



THE DATA-DRIVEN ECONOMY. CHALLENGES FOR COMPETITION

November 2016

“Come gather 'round people
Wherever you roam
And admit that the waters
Around you have grown
And accept it that soon
Or you'll be drenched to the bone
If your time to you
Is worth savin'
Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'.”

The Times They Are A-Changin'. Bob Dylan¹. 13 January 1964

“If a company's use of data is so bad for competition that it outweighs the benefits, we may have to step in to restore a level playing field. [...] we don't need a whole new competition rulebook for the big data world. Just as we didn't need one for a world of fax machines, or credit cards, or personal computers. What we do need is to pay close attention to these markets and to take action when it's necessary.”

Competition in a big data world. Margaret Vestager. 17 January 2016²

“[...] we need to start looking at mergers with valuable data involved, even though the company that owns it doesn't have a large turnover. [...] I think there's a strong case for new EU rules as part of the answer. [...] if we do find that new EU legislation is the best way forward, I hope to put a proposal on the table early next year.” *Big Data and Competition*. 29 September 2016³

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¹ Nobel Prize for Literature in 2016.

² https://ec.europa.eu/commission/2014-2019/vestager/announcements/competition-big-data-world_en

³ http://ec.europa.eu/commission/2014-2019/vestager/announcements/big-data-and-competition_en



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PRELIMINARY

The Catalan Competition Authority (hereinafter, “ACCO”) is an independent agency of the Government of Catalonia by Law 1/2009, of 12 February, on the Catalan Competition Authority, which in accordance with Article 2.1 of this regulation “aims to guarantee, improve and promote conditions of free competition and market transparency in respect of the economic activities carried out mainly in Catalonia”⁴.

Innovation affects competition conditions in the markets insofar as it alters the behaviour of the operators acting therein and may even change the way in which the markets function.

For this reason, the ACCO has worked on the analysis of important innovative factors such as the so-called collaborative economy⁵ or electrical self-consumption⁶ in order to encourage new technological possibilities with a view to contributing to improving the conditions of competition in the markets, thereby increasing the welfare of consumers and users.

One of the most significant technological advances relates to the possibility of capturing a huge amount of information and the rapid processing thereof (two of the main features that make up the phenomenon known as *big data*). This not only entails the emergence of specialised operators in these activities, but also makes a “data economy” possible.

In this regard, it expands the profitability of business models based on data and gives more strategic value to the collection thereof. The increased possibilities of obtaining revenue from the information lends greater efficiency to the strategy of setting a price of zero in one of the markets on which platform-type (two-sided) business models depend.

However, the market in which an operator offers its service at zero cost is not free from possible competition problems in parameters other than price (significantly, quality: whether understood as adequately classified information or the level of privacy offered to users). Therefore, the competition authorities must necessarily abandon a *price-centric* perspective and enter into an assessment of other parameters already foreseen in the Competition Act.

This is just one of the challenges of this new environment (the data economy). In this paper we explore the possibility that the latter may require regulatory changes, as well as changes to the modus operandi of the competition authorities.

The document is divided into 3 parts: (i) characterisation of the phenomenon, (ii) main challenges and (iii) possible responses of a regulatory nature and modus operandi of the competition authorities.

⁴ This document flows from the protection of competition, it is informational in nature and, therefore, references to individual operators are merely intended to illustrate the reality that we wish to discuss, but in no case do they imply a validation of their actions in terms of competition policy.

⁵ *PEER-TO-PEER TRANSACTIONS (P2P). A STEP FORWARD*. May 2016 ACCO. Xavier Puig and Susanna Grau.

<http://acco.gencat.cat/ca/detall/article/ES-10-2016.-Transaccions-entre-iguals-P2P-i-competencia.-Un-pas-endavant>

⁶ *Electrical self-consumption and competition*. May 2016 ACCO. Xavier Puig and Susanna Grau.

<http://acco.gencat.cat/ca/detall/noticia/LACCO-fa-publicques-unes-observacions-sobre-lautoconsum-electric-i-la-competencia>



(I) A NEW REALITY: THE DATA-DRIVEN ECONOMY

Technological developments have led to significant changes in many areas and the economy has not been alien to such changes.

Some of the most recent and significant changes that technology has stimulated in the economy have included the appearance of multiple operators that base their business model on the processing of information and can access it thanks to (i) increased digitisation (conversion of physical assets into information), which has enabled digital interactions (unlike physical interactions, they leave a record – information), and (ii) a large volume of information (Internet and sensors).

These changes have not only allowed the proliferation of business models based on information processing but rather, in particular, they can be found in those operators that have achieved the most significant success recently (from Google to Facebook, WhatsApp or LinkedIn, through to Uber and Airbnb).

1. Digitisation

From the industrial revolution and until well into the twentieth century, the most important competitive advantage of economic operators was based on their ability to produce and distribute goods or physical products. However, in recent decades, a particular phenomenon has emerged of the transformation of physical goods (atoms) into information (bits). In other words, the physical format is becoming less relevant while the importance of data continues to grow.

Those who have lived during the last 3 decades will be familiar with cassettes and CDs. They have also purchased and viewed videos (videocassettes) and consulted the *Yellow Pages*. Most likely children born today will never use any of the above physical media. They will use only data; for example, through services offered by Spotify (music), Netflix (video) or Google (as a directory of business contacts). And perhaps they will use less hard-copy books and more e-books.

If the technological advances that allowed the dematerialisation of information had not taken place, none of the companies described above would have emerged. Google was created in response to the problem posed by the emergence of a multitude of digital information that needs to be sorted in order to be easily queried. Without a huge volume of digital information in terms of news, music, video, etc., Google would never have existed. There would be no such need.

A trend which, far from disappearing, it seems will become ever more entrenched, with the eventual widespread use of 3D printers.

Thus, the most important competitive advantage appears to have moved from production and distribution to information (data) and its management⁷.

⁷ As will be discussed, the management of the information may, to a large extent, also depend on the data or interactions as much or more than the algorithm. In this sense, it would seem that algorithms are becoming a kind of commodity that can be achieved or refined based on initiatives such as "Kaggle.com".

2. The digital interface

The dematerialisation of information (a physical support is no longer necessary) is combined with the possibilities of digital interaction enabled by the Internet. The Internet is merely a network that puts us in digital contact and permits many distance digital interactions. As a result of these possibilities, many operators have appeared in the framework of what has been labelled “Internet 2.0” (relational internet). Among them are Wikipedia, Facebook, Uber, Airbnb, TripAdvisor and others.

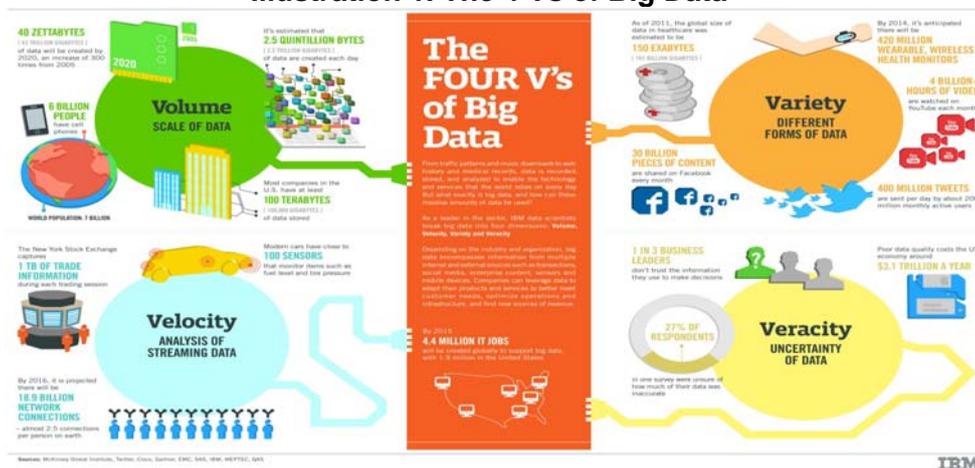
That is, without the Internet, there would be no possibility of collective or collaborative work, such as Wikipedia or TripAdvisor, nor would companies such as Uber and Airbnb have appeared, which work to streamline the connection between supply and demand through digital media. Nor would Facebook exist if an interaction, previously restricted to the personal sphere (having a friendship with someone), had not been configured digitally.

In any case, we are at the threshold of a new revolution⁸ to the extent that digital interactions will cease to be virtually monopolised by people and also start to include the intercommunication between objects under the *Internet of Things*⁹ (hereinafter, IoT). It is likely that the massive deployment of IoT will enable the emergence of new operators who will share with the above the peculiarity that their business model will be predicated on information.

