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THE ROLE OF DATA IN MERGERS

The need to define a relevant market for data

Candidate number: 9010
Submission deadline: 15/05/2018
Number of words: 15,547

ACKNOWLEDGEMENTS

There are several people to whom I am grateful for all their support in the writing process of this thesis.

I want to thank my supervisor, Samson Yoseph Esayas, for his support and valuable feedback throughout the entire process of writing.

I owe a special thanks to my family for their unconditional support. I would not have been able to get this far without them.

Lastly, I would like to thank my friends for being next to me, supporting me and helping me through the entire writing process of this thesis.

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I. INTRODUCTION

1.1. Background

Personal data has become an indispensable tool for the online environment, especially for companies that offer free services to customers. Data is now considered the oil of the digital economy offering new opportunities, but also bringing challenges for consumers, industries, regulators and authorities.

Today data is collected and processed on an unprecedented scale. It has become a key asset for companies in the digital economy. This has raised questions with regard to the relevance of data in the assessment of anticompetitive practices and mergers.

Users of online services disclose huge amounts of data in exchange for "free" services. This has led to the emergence of companies that achieve high profit based on business models that involve the collection and commercial use of data. Basically, the business of these companies is determined by the amount and quality of the data they hold. They are multi-sided platforms that bring together both users and advertisers. The "free" services are provided in exchange for user data. Then, the data collected is used to sustain these services through advertisements. In this way, these companies sustain their business models.

Although companies have always collected data, yet in recent years the fast-paced evolution of technology has led to the emergence of data as an asset that is used for the provision of products and/or services in the online environment. This is why these multi-sided platforms have attracted the attention of the competition community.

This thesis addresses the role of data in the competitive process, with a focus on mergers between online service providers, including search engines and social networks. It analyzes whether mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry through the lens of the European Commission`s data-related merger decisions in the online environment. After analyzing situations where access to data may constitute a competitive advantage for certain undertakings in the online environment and an entry barrier for actual or potential competitors, the need to define a relevant market for data will be discussed.

1.2. Research question

In the context of data related mergers, is there a need to define a relevant market for data?

1.3. Structure of the thesis

In order to assess the role of data in mergers and the need for defining a relevant market for data, this thesis is structured as follows. Chapter II provides an overview of data

protection law and competition law, with a focus on mergers, with a view to familiarize the reader with the main operating concepts.
Chapter III aims to highlight the growing importance of data in digital markets, by analyzing the value of personal data in digital markets, the availability of data and if data may constitute a competitive advantage for online companies.
Chapter IV will address the role of data in mergers and the need to define a relevant market for data. It will start by providing an overview of the European Commission`s previous merger decisions involving user personal data with a view to assess how the relevant market for data has been defined, if at all and what lessons we can take from the Commission's analysis. Further on, it will discuss the importance of the relevant market for data, the need to define it, the challenges thereto and how data may be regarded as a specialized asset for the online environment.
Chapter V provides an overview of the analysis and the final conclusion.

1.4. Methodology

This thesis focuses on the role of data in mergers and the need to define a relevant market for data. I provide an overview of data protection law only to familiarize the reader with the general provisions of privacy and data protection and in order to have an understanding of the implications of the collection and processing of personal data.
Since I address the issue of the competitive advantages of owning large sets of data, I will only briefly discuss the competitive constraints related to privacy as a non-price parameter of competition.
In my research, in order to assess if owning large datasets amount to a competitive advantage and create barriers to entry and subsequently, if there is a need to define a relevant market for data, I relied upon EU legislation for data protection and competition law, as well as case law of the European Commission (data related merger decisions). Other sources consist of: books, journals, scholar papers, opinions and relevant reports to give weight to the discussion on this topic.

II. LEGAL BACKGROUND

This chapter aims to gradually familiarize the reader with the main operating concepts of data protection law and competition law. Section 2.1. deals with the General Data Protection Regulation [1] ("**GDPR**"), in order to give the reader an insight on the implications of the collection and processing of personal data.

Section 2.2. contains an overview of EU competition law, with a focus on mergers, to facilitate the reader`s understanding of the evaluation of the European Commission`s previous merger decisions involving user personal data.

2.1. Overview of data protection law

EU data protection law is comprised of a mix of primary and secondary law.[2] Article 16 of the Treaty of the Functioning of the European Union[3] [4] ("**TFEU**") contains the legal basis for EU data protection law: "1. Everyone has the right to the protection of personal data concerning them." Article 8(1) of the Charter of Fundamental Rights of the European Union[5] sets out a right to data protection[6]: "Everyone has the right to the protection of personal data concerning him or her."

With regard to the secondary source of law, the Data Protection Directive[7] has been regulating personal data processing in the EU for almost two decades ago. However, the GDPR will replace this Directive in May 2018.

The collection and sharing of personal data has increased significantly, since technology allows private companies and authorities to use personal data on an unprecedented scale in order to pursue their activities.[8] To this end, the Regulation seeks to create greater harmonization of the EU legal framework due to its direct binding nature.

In order to summarize its main principles, the following will be addressed: (i) what is personal data; (ii) what is the legal basis for processing of personal data; (iii) data subject`s rights and (iv) who controls and processes personal data.

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[1] Regulation 2016/679 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, O.J. 2016, L 119/1

[2] Francisco Costa-Cabral and Orla Lynskey, *Family ties: The Intersection between Data Protection and Competition in EU law,* Common Market Law Review 54: 11–50, 2017 Kluwer Law International. Printed in the United Kingdom, p. 16

[3] Francisco Costa-Cabral and Orla Lynskey, *The Internal and External constraints of Data Protection on Competition law in the EU*, LSE Law, Society and Economy Working Papers 25/2015, London School of Economics and Political Science Law Department, p 5

[4] Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012

[5] Charter of Fundamental Rights of the European Union, 2000/C 364/01

[6] Francisco Costa-Cabral and Lynskey, *Family ties: The Intersection between Data Protection and Competition in EU law,* Common Market Law Review 54: 11–50, 2017 Kluwer Law International. Printed in the United Kingdom, p. 16

[7] Directive 95/46/EC of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data, OJ L 281/31 ("**Data Protection Directive**")

[8] Recital (6) GDPR

i. Personal data

Personal data is defined as "any information relating to an identified or identifiable natural person ('**data subject**'); an identifiable natural person is one who can be identified directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person."[9]

Regarding the nature of information, Article 29 Working Party[10] states that objective and subjective information (such as opinions and assessments) concerning a person should be regarded as personal data.[11]

Regarding the content of information, personal data includes data concerning any sort of information, such as, apart from the personal information, any kind of information. This may include information with regard to activities undertaken by a person, like working relations or the economic and social behavior of that person (as a consumer, customer, employee, patient, user, etc.).[12]

From the definition of personal data, we can see that, data must first relate to or concern a person and, secondly, data must lead to the identification of a person.[13]The key in this definition is the "identifiability" criteria; the data collected has the ability to distinguish a person from another.[14] [15]

ii. Legal basis for processing personal data

Processing of personal data is only allowed based on a legal ground. Article 6 of the GDPR provides six alternative grounds on which data controllers can rely on when processing personal data: (i) consent; or, whenever data processing is (ii) necessary for

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[9] Article 4(1) GDPR

[10] The "Article 29 Working Party" is the short name of the Data Protection Working Party established by Article 29 of Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data. It provides the European Commission with independent advice on data protection matters and helps in the development of harmonized policies for data protection in the EU Member States. The European Data Protection Board will replace Article 29 Working Party in the GDPR (Article 68)

[11] Opinion 4/2007 on the concept of personal data, Article 29 Data Protection Working Party, 01248/07, WP 136, p 6

[12] Opinion 4/2007 on the concept of personal data, Article 29 Data Protection Working Party, 01248/07, WP 136, p 6

[13] Lee A. Bygrave, *Data Privacy Law: An International Perspective*, Oxford University Press, 2014, p 129

[14] Lee A. Bygrave, *Data Privacy Law: An International Perspective*, Oxford University Press, 2014, p 130

[15] "the definition of "personal data" should be as general as possible, so as to include all information concerning an identifiable individual. A person may be identified directly by name or indirectly by a telephone number, a car registration number, a social security number, a passport number or by a combination of significant criteria which allows him to be recognized by narrowing down the group to which he belongs (age, occupation, place of residence, etc.). The definition would also cover data such as appearance, voice, fingerprints or genetic characteristics." European Commission (COM(92) 422 nal—SYN 287), p 9, http://aei.pitt.edu/10375/1/10375.pdf

the performance of a contract; (iii) necessary for compliance with a legal obligation; (iv) necessary in order to protect the vital interests of the data subject; (v) necessary for the performance of a task carried out in the public interest; and (vi) necessary for the purpose of the legitimate interest pursued by the controller.

