApp.²⁶⁴

In my view, multi-homing does not attenuate competitive concerns in zero-price markets, as it's the time users spend on a network that brings data, and thus value.²⁶⁵ If 60-70 % of Messenger users were also spending time on WhatsApp, Messenger was losing traffic, and thus

²⁵⁸ *Ibid.*, para 350.

²⁵⁹ *Ibid.*, para 407 *et seq.*

²⁶⁰ In contrast with the general focus on price; cf. Non-horizontal Merger Guidelines, para 94.

²⁶¹ Such a finding generally leads to more leniency, cf. JONES; SUFRIN, *op. cit.*, s. 1146.

²⁶² *Facebook/WhatsApp*, paras 69-71 and 102.

²⁶³ *Ibid.*, para 42.

²⁶⁴ *Ibid.*, para 140 and 105, respectively.

²⁶⁵ CERVANOVÁ, A. Data jako zdroj tržní síly? Jak ovládání dat ovlivňuje postavení soutěžitelů na trhu a nakolik je relevantní pro soutěžní právo – část II. *PravniProstor.cz* [online]. 2018, s. 2 [accessed 21. 6. 2019].

personal data and profits. It is also not plausible that two apps with similar privacy settings compete more fiercely than those with different privacy protection.²⁶⁶ Interestingly, the EC recognized competition on privacy is taking place among texting apps.²⁶⁷ It also noted that following the announcement of the merger, thousands of users migrated to different texting app due to privacy concerns.²⁶⁸ Despite these empirical findings, the EC resigned to appraise the effects of the merger on privacy as a competitive factor, which in fact degraded post-merger.²⁶⁹ In my view, at the very least, these findings should have led the EC to closer scrutiny regarding the “close competitors” test, as it often does.²⁷⁰

Secondly, there was a concern that Facebook could change WhatsApp’s policy to begin to collect user data and thereby strengthen its position in the online advertising market (cf. chap. 3.3).²⁷¹ The theory was dismissed, as there was an array of rivals collecting such data.²⁷² Such reasoning is not a novelty and was applied also where “regular” data was at stake.²⁷³ Interestingly, however, the EC also refused to consider the other side of the coin, i.e. privacy-related concerns from the increased concentration of user data, as these were to be resolved by data protection law.²⁷⁴

This seems consistent with *Asnef-Equifax*. However, I am of the view it fails to consider that influence of the merger on privacy as a (recognized) competitive factor²⁷⁵ cannot be satisfactorily addressed by data protection, as argued above. This is even more alarming in zero-price markets, where the incentives of firms to diminish privacy are high and the likelihood of consumers keeping

²⁶⁶ EZRACHI; STUCKE, op. cit., s. 131.

²⁶⁷ *Facebook/WhatsApp*, para 87.

²⁶⁸ *Ibid.*, footnote 79.

²⁶⁹ STUCKE; GRUNES, op. cit., s. 83.

²⁷⁰ JONES; SUFRIN, op. cit., s. 1144.

²⁷¹ *Facebook/WhatsApp*, para 187.

²⁷² *Ibid.*, paras 168-91.

²⁷³ Cf. *Google/DoubleClick*, para 269; *Publicis/Omnicom*, para 628 and *Microsoft/Yahoo!*, para 192.

²⁷⁴ *Ibid.*, paras 164.

²⁷⁵ Cf. Autoritat, op. cit. s. 26 and *Microsoft/LinkedIn*, para 120.

the undertakings “in check” low, as argued in chap. 6.1.2. Again, this harm materialized post-merger, as Facebook amended WhatsApp privacy policies to allow for the transfer of user data to Facebook.²⁷⁶ Thus, privacy as product quality was crippled and a consumer choice build on privacy was eliminated from the market.²⁷⁷ Below, I argue an alternative approach could be utilized in *Facebook/WhatsApp* circumstances to better safeguard privacy as a competitive factor.

6.3 Disruptive Theory of Harm

Facebook/WhatsApp shows that even where competition on privacy is recognized in the horizontal appraisal, it is not analyzed whether it could be diminished post-merger. First, differing privacy policies are, controversially, read as a sign two products are not close substitutes. Secondly, it is incorrectly believed all-privacy related issues can be reconciled by data protection (chap. 6.1.2). Accordingly, post-merger changes in privacy policy enabling the collection of personal data are only scrutinized as increasing market power in the “paid” side of the market (chap. 3.3).

Nevertheless, in my view, a different approach could be deployed. WhatsApp sought to offer a new business model ultimately promoting privacy (limited personal data collection) in exchange for a small fee. Facebook arguably strived for the very opposite, i.e. a wide collection of personal data enabling exploitation of privacy through monetization. Thus, WhatsApp played a certain “disruptive” role.²⁷⁸ Accordingly, I am of the view the differing privacy settings manifested competition between two business models.²⁷⁹

In the United States, a concentration may prohibitively lessen competition where one of the merging firms is an incumbent and the other (a “maverick”) threatens to disrupt market conditions

²⁷⁶ EC. Press release: Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover. *Europa.eu* [online]. EU, issued 18 May 2017, Ref. No. IP/17/1369 [accessed 21. 6. 2019].