3. Big data

Multiple economic operators, aware of the growing importance of data, have invested in aspects related to it, particularly in its collection and processing. This has led to the phenomenon known as *big data*, characterised by the “4 Vs”: volume, variety, velocity (of processing) and veracity.

Illustration 1. The 4 Vs of Big Data¹⁰



⁸ “¿Internet de las cosas? ¡Tranquilos!” *La Vanguardia-Dinero*, 25 September 2016. Fernando Trias de Bes Mingot.

<http://www.esade.edu/web/esp/about-esade/today/esade-opinion/viewelement/324781/1/internet-de-las-cosas-tranquilos>

⁹ *BIG DATA: INDIVIDUAL RIGHTS AND SMART ENFORCEMENT*, European Data Protection Supervisor-BEUC Joint Conference Brussels, Belgium, 26 September 2016. Remarks of Commissioner Terrell McSweeney

https://www.ftc.gov/system/files/documents/public_statements/987103/mcsweeney_-_euro_data_protection_conf_9-29-16.pdf

“Last year, Cisco released a report predicting that the Internet of Things will generate more than 500 zettabytes of data a year by 2019 – or the rough equivalent of all the data created from the dawn of the written word to the dawn of the Internet.” *Cisco Global Cloud Index: Forecast and Methodology*, 2014–2019 White Paper, 21 April 2016 at 17:00 h

http://www.cisco.com/c/en/us/solutions/collateral/service-provider/global-cloud-indexgci/Cloud_Index_White_Paper.pdf.

¹⁰ <http://www.ibmbigdatahub.com/infographic/four-vs-big-data>

4. The value of data

Data collection requires expenditure by companies either in the form of the implementation of more or less sophisticated systems of data collection (sensors) or through the offering of free or subsidised products (smartphones) or services (Google) in order to capture user information and derive economic benefit from it at a later date.

Data acquisition may be more or less evident¹¹:

The FTC has had to warn¹² application developers regarding the use of software that allows, without notifying users, listening via mobile telephones in order to detect users' television use.

News has also appeared¹³ reporting that smart TVs and watches may be listening to the conversations that happen around them. This circumstance was contained in a report by the Competition and Markets Authority (CMA)¹⁴.

In the age of IoT, an increasing range of products will collect information. Recently a lawsuit was made public¹⁵ regarding the collection of data from a vibrator (it was configured through an app).

Google has been accused of avoiding the privacy settings of the Apple Safari browser in order to obtain information from users via cookies¹⁶.

In any case, without addressing at this time privacy considerations (which can also be violated in connection with the subsequent use of the information gathered), data collection requires an investment meaning that any operator that has such data enjoys a competitive advantage. These large data sets are becoming a core asset in the economy, fostering new industries, processes and products and creating significant competitive advantages¹⁷.

Some¹⁸ have argued that data is like crude oil (a basic input, perhaps essential, for the functioning of the economy as a whole and of significant economic value).

It should be noted that a consideration of data as a basic or essential input has very significant legal consequences. In particular, if the data are effectively conceptualised as an essential element, the competition authorities may, under certain circumstances, impose on whoever has such data the obligation to ensure access to such information for their competitors. In order to consider this an essential input, the following circumstances must be present: (i) absence of alternatives¹⁹ and (ii) obstacles of a technical, legal or economic

¹¹ "Your Coffeemaker Is Watching You", *The Atlantic*, July/August 2016

<http://www.theatlantic.com/magazine/archive/2016/07/your-coffeemaker-is-watching-you/485597/?preview=VjDYOXUkmMWwsJe5MWcW3SkhVmQ%20...https://twitter.com/DataCompetition/status/784197284799983616>

¹² <https://www.ftc.gov/news-events/press-releases/2016/03/ftc-issues-warning-letters-app-developers-using-silverpush-code>

<https://www.ftc.gov/news-events/blogs/business-blog/2016/03/letters-app-developers-caution-against-info-surprises>

¹³ <http://www.bbc.com/news/technology-31296188> <https://www.theguardian.com/technology/2015/mar/13/smart-barbie-that-can-listen-to-your-kids-privacy-fears-mattel>

¹⁴ Paragraph 4.90

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/435817/The_commercial_use_of_consumer_data.pdf

¹⁵ 23 September 2016 <http://www.elladodelmal.com/2016/09/internet-of-sexy-things-una-mujer.html>

¹⁶ 30 August 2016. "Google Just Agreed to Pay \$5.5 Million to Settle Claims It Hacked Apple's Browser"

<http://fortune.com/2016/08/30/google-safari-class-action/>. Also in connection with Safari, notable is this matter between the FTC and Google: *United States v. Google Inc.* [No. CV 12-04177 SI (N.D. Cal. Nov. 16, 2012)]

https://en.wikipedia.org/wiki/United_States_v._Google_Inc.

¹⁷ "These large data sets are becoming a core asset in the economy, fostering new industries, processes and products and creating significant competitive advantages", <http://www.oecd.org/sti/ieconomy/data-driven-innovation.htm>

¹⁸ <https://www.quora.com/Who-should-get-credit-for-the-quote-data-is-the-new-oil>

¹⁹ The input is necessary. "Objective necessity of the input" in the words of the Communication from the Commission — Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary practices by dominant undertakings <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:045:0007:0020:ES:PDF>



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nature²⁰ which make it unreasonably difficult for any other operator to compete²¹ with whoever holds the key input if it does not obtain access to the input that is in its power²².

However, although the data/oil simile seems correct based on the characteristics given in relation to their importance, it does not adequately capture other elements that distinguish data and which are, perhaps, the cause of some confusion.

Thus, unlike oil, data carried with it the problem of privacy, and, furthermore, information is a right, not a rival. That is, collection by a particular company does not prevent the collection of the same information by a competitor, unlike oil, which can only be consumed by one company and never two at once. However, the “non-rivalry” of data does not prevent those who obtained it from excluding or attempting to exclude competitors from their data store.

For this reason, an increasing number of merger operations can be explained by the collection of information²³. The following illustration provides some examples²⁴:

²⁰ Such that it is not restricted only to those operators with sufficient financial capacity for the mass collection of information.

²¹ “The Commission will consider whether the supply of the refused input is objectively necessary for operators to be able to compete effectively in the market. This does not mean that without the refused input, no competitor could ever enter or survive in the downstream market (1). Rather, an input is indispensable where there is no actual or potential substitute on which competitors in the downstream market could rely so as to counter — at least in the long-term — the negative consequences of the refusal” in the terms of the Communication from the Commission — Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary practices by dominant undertakings <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:045:0007:0020:EN:PDF>

²² Paragraphs 44-45. Case C-7/97 *Bronner* [1998] ECR I-7791 <http://curia.europa.eu/juris/liste.jsf?language=en&num=C-7/97>

²³ According to an OECD estimate reported by Ariel Ezrachi and Maurice Stucke, these operations more than doubled between 2008 and 2013 (from 55 to 134). http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/eu-internal-market-subcommittee/online-platforms-and-the-eu-digital-single-market/written/23223.html#_ftn9. The same estimate is referenced in the *Report of workshop on Privacy, Consumers, Competition and Big Data 2 June*. 11 July 2014.

https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/Consultation/Big%20data/14-07-11_EDPS_Report_Workshop_Big_data_EN.pdf

²⁴ Compiled internally from these data: Facebook: <http://www.statista.com/statistics/225771/price-of-selected-acquisitions-by-facebook-since-2009/>; Google: <http://www.statista.com/statistics/192300/price-of-selected-acquisitions-by-google/>; Microsoft (until 2014): <http://www.onlinemarketing-trends.com/2014/12/top-10-list-of-most-cash-guzzling.html>; BMW, Audi, Mercedes: <http://www.autoevolution.com/news/audi-bmw-and-mercedes-benz-conclude-the-acquisition-of-here-102602.html>. The acquisition of LinkedIn by Microsoft was valued at \$26 billion. 13 June 2016. *Bloomberg*, “Microsoft Pays \$26 Billion for LinkedIn in Biggest Deal Yet” <http://www.bloomberg.com/news/articles/2016-06-13/microsoft-to-buy-linkedin-in-deal-valued-at-26-2-billion-ipe079k9>. However, the operation was subject to review by the European competition authorities. Salesforce requested this: 29 September 2016. *Reuters*, “Salesforce urges EU to probe Microsoft, LinkedIn antitrust issues” <http://www.reuters.com/article/us-linkedin-m-a-microsoft-salesforce-idUSKCN11Z2YV> and the European Union has allegedly already sent requests for information. “EU Sent Questionnaires About Microsoft-LinkedIn Deal to Rivals”, 22 October 2016. <http://www.wsj.com/articles/eu-sent-questionnaires-about-microsoft-linkedin-deal-to-rivals-1477144129>. In this interesting conference in Brussels on 3 October 2016, Damien Neven noted at 1:15:55 that perhaps LinkedIn does not have a turnover that would permit the review by the European competition authorities, as it does not exceed the legal thresholds established for this purpose. “Big data, digital platforms and market competition”, <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>. This information shows the cost per user of different merger operations in the technology sector: <https://techcrunch.com/2014/02/25/the-age-of-acquisitions/> “Visualizing 15 Years Of Acquisitions By Apple, Google, Yahoo, Amazon, And Facebook”, 25 February 2014. Also interesting is this interactive article on merger operations carried out by technology giants: Hungry Tech Giants. Simply Business. <http://www.simplybusiness.co.uk/microsites/hungry-tech/>;