With regard to the safeguards relating to the processing of personal data, Article 5 of the GDPR provides that personal data shall be processed: (i) lawfully and fairly; (ii) with an explicit and legitimate purpose; (iii) adequately and with the observance of the data minimization principle; (iv) accurately; and (v) stored for no longer than necessary; (vi) secured and confidential.

iii. Rights of the data subject

The data subject is the natural person whose data is collected. Under the GDPR, the data subject has several rights, such as: the right to be informed with regard to the processing of their personal data, the right to access, delete or rectify the data in certain circumstances, the right to restrict the processing and object to it and the right to data portability.[16] These rights are intended to offer control over data that is collected and processed. As it was highlighted "persons should be able to participate in, and have a measure of influence over, the processing of data on them by others".[17]

iv. Data controllers and data processors

The controller (natural or legal person, public authority, agency or other body) is the one that determines the purposes and means of the processing of personal data.[18] The controller must ensure that the processing of personal data is in compliance with data protection principles and that it has a valid legal ground for the processing of personal data. Also, it must implement appropriate technical and organizational measures and be able to meet requests from data subjects.[19]

The processor is the one that processes data on behalf of the controller and must process the data only under the instructions and authority of the controller.[20]

Controllers are liable for the damage caused by processing which infringes the provisions of the GDPR, whereas processors are liable for damage caused by processing only where they have not complied with the data protection provisions addressed to them in the GDPR or where they acted outside the instructions of the controllers.[21]

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[16] Articles 12-22 GDPR

[17] Lee A. Bygrave, *Data Privacy Law: An International Perspective*, Oxford University Press, 2014, p 158

[18] Article 4(7) GDPR

[19] Article 24 GDPR

[20] Article 28 GDPR

[21] Article 82(2) GDPR

As presented above, the GDPR brings changes in terms of liability, which is increased and also with regard to the level of fines for breaches.[22] This is intended as an "incentive" for companies that collect and process data to an ever-growing extent, to comply with the provisions of data protection law.
The collection, processing and use of data are rapidly increasing, especially in the online environment. Online service providers, such as social networks, search engines or e-commerce platforms achieve high turnovers through the use of personal data they collect from consumers. As a result, it seems that data has become fundamental for determining the competitive strength of online businesses.[23]

2.2. Overview of EU competition law

Next, I will provide a brief overview of the provisions of EU competition law, with a focus on mergers.
Competition policy was included in the list of Community activities set out in the Treaty of Rome[24], as part of a set of wide policy instruments directed towards the objective of the European economic integration.[25]
Competition law is concerned with ensuring that undertakings operating in the free market economy do not restrict or distort competition in a way that prevents the market from functioning optimally.[26]
European competition policy is developed from two main rules set out in the TFEU, Chapter 1 of Title VII (articles 101 and 102) and in the Merger Regulation.[27]

This thesis focuses on the competitive advantages that certain undertakings in the online environment may have as a consequence of acquiring data through mergers. This is why a closer look at the provisions of the Merger Regulation is necessary.
The Merger Regulation applies to economic concentrations (mergers). There is a concentration where two or more previously independent undertakings merge their businesses, where there is a change in control of an undertaking or where a full function joint venture is created.[28]

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[22] Article 83(4) GDPR
[23] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition Journal 38 no. 4, 2015, p 473
[24] The treaty establishing the European Economic Community; The Treaty of Rome has been amended on a number of occasions, and today it is called the Treaty on the Functioning of the European Union.
[25] Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 38-39
[26] Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 1
[27] Council Regulation (EC) no.139/2004 on the control of concentrations between undertakings, O.J. L 024, 29/01/2004 P. 0001 - 0022
[28] Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 1129

The concept of "undertaking" is not defined in the TFEU, but according to the case law of the Court of Justice of the European Union ("**CJEU**") the concept of an undertaking encompasses every entity engaged in an economic activity regardless of the legal status of the entity and the way in which it is financed.[29]

A merger implies a change in the market structure (whether it has an EU dimension or a national dimension), this is why competition authorities get to decide if two or more undertakings may merge. The reason for not making mergers unlawful *per se*[30] is that this would create serious burdens for business owners and, furthermore, a significant part of the mergers do not fall within the general scope of the hereby mentioned regulation as their impact on the relevant market does not have the potential to create a distortion. Yet, on the other hand, certain merger opportunities need to be analyzed by competition authorities as they may create a permanent and lasting change on the market.[31]

Mergers beyond a certain threshold are notified to the Commission, which can prohibit or impose mitigating conditions if the merger significantly impedes effective competition, in the common market or in a substantial part of it, in particular as a result of the creation or strengthening of a dominant position[32].[33]
When assessing whether a merger significantly impedes effective competition on the market, competition authorities start their analysis with the market definition. The definition of the relevant market tends to have a decisive role in the context of a merger.[34]

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[29] Case 41/90 Höfner and Elsner v Macrotron, para 21
[30] Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 1129
[31] Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 1129
[32] According to the case law of the CJEU, dominance refers to "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers". Case 27/76, United Brands v Commission, para 65
In AKZO case (Case C-62/86 AKZO Chemie BV v Commission, para 60), the court explained what was meant by *very high market shares* within the meaning of the test set out in Hoffmann-La Roche (Case 85/76 Hoffmann-La Roche & Co AG v. Commission, para 39-41): a dominant position is presumed when there is a market share of 50% in a relevant market. Market share is an indication of the market power of an undertaking and it may indicate sometimes the existence of market barriers. Market barriers may confer advantages for some undertakings that in turn are hard to replicate by other competitors. "A barrier to entry is a cost of producing which must be borne by a firm which seeks to enter the industry but it is not borne by firms already in the industry" G.J.Stigler, *The organization of Industry*, Irwin, 1968, p 67; also "a barrier to entry may be described as something which prevents or hinders the mergence of potential competition which would otherwise constrain the incumbent undertaking" Alison Jones and Brenda Sufrin, *EU Competition law, Text, Cases and Materials*, Fifth edition, Oxford University Press, p 86
[33] Article 2(3) EUMR
[34] or abuse of dominance "The definition of the relevant market in both its product and its geographic

Today, the huge collection and use of personal data is redefining the economic landscape from a competitive perspective, its nature being seen as a determinate asset of a company unlike ever before. In this sense, data-driven innovation has become a key pillar of 21st-century growth, with the potential to significantly enhance productivity, resource efficiency, economic competitiveness, and social well-being.[35]
Greater access to and use of data may generate the need for policy changes and synergies in fields ranging from consumer protection to privacy or competition law.
A first step to obtain better access to large data collection is to acquire/merge with other companies that own huge volumes of data. The OECD 2015 reports that in the sector related to data "the number of mergers and acquisitions (M&A) has increased rapidly from 55 deals in 2008 to almost 164 deals in 2012" (p. 94).[36]

In the context of mergers, data related markets are of a peculiar nature, especially in the online environment. This is why, it is necessary to analyze if mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry and subsequently if a relevant market for data needs to be defined.

dimensions often has a decisive influence on the assessment of a competition case." Commission Notice on the definition of relevant market for the purposes of Community competition law 97/C 372/03, para 4

[35] OECD, Data-Driven Innovation: Big Data for Growth and Well-Being, OECD Publishing, Paris (2015) http://www.oecd-ilibrary.org/science-and-technology/data-driven-innovation_9789264229358-en

[36] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 16 http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf

III. PERSONAL DATA IN THE DIGITAL ECONOMY

This chapter will analyze the value of personal data in digital markets, the availability of data and if data may constitute a competitive advantage for online companies. This analysis will help understand the growing importance of data in digital markets and why it is important to analyze the role that data plays in the competitive assessment of mergers.

3.1. The value of personal data in digital markets

The digital economy has undergone a rapid change. Now users of online services disclose huge amounts of data in exchange for services. This has led to the emergence of a number of companies that achieve high profit based on business models that involve the collection and commercial use of data.[37]

Data is now considered the oil of the digital economy.[38] In many online markets personal data is used as a commodity, since online service providers, such as search engines, social networks or e-commerce platforms offer users "free" services in exchange for their data. They then use this data to sustain these services through advertisements. In this way, these providers sustain their business models.[39]

With the personal data collected from users, Google provides users targeted search results and/or targeted advertisements. In Google's version of the AdWords system advertisers can buy advertising links in the 'sponsored links' section of a Google search results page. Thereby, the advertiser purchases the possibility of having their ad displayed with the search results for a particular keyword that is relevant to the advertiser's business.[40]

On social network platforms, such as Facebook, the providers use the profile and the content uploaded by users to sell them targeted advertising.[41]

It is not only companies that treat personal data as a commodity but also consumers. Users freely exchange their data for free services or discounts. Nevertheless, sometimes consumers do not have a choice but to give their data to receive certain services for

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[37] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 3 http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf

[38] Joris Toonders, Yonego, *Data is the new oil of the digital economy*, https://www.wired.com/insights/2014/07/data-new-oil-digital-economy/, accessed November 8, 2017

[39] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 476 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[40] Stefan Bechtold, Catherine Tucker, *Trademarks, Triggers and Online Search,* Working paper, May 18, 2013, p 2 https://www.law.northwestern.edu/researchfaculty/searlecenter/events/internet/documents/Bechtold_Tucker_Tra demarks_Online_Search_2013.pdf

[41] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 478 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

which monetary payment is not an option. Facebook for example, only allows consumers to become users of its platform if they hand in their personal data.
The fact that an increasing number of companies offer consumers the possibility to replace part of the monetary payment for a product or service by giving permission to collect their data is a sign that data is becoming a currency in itself.[42]
The telecommunications company AT&T offered customers a discount for broadband services if they did not opt out of the web browsing tracking.[43] This means that users gave their personal data to AT&T in exchange for a discount for the service that the latter provided. Amazon also offered its customers a discount for one of its kindle tablets if they accepted to buy the product that already contained ads.[44]