²⁷⁷ Autoritat, op. cit., s. 26.

²⁷⁸ See also STUCKE; GRUNES, op. cit., s. 260-262.

²⁷⁹ Cf. Autoritat, op. cit., s. 26.

with a new business model.²⁸⁰ In the EC's guidelines, such a "maverick" theory of harm also appears, albeit expressly only in respect of coordinated effects of horizontal mergers.²⁸¹ Nevertheless, in practice, the EC deployed it to analyze non-coordinated effects as well,²⁸² relying on part of guidelines dedicated to "elimination of an important competitive force".²⁸³ Accordingly, "*some firms have more of an influence [...] their market shares or similar measures would suggest. A merger involving such a firm may change the competitive dynamics in a significant, anti-competitive way.*"²⁸⁴

6.3.1 Towards an Applicable Framework

The EC's guidelines define a maverick as a firm with a history of preventing or disrupting coordination, e.g. with characteristic favoring different strategic choices in comparison with competitors.²⁸⁵ The decision-making practice does not offer much elaboration, but it relies on quick market share increase,²⁸⁶ especially by aggressive pricing.²⁸⁷ Finally, a merger involving a maverick may SIEC if it would change the "*competitive dynamic in a significant, anti-competitive way*".²⁸⁸ The EC seems to have interpreted this as impending elimination of the maverick's business model and thereby its competitive pressure and consumer benefits.²⁸⁹

In my opinion, four elements of a "maverick" theory of harm can be induced. First, it plays a disruptive role (makes different strategic

²⁸⁰ Horizontal Merger Guidelines of the U.S. Department of Justice and the Federal Trade Commission. *Ftc.gov* [online]. 2010, para 2.1.5 [accessed 21. 6. 2019].

²⁸¹ Cf. Horizontal Merger Guidelines, paras 20, 42.

²⁸² BROMFIELD, J.; OLCZAK, M. The Role of the Maverick Firm Concept in European Commission Merger Decisions. *Journal of Competition Law & Economics*. 2018, vol. 14, iss. 2, s. 182.

²⁸³ E.g. Decision of the EC of 26. 4. 2006 *T-Mobile/tele.ring*, Ref. No. M.3916, para 126.

²⁸⁴ Horizontal Merger Guidelines, para 37.

²⁸⁵ *Ibid*, para 42.

²⁸⁶ However, cf. *Facebook/WhatsApp*, paras 96-100.

²⁸⁷ BROMFIELD; OLCZAK, op. cit., s. 186. See also *T-Mobile/tele.ring*, para 73.

²⁸⁸ Cf. Horizontal Merger Guidelines, para 27.

²⁸⁹ *T-Mobile/tele.ring*, para 125.

choices than competitors). Secondly, it creates competitive pressure (evidenced e.g. by swift market share increase) and, thirdly, it benefits consumers (aggressive pricing). Finally, the merger eliminates maverick' business model and with it its competitive pressure and consumer benefits.

It is my reckoning such a framework could be applied to preserve privacy-enhancing consumer choice.²⁹⁰ Indirectly, it would also serve a proxy to protect competition on privacy as product quality. Keeping a privacy-oriented model on the market arguably disciplines incumbents regarding their privacy policies. Moreover, if the maverick theory is utilized to protect privacy as a competition factor, it would fit in well with existing guidelines and decision-making practice on "elimination of important competitive force". This would also reflect that privacy is a fundamental right in the EU²⁹¹ and the calls of the EDPS for its inclusion in merger control.²⁹² Finally, *Asnef-Equifax* would not prevent such an amendment provided it is confined to its facts, i.e. data pooling (chap. 6.1.2).

6.3.2 Applying the Framework to Facebook/WhatsApp

First, WhatsApp played a disruptive role, as it brought a new business model based on a small fee to an otherwise zero-price market. In other words, it had characteristic favoring different strategic choices in comparison with competitors.

Secondly, it lured in 70 % of Messenger users, despite them being gravitated to Messenger by Facebook's social network. This means Messenger was losing traffic and thus profits, which suggests competitive pressure. Besides, it arguably constrained Messenger in terms of privacy policies, as any reduction in privacy would entail

²⁹⁰ For an inspirational, but different „maverick“ theory, see ESAYAS, S. Privacy as a Non-Price Competition Parameter: Theories of Harm in Mergers. *University of Oslo Faculty of Law Legal Studies Research Paper Series* [online]. 2018, no. 26, s. 6-8 [accessed 9. 6. 2019] s. 6-8.