Illustration 2. Some significant merger operations in terms of acquisition of information

Adquirente	Adquirida	Precio	Año
 Microsoft	 LinkedIn	26.000 M \$	2016
 facebook	 WhatsApp	19.000 M \$	2014
 Microsoft	 skype	8.500 M \$	2011
 Google	 nest	3.200 M \$	2014
 Google	 doubleclick	3.100 M \$	2008
 Audi  BMW  Mercedes-Benz	 here	2.800 M \$	2015
 Google	 YouTube	1.600 M \$	2006
 Google	 waze	1.100 M \$	2013
 facebook	 Instagram	1.000 M \$	2012

5. The accentuation of imbalance in two-sided markets

The value of the data essentially derives from its later use; usually for advertising purposes (they allow advertisers to better define the profile or target to whom they are directed).

This circumstance has affected in a very special way the strategy of managers of platforms that operate in two-sided markets, which are characterised by bringing together two distinct groups in which at least one group positively values the presence of the other.

This structure is nothing new and ranges from newspapers (readers and advertisers), television (viewers and advertisers) and radio (listeners and advertisers) to airports (airlines and passengers) or shopping centres (buyers and shops).

As stated, in many of these areas, initially a process of conversion from physical to digital took place which has allowed increasingly more valuable information to be obtained from users, which may be made profitable, for example, by offering the possibility of increasingly personalised ads to the target audience of the designer of the marketing campaign in question.

That is, in digital media the offeror of the content not only obtains monetary compensation for them, but also information on how users interact with the content offered.

Formerly, a seller of a newspaper or book only obtained the price thereof and knew nothing of the identity of the buyer or the subsequent use. Today, companies such as Amazon not only receive the money that we pay when we buy one of their books, but they have or could have information on: (i) our entire purchase history, (ii) what we highlight, (iii) when we move the pages fast or slow, (iv) at what point we abandon a certain book, (v) at what point of reading the vast majority of readers finish the book, etc.²⁵

In a way, it achieves a dual income, such that maximising them as a whole may entail giving up one of the incomes. Accordingly, maybe the most efficient strategy is to offer content for free (attracting all potential users on one side of the market) to obtain higher incomes on the other side of the market (advertisers) based on the greater information collected (from a

²⁵ "Your E-Book Is Reading You", *The Wall Street Journal*, 19 July 2012.
<http://www.wsj.com/articles/SB10001424052702304870304577490950051438304>



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higher number of users and interactions). Amazon has already patented the ability to display advertising while users read books in digital format²⁶.

This is also the model that has been followed by companies such as Google which, although it obviously incurs significant cost to offer its services, imposes no monetary cost on users who use the search engine. In this way, it obtains almost all of its income from payments made by advertisers to advertise to their selective target audience. Thanks to the information collected by Google, a publisher can make its ad appear only when a user enters a few specific terms in the search box, when it is in a particular country, or has a certain taste²⁷, etc. Possibilities which, in the absence of the data associated with the previous digital interaction with the users, would not exist.

Consequently, in an economy increasingly led/characterised by data, it is becoming more common to see operators offering free services and goods with the aim of attempting to obtain the largest number of users and interactions possible, while bearing the losses arising directly from this strategy, aware that they may overcompensate them from the exploitation of the data obtained.

In this scenario the price is significant; at least in relation to one side of the market – in which free goods or services are offered – on which these platforms operate (which as stated are relatively common and frequent structures).

6. Network effects ²⁸

6.1 Traditional

The traditional network effect can be defined as one in which a particular service user receives a better experience the more other users also use it.

If I install an instant messaging application on my phone the utility I get from it depends directly on the number of my contacts who also use this application. As more family members, friends and acquaintances opt for the same application, the more useful it will be to me.

Reputation mechanisms also benefit from these network effects: the value that a user obtains when querying TripAdvisor depends on the people who have previously also used this service in order to voice their opinion.

6.2 Data volume (learning)²⁹

Some of the services of the information society are provided by using algorithms that have a particular characteristic: they learn from their own performance in relation to user feedback.

Imagine that a new company called “Tesla” appears. When someone enters a search term it would be likely that they would initially be offered as a search result the Wikipedia page on Nikola “Tesla” (electrical engineer). As the search engine perceives that more and more users, rather than accessing this content, access content that appears lower down in the results offered by the same search engine, it will begin to give it priority. That is, when a user enters a particular term, the search engine performs a calculation of probabilities in order to provide the information

²⁶ “Amazon Patent Details Ad-Supported Kindle Books”, 7 July 2009, *Gizmodo*. http://gizmodo.com/5309001/amazon-patent-details-ad-supported-kindle-books?trending_test_three_e&utm_expid=66866090-68.Rvuykf2qT9qOAx_axtw3_w.2&utm_referrer=https%3A%2F%2Fwww.google.es%2F

²⁷ About targeting your ads by audience interests. <https://support.google.com/adwords/answer/2497941?hl=en>

²⁸ The systematisation has been based on the description contained in the highly recommended book *Big Data and Competition Policy*, Maurice E. Stucke & Allen P. Grunes, Oxford, 2016.

²⁹ Network effects linked to learning are usually related to the potential derived from “machine learning”.



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that it deems most likely that the user is seeking. If a search engine has fewer interactions, no matter how well designed it is, it will be especially difficult to recalibrate these probabilities.

Thus, if a user uses a search engine with more interactions, it is more likely that when it enters the word "Tesla" it will offer the information on cars that it is surely seeking (tesla.com by Tesla Motors, Inc.), thereby benefiting from the interactions of other users who have enabled the search engine to refine the aforementioned probability recalculation.

Consequently, the higher the number of users (or more precisely, of interactions) using the algorithm, the better the algorithm itself and therefore the better the service offered to users³⁰. Again, the utility that I obtain from the use of the algorithm is positively correlated with the number of users who use it³¹.

6.3 Scope of information

Network effects can also be conceived individually. In this sense, the network is configured by the different areas of interaction between a user and the operator that collects his or her data. Accordingly, the more areas of interaction that exist with a particular operator, the more personalised the service that the user receives can be.

Continuing with the example of the search engine, it draws not only from the data obtained by the search engine itself (Google), but also other information such as the content of emails (Gmail) or the use of our phone (Android), browsing history (Chrome), videos viewings (YouTube) or even presence at home (from data from the thermostat Nest).

By way of example, if a user enters the search term "Tivoli" without having GPS enabled and due to the information available Google believes the user is in Barcelona perhaps it will offer information on the Tivoli Theatre. However, if the user is located in Copenhagen and has enabled GPS on its Android phone and enters the same word, the first information provided will be the attraction park in the Danish capital with the same name.

6.4 Feedback between the two sides

In two-sided markets it is likely that the number of users on the other side (side 2) will increase the value for the user on the first side (side 1).

The utility for a potential user of Uber will be greater the higher the number of offerors (the waiting time will be less). In addition, for potential offerors, Uber will be more attractive the larger the number of potential customers they can access through the aforementioned application. Both effects feed off of one another.

Therefore, we must bear in mind that network effects are not confined to the increase in users occupying a similar position in a particular sector (e.g. user, as was the example on the effects of the traditional network in which the increase in utility depended on a greater number of users – WhatsApp), but rather the increased utility can also be produced by the growth of other types of users (offerors – Uber – the more offers, the less the waiting time).

³⁰ The degree of dependence that the algorithm has on the data/interactions for its proper functioning depends on the task that it is required to resolve. This was stated by Hal Varian, Chief Economist of Google, when he noted that image and voice recognition required abundant information. "Big data, digital platforms and market competition", <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>, 3 October 2016, *Bruegel*.