There is no doubt data is valuable to companies and it is "even more so for digital platforms" [45], as they sustain their business model through the collection and commercial use of data.
Because they "act as intermediaries between different customer groups" [46] online platforms function as multi-sided platforms. Multi-sided platforms or multi-sided markets are not new. This is where companies "are active towards more than one group of users/customers".[47] In the case of online platforms, they bring together users and advertisers.
What is common for multi-sided platforms is the existence of the network effects.[48] Basically, the network effects occur in the situation where a good or service becomes more valuable when more customers use it.
There are two types of network effects, namely direct and indirect. The direct effect occurs when "the benefit that users of one group get from a specific service depends on

[42] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 474
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309
[43] Mark Bergen, *AT&T gives discount to internet customers who agree to be tracked*, published on February 18, 2015, http://adage.com/article/digital/t-u-verse-ad-tracking-discount-subscribers/297208/
[44] J.A. Martin, *Why You Want a Kindle With Ads Instead of Amazon's Ad-Free E-Readers*, October 8, 2012, https://www.cio.com/article/2371022/peripherals/why-you-want-a-kindle-with-ads-instead-of-amazon-s-ad-free-e-readers.html
[45] H.A. Shelanski, *Information, Innovation, and Competition Policy for the Internet*, *University of Pennsylvania Law Review, vol.* 161:1663, 2013, p 1678
http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1025&context=penn_law_review
[46] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 476
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309
[47] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 27
http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf
[48] "Network effects refers to how the use of a good or service by a user impacts the value of that product to the other users" Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 27
http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf

the number of other users from the same group that uses the service".[49] The indirect effect takes place "when the benefit that users of one group get from the service depends on the number of users from a different group using the service".[50] Essential for the online multi-sided platforms is the existence of indirect network effects because "once more customers join one side of the platform, the value of the platform to its customers on the other side rises".[51] For example, if we take Facebook, the more users join the network, the more advertisers will be keen on doing business with Facebook. The group of users influences the group of advertisers and the link between these groups is an indirect network effect.
Unlike single-sided markets, the main feature of multi-sided markets is that the two sides are inter-related. If one side grows, than the group on the other side becomes larger as well.

In addition to being a valuable commodity[52], data can also function as an input for production. Providers of online platforms use the data collected from users in order to improve their services from a quality and relevance perspective. As we will see in the next chapter, data is an important asset, which fuels the provision of services for online platforms.

Nevertheless, viewed either as a commodity, an input for production or an asset, data is indispensable for online service providers that have built their business on its collection and commercial use. This is why online service providers seek to acquire data. One of the ways to acquire large sets of data is through strategic mergers. In this way online service providers can achieve a critical mass on both sides of the market. As it will be discussed in the next chapter, these mergers may lead to concentrations, entry barriers on the market and the hampering of competition.
Before reaching this discussion, a look at the types, availability and diversity of the data collected by companies is necessary.

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[49] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 27 http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf
[50] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 27 http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf
[51] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 476
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309
[52] Preliminary Opinion of the European Data Protection Supervisor, *Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014, ("**Preliminary Opinion**") para 1
https://edps.europa.eu/sites/edp/files/publication/14-03-26_competitition_law_big_data_en.pdf

3.2. Types of data collected

There are many different types of user data collected by online service providers. Firstly, there is data that users provide themselves, on a voluntary basis, such as name, contacts, photos, address, search history or other social network related information.
Secondly, online service providers collect data by tracking users online and observing their behavior. Usually, this is done by way of cookies.[53] Through the use of cookies, online providers are able to identify users and store users preferences.[54]
The third type of data is inferred from the analysis of volunteered (data provided by users) and observed data (collected via tracking users).[55]

3.3. Availability and diversity of data

Data is widely available for all undertakings. Now, the cost of collecting data is low and the storage and analysis of data collected is becoming less expensive for companies. From this it may be inferred that data are extensively available for companies and that the collection, processing and analysis of data is affordable to all competitors on the market.[56]
However, even though huge volumes of data are being collected, stored and analyzed today, this does not necessarily mean that data is readily available for all competitors on the market. Companies need to invest in the development of free services in order to have access to and collect user data. As it has been noted, if data "were as freely available as sunshine, companies would not spend a considerable amount of money offering free services to acquire and analyze data to maintain a data-related competitive advantage".[57]

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[53] "A cookie is a small piece of data that a website asks your browser to store on your computer or mobile device. The cookie allows the website to "remember" your actions or preferences over time.
Most browsers support cookies, but users can set their browsers to decline them and can delete them whenever they like." http://ec.europa.eu/ipg/basics/legal/cookies/index_en.htm

[54] Article 5(3) of Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector, provides that "Member States shall ensure that the use of electronic communications networks to store information or to gain access to information stored in the terminal equipment of a subscriber or user is only allowed on condition that the subscriber or user concerned is provided with clear and comprehensive information in accordance with Directive 95/46/EC, inter alia about the purposes of the processing, and is offered the right to refuse such processing by the data controller. This shall not prevent any technical storage or access for the sole purpose of carrying out or facilitating the transmission of a communication over an electronic communications network, or as strictly necessary in order to provide an information society service explicitly requested by the subscriber or user."

[55] World Economic Forum, *Personal data: The mergence of a new asset*, January 2011, p 7 http://www3.weforum.org/docs/WEF_ITTC_PersonalDataNewAsset_Report_2011.pdf

[56] D.S.Tucker, H.B.Wellford, *Big Mistakes Regarding Big Data*, Antitrust Source December 2014, p 3, https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/dec14_tucker_12_16f.authcheckdam.pdf

[57] M.E. Stucke, A.P. Grunes**,** *No Mistake About It: The Important Role of Antitrust in the Era of Big Data*, The Antitrust Source April 2015, Research Paper #269 May 2015, p 7, http://ssrn.com/abstract=2600051

Data is considered to have a non-rivalry nature, meaning that if a company collects sets of data, this does not exclude a competitor from gathering or having access to the same data. Usually consumers provide data on a voluntary basis to different companies (general information like name, contacts, photos, address, phone number, etc). This happens in the context of multi-homing, when consumers use different providers for a similar service.[58] This way, companies have access and make use of the same sets of data.

The fact that data is non-rival does not mean that data is equally available to all competitors on the market. Online service providers, for instance, may be able to exclude others "by preventing or restricting access to information for which few or no substitutes are available. Firms whose business model is built on the acquisition and monetization of personal data feel the need for keeping their datasets to themselves".[59]

In addition, it is important to look at the diversity in value of data. Data provided by users such as name, contacts, photos, address, phone number, etc have a long lasting value and need to be collected only once. Whereas other types of data such as consumers search requests "will be more transient in value, being relevant over a shorter period of time".[60] This means that some data collected loses value in time and companies need to collect data in real time. This is essential for online service providers who need real time access to past and present information about their users.

In this context, other competitors as well as new entrants may never be able to keep up with incumbents, either because they do not have the necessary resources or because they are not permitted access by the latter to large datasets. Nevertheless, this should be assessed on a case by case basis, because in order to understand how certain undertakings gain and maintain competitive advantages based on the personal data they hold and process, it is necessary to take a look at the collection mechanisms, exclusivity access and the way network effects work.

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[58] Although multi-homing is viewed as a factor to reduce market power, in reality multi-homing is not that relevant for data-based market power. "Consumers are said to multi-home when they use several providers to get the same kind of service. (...) Switching costs can prevent consumers from using various providers in equal proportions. Consumers may pay more attention to quality when services are free because in this context, quality is the only dimension of competition between platforms; yet, in a market characterized by network economies and experience effects, new entrants may not be able to propose services of a quality as high as those of established undertakings and could not compensate this lower quality by proposing lower prices." Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 28-29
http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf

[59] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition Journal 38 no. 4, 2015, p 479
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[60] UK Competition & Markets Authority, *The commercial use of consumer data. Report on the CMA's call for information*, June 2015, para 3.6,
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/435817/The_commercial_use_of_consumer_data.pdf

3.4. Data as a competitive advantage

From the above it may be ascertained that the current business model of online service providers "relies on the acquisition and monetization of user data".[61] The current debate is whether the effort to collect data in order to compete with incumbents amounts to a competitive advantage for the latter and a barrier to entry for other businesses.[62]

As previously pointed out, network effects best describe multi-sided platforms. The existence of network effects may favor the appearance of entry barriers that protect incumbents and alienate other competitors and/or make it harder for new competitors to enter the market. As the EDPS[63] pointed out in its Preliminary Opinion undertakings in two-sided digital markets that own and rely on large datasets "are able to (...) create barriers to entry"[64] on the market. This happens because in addition to owning large datasets, dominant undertakings also have the technical resources necessary for extracting value out of the data collected.[65]

On one side of the platform users provide data that is subsequently used by online service providers to improve the quality of the "free" services and to make profit through advertisements. Most users are not aware of the fact that they enable online platforms to improve their services and gain profit. For example, based on a user's activity (considering search quarries and clicking on relevant search results), a search engine improves the relevance and quality of the results it returns.[66]

On the other side of the platform, advertisers, through the data collected by the platform from the provision of "free" services, are able to target their advertisements to specific groups of users.