²⁹¹ Art. 8 of the Charter of Fundamental Rights of the European Union.

²⁹² EDPS Opinion on coherent enforcement of fundamental rights in the age of big data (8/2016). *Edps.europa.eu* [online]. EDPS, 2016, s. 3 and 14 [accessed 21. 6. 2019].

impeding migration of users to WhatsApp.²⁹³ Thirdly, WhatsApp enhanced consumer welfare by renouncing personal data collection for monetization purposes and thus added a privacy-oriented consumer choice. Finally, Facebook post-merger arguably had economic incentives to diminish privacy which would not be prevented by countervailing consumer pressure (chap. 6.1.2).

It follows Facebook could have been likely to both reduce product quality (privacy) post-merger and start collecting WhatsApp's user data, thus eliminating a competing business model and thus also privacy as a consumer choice, i.e. SIEC. Naturally, this would not have prevented a clearance decision if the parties to the concentration offered appropriate commitments or remedies.²⁹⁴

6.4 Partial Conclusion

Personal data appear in three contexts in merger control. First, as a matter of economic and legal background. Secondly, accumulation of personal data by the merged entity could increase market power and thus SIEC, in the same way as an accumulation of "regular" data. Thirdly, personal data materializes as a privacy dimension of product quality and consumer choice.

It was argued the latter can only be addressed within the conglomerate foreclosure (tying) framework. In contrast, where the horizontal framework is deployed, merger control fails to consider privacy (as a quality or consumer choice), leaving it to data protection law to resolve.

An alternative theory of harm was put forward as a possible solution. Accordingly, SIEC could be found where the conditions for the "maverick" or "disruptive" theory of harm would be met. For an elaboration on this conclusion and additional remarks, see chap. 7.3.

²⁹³ Cf. *Facebook/WhatsApp*, para 86.

²⁹⁴ Art. 6(2) and 8(2) ECMR.

7 Conclusions

The aim of this thesis was to analyse whether the current framework of EU competition law is appropriate to deal with theories of harm related to Big Data, identify residual problematic points, and discuss possible solutions. This was to be done within the framework of the three research questions formulated at the outset, pertaining to the three pillars of EU competition law. These are answered in turn below.

7.1 Big Data, Algorithms and Art. 101 (1) TFEU

7.1.1 How can algorithms be deployed to facilitate explicit collusion?

Algorithms may facilitate concertation both in horizontal relations (price-fixing) and vertical relations (RPM). A pricing platform may serve to that end. Furthermore, algorithms can be deployed in a hub-and-spoke setting and act as a “hub”, or as a facilitator of collusion among undertakings.

7.1.2 Is the framework of art. 101 (1) TFEU, particularly the rules on liability, sufficient to address these situations?

In most situations, collusive contact or an agreement will be found to establish liability, even where an algorithm is deployed to implement concertation, which makes it a no-brainer from an enforcement perspective. In that respect, the legal framework of 101 (1) TFEU is sufficient, as the challenge remains the same, i.e. evidencing collusive contact or agreement. This applies also in a situation where algorithms of rivals would start to collude on their own. It is my reckoning liability in such situations would be established in analogy to strict liability of undertakings for anti-competitive acts of their employees. A case on such a scenario is however still to be awaited.

In contrast, if deployed in a hub-and-spoke setting, a “collusive” algorithm provided by a third-party could escape scrutiny where the IT provider conceals the “collusive design” from its users.

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In that regard, I am of the view the current legal framework is not sufficient.

7.1.3 What changes should be made?

It was argued the “regulatory gap” should be addressed by amending the rules on liability for acts of third-party service providers. Accordingly, a rebuttable presumption should be introduced that a user of a “collusive” algorithm acquired from a third-party developer was aware of such a functionality (after competition authority proved the collusive design) and is thus liable of concertation. He should be allowed to rebut such a presumption by showing he had acted as a prudent trader, i.e. he had taken positive precautionary measures to assure the algorithm is compliant with competition law prior to deploying it.

7.1.4 What other comments and recommendations can be made?

Analysis of decision-making practice allows three remarks to be made. First, *Webtaxi* shows algorithms may bring countervailing benefits, which may exempt an otherwise prohibited (even price-fixing) agreement. This should serve an important reminder for competition authorities. Secondly, the *Online Sales of Posters* case shows operations of algorithms is not always free of lapses, which may ease uncovering algorithmic collusion. Thirdly, as algorithms enhance the stability and effectiveness of collusion, I agree their deployment should lead to higher fines awarded.