³¹ It is therefore considered that this phenomenon constitutes a network effect, although the Chief Economist of Google, Hal Varian, claims otherwise. "Big data, digital platforms and market competition" <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>, 3 October 2016, *Bruegel*. "While it is true that this network economy has an initial impact on the supply side (it makes it possible to offer a substantially better service). Mr Varian notes that this factor is not different to offering a product/service, succeeding and, with the proceeds, improving it. However, it is considered that *machine learning* leads to a direct improvement of its use (it does not require any additional investment) so that the cause of the improvement is directly attributable to the use by multiple users. In the example of Mr Varian, improving service performance depends on the success of the reinvestment of the proceeds from a successful product or service."

(II) CHALLENGES FOR THE COMPETITION**1. A wider perspective**

Previously, it has been suggested that the strong economic performance that can be obtained from data has strengthened the strategy of operators in two-sided markets that are based on information. Such operators release users from monetary payment in order to attract the maximum possible number of users and thereby obtain as much information as possible from this commercial relationship.

The strategy described above means that the users receive a product or service for free. However, as counter-intuitive as it may initially seem, even in a market where users receive a service at zero cost there may be anti-trust issues that adversely impact their welfare.

Specifically, the welfare of users not only depends on the price paid for the service monetarily but also the quality of such service³² and the variety of the available supply.

The mandate of the legislator of the competition authorities includes not only taking into account the “price” variable, but also other elements that affect the welfare of the consumer, such as: “the number of products offered”, “their variety” and “their quality”.

We should note the contents of the first paragraph of the preamble of Law 15/2007, of 3 July, on the protection of competition (hereinafter, the “Competition Act”):

“The existence of effective competition between companies is one of the defining elements of the market economy; it tempers the actions of businesses and reallocates productive resources in favour of the **most efficient techniques or operators. This productive efficiency is passed on to the consumer in the form of lower prices or an increase in the quantity of the products on offer, their variety and quality**, thereby increasing the welfare of society as a whole.”

The qualitative variables include the privacy of their data, an element that can also be conceived of as a “non-monetary price.” Specifically, as regards the qualitative factor, in the context of a roundtable of the OECD³³, the competition authorities specifically considered this to be an objective, even though they were aware of the subjectivity inherent to this element³⁴.

Although in the field of promoting competition reference is made with some frequency to factors other than price in order to extol the virtues of competition, it is more difficult to identify considerations related to these same factors in processes for the protection of competition.

It appears that competition authorities should analyse aspects other than price in their competition analysis. As will be discussed, some have already had to adopt this wider perspective to deal with a number of cases that displayed the features described above. Uniquely, in this regard the so-called “Google case” is a milestone by the DG Comp³⁵.

We should also note that one of the objectives of the competition authorities is to guarantee the variety that comes from competition.

³² When the product is free, quality becomes particularly relevant according to the European Commission. “Microsoft/Yahoo! Search Business (Case Comp/M.5727)” Commission Decision C(2010) 1077 [2010] OJ C 020/08, para. 101; Microsoft/Skype (Case Comp/M.6281), Commission Decision C(2011) 7279, 7 October 2011, para. 81.

³³ *OECD Policy Roundtables: “The Role and Measurement of Quality in Competition Analysis”*, 28 October 2013, <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>, P. 22

³⁴ *Ibid.* P. 6.

³⁵ http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39740

Variety is a factor that is more sensitive in certain areas, such as the media³⁶ in which variety may even be synonymous with news quality viewed as a whole. In terms of the Chairman of the FTC, Robert Pitofsky: “Antitrust is more than economics. . . . And I do believe if you have issues in the newspaper business, in book publishing, news generally, entertainment, I think you want to be more careful and thorough in your investigation than if the very same problems arose in cosmetics, or lumber, or coal mining. I mean, if somebody monopolizes the cosmetics fields, they’re going to take money out of consumers’ pockets, but the implications for democratic values are zero. On the other hand, if they monopolize books, you’re talking about implications that go way beyond what the wholesale price of the books might be.”³⁷

More recently, Giovanni Buttarelli – current supervisor of data protection at European level (EDPS) – stated³⁸: “What if Twitter were acquired by a digital giant? This should be of interest to consumer enforcers and antitrust, as well as the privacy community. It would have real implications for freedom of expression online. Merger control provides for the protection of media plurality – this is a concern from an analogue world. We need to update this for the digital reality, as more and more of our lives and objects go online.”

As part of the merger between AT&T Inc. and Time Warner Inc., some people indicated the need to take into consideration the impact of this transaction on variety in media³⁹.

2. Risks for competition

An economy characterised by data as an element of special relevance displays some unique features among which are its dynamism and the common presence of some of the network effects previously noted. The combination of both aspects assumes that an indecisive action by the competition authorities⁴⁰ may have important consequences in the competitive market environment.

Accordingly, by way of example, allowing certain mergers by a party that already boasts an important volume and variety of data may prevent an operator of smaller size from having the information necessary to experience network economies, and therefore it is unlikely that in the future it will be able to establish itself as an alternative to the operator that does have the information and experiences, at high velocity, the derivative positive impact of network effects.

Consequently, it is desirable – from a dynamic perspective of competition – to assess to what extent the integration would impede market access to economically viable alternatives, as

³⁶ “The merger may therefore lead to higher prices or a reduction in choice and quality for readers.” Press release: “Specialist magazines merger could face in-depth investigation”. 07 October 2016. <https://www.gov.uk/government/news/specialist-magazines-merger-could-face-in-depth-investigation>

³⁷ Reference recorded by Maurice Stucke in an interview. 26 September 2016. *How Can Antitrust Be Used to Protect Competition in the Digital Marketplace?*

<https://promarket.org/digital-market-not-going-correct/>

Mr Pitofsky’s statements were recorded initially in the Washington Post. Alec Klein, “A Hard Look at Media Mergers”, *Wash. Post*, 29 November 2000 (quoting Robert Pitofsky, FTC Chairman).

<https://www.washingtonpost.com/archive/business/2000/11/29/a-hard-look-at-media-mergers/d8380c2d-92ee-4b1b-8ffd-f43893ab0055/>

³⁸ *Big data: individual rights and smart enforcement*, speech at EDPS-BEUC, *Joint Conference European Commission*, Berlaymont, Brussels, 29 September 2016, Giovanni Buttarelli

https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Publications/Speeches/2016/16-09-29_Speech_EDPS_BEUC_BigData_EN.pdf

³⁹ Letter from Senator Bernard Sanders dated 26 October 2016 <http://www.sanders.senate.gov/download/atandt-time-warner-letter?inline=file>

⁴⁰ We should highlight the report “Competition Law and Data”, of 10 May 2016. *Autorité de la Concurrence* and *Bundeskartellamt*. <http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf>. This study led to two entries on the blog of the CNMC, 18 August 2016. José Rubio and Pedro Hinojo. Competition policy and big data (a French and German view) (I) <https://blog.cnmc.es/2016/08/18/competencia-y-big-data/>

Competition policy and *big data* (a French and German view) (II) 22 August 2016. José Rubio and Pedro Hinojo. <https://blog.cnmc.es/2016/08/22/la-politica-de-competencia-y-el-big-data-una-vision-francesa-y-alemana-ii/>. As part of the continuation to said joint study, the *Bundeskartellamt* issued a working paper on the market power of the platforms and networks. 09 June 2016.

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/09_06_2016_ThinkTank.html



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well as the dependence in terms of data for the merged entity, which may eventually constitute a limit on innovation.

This type of risk concerns a problem of a structural nature (risks have a dual nature: structural/behavioural).

2.1 Structural risk: winner takes all

Structural risk is a result of the network effects listed in section 1.4 above and entails that when an operator obtains some competitive advantage in terms of interactions (information)⁴¹ it is possible that the level of quality that it can offer as a result of this will be irreplicable unless another operator reaches that minimum point from which the growth in terms of quality is now very marginal.

This same situation has been noted by the OECD and masterfully addressed in the book *Big Data and Competition Policy*⁴²:

“We are already hearing the warnings: ‘Where companies acquiring massive proprietary data sets,’ the OECD observed, ‘there is thus a higher risk that we’re kind of heading toward data as a source of monopoly power⁴³’. The OECD also noted how the ‘economics of data favours market concentration and dominance’ and how ‘data-driven markets can lead to a “winner takes all” result where concentration is a likely outcome of market success’.⁴⁴”

The paradigmatic example is Google:

Once Google designed its information ranking algorithm and obtained a large number of users, the same algorithm was refined (learning) from each of the interactions. This, in practice, may mean that even if a powerful competitor such as Microsoft dedicates great effort to creating an alternative search engine (Bing), and even if its design is better than Google, it will be unlikely to perform as well as Google’s as it does not have a sufficient number of interactions to learn from them.

So much so that the Department of Justice in its communication⁴⁵ regarding the merger between Microsoft (and its Bing search engine) and Yahoo, detected the need for the search engine to have a greater number of interactions to evolve in terms of quality and to generate real competition.