Hence, due to the mechanism of multi-sided platforms, the more data online providers collect, the faster their revenues increase, as advertisers are interested in the platform`s

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[61] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms,* World Competition Journal 38 no. 4, 2015, p 484
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[62] M.E. Stucke, A.P. Grunes**,** *No Mistake About It: The Important Role of Antitrust in the Era of Big Data*, The Antitrust Source April 2015, Research Paper #269 May 2015, p 3,
http://ssrn.com/abstract=2600051

[63] The European Data Protection Supervisor

[64] Preliminary Opinion, para 66

[65] "Powerful or dominant undertakings are able to exploit 'economies of aggregation' and create barriers to entry through their control of huge personal datasets alongside proprietary software which organizes the data. (...) the dominant undertaking has exclusive control of the information, while competitors lack the technical means to re- create the structure or system upon which the service relies. This effectively prevents entry to the market and restricts consumer choice for the 'free' services in question. At the same time, costs for the advertising market increase due to lack of competing offers." Preliminary Opinion, para 66

[66] C.Argenton, J.Prüfer, *Search Engine Competition with Network Externalities*, Journal of Competition Law and Economics, 2012, *DOI:*10.1093/joclec/nhr018, p 8,
https://pure.uvt.nl/ws/files/1373523/search_engines.pdf

ability to display relevant ads to as many users as possible and therefore increase their sales.

Once an online platform achieves a critical mass on both sides of the platform "it may be hard for a competing platform to gain foothold on the market".[67] First it needs to develop large datasets (attract users and collect their data) in order for advertisers to be interested in displaying their ads. In order to attract users, the competitor needs to provide quality "free" services, at least at the same quality as its competitors, otherwise users will not be interested in the platform. This is a result of the direct network effects, since for example, users keen on joining a social network are more likely to join the one that already has most users. As a result, due to its particularities "the market is very concentrated, and competition is harder to achieve. Because of the network effects only a few social network providers will be able to survive." [68]

In addition to having access and owning huge sets of data, engineering resources devoted to improving a platform's algorithms are required for the functioning of an online platform.[69] Access to users' data in combination with the necessary resources to extract knowledge from the data collected can amount to a competitive advantage and can lead to a position of market power or it can strengthen the already existing position. Even if access to large sets of data does not guarantee success for an online platform, data is still necessary in order to sustain the business model based on the collection and commercial use of data. In order to survive in such a market, online service providers require huge amounts of data and resources to process and extract knowledge from data. On this note "a chief scientist of Google even suggested: 'We don't have better algorithms than anyone else. We just have more data'".[70]

It seems that owning large sets of data can amount to a competitive advantage and may exclude other competitors from the market or at least lead to a position of market strength. Nevertheless, as pointed out, this competitive advantage should be analyzed on a case-by-case basis.

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[67] I.Graef, S.Y.Wahyuningtyas, P.Valcke, *Assessing Data Access Issues in Online Platforms*, Telecommunications Policy 39, 2015, p 378
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[68]I.Graef, S.Y.Wahyuningtyas, P.Valcke, *Assessing Data Access Issues in Online Platforms*, Telecommunications Policy 39, 2015, p 378
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[69] A.V. Lerner, *The Role of "Big Data" in Online Platform Competition*, August 26, 2014, p 30, http://papers.ssrn.com/sol3/papers.cfm? abstract_id=2482780

[70] M. Asay, *Tim O'Reilly: 'Whole Web' is the OS of the future*, https://www.cnet.com/news/tim-oreilly-whole-web-is-the-os-of-the-future/, accessed November 16, 2017

IV. THE ROLE OF DATA IN MERGERS AND THE NEED TO DEFINE A RELEVANT MARKET FOR DATA

This chapter will analyze whether mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry.

I will start by providing an overview of the European Commission`s previous merger decisions involving user personal data with a view to assess how the relevant market for data has been defined, if at all and what lessons we can take from the Commission's analysis. Next, I will discuss the importance of the relevant market for data, the need to define it, the challenges thereto and how data has become a specialized asset for the online environment.

Defining a relevant market is both necessary and useful, since in this way it is established what goods and/or services actually or potentially compete. As we will see in this chapter, defining a relevant market for data may prove to be difficult, but this may be of use for competition authorities to take into account a new form of potential competition for acquiring/collecting data

As previously discussed, personal data has become a valuable asset for companies in the online environment, which have developed a business model based on the acquisition and commercial use of data. This has led to situations where access to data may constitute a competitive advantage for certain undertakings and may create barriers to entry for new comers or other competitors.

The fast pace evolution of the online markets for search engines, social networks and e-commerce platforms has led to high market shares that are held by a limited number of undertakings. As noted, these undertakings are active in a special type of market, namely multi-sided markets or multi-sided platforms. This type of market brings together two distinct groups. Search engines and social networks platforms bring together users, on one side of the platform and advertisers on the other side of the platform.

In order to be in the presence of a multi-sided platform we need to have two or more groups on each side of the platform. The online platform acts as an intermediate between the two groups. It collects personal data from users, which in return is used to provide targeted advertising. Therefore, through the collection and commercial use of data, online platforms sustain the provision of "free" services to users and also gain revenue.

For this type of business model to be successful, the platform needs to be popular and attract the attention of users. As a result, platforms compete with each other for the

collection of personal data from users.[71] The more users a platform attracts, the more audience it gets for advertising and therefore, advertisers will be keen on buying space for displaying their ads.

The fact that the two sides interact with each other, is the result of the indirect network effects, which best describe the multi-sided platforms.[72] The indirect network effects occur in multi-sided platforms when the two groups are connected and influence each other. On one side users benefit from targeted advertising matching their interests, whereas on the other side advertisers increase their revenue by selling their products or services. However, it is questionable here if users really need advertisers. Some users may find targeted advertisements useful as they provide products and services tailored on their interests, but "it is not an essential feature"[73] for them. More likely it is the advertisers that need users as they gain advantages from being connected to the users through the platform.

Multi-sided platforms raise some practical implications in terms of defining the relevant market. To better exemplify this, I will present below the evaluation of proposed concentrations that involve user data on multi-sided platforms. This will help determine whether competition tools are able to take account of the particularities of each side of the platform.

4.1. Previous merger decisions related to user data

In order to assess if mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry, and subsequently, if a relevant market for data has been defined at all, it is necessary to take a look at the European Commission`s previous decisions involving user data in multi-sided markets.
These decisions will provide the background in order to see how the European Commission has described, if at all, the relevant market for data and what lessons we can take from these decisions.

[71] Directorate-General for Internal Policies of the Union, *Challenges for Competition Policy in a Digitalized Economy*, European Parliament, July 2015, p 22 http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf
[72] F. Thépot, *Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets*, Centre for Law, Economics and Society, UCL, Working paper series 4/2012, p 3 https://www.ucl.ac.uk/cles/research-paper-series/research-papers/cles-4-2012
[73] N. Newman, *Search, Antitrust and The Economics of the Control of User Data*, Yale Journal on Regulation, Volume 31, Issue 2 Yale Journal on Regulation, Article 5, 2014, p 406 http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1389&context=yjreg

i. Google/DoubleClick merger

In November 2007 the European Commission opened an investigation for the proposed acquisition of DoubleClick by Google.[74] The investigation was finalized in March 2008 and the Commission cleared the said merger, as it did not have a significant impact on effective competition on the market.

Google operates an Internet search engine through which it offers its users the possibility to search on the web free of charge. Apart from being one of the most popular search engines, Google also provides online advertising space on its website through its AdWords[75] and AdSense[76] networks. In addition, Google also offers a range of free services to users such as, Gmail, Maps, Google Earth, YouTube, etc, These services are sustained through online advertising services, since Google makes almost all of its revenue from online advertising.[77]

DoubleClick is a provider of ad serving[78] technology. The company sells ad serving, management and reporting technology worldwide to website publishers, advertisers and advertising agencies, in addition to ancillary services.[79]

Google offers advertising space for search ads, whereas DoubleClick offers ad serving technology mainly for display ads (non-search ads),[80] both companies being active in the online advertising industry.

The relevant markets identified by the Commission were the provision of online advertising space[81], intermediation in online advertising[82] and the provisions of display

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[74] Case no COMP/M.4731 - Google/ DoubleClick

[75] AdWords is an online advertising service developed by Google which enables advertisers to create advertisements which will appear on relevant Google search results pages, https://support.google.com/adsense/answer/76231?hl=en

[76] AdSense is a program run by Google that allows publishers in the Google network of content sites to serve automatic text, image, video or interactive media advertisements that are targeted to site content and audience, https://www.google.com/adsense/start/how-it-works/#/

[77] Case no COMP/M.4731 - Google/ DoubleClick, para 4

[78] Ad serving describes the technology and service that places advertisements on Web sites. https://www.doubleclickbygoogle.com; "Online publishers sell advertising space on their websites in order to generate revenues. Advertisers purchase such advertising space to place their advertisements. Once online advertising space has been sold by a publisher to an advertiser, either directly or through an intermediary, both parties need to ensure that the correct advertisement actually appears on (i.e. is served to) the publisher's website space at the right place at the right time. is step is performed by the ad serving tools, which also measure the performance of the ad placement (by recording events and in some situations by 'tracking' the behavior of users). DoubleClick provides such ad serving tools to both publishers and advertisers." J.Brockhoff, B.Jehanno, V.Pozzato, C.Buhr, P.Eberl, P. Papandropoulos, *Google/DoubleClick: The first test for the Commission's non-horizontal merger guidelines,* Competition Policy Newsletter, Number 2, 2008, p 53, http://ec.europa.eu/competition/publications/cpn/2008_2_53.pdf

[79] Case no COMP/M.4731 - Google/ DoubleClick, para 5

[80] J.Brockhoff, B.Jehanno, V.Pozzato, C.Buhr, P.Eberl, P. Papandropoulos, *Google/DoubleClick: The first test for the Commission's non-horizontal merger guidelines,* Competition Policy Newsletter, Number 2, 2008, p 54, http://ec.europa.eu/competition/publications/cpn/2008_2_53.pdf

[81] Case no COMP/M.4731 - Google/ DoubleClick paras 44-56

[82] Case no COMP/M.4731 - Google/ DoubleClick paras 57-73

and ad serving technology[83]. All markets identified by the Commission refer to services for which a monetary payment exists. As a result, the Commission did not identify a relevant market for data since neither Google nor DoubleClick do not trade data. Data is not sold or traded and as a result no demand and supply exists and for this reason, the Commission did not identify a relevant market for data.