In addition, the compliance by design and “you should had known your algorithm” rules are currently only Vestager’s public proclamations and it is not certain whether they should be read as a strict liability or else. In my view, legal certainty would be pressed forward if the EC incorporated these rules into its soft law (Horizontal Agreement Guidelines and Vertical Restraints Guidelines). At that opportunity, it should also elaborate on the means of a rebuttal, shall it opt for the rebuttable presumption model, as advised in this thesis.

7.2 Hindering (Big) Data Access and Art. 102 TFEU

7.2.1 How can undertakings hinder access to data for their competitors?

Dominant undertakings may deploy multiple (abusive) methods of hindering data access for their competitors. These include tying, exclusivity arrangements, hindering data portability, excessive collection of personal data, discrimination in access to data and refusal to supply data access.

7.2.2 Is the framework of art. 102 TFEU prepared to address them? If not, what changes should be considered?

Analysis of existing decision-making practice shows the legal framework of art. 102 TFEU is sufficiently robust to capture such practices. No regulatory problems were identified. Therefore, there is no need for adaptation of art. 102 TFEU to the Big Data world in this respect.

7.2.3 What comments and recommendations can be made?

First, dominant undertakings may exploit consumer biases (e.g. the status quo or omission bias) to facilitate their foreclosure practices. Accordingly, competition authorities should utilize behavioural economics when dealing with abuses of dominance.

Secondly, where products collect Big Data, the foreclosure effects of abuses may be amplified by learning effects or scale and scope network effects. Foreclosing a competitor prevents him not only from selling more products in the short run but also from the inflow of Big Data and thus of benefits connected to positive feedback loops. This harms competition also in the long run. Accordingly, where Big Data is involved, competition authorities should look for data-related anti-competitive effects also beyond the tied product market.

Thirdly, the *Facebook* decision evidences an intersection between personal data and art. 102 TFEU. It illustrates that a dominant may “excessively” collect personal data to achieve exclusionary effects. Although the decision was neither based in EU law nor on an exclusionary theory of harm, it paves the way for new

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exclusionary abuse, which would use GDPR as a benchmark of competition on the merits. I argued this would not run counter the *ne bis in idem* principle. Accordingly, competition authorities should not discharge competitive concerns related to personal data by surrendering them to data protection law.

Finally, I argued that data protection law generally does not preclude access to personal data held by dominants to be mandated. However, it seems desirable dominant firms and competition authorities cooperate with authorities charged with data protection to assure full GDPR compliance.

7.3 Personal (Big) Data and Merger Control

7.3.1 Are issues pertaining to personal data considered in merger control and how?

Personal data appear in three contexts in merger control. First, as a matter of economic and legal background. Secondly, accumulation of personal data by the merged entity could bring about an unmatched competitive advantage and thus impede competition in the same way as an accumulation of “regular” data. Thirdly, personal data materializes as a privacy dimension of product quality and consumer choice.

7.3.2 Is the framework of ECMR sufficient to address all issues pertaining to personal data?

It was argued issues related to privacy as a competitive factor (quality or consumer choice) are only addressed within the conglomerate foreclosure (tying) framework (*Microsoft/LinkedIn*). In contrast, where the horizontal framework is deployed, merger control fails to consider privacy, as illustrated by *Facebook/WhatsApp*. This is not desirable, as data protection law and market forces cannot resolve degradation of privacy as product quality (above the GDPR threshold) and elimination of a privacy-oriented consumer choice.

7.3.3 What changes should be made?

An alternative theory of harm was put forward as a solution. Accordingly, SIEC could be found where four conditions are fulfilled. This would apply where (i) a “maverick” with a distinguished business model operates on a market (e.g. a privacy-oriented model in a zero-price market), (ii) exerts competitive pressure on incumbents (e.g. attracts a significant portion of incumbent’s consumers), (iii) benefits consumers (e.g. in terms of privacy as a quality or a consumer choice) and (iv) the merger would result in its elimination.

7.3.4 What comments and recommendations can be made?

First, the “maverick” theory of harm is not a complete novelty and would fit in well with existing soft law and decision-making practice of the EC. In my view, it should be incorporated within the “elimination of important competitive force” framework in Horizontal Merger Guidelines. These should recognize privacy as a form of consumer harm to be appraised and specify applicable condition, as outlined above. This would both enhance legal certainty and serve as a reminder for competition authorities that not all privacy related issues can be resolved by data protection law.

Secondly, the submitted solution would only serve to safeguard privacy as a competitive element where it would be brought onto the market by a “maverick”. Outside this context, other solutions should be outlined.

Thirdly, the theory would also indirectly promote privacy as product quality by keeping a privacy-oriented model on the market, which could further exert pressure on incumbents in respect of privacy competition.

Finally, *Facebook/WhatsApp* shows that where a privacy-oriented business model appears on a zero-price market, the “close competitors” framework may deliver false negatives. Accordingly, at least in this context, differing privacy settings should not be automatically read as a sign of low substitutability between products.

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