“The search and paid search advertising industry is characterized by an unusual relationship between scale and competitive performance. The transaction will enhance Microsoft’s competitive performance because it will have access to a larger set of queries, which should accelerate the automated learning of Microsoft’s search and paid search algorithms and enhance Microsoft’s ability to serve more relevant search results and paid search listings, particularly with respect to rare or ‘tail’ queries. The increased queries received by the combined operation will further provide Microsoft with a much larger pool of data than it currently has or is likely to obtain without this transaction. This larger data pool may enable more effective testing and thus more rapid innovation of potential new search-related products, changes in the presentation of search results and paid search listings, other changes in the user interface, and changes in the search or paid search algorithms. This enhanced performance, if realized, should exert correspondingly greater competitive pressure in the marketplace.”

⁴¹ This is reflected in this eloquently titled article: *Data, not algorithms, is key to machine learning success*, 6 January 2016 <http://versionone.vc/data-not-algorithms-is-key-to-machine-learning-success/#ixzz4LApiviHE>

⁴² *Big Data and Competition Policy*, Maurice E. Stucke & Allen P. Grunes. Oxford. 2016. Paragraph 16:52. Page 252.

⁴³ OECD, “Data Driven Innovation for Growth and Well-Being”: Interim Synthesis Report, October 2014, p.58, <https://www.oecd.org/sti/inno/data-driven-innovation-interim-synthesis.pdf>

⁴⁴ *Ibid*, p.7

⁴⁵ Department of Justice. 18 February 2010. <https://www.justice.gov/opa/pr/statement-department-justice-antitrust-division-its-decision-close-its-investigation-internet>

The finding that the structure of some markets is reduced to a single operator (*winner takes all*) must necessarily sound an alarm for the competition authorities.

The first involves the pursuit and promotion of mechanisms to ensure greater competition in the markets and certain variety in the options available to users and consumers.

In this sense, it would be interesting to define the ownership of the data. If they are always owned by users, any operator could offer quality services to those who voluntarily grant it access to their own data⁴⁶. In other words, the competitive advantage derived from the interaction with users would not depend on the capacity of its mass collection (as a result of important investments) but would depend on the ability to persuade the users to voluntarily cede their data.

In the same vein, there are those who uphold the right of users to obtain at all times a copy of all the information that an operator has collected about them:

“A right to obtain a copy of the stored data from the controller and the freedom to move it from one service provider to another, without hindrance.”⁴⁷

“Under this proposed reform, individuals would be given the right to ‘switch electronically processed personal data from one firm to its rival through a “commonly used” electronic format’. This right of data portability is seen as a mere extension of the principle that it is ‘your’ data, not the controllers”.⁴⁸

Also, the former Competition Commissioner, Joaquin Almunia, said that “one of the principles of the current data protection reform goes to the heart of competition policy [...] the ‘right to portability’”.⁴⁹

Continuing with the above example, users could choose to cede all their historical data collected by Google to, for example, Bing. Thus, Bing could obtain the historical data sets so that its algorithm can learn with the same historical information. Note that it would be very difficult for Bing to obtain this information through alternative routes since users would not use it because its performance – precisely due to the lack of data – would be worse than Google's.

Also in a similar sense, Telefónica⁵⁰ announced⁵¹ recently that it is working on a platform – operational in 2017 – that will allow users themselves to manage their own data, whereby operators who want to make use of it will pay for it. However, this is not the only business proposal in this line⁵².

In the same vein, Giovanni Buttarelli – current supervisor of data protection at European level (EDPS) – mentioned in a recent speech⁵³ the concept of “personal data stores” as a concept

⁴⁶ That is, it would involve guaranteeing that the user has the possibility of choosing the option to preserve the privacy of his data, which would probably mean he would have to pay a monetary cost for the service or, on the contrary, expressly choose to “sell it” in exchange for enjoying a free service and/or receiving monetary compensation.

⁴⁷ Pages 9 and 10. *Competition Law and Personal Data: Preliminary Thoughts on a Complex Issue*,

Damien Geradin & Monika Kuschewsky. 12 February 2013. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2216088

⁴⁸ Footnote 37, *Competition Law and Personal Data: Preliminary Thoughts on a Complex Issue*,

Damien Geradin & Monika Kuschewsky. 12 February 2013.

⁴⁹ J. Almunia, “Competition and personal data protection”, 26 November 2012. Speech12/860.

⁵⁰ Telephone operators also collect a wealth of information from their customers: <http://www.zeit.de/datenschutz/malte-spitz-data-retention> Zeit Online.

⁵¹ http://economia.elpais.com/economia/2016/09/05/actualidad/1473067092_839315.html;

<http://www.lavanguardia.com/economia/20160905/41120275640/telefonica-clientes-cobren-empresas-datos.html>;

<http://www.xatakamovil.com/movistar/telefonica-prepara-una-plataforma-para-que-los-otrs-recompensen-a-sus-clientes-por-acceder-a-sus-datos>

⁵² <http://handshake.uk.com/hs/index.html>

⁵³ “Personal data stores will be one way of the individual reasserting her control over personal data, and we were impressed to learn of the work the Japanese administration is doing to promote such decentralisation of data storage.” *BIG DATA RIGHTS: LET'S GET TOGETHER*. 06 October 2016. Giovanni Buttarelli.



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to ensure control over personal data and praised the work done by the Japanese administration to promote decentralisation in the storage of information.

Another possibility would be to oblige whoever collects information to offer an API (application programming interface) so that users can always access this information and offer it to competitors (increased compatibility). This is the interesting line of work pointed out by Nick Grossman in a recent interview⁵⁴ and which somehow matches the content of Article 20 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)⁵⁵.

Finally, reference has also been made to the possibility of creating platforms so that different operators possessing information may transfer it to a common market and the content thereof may be subsequently resold to other operators who need the information⁵⁶.

It is noteworthy that the various options agree that they limit the possibilities of exclusion by the operator who initially obtained the data and do not involve any cost⁵⁷ for the user to manage the data (either they have not left his sphere of control or he can access them through an API at a cost of 0). That is, all of them attempt to achieve the annulment of the costs of the change so that users can facilitate access to their history or reputation⁵⁸ for any new offeror, thereby enabling it to offer customised services based on the same information as that held by the previous service provider.

2.2 Behavioural risk: practices restricting competition

The data economy is not without risks for competition⁵⁹, which are listed below, and in the light of the above, they will most likely require more vigorous action by the competition authorities. Practices restricting competition could include, among others:

- Degrading the quality of the service. Practices that may be carried out in those areas that are the most complex and rarely perceived by users (privacy terms, quality of response offered by the service – discriminating in favour of the services instead of offering the best qualitative answer).
- Impeding the change by users to competing operators. The offerors of digital services may have invested efforts in achieving a good reputation or undertaken digital work (e.g. advertising campaigns). Impeding the ability to leverage this work if a change is made to an alternative operator limits competition.
- Abusing dominance in a specific area of a regulated market and moving it to another. Operating in a market allows access to information. When it involves a regulated area

https://secure.edps.europa.eu/EDPSWEB/edps/site/mySite/Big_data_rights_Lets_get_together

⁵⁴ *The Capital Forum*. 21 September 2016. Based on the conference call of 15 September 2016. <http://createsend.com/t/j-D5D60E8ACC6E3E1C>

⁵⁵ "To further strengthen the control over his or her own data, where the processing of personal data is carried out by automated means, the data subject should also be allowed to receive personal data concerning him or her which he or she has provided to a controller in a structured, commonly used, machine-readable and interoperable format, and to transmit it to another controller." http://ec.europa.eu/justice/data-protection/reform/files/regulation_oj_en.pdf

⁵⁶ *Creating a successful Internet of Things data marketplace*.

October 2016 Johannes Deichmann, Kersten Heineke, Thomas Reinbacher, and Dominik Wee <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/creating-a-successful-internet-of-things-data-marketplace>

⁵⁷ The absence of cost is particularly relevant since there is a tendency to place a higher value on what you demand in order to lose something that you already own than that which you are willing to pay in order to recover it.

⁵⁸ Initiatives have appeared in this regard, such as "Traity", which facilitate the portability of users' reputation.

⁵⁹ In a recent interview, Ariel Ezrachi and Maurice E. Stucke suggest that the digital economy is less competitive than is commonly believed (probably due to its complexity). <https://promarket.org/digital-economy-much-less-competitive-think/>

in which only operators appointed for this purpose may have information, it cannot be used in other areas insofar as it would put competitors at a clear disadvantage without this being justified on business grounds.

- Limiting access to the data. In particular, conveyed through exclusivity agreements or mergers.
- Coordinating prices or supply conditions. Using algorithms.
- The perfect discrimination between users/buyers in order to take control of the consumer's surplus (*targeting behaviour*).