Nevertheless, the Commission did make some comments regarding data, namely if the "combination of DoubleClick`s assets with Google`s assets and in particular the combination of customer provided information (CPI) data (generated by the use of internet) obtained by both of them, would allow the merged entity to achieve a position that could not be replicated by its integrated competitors (mainly Yahoo! and Microsoft) or "point" product competitors. As a result of this combination, Google's competitors would be progressively marginalized which would ultimately allow Google to raise the prices for its intermediation services."[84]

The Commission continued its analysis by stating that "such a combination, using information about users' IP addresses, cookie IDs and connection times to correctly match records from both databases, could result in individual users' search histories being linked to the same users' past surfing behavior on the internet. For instance, after such a match, the merged entity may know that the same user has searched for terms A, B and C and visited web pages X, Y and Z in the past week. Such information could potentially be used to better target ads to users."[85] In the end the Commission concluded that this combination of assets could be impractical and even if it were implemented it would still not confer the merged entity a competitive advantage that could not be matched by its competitors.[86] Here, the Commission made reference to competitors that run search engines and offer ad serving services (like Microsoft and Yahoo!), that purchase data from third parties and from internet service providers that track users behavior online. The Commission analyzed the issue of the combination of data based on the fact that other competitors may have access to similar data and therefore the merged entity would not hold a competitive advantage.[87] However, the Commission did not distinguish between different types of data. It only referred to the possibility that other competitors have to collect large amounts of data.

The Commission exclusively analyzed whether the issue of combination of data between the merger parties would significantly impede effective competition on the market and in its conclusion to the merger decision it ultimately stated that its decision

[83] Case no COMP/M.4731 - Google/ DoubleClick paras 74-81
[84] Case no COMP/M.4731 - Google/ DoubleClick para 359
[85] Case no COMP/M.4731 - Google/ DoubleClick para 360
[86] Case no C 361-363OMP/M.4731 - Google/ DoubleClick para 361-363
[87] Autorité de la concurrence and Bundeskartellamt, *Competition Law and Data*, May 10, 2016, p 34 http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf

is without prejudice to the obligations that the parties have under the EU legislation concerning privacy and data protection.

ii. Microsoft/Yahoo! merger

On February 2010 the European Commission cleared Microsoft`s proposed acquisition of Yahoo!`s internet search and search advertising business and concluded that the merger did not significantly impede effective competition on the market.[88]

Microsoft is a technology company that develops, manufactures, licenses, supports and sells computer software, consumer electronics, personal computers, and services.

The merger concerned Microsoft's Online Services Business division respectively, its internet search platform, Bing, and its online search advertising platform, adCenter.[89]

Yahoo! search is an internet search engine and online search advertising business of Yahoo!.

This merger is important for the fact that the Commission had to assess the complex market of online search. Here, the Commission analyzed the importance of data for the online advertising market and the possible positive effects of data in this market.

The European Commission had to analyze the market for online search, which is characterized by the presence of two-sided platforms.[90] In its analysis of the two-sided platform, the Commission examined the ability of search advertising platforms to both generate search traffic and sell it to advertisers. It stated, "a search engine is a matchmaker connecting advertisers and users. Therefore a search engine is a two-sided platform where the demands on the two sides are interdependent. Advertisers aim to reach a large audience and monetize their investment in advertising. Users value the relevance of the internet search which includes the organic (or algorithmic) and advertising (or sponsored) results."[91]

In addition, this merger lead to the creation from three to two market players, in a market that already seemed to have high barriers to entry.[92]

The relevant markets identified by the Commission were online advertising [93], intermediation in online advertising [94] and internet search [95]. Just like in Google/DoubleClick, the Commission considered the online advertising market to be the relevant market. It did not go in depth with the analysis of this market, respectively

[88] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business
[89] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, para 2
[90] T.Vecchi, J.Vidal, V.Fallenius, *The Microsoft/ Yahoo! Search Business case*, Competition Policy Newsletter, Number 2, 2010, p 41 http://ec.europa.eu/competition/publications/cpn/2010_2_8.pdf
[91] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, para 100
[92] T.Vecchi, J.Vidal, V.Fallenius, *The Microsoft/ Yahoo! Search Business case*, Competition Policy Newsletter, Number 2, 2010, p 41 http://ec.europa.eu/competition/publications/cpn/2010_2_8.pdf
[93] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, paras 61-81
[94] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, paras 82-84
[95] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, paras 85-86

if other parts of the online advertising market could constitute autonomous markets in their own right and left the definition of the relevant market open, since the transaction did not give rise to serious doubts on the common market.[96]

This merger is noteworthy, because here the Commission considered that this merger could promote innovation in the online advertising market since the new entity will be able to provide better services to users through the combination of data from Yahoo! and Microsoft. It stated, "it is possible that due to the transaction some benefits will materialize due to larger scale of the merged entity. On this basis, the transaction does not give rise to serious doubts as to its compatibility with the common market as far as its effects on search engine users are concerned."[97] Therefore, it concluded that the merger may have a positive impact on the market, since although it deprives the market of a competitor, it will help the new entity boost competition against the dominant player on the market, Google.

iii. Facebook/WhatsApp merger

On October 2014 the European Commission authorized the merger between WhatsApp and Facebook[98], as it did not find it to significantly impede effective competition on the market.

Facebook is an online social media and social networking platform. The online platform offers its users social networking (through its Facebook platform), consumer communications (through the Facebook Messenger app) and photo/video sharing services (through its Instagram platform). For the provisions of these free services, the platform collects user data that in return is used for targeted advertising.

WhatsApp provides consumer communication services via a mobile app, where users can send text messages, voice calls, video calls, images, documents, user location, etc. WhatsApp does not provide online advertising space on its app.

The Facebook/WhatsApp merger is particularly interesting because the European Commission finally recognized the role that data may play in the competitive assessment of mergers and even formulated a possible theory of harm with regard to

[96] "Whether segments of that market constitute relevant markets in their own right can be left open because the transaction would not give rise to serious doubts as regards its compatibility with the common market in the EEA under any such narrower market definition. For the same reason, it can be left open whether intermediation, internet search and distribution agreements on entry points to search engines also constitute relevant markets.", Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, para 87

[97] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, paras 225-226

[98] Case no COMP/M.7217 - Facebook/ Whatsapp

the combination of the parties' datasets.[99] This was done though, without the Commission defining a relevant separate market for data.
The Commission assessed the impact of the merger for three markets, namely, consumer communications services[100], social networking services[101] and online advertising services[102].

I will provide below the two main ways in which data may be taken into account in the competitive assessment of mergers.

- **Data - a competitive advantage of the merged entity**

For the market of online advertising services, the Commission analyzed if the combination of the parties datasets may strengthen Facebook`s position on the market and hamper competition, respectively, if the combination of datasets from Facebook and WhatsApp "could provide them with a competitive advantage, by helping to improve the merged entity`s product or service post-merger in a way that competitors are unable to match".[103] During the investigation, the Commission formulated a possible theory of harm "according to which Facebook could strengthen its position in online advertising by: (i) introducing advertising on WhatsApp, and/or (ii) using WhatsApp as a potential source of user data for the purpose of improving the targeting of Facebook's advertising activities outside WhatsApp".[104]
The Commission found that it was unlikely that Facebook will improve its targeted advertising in the above scenarios; if Facebook does introduce advertising on WhatsApp, there would still be sufficient competitors on the market left to offer targeted advertising[105]; if Facebook starts using WhatsApp user data, there would still be large amounts of user data available on the Internet for other competitors.[106] Here also, the Commission did not distinguish between different types of data. It only stated that large amounts of data would be available for other competitors.

[99] E.Ocello, C.Sjödin and A.Subočs, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook / WhatsApp EU merger case*, Competition Merger Brief, Issue 1, February 2015, http://ec.europa.eu/competition/publications/cmb/2015/cmb2015_001_en.pdf
[100] Case no COMP/M.7217 - Facebook Whatsapp para 34
[101] Case no COMP/M.7217 - Facebook/Whatsapp para 62
[102] Case no COMP/M.7217 - Facebook/Whatsapp para 79
[103] E.Ocello, C.Sjödin and A.Subočs, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook / WhatsApp EU merger case*, Competition Merger Brief, Issue 1, February 2015, p 6, http://ec.europa.eu/competition/publications/cmb/2015/cmb2015_001_en.pdf
[104] Case no COMP/M.7217 - Facebook/Whatsapp para 167
[105] Case no COMP/M.7217 - Facebook/Whatsapp para 179
[106] Case no COMP/M.7217 - Facebook/Whatsapp para 189

- **Competitive constraints related to privacy - a non-price parameter of competition**

In order for Facebook to collect WhatsApp user data it would have to make a change in WhatsApp`s privacy policy, since the latter only stores limited information about its users and does not use this information for any advertising purposes.[107] Moreover, for this part of the assessment Facebook (the Notifying Party) stated that in order to collect data from WhatsApp it would need to implement a form of integration between the two apps and "that there are major technical obstacles thereto." [108] Also, during the investigation the Commission found that, in case there is a change in the privacy policy of WhatsApp, users might be likely to switch to apps that they feel provide an adequate privacy policy.