2.2.1 The degradation of service quality

The degradation of service quality can occur primarily for two reasons. The first occurs when a privileged treatment is offered in relation to oneself (when the platform manager operates through the platform itself) and, therefore, the objective ceases to be offering the best possible results and becomes instead that of favouring oneself. This behaviour is developed in section 2.2.1.1. of this document.

The second reason for degrading the service can derive from the goal of increasing the profits at the expense of exploiting the existing information asymmetry. That is, if an operator knows that its users may not be aware of certain levels of quality of service (e.g. security features, privacy, etc.), it reduces them in order to incur less expense (less spending on security) or obtain more income (less privacy – reduced quality – implies increased possibilities of profit). That is, when there are elements that it is difficult for users to perceive, a race to the bottom occurs. This circumstance is accentuated if the operator holds a dominant position and, therefore, has a lower risk (less competitive pressure) that this strategy will entail a significant loss of users/customers. These behaviours are developed in section 2.2.1.2 of this document.

2.2.1.1 Preferential treatment

One of the factual elements on which the proceedings between the Commission and Google are based⁶⁰ refers to the possible favouritism by the company of its own services in the field of so-called vertical search engines (for example, specialised search engines on user reviews).

For example⁶¹, Google could have prioritised the appearance of the comments made in Google+ in place of other review services even if Google+ had fewer reviews in total.

Illustration 3. Prioritisation of Google +. Quality reduction⁶²



"pediatrician nyc": Focus on the User (FOTUL) results versus Google+

⁶⁰ http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39740

⁶¹ Both this and the following behaviours that are reflected in this section are merely illustrative examples, but in no case can they be understood as a pronouncement on cases specifically by the ACCO.

⁶² See <http://focusontheuser.eu/es#what-users-want>

Therefore, if the quality of the results in this particular area – as is reasonable to assume – is positively correlated with the number of opinions which the user can access, prioritising Google+ harms competitors who cannot access the users as well as users themselves, as they receive worse information (reduced quality).

Recently there have also been reports⁶³ that Amazon is also prioritising its own services. Similar to Google, Amazon controls the information portal and also operates through it when offering products directly.

Apparently, Amazon allegedly placed in the “buy box” the products it offers itself, without these being the cheapest. Similarly, the ordering of the information did not take into account the cost of shipping the products when they are offered directly by Amazon, although the consumer always has to pay them when it does not have a subscription with Amazon.

Both Google and Amazon seem to have possibly benefited their own services to the detriment of competitors, causing harm to consumers and users (in the case of Google in terms of the quality of the information received and in the case of Amazon even in monetary terms – purchasing more expensive products without actually realising that there are more economic options).

Other environments where anticompetitive practices of a similar nature are likely to occur would be those of virtual application stores⁶⁴. Again, the portal is controlled by an operator (the two most important being Google and Apple), and the same operator offers proprietary applications through the aforementioned portal.

This unique configuration involves a very particular love/hate relationship of the platform manager in relation to the offerors that operate through it⁶⁵. At the beginning it was love, because all of these platforms require the presence of these offerors for the platform itself to have value. Google would have little value without third-party content, as would Amazon without external products or Android and iOS without applications by independent developers.

However, this initial relationship of love can turn to hate when the manager of the platform wants to use it to offer its own information (Google+), its own products (Amazon) or its own applications (Android⁶⁶ and iOS). Some authors have chosen to define this relationship as friend/enemy (frenemy)⁶⁷.

This implies such a level of risk that the European Parliament adopted a resolution in which it “calls, furthermore, on the Commission to consider proposals aimed at unbundling search engines from other commercial services as one potential long-

⁶³ <https://www.propublica.org/article/amazon-says-it-puts-customers-first-but-its-pricing-algorithm-doesnt>

⁶⁴ It reveals the control that the manager of a platform such as the App Store has to delay permissions granted to apps in order for them to be able to be marketed through the platform. *The Capital Forum*. 21 September 2016. Based on a conference call of 15 September 2016. <http://createsend.com/t/j-D5D60E8ACC6E3E1C>. *Japan: Report shows Apple, Google hinder app competition*. *Competition Policy International* 15 September 2016. <https://www.competitionpolicyinternational.com/japan-report-shows-apple-google-hinder-app-competition/>

⁶⁵ The British Parliament made public on 20 April 2016 the report on *Online Platforms and the Digital Single Market* in which it examined this gateway situation that these platforms present. <http://www.parliament.uk/online-platforms>. As part of this study Ariel Ezrachi and Maurice Stucke presented this information:

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/eu-internal-market-subcommittee/online-platforms-and-the-eu-digital-single-market/written/23223.html>

⁶⁶ *Android and Competition Law: Exploring and Assessing Google's Practices in Mobile*. Benjamin G. Edelman, Damien Geradin 1 September 2016.

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2833476

⁶⁷ Paragraph 6.76) Book *Big Data and Competition Policy*. Maurice E. Stucke & Allen P. Grunes. Oxford. 2016

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term means of achieving the aforementioned aim”⁶⁸. That is, Parliament's resolution would be in the sense that a possible structural intervention would be considered in order to prevent the one who has control of one of these platforms from also operating through it.

For example, and although there is still no record of it, should Airbnb be able to access the housing market and offer flats it owns through its platform? Whatever the answer to this question, it is clear that if so, there would be a high risk that Airbnb, with all the information and intermediation capacity that it has accumulated in this sector, could use these elements to favour its own accommodation.

2.2.1.2 Increased profits

It is noteworthy that the quality of the services is not always positively correlated with the benefits obtained from these, which leads to a race to the bottom.

There are various elements that make up an environment where quality can even be negatively correlated with income.

- Competition between free services and paid services

It is possible that a single provider offers free and paid services.

Google offers “free” links (organic results) and paid links.

Illustration 4. Type of results of Google

The image shows a Google search interface for the query 'car signage'. The search results are divided into two main sections: 'Sponsored Links' and 'Organic Links'. The 'Sponsored Links' section is highlighted with a red box and labeled 'Paid (sponsored) results' with a red arrow. The 'Organic Links' section is highlighted with a green box and labeled 'Organic Links' with a green arrow. The 'Google' logo is on the left, with blue arrows pointing to the respective sections. The search results include various websites offering car signage services, such as 'SIGN'S/DIGNS® Car Signage', 'Car Magnets by Easy Signs', 'Car Graphics & Signs', and 'Signage Solutions'.

Larry Page and Sergey Brin, in the university paper that led to Google (*The Anatomy of a Large-Scale Hypertextual Web Search Engine*⁶⁹), indicated that if a company pays to be advertised on a search engine, the incentive of the manager of the search engine is to attempt to ensure that such information is not shown for free as an organic result when the user enters the name of the advertiser. That is, if the search engine has greater quality when identifying a particular company, that improvement in quality may involve a reduction in revenue:

⁶⁸ European Parliament resolution of 27 November 2014 on supporting consumers rights in the digital single market <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2014-0071+0+DOC+XML+V0//ES>

⁶⁹ Appendix 8. <http://infolab.stanford.edu/~backrub/google.html>



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“Furthermore, advertising income often provides an incentive to provide poor quality search results. For example, we noticed a major search engine would not return a large airline’s homepage when the airline’s name was given as a query. It so happened that the airline had placed an expensive ad, linked to the query that was its name. A better search engine would not have required this ad, and possibly resulted in the loss of the revenue from the airline to the search engine. In general, it could be argued from the consumer point of view that the better the search engine is, the fewer advertisements will be needed for the consumer to find what they want. This of course erodes the advertising supported business model of the existing search engines”.

In the same paper and section⁷⁰, it warned that there could also be an incentive to degrade the quality of the information provided in order not to damage the reputation of any customer (advertiser).

“Currently, the predominant business model for commercial search engines is advertising. The goals of the advertising business model do not always correspond to providing quality search to users. For example, in our prototype search engine one of the top results for cellular phone is ‘[The Effect of Cellular Phone Use Upon Driver Attention](#)’, a study which explains in great detail the distractions and risk associated with conversing on a cell phone while driving. This search result came up first because of its high importance as judged by the PageRank algorithm, an approximation of citation importance on the web [[Page, 98](#)]. It is clear that a search engine which was taking money for showing cellular phone ads would have difficulty justifying the page that our system returned to its paying advertisers. For this type of reason and historical experience with other media [[Bagdikian 83](#)], we expect that advertising funded search engines will be inherently biased towards the advertisers and away from the needs of the consumers.”

Finally, Larry Page and Sergey Brin pointed out that these types of bias in the search engines were particularly insidious for users to the extent that even for experts it was “very difficult” to evaluate the search engines⁷¹.