Despite the Commission`s findings on this matter and Facebook`s statement, WhatsApp`s privacy policy did change post-merger.[109] Moreover, prior to the clearance of the merger, the German privacy regulator warned users to switch to another communication services app since Facebook was buying WhatsApp and advised, "the deal could raise important data protection issues because the personal data of its users will likely be merged with Facebook data".[110]

The Commission acknowledged that in the market for consumer communication services, users increasingly value privacy and data security.[111] This decision was the first to recognize privacy as a non-price competition parameter. The Commission spotted the differences between the two communication services apps, one of them being the difference between their privacy policies.[112] It did not go further to analyze the impact of the merger on the incentives of the parties to compete on privacy and privacy policies[113], it only assessed the privacy implications in relation to its analysis of the advertising market.[114] If indeed privacy is a non-price parameter of competition, than two communication services apps having different privacy policies, should have

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[107] Directorate-General for Internal Policies of the Union, *Challenges for Competition Policy in a Digitalized Economy*, European Parliament, July 2015, p 43 http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf

[108] Case no COMP/M.7217 - Facebook/Whatsapp para 185

[109] European Commission, Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover, Brussels, May 18, 2017, http://europa.eu/rapid/press-release_IP-17-1369_en.htm accessed April 15, 2017

[110] L.Essers, *German privacy regulator: WhatsApp users should switch to a more secure service* (Amsterdam, February 20, 2014) http://www.pcworld.com/article/2099700/whatsapp-users-should-switch-to-a- more-secure-service-german-privacy-regulator-urges.html, accessed December 12, 2017

[111] Case no COMP/M.7217 - Facebook/Whatsapp para 87

[112] contrary to WhatsApp, Facebook Messenger enables Facebook to collect data regarding its users that it uses for the purposes of its advertising activities, Case no COMP/M.7217 - Facebook/Whatsapp para 102

[113] S.Esayas, *Competition in dissimilarity: Lessons in privacy from the Facebook/WhatsApp merger*, CPI Antitrust Chronicle August 2017, p 2

[114] S.Esayas, *Competition in dissimilarity: Lessons in privacy from the Facebook/WhatsApp merger*, CPI Antitrust Chronicle August 2017, p 2

been considered direct competitors, rather than being viewed as complementary services. Pre-merger, users would use WhatsApp services for the privacy features that it offered (*i.e.* end-to-end encryption) and in this way WhatsApp would lure users from Facebook messenger app. Whereas, post-merger, Facebook may have the interest in changing the privacy policy of WhatsApp to have access to larger amounts of data for the benefit of advertising (either introducing advertising on WhatsApp or improving the advertising services on Facebook platform). As a result of this change, competition on privacy and privacy policies may be hampered and consumers may in the end be harmed by the loss in privacy. As mentioned above, the privacy policy of WhatsApp did change post-merger, leaving Facebook with only a fine to pay.

However, the Commission in 2014 might not have properly addressed the issue of privacy as a non-price parameter of competition, because this may be of relevance in cases where privacy is a central factor in the decisions of users to purchase/use a service.

The Commission in the end stated that "any privacy-related concerns flowing from the increased concentration of data within the control of Facebook as a result of the Transaction do not fall within the scope of the EU competition law rules but within the scope of the EU data protection rules."[115] Data protection law should resolve personal data infringements, but the Commission should analyze competition issues raised by the combination of datasets and the loss in privacy with utmost care.

Nevertheless, the assessment conducted in Facebook/WhatsApp showed that the Commission is preoccupied with the implications that data may have on competition.

iv. Microsoft/LinkedIn merger

On December 2016 the European Commission approved the merger between Microsoft and LinkedIn[116] subject to a series of commitments by Microsoft.

The Microsoft/LinkedIn merger is an important development in the Commission`s analysis of mergers involving data-related issues. As we will see below, this decision provides guidance in the assessment of data issues in merger control.

Microsoft is a technology company that develops, manufactures, licenses, supports and sells computer software, consumer electronics, personal computers, and services. Its products include operating systems for PC`s, software solutions, cloud services and online advertising (through its search engine Bing).[117]

LinkedIn is a professional social network that operates via website and mobile app.

[115] Case no COMP/M.7217 - Facebook/Whatsapp para 164
[116] Case M.8124 – Microsoft/LinkedIn
[117] Case M.8124 – Microsoft/LinkedIn para 2

The Commission assessed the impact of the merger for the following markets: PC OSs [118], productivity software [119], customer relationship management [120] software solutions, sales intelligence solutions [121], online communications services [122], professional social network services [123], online recruitment services [124] and online advertising services[125]. Although the Commission did not identify a relevant market for data, it assessed the impact of the combination between the parties' datasets for the markets involved.

The Commission assessed the likelihood of horizontal non-coordinated effects[126] in the market for online advertising services and of non-coordinated vertical effects[127] in connection with input foreclosure [128] in the market for customer relationship management software solutions.[129]

In the market for online advertising the Commission analyzed if data aggregation of the merging parties was likely or not and what would be the possible effects on competition. It found that "a possible post-merger combination of data held by each of the Parties in relation to online advertising"[130] would not harm competition. Any such combination of data could be possible only to the extent to which it is permitted by the applicable data protection rules.[131] Since the GDPR enters into force in May 2018, this may further limit the merged entity's ability "to have access and to process its users'

[118] Case M.8124 – Microsoft/LinkedIn para 8
[119] Case M.8124 – Microsoft/LinkedIn para 19
[120] Case M.8124 – Microsoft/LinkedIn para 29
[121] Case M.8124 – Microsoft/LinkedIn para 29 and 57
[122] Case M.8124 – Microsoft/LinkedIn para 76
[123] Case M.8124 – Microsoft/LinkedIn para 87
[124] Case M.8124 – Microsoft/LinkedIn para 126
[125] Case M.8124 – Microsoft/LinkedIn para 152
[126] Non-coordinated effects, also referred to as unilateral effects, may arise where, as a result of a merger, the merged firm finds it profitable to raise prices (or reduce output or quality) as a result of the loss of competition between the merged entities.
https://assets.publishing.service.gov.uk/media/555de40de5274a74ca0000eb/oft516.pdf
[127] "non-coordinated effects may significantly impede effective competition as a result of a vertical merger if such merger gives rise to foreclosure. Foreclosure occurs where actual or potential competitors' access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing those companies' ability and/or incentive to compete. Such foreclosure may discourage entry or expansion of competitors or encourage their exit." Case M.8124 – Microsoft / LinkedIn, para 182
[128] "Input foreclosure arises where, post-merger, the new entity would be likely to restrict access to the products or services that it would have otherwise supplied absent the merger, thereby raising its down-stream rivals' costs by making it harder for them to obtain supplies of the input under similar prices and conditions as absent the merger. This may lead the merged entity to profitably increase the price charged to consumers, resulting in a significant impediment to effective competition" Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07), para 31
[129] E.Ocello, C.Sjödin, Microsoft/LinkedIn: *Big data and conglomerate effects in tech markets*, Competition Merger Brief Issue 1, May 2017, p 1 http://ec.europa.eu/competition/publications/cmb/2017/kdal17001enn.pdf
[130] Case M.8124 – Microsoft/LinkedIn para 176
[131] Case M.8124 – Microsoft/LinkedIn para 177

personal data in the future since the new rules will strengthen the existing rights and empowering individuals with more control over their personal data".[132]
The Commission continued its assessment and noted that if such combination of data would be allowed under the applicable data protection framework then the merger could raise certain horizontal issues. The combination of datasets could increase the market power of the merged entity "in a hypothetical market for the supply of this data"[133] or could create barriers to entry in the market for existing or potential competitors, which may need the data to enter or operate on the market. If the combination of data is not possible due to technical reasons or the parties do not intend to combine their data, the Commission found that nevertheless, "pre-merger the two companies were competing with each other on the basis of the data they controlled"[134] and as a consequence of the merger, competition could be eliminated from the market.
In the end, no horizontal concerns arose since the merger did not give rise to this type of issues for the online advertising market, because neither Microsoft nor LinkedIn do not "make available their data to third parties for advertising purposes".[135] Moreover, after its analysis, the Commission stated that the combination of datasets would not give rise to barriers to entry in the market since large amounts of data would still be available for other competitors on the market.

In what concerns the market for customer relationship management software solutions it was argued that LinkedIn data would be an important tool in the provision of software solutions. Concerns were raised since by acquiring LinkedIn, Microsoft would have exclusive access to all data of LinkedIn.
In order to establish if there would be any vertical effects, the Commission assessed whether LinkedIn had any intention to start monetizing its data and whether LinkedIn`s data was an important tool in the provision of CRM software solutions. Firstly, from the documents and information provided, the Commission found that LinkedIn had no intention in monetizing its data.[136] Secondly, it concluded that the data held by LinkedIn was not an important tool for the CRM market, meaning that access to this data would not give Microsoft a competitive advantage in this market. Therefore, any impact on competition in the market for CRM software solutions was excluded.

In this decision the Commission also analyzed the issues of tying and interoperability between Office applications of Microsoft and LinkedIn in the market for professional

[132] Case M.8124 – Microsoft/LinkedIn para 178
[133] Case M.8124 – Microsoft/LinkedIn para 179
[134] Case M.8124 – Microsoft/LinkedIn para 179
[135] Case M.8124 – Microsoft/LinkedIn para 180
[136] Case M.8124 – Microsoft/LinkedIn para 248

social networking (PSN) services. Consumers use social networks like Facebook for private reasons (connect with friends and family members) and tend to use networks like LinkedIn for professional reasons.[137]

Pre-installation or integration of LinkedIn was found to lead to LinkedIn`s growth which competitors could not replicate. This growth was considered to harm competition due to the presence of the network effects that characterize the PSN services market. The popularity and utilization of LinkedIn may grow due to network effects since most consumers may use LinkedIn as their professional network and this will be more appealing to its existing and future members. The conclusion was that this would lead to the "foreclosure of competing providers of PSN services that currently exist in certain EEA countries or of potential new entrants".[138]

In addition, the Commission noted that pre-installation or integration of LinkedIn together with its growth generated by the network effects would have an ultimate impact on consumers since it would restrict their privacy choice. Since LinkedIn would become the largest and most powerful PSN service provider it could exclude other competitors from the market that may offer better privacy choices to consumers.[139] This consideration of the Commission strengthens the role that privacy may play in mergers. In the end, the Commission cleared the merger subject to full compliance with a set of commitments.[140]

4.2. What lessons we can take from these decisions

Although the European Commission has previously assessed data related issues in other mergers[141], the cases discussed above gave the Commission the chance to look at a broad range of data issues that arise in the context of data related mergers in multi sided markets.

From the Google/DoubleClick merger in 2008 to the Microsoft/LinkedIn case in 2016, the Commission gradually started analyzing the possible effects of the combination of datasets owned by the parties to the merger. However, in its analysis the Commission failed to identify and define a separate market for data. Although it found possible negative effects for some of the mergers (as in Microsoft/LinkedIn case regarding the pre-installation or integration of LinkedIn) the Commission did not find the involved

[137] E.Ocello, C.Sjödin, Microsoft/LinkedIn: *Big data and conglomerate effects in tech markets*, Competition Merger Brief Issue 1, May 2017, p 3

[138] Case M.8124 – Microsoft/LinkedIn para 343

[139] Case M.8124 – Microsoft/LinkedIn para 350-351

[140] Case M.8124 – Microsoft/LinkedIn para 470

[141] M.4726 - Thomson/Reuters (2008); M.4854 - TomTom/Tele Atlas (2008); M.6314 - Telefonica UK/Vodafone UK/Everything Everywhere/JV (2012); M.7023 - Publicis/Omnicom (2014); M.7337 - IMS Health/Cegedim (2014)

parties to be competitors in a hypothetical market for data since none of the parties trade data.
Consequently, the impact on consumers and the harm for competition were not considered to be major, because the Commission either found that there were sufficient competitors on a relevant market either that the data the parties could combine would still be available in the market for other competitors. However, for the reasons discussed below, the focus of the analysis of the Commission should have also taken into consideration the substitutability of different types of data.

Unlike in Google/Double Click and Microsoft/Yahoo!,, in Facebook/WhatsApp the Commission analyzed the potential data concentration to the extent to which it could strengthen Facebook`s position on the market and only assessed privacy issues in relation to the online advertising market. The potential data concentration was assessed though without the Commission defining a relevant market for data.

As mentioned, when assessing whether a merger significantly impedes effective competition on the market, competition authorities start their analysis with the market definition. Defining a relevant market entails the existence of supply and demand for the product or service on that market.[142] The providers-parties to the analyzed mergers make it clear that they do not sell data to third parties.[143]As a result, a relevant market could not be identified, since data does not take the form of a relevant product or service on a given geographical market. Nevertheless, in Facebook/WhatsApp a number of respondents stated that Facebook`s position on the market for the provision of online advertising services could be consolidated as a result of the combination of datasets between Facebook and WhatsApp. This led the Commission to analyze, irrespective of the existence of a market for the provision of data, a potential data concentration. In the end, the Commission noted that "regardless of whether the merged entity will start using WhatsApp user data to improve targeted advertising on Facebook's social network, there will continue to be a large amount of Internet user data that are valuable for advertising purposes and that are not within Facebook's exclusive control."[144]
The Commission relied on this conclusion along its analysis in data-related mergers, but it failed to go further and see what types of data will actually remain available for other competitors on the market. Facebook is the largest social network of its kind and it also disposes of the necessary technical resources to handle user data and to gain

[142] Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), para 13-23
[143] I.Graef, Market Definition and Market Power in Data: The Case of Online Platforms, World Competition Journal 38 no. 4, 2015, p 490,
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309
[144] Case no COMP/M.7217 - Facebook Whatsapp para 189

revenue by extracting value from the data. Its resources in combination with the datasets that it collects and acquires may raise barriers to entry for actual or potential competitors in markets for online advertising or communication services. As we will see below, the data necessary for social networks to provide targeted advertising is different from the data that is necessary for search engines to provide targeted advertising. Therefore, the simple observation that sufficient data remains available on the market is not enough, since without a proper analysis of a market for data we cannot know for sure if indeed the right and useful amount of data remains available for other competitors on the market.

In the Microsoft/LinkedIn merger, the Commission discussed the possible data combination between the two parties in a hypothetical market for data. The Commission`s line of analysis was that, in a potential market for supply of data, the merged entity`s market power may increase or barriers to entry for actual or potential competitors may increase, since they may need the data to operate on the market. In the end, the Commission concluded that there was no threat for competition because neither of the two parties traded data for advertising purposes. Also, the combination of data did not raise any barriers to entry, as there would continue to be a large amount of data available on the Internet for other competitors.
The Commission`s approach in the Microsoft/LinkedIn merger went a bit further and assessed the possible combination of datasets in a hypothetical market for the supply of data. Still, the Commission`s approach could have gone further. The parties were competing with each other on the basis of the data they controlled on the market for online advertising and post-merger, this data would become accessible to the merged entity. The assessment did not go further since the parties firstly, did not trade data and secondly, the amount of data that would remain available to third parties for the provision of advertising services would be enough. Also, here, like in Facebook/WhatsApp, the Commission did not evaluate what types of data actually remain available for competitors and if this data would be enough for the provision of online advertising.

The Commission used the approach of *data as an input* in Microsoft/LinkedIn. This was done in the assessment of the non-coordinated vertical effects in connection with input foreclosure in the market for customer relationship management software solutions. LinkedIn data was considered to be an input for the provision of certain software solutions. The Commission may use this kind of approach, considering data as an input for the provision of certain services in a market, when it assesses the effects on competition of data-related mergers, especially when data is used to provide services for users and advertisers.

Further on, I will discuss the need to define a relevant market for data as well as the challenges thereto.

4.3. A relevant market for data

i. Is there a need for defining a relevant market for data?

From the above analysis, it looks like the traditional tools used by competition authorities for the definition of a relevant market are not suited for situations where there is no direct economic gain. As we have seen, this is the case for data related mergers, where data is not traded and therefore no supply and demand exists.

As stated above, defining a relevant market is both necessary and useful, since it allows for the determination of what goods and/or services actually or potentially compete.

In the analysis of the Commission, the market definition approach referred to existing competition for the services offered on online platforms.[145] A possible definition of a relevant market for data was discussed in the dissenting opinion related to Google/DoubleClick case in the U.S. [146] The commissioner at that time made predictions about the future of the market in light of the merger between Google/DoubleClick and stated that competition and privacy issues should be adequately assessed in the interest of consumers. In this light, she stated that "it might have been possible to define a putative relevant product market comprising data that may be useful to advertisers and publishers who wish to engage in behavioral targeting."[147]

The identification of a separate market for data, distinct from the product or services that are "fueled" by the data collected would be more accurate and reflect reality. Online service providers extract value from data "far beyond the initial purposes for which the data initially might have been shared or collected, and this value often has important competitive consequences." [148] This means that data is used as an input for the

[145] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition Journal 38 no. 4, 2015, p 492
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

[146] Dissenting Statement of Commissioner Pamela Jones Harbour, *Google/DoubleClick*, FTC File No. 071-0170, 20 Dec. 2007
https://www.ftc.gov/sites/default/files/documents/public_statements/statement-matter-google/doubleclick/071220harbour_0.pdf, accessed April 9, 2018

[147] Dissenting Statement of Commissioner Pamela Jones Harbour, *Google/DoubleClick*, FTC File No. 071-0170, 20 Dec. 2007, p 9

[148] P.Jones, T.I.Koslov, *Section 2 in a web 2.0. world: An expanded vision of relevant product markets*, p 773
http://www.nortonrosefulbright.com/files/us/images/publications/20100816Section2InWebWorld.pdf, accessed April 9, 2018

provisions of services to both users and advertisers and the more data a company owns, the better the services it provides and, in the end, the larger revenue it gets.