Something similar happens in connection with the discussion of net neutrality. In this sense, its defenders advocate⁷² that if net neutrality is not guaranteed, the manager thereof would have incentives to voluntarily degrade the quality of the *non-premium* service in order for the *premium* or faster service to prove more attractive.

- Information asymmetries

Improving or ensuring a certain level of quality that it is difficult for users to detect cannot be compensated in terms of revenue.

Therefore, there is a wide-ranging legislation in areas such as industrial safety. The regulator, aware of these information asymmetries, imposes burdens in order to guarantee a certain level of quality.

Privacy is also a factor that it is very difficult for users to perceive and verify. Protecting it constitutes a limitation on use and, therefore, on the economic profit that operators are able to obtain from the data collected (it has already been noted that the data lead to network effects, meaning that giving up the use of them is even more significant). Therefore, the general incentive for operators is clear: Offer a low level of privacy as this allows for greater profitability with virtually no cost in terms of loss of users or buyers⁷³.

⁷⁰ Appendix 8. <http://infolab.stanford.edu/~backrub/google.html>

⁷¹ “Since it is very difficult even for experts to evaluate search engines, search engine bias is particularly insidious.” Appendix 8 <http://infolab.stanford.edu/~backrub/google.html>

⁷² *Net Neutrality Kills!* SavetheInternet.Eu. 09 October 2015. <https://www.youtube.com/watch?v=q6fXpo8uQtA&feature=youtu.be>

⁷³ This video shows how when a user is clearly told that he is invited to a free coffee (similar to the entry that many apps try to obtain) but in return must provide a multitude of personal information, the user chooses not to accept the free coffee. Supposedly

So, once more, the overall positive relationship between quality and income is broken.

Once again, for this reason the legislator establishes a set of rules directed, in this case, at the protection of data.

However, it happens that when an operator holds a dominant position, by definition, it feels less competitive pressure, which together with the low perception of this factor may mean that there is a greater temptation to abuse such a situation of dominance in the market and degrade the quality of the service offered.

Earlier this year, the German competition authority (*Bundeskartellamt*) began an investigation against Facebook for allegedly infringing aspects of data protection⁷⁴ and, by the end of October, the Italian competition authority opened a double investigation in connection with (i) the possibility that WhatsApp may have forced the acceptance of the new terms and conditions (which allowed that company to share information with Facebook) by warning its users that if they do not accept them they could not continue to use the service and (ii) the possibility that the inclusion of certain clauses in the aforementioned conditions were oppressive (abusive)⁷⁵.

Specifically, Facebook has been at the centre of another controversy in terms of quality elements that are difficult to perceive. In this case, it supposedly overestimated some metrics relating to the “consumption” of videos by the users of that social network⁷⁶, meaning that advertisers would have performed their calculations of the profitability of their ads based on misinformation.

All the practices described in this section (2.2.1) have a common characteristic: their relative visibility by users (information asymmetry). It appears that this circumstance will be increasingly present insofar as users largely prioritise their convenience: a response as specific and as fast as possible.

there is an information problem under which many users accept free use of applications in monetary terms in exchange for sacrificing part of their privacy. <https://www.youtube.com/watch?feature=youtu.be&v=hE9D3aFjUy8&app=desktop>
⁷⁴ http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html?sessionid=6182A1E5981DA8D58F8EF0D4448C82ED.1_cid378?nn=3599398 *Bundeskartellamt's* decision has not been without criticism: <http://chillingcompetition.com/2016/03/02/facebook-privacy-and-article-102-a-first-comment-on-the-bundeskartellamts-investigation/> In this interesting article it is noted that the decision by the German competition authority would rely on a previous decision of the *Bundesgerichtshof* (KZR 58/11 -VBL-Gegenwert) of 6 November 2013. Robert Mc. Leod. *Novel But a Long Time Coming: The Bundeskartellamt Takes on Facebook*. <http://jeclap.oxfordjournals.org/content/7/6/367.full.pdf+html> *Journal of European Competition Law & Practice*, 2016, Vol. 7, No. 6. The Commissioner of the FTC Terrell McSweeney said that in the United States this practice would be seen from the perspective of the protection of consumers and users. “In the United States, we would view the violation of data protection provisions on its own as a consumer protection issue. Another difference is the European view that dominant firms have ‘special obligations’. The potential competition law violations identified in the recently-issued EDPS opinion are primarily ‘exploitative abuses’, which do not have an analogue under the American antitrust laws. In the U.S. context, extracting more data from customers than would be possible in a competitive market could be viewed as akin to charging monopoly prices. U.S. law is clear that monopoly pricing by itself does not violate the antitrust laws”. https://www.ftc.gov/system/files/documents/public_statements/987103/mcsweeney_-_euro_data_protection_conf_9-29-16.pdf *BIG DATA: INDIVIDUAL RIGHTS AND SMART ENFORCEMENT* European Data Protection Supervisor-BEUC Joint Conference Brussels, Belgium, 29 September 2016 Remarks of Commissioner Terrell McSweeney.
⁷⁵ Press release of the *Autorità Garante della Concorrenza e del Mercato*. 28 October 2016. <http://www.agcm.it/en/newsroom/press-releases/2358-exchange-of-personal-data-with-facebook-and-oppressive-clauses.-double-antitrust-investigation-on-whatsapp.html>
⁷⁶ <http://www.wsj.com/articles/facebook-overestimated-key-video-metric-for-two-years-1474586951>
<http://www.nytimes.com/2016/09/24/business/media/facebook-apologizes-for-overstating-video-metrics.html?ref=media&r=0>

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For example, the use of digital assistants (Apple's Siri, Amazon's Alexa, Facebook's M or Google's Assistant) already offers this kind of response: rapid and specific, meaning that the risks both in terms of quality and in market closure between competitors are greater⁷⁷.

Taking up an earlier example, it would still be more difficult for the user to detect that there are cheaper products (in the case of Amazon it seems that they prioritise its products, but this does not prevent them from finding them after performing a more detailed search). Through an assistant such as those mentioned above, it may be more difficult or impossible if they offer a single answer.

This greater difficulty in detection will require a more effective control by the public authorities (both data protection and competition authorities) which cannot be borne by the users themselves. One study stated that reading all the privacy policies would require 244 hours per year, representing more than half the time a user spends a year on surfing the Internet⁷⁸ (an excessive burden). In addition, it is necessary to consider the complexity of many of them.

In this sense, not only does it seem desirable for competition authorities to track these aspects, where they have a competitive aspect, but also desirable is the initiative by the privacy agency of the United Kingdom to draw up a quality seal on Privacy⁷⁹ in order to minimise the burden of verification by users.

2.2.2 *Hindering data portability*

There are opinions in the sense that some of the risks listed in the previous section do not constitute a substantive problem to the extent that users can easily and quickly change service provider (*competition is a click away*). This argument ignores information asymmetry, according to which the user might not change operator even while suffering a degradation in terms of the quality received.

In the digital world, information asymmetry can eliminate the positive effects of a possible easy switch. In the physical world, the costs of turning to another offeror may involve travelling to the establishment of the competitor, which involves a cost that may eventually be substantial when compared with the digital world⁸⁰. However, there is an essential difference between the two areas: in the physical world quality is more readily apparent.

If a user does not like an ice-cream/meal, he senses it and, aware of that fact, chooses to change it and to go to another competing establishment, even if this means travelling to a place further away from home. However, in the digital world, few users will have detected if a search engine occasionally offers them information that is less relevant than the information it potentially could have provided. Consequently, the user does not take the trouble, however small, to switch to a different one.

In addition, there are other elements that seem to indicate that the costs of switching could be higher than those that are apparently perceived and, therefore, aspects such as the habit of using a particular service, collective network effects, reputation, etc., should be considered.

These circumstances (information asymmetry and existence of switching costs) explain the high value that companies give to being a default option.

⁷⁷ *Is Your Digital Assistant Devious?*. Ariel Ezrachi and Maurice Stucke. 23 August 2016.

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2828117

⁷⁸ *EDPS Privacy and competitiveness in the age of big data: The interplay between data protection, competition law, and consumer protection in the Digital Economy, Preliminary Opinion*, 26 March 2014, p.34

https://secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2014/14-03-26_competition_law_big_data_EN.pdf

⁷⁹ <https://ico.org.uk/for-organisations/improve-your-practices/privacy-seals/>

⁸⁰ This was indicated by Hal Varian, Chief Economist of Google. *Big data, digital platforms and market competition*. <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>. 03 October 2016. Bruegel.

Google allegedly paid Apple one billion dollars to continue to be the default search engine on the iPhone⁸¹.