In addition, a definition of a separate market for data would be appropriate especially in the case of online service platforms, which unlike traditional ICT companies make their revenue by relying on the information they extract from users. Their entire business relies on the collection, acquiring and commercial use of data.
The Commission has analyzed data as an input, where data is collected for free and than used internally to provide services to users and advertisers. At a first glance, data has a non-rivalrous and non-exclusive nature, meaning that more companies can use the same set of data and because users multi-home, they provide their data to multiple online providers. Largely, data is widely available and the cost for collection is low. However, at a closer look, there are several issues that arise given that entry barriers may vary depending on the industry and may increase as a result of the network effects. For this reason, to consider that data is non-rivalrous and non-exclusive, meaning that is widely available for everyone to collect and use, is not accurate and may lead to erroneous competitive assessments. Online service providers seek to collect and acquire data to enhance the provision of their services to both users and advertisers. In this way, data is used as an input for the provision of related services and hence, when defining a relevant market, account should be taken of the data used to provide that service. This leads to the conclusion that there is a need to define of a relevant market for data. When defining a relevant market for the services that are provided to users and advertisers, the fact that data that is used for the provisions of these services should be taken into account. This could be done by defining an additional relevant market for data that is closely related to the services that it enables to provide. In this way, a more accurate assessment may be conducted that would take into account the collection mechanisms, access to data and the way network effects may influence the market.

Up to this point, data has been analyzed as an input and only a hypothetical market for the supply of data has been defined. The Commission has analyzed the implications that combination of datasets may have on competition, but it has not yet identified specific harm to competition. Authorities should be aware that accumulation of data by companies might raise risks regarding competition. Such risks may take the form of barriers to entry (if new entrants do not have access to data), collusion, due to increased transparency on the market or even exclusionary conduct (preventing other competitors to access the same data).[149]

[149] C.Breuvart, E.Chassaing, A.S.Perraut, *Big data and competition law in the digital sector: Lessons from the European Commission's merger control practice and recent national initiatives*, Competition

Moreover, mergers in the online environment are fueled by the amount of data the target undertaking has. Therefore, to properly assess such a merger, the definition of a distinct market for data is needed, in addition to the markets for the products or services offered to users and advertisers.

ii. The challenges of defining a relevant market for data

Under the approach of defining a relevant market only for services that are actually traded, data has been assessed only with regard to its internal use. This is the case since no supply and demand for data exists and hence with no sale of data there can be no market.

In the digital context of data related mergers in multi sided markets, the traditional tools used for the definition of relevant markets seem to be challenged. The Commission has analyzed data only as an input, being collected for free and then used for the provision of advertising services (or data analytics). The particularity of multi sided markets is that on the consumer side, online service providers (*i.e*. Google, Facebook) offer free services in exchange for vast amounts of data and then, on the advertiser side, they use the data to sell targeted advertising. In this way, online service providers treat data as a source of revenue. But, as it was emphasized "the Commission's analysis has focused on data-related services and functionalities, instead of the data itself."[150]In other words, the Commission has focused only on the services that are enabled by the use of data, without assessing the implications of the use of data in such a way.

In Facebook/WhatsApp the Commission analyzed the market for advertising where it assessed a potential data concentration, but in the end "the Commission did not investigate any possible market definition with respect to the provision of data, since (...) neither of the Parties is currently active in any such potential markets."[151] It seems that every time the Commission came close to analyzing potential competition effects on a market for data it rapidly reached the conclusion that since the parties do not trade data, there is no basis for defining a relevant market for data. Or, even in a hypothetical market for data, the Commission concluded that post merger, there would still be enough data available on the market for other competitors.

Law Review, ConcurrencesN°3-2016, pp.41-55, p 43
https://awards.concurrences.com/IMG/pdf/05.concurrences_3-2016_article_c._breuvart_al.pdf

[150] C.Breuvart, E.Chassaing, A.S.Perraut, *Big data and competition law in the digital sector: Lessons from the European Commission's merger control practice and recent national initiatives*, Competition Law Review, ConcurrencesN°3-2016, pp.41-55, p 45
https://awards.concurrences.com/IMG/pdf/05.concurrences_3-2016_article_c._breuvart_al.pdf

[151] Case no COMP/M.7217 - Facebook/Whatsapp para 72

One of the challenge when defining a relevant market for data is that it needs to address the platform as a whole. This means that it needs to take account of the data that is used to provide services to both users and advertisers. Also, it needs to take into account the substitutability of data. Different types of data are useful for providing different types of services. The functionality of the services provided should be assessed together with the data used for the provision of such services.

iii. Data as a specialized asset

As the Commission previously observed[152], in the market for online platforms competition is based on quality and innovation. Since they have free access, users choose their provider based on the features and quality of the online platform.

Given that quality and innovation are strong parameters of competition in this market, when defining a potential market for data competition authorities may take into consideration the concept of "competition in innovation". This concept is present in the Commission`s guidelines on the applicability of Article 101 of the TFEU to horizontal co-operation agreements.[153] In the Horizontal Guidelines, the Commission acknowledges that research and development cooperation may affect competition in existing markets and that it is not enough to analyze "actual or potential competition in existing product/technology markets."[154] The Commission suggests that it should be assessed if after the relevant cooperation there will be sufficient R&D competition. In order to do so, certain aspects may be taken into account, such as specialized assets.[155]

As mentioned above, users choose their provider based on the quality and level of the services that it offers. As a consequence, online service providers compete by improving and/or creating products and services that may in the end, constitute a market of their own. In this scenario, competitors need access to data in order to be able to improve their services or keep up with the rapid innovation in this field. Therefore, in the market for online platforms, data may be regarded as a specialized asset to which competing providers need access in order to provide services for users and advertisers.[156] The application of the concept of specialized data could enable

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[152] Case no COMP/M.5727 – Microsoft/ Yahoo! Search Business, para 119 and Case No COMP/M.6281 - Microsoft/Skype, paras 81-84

[153] 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 119-120 ("**Horizontal Guidelines**")

[154] Horizontal Guidelines para 119

[155] "(...) the following aspects have to be taken into account: the nature, scope and size of any other R&D efforts, their access to financial and human resources, know-how/patents, or other specialized assets as well as their timing and their capability to exploit possible results." Horizontal Guidelines para 120

[156] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition Journal 38 no. 4, 2015, p 493
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

competition authorities to define a distinct relevant market for data, in addition to the markets for the services provided.[157]

Given the fact that the main impediment for a definition of a relevant market is that no supply and demand exist for data, so far only a hypothetical market for data can be defined. Therefore, since data is an input for the provision of online services, defining a relevant market where data is considered an asset for these services may lead to a more accurate assessment of the markets for existing services and/or products. The definition of an additional input market for data may prove to be useful when evaluating the competitive situation of the existing services offered to users and advertisers. In this way, competition authorities may analyze the potential competitive constraints that actual or potential competitors of dominant online service providers may face when trying to compete in online markets.

When defining an additional input market for data, an important aspect to take into account is that, different types of data are used for providing different types of services. In other words, the substitutability of data is a key factor when defining a relevant market for data, since it may determine the boundaries of the market. Also, the assessment of the substitutability of different types of data may lead to a more accurate analysis in terms of the data that remains available on the market for other competitors. In its evaluation of the mergers, the Commission reached the conclusion that irrespective of the combination of datasets between the parties, sufficient amount of data will remain available on the market for other competitors. The substitutability assessment may prove to be useful in determining what types of data actually remain available on the market. This is important, because the data that a social network needs to provide services (targeted advertising) is different than the data that a search engine or e-commerce platform needs for providing the same services. Hence, it is not enough that data exists on the market for competitors, it needs to be assessed what type of data remains available and if it is useful for the provisions of the services.
Social networks provide targeted advertising based on the data gathered about user`s interests, whereas search engines provide the same service based on the data collected through the queries of the user. This is why, in the assessment of a merger, the sufficient amount of data that remains available should also be useful to those competitors in that particular market.

[157] I.Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, World Competition Journal 38 no. 4, 2015, p 493
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647309

Although the Commission has started to be aware of the impact that data may have on competition, the pressure for defining a relevant market for data is still growing. The EDPS and other entities are pushing for a more innovative approach, irrespective of the fact that data is sold or not.[158]

At a first glance, it seems that the traditional tools used for the definition of a relevant market are not suited. But, in reality, competition authorities should use these tools in a more innovative approach. Already, the Commission has dealt with situations where it assessed the implications of data on different relevant markets.

Starting from here, the Commission should combine its existing tools properly and assess on a case-by-case basis if mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry.

[158] C.Breuvart, E.Chassaing, A.S.Perraut, *Big data and competition law in the digital sector: Lessons from the European Commission's merger control practice and recent national initiatives*, Competition Law Review, ConcurrencesN°3-2016, pp.41-55, p 45

V. CONCLUSION

This thesis set out to clarify whether mergers between companies owning large datasets amount to a competitive advantage and create barriers to entry. Specifically, the aim of this thesis was to provide an answer to the question if there is a need to define a relevant market for data.

Currently, relevant markets for online platforms are defined based on the services that are provided to users and advertisers and for which supply and demand exists. Nevertheless, given the fast accumulation of data by certain online platforms, together with the rapid technological development, that enables the collection and processing of huge amounts of data, competition authorities should start addressing competition concerns beyond the relevant markets for the actual services provided to users and advertisers.

Competition authorities should consider defining an additional relevant market for data, where data constitutes a specialized asset for the provision of services to users and advertisers. By regarding data as a specialized asset, the competitive constraints in connection to access to data needed by actual or potential competitors to compete on the market can be assessed. An additional market for data can be defined by also taking into consideration the substitutability of different types of data, since the functionality of the services provided by online platforms is given by a specific set of data.

This would lead to a more forward-looking approach in terms of defining a relevant market for data that will take into account the fact that data is currently used for the development of end services by online platforms.

In addition, this would enable competition authorities to accurately evaluate in the future data-related merges, assess the input to which competitors need access to and in the end, contribute to maintaining a healthy competition on the market and to the diversity of services and competitors.

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