Google also faces a statement of objections (in addition to that relating to favouring its own services) in relation to Android. This statement covers three practices, two of which consist precisely of trying to ensure its applications are the default on Android devices⁸²:

“...by:

requiring manufacturers to pre-install Google Search and Google's Chrome browser and requiring them to set Google Search as default search service on their devices, as a condition to license certain Google proprietary apps;

[...]

giving financial incentives to manufacturers and mobile network operators on condition that they exclusively pre-install Google Search on their devices.”

Consequently, it appears that the decision by users to switch between competitors is not very common. Even so, some operators have tried to hinder these possibilities of switching.

Google itself received scrutiny⁸³ from the European competition authorities insofar as they considered it introduced restrictions on the possibilities of exporting data created in *adwords* campaigns to other competitors.

2.2.3 Abusing a dominant position in one area and moving it to another

Operating in a regulated market – in the sense of being the only market operator designated exclusively for its activity therein – offers two benefits: (i) monetary, deriving from the aforementioned activity and (ii) gathering information from users. However, information obtained in the segment of regulated activity can probably only be used in connection with that same field. That is, the operator cannot use this data obtained in a privileged way (it is the only one who would have such access under those conditions)⁸⁴ in order to gain a competitive advantage in another segment or market.

In France, GDF Suez used the information obtained in its regulated monopolistic activity in the gas industry to compete in other markets. The French competition authority ordered⁸⁵ GDF Suez to provide access to this information.

Data is again an essential variable for operators to the extent that it can be the key element allowing, from a dominant position in a particular market, expansion or transition to another market.

2.2.4 Limiting access to the data

In the light of the competitive importance⁸⁶ of information and, as noted above, the possibility of exclusion, it is not surprising that the various operators attempt to gain this advantage over their competitors. There are various practices that pursue the same aim of limiting access to information by rival operators.

⁸¹ Google Paid Apple \$1 Billion to Keep Search Bar on iPhone. 22 January 2016. <http://www.bloomberg.com/news/articles/2016-01-22/google-paid-apple-1-billion-to-keep-search-bar-on-iphone>

⁸² Antitrust: Commission sends Statement of Objections to Google on Android operating system and applications. Press release. 20 April 2016. http://europa.eu/rapid/press-release_IP-16-1492_en.htm

⁸³ In section III of the commitments that Google initially sent to the Commission, reference was made to this issue. COMMITMENTS IN Case COMP/C-3/39.740 - *Foundem and others*. 03 April 2013.

⁸⁴ While previously we have already noted the desirability of allowing access to information for all competitors.

⁸⁵ *Autorité de la Concurrence*, “Gas Market”, press release, 9 September 2014 http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=592&id_article=2420

2.2.4.1 Exclusivity agreements

An initial practice that enables both to obtain information and limit access to third parties is to establish exclusivity agreements by which one party gives exclusively to the other for the information collected or directly allows the party that wants to obtain the information to be present on the portal or hardware through which the collection of information occurs.

Google allegedly set up a network of such agreements. In this sense, besides the already mentioned agreement with Apple to be the default search engine on its mobile devices, it has also reached agreements with Mozilla Firefox⁸⁶ and Opera⁸⁷.

It is unlikely that any other competitor could offer the substantial amounts of money that Google offers, since the competitors do not have the ability to monetise ads so well (due to the lack of data).

The aforementioned agreements merely increase the distance between Google and its competitors which would also find it difficult to find such powerful sources of information in order to access such voluminous information. As stated in an interesting study⁸⁸, this network could be considered contrary to Articles 101 and 102 TFEU.

By way of a final note, we should indicate that Google has established exclusivity agreements related not so much with the collection of data but to prevent its AdSense users (owners of websites who want to make them profitable through the sale of space on them for the placing of ads) making their services compatible with those of competitors. This practice is also being analysed by the European Commission, which has included it in one of the statements of objections against the company Mountain View⁸⁹.

2.2.4.2 Mergers

Mergers constitute a mechanism for incorporating information from another operator at the heart of a company in a way that is structured and more stable. The most well-known technology companies have carried out various mergers that seem to have as their main motivation incorporating information, as has been described in Figure 2. Particularly well-known are the mergers already executed between Google and Double Click⁹⁰ and Google and Waze.

The first allowed Google to gather information and technology to lead the capacity to obtain profitability from the most personalised or targeted ads. Both the Commission and the FTC authorised the operation. However, in the case of the FTC there was a

⁸⁶ Although at the end of 2014 Firefox reached an agreement for 5 years with Yahoo. 19 November 2014. *Firefox drops Google as default search engine, signs five-year deal with Yahoo*

<http://www.theverge.com/2014/11/19/7250513/firefox-signs-yahoo-as-default-search-engine->

⁸⁷ This agreement has been in force since 2012 and has been extended until 31 December 2017. *BRIEF-Opera Software and Google signs new agreement*

Reuters. 01 June 2017. <http://www.reuters.com/article/idUSFWN0YN03L20150601>

⁸⁸ Page 8 of the document:

Competition Law and Personal Data: Preliminary Thoughts on a Complex Issue

Damien Geradin & Monika Kuschewsky. 12 February 2013. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2216088

⁸⁹ Antitrust: Commission takes further steps in investigations alleging Google's comparison shopping and advertising-related practices breach EU rules. 14 July 2016. http://europa.eu/rapid/press-release_IP-16-2532_en.htm

⁹⁰ Commission Decision of 11 March 2008. Comp/M.4731 Google / Double Click.

http://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf; Statement of the Fed. Trade Comm'n. Concerning Google/DoubleClick (Dec. 20, 2007), File No. 071-0170 at 12, https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf

dissenting opinion which stated that the network effects may not have been taken into account and that the barriers to entry that the operation produced (in the sense that no competitor could offer a service of the same quality) would mean that the advertisers did not have any alternative but to resort to the merged entity⁹¹.

The merger between Google and Waze can also be explained by the acquisition of information. Waze, an Israeli company which users used to identify different aspects of traffic in real time, contained valuable information allowing Google to supplement its maps with real-time individualised input. The Office of Fair Trading⁹² concluded that the operation would not reduce competition nor did the FTC⁹³ consider that the acquisition entailed competition concerns. Three years later it does not appear that any alternative product offers the same quality.

Another merger that seems to be explained by the interest in obtaining information is that of Facebook and WhatsApp. Facebook was interested in obtaining all the information generated through WhatsApp in order to improve its ability to better target its ads. This vision seems to have been achieved. The business model of WhatsApp has been altered: (i) it has stopped experimenting with charging €1 for the application and (ii) its privacy policy has been amended to specifically allow the transfer of information to Facebook⁹⁴.

The merger, therefore, has entailed a loss of options by the user. That is, where prior to the said merger two different models coexisted (WhatsApp – with greater data protection but with the requirement of an annual cash payment) and Facebook Messenger (less privacy protection but free) there is now just one (free service but with little privacy).

Consequently, for those users who valued their privacy at a monetary amount higher than requested by WhatsApp, with the merger they have seen their welfare decrease (decreased quality in terms of privacy). Note that they are unlikely to stop using a specific messaging service when their friends and family remain on it (traditional network effects).

In this sense, it is notable for example that, regarding the merger between WhatsApp and Facebook, the European Commission did not analyse the impact on privacy resulting from an increase in the concentration of data produced as a result of that acquisition.

⁹¹ Commissioner Pamela Jones Harbour, Dissenting Statement in the matter of Google/DoubleClick, 20 December 2007.

https://www.ftc.gov/sites/default/files/documents/public_statements/statement-matter-google/doubleclick/071220harbour_0.pdf

⁹² 17 December 2013. Office of Fair Trading. *Completed acquisition by Motorola Mobility Holding (Google, Inc.) of Waze Mobile Limited*. ME/6167/13.

http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/mergers_ea02/2013/motorola.pdf

⁹³ Engadget. 01 October 2013. <https://www.engadget.com/2013/10/01/ftc-will-not-challenge-google-waze-acquisition/>

⁹⁴ 26 September 2016. <http://www.xataka.com/moviles/whatsapp-empieza-a-compartir-tu-numero-de-telefono-y-conexiones-con-facebook>; The data protection authority in Hamburg has issued an administrative order to prevent this transfer of data. Press release. 27 September 2016. https://www.datenschutz-hamburg.de/fileadmin/user_upload/documents/Press_Release_2016-09-27_Administrative_Order_Facebook_WhatsApp.pdf. It was also reported in the news that the UK data protection authority allegedly said that it would investigate Facebook and WhatsApp. BBC News. 29 September 2016.

<http://www.bbc.com/news/technology-37512419>. Facebook: WhatsApp consummates its warning: either you accept the conditions or you cannot continue to use the service, *El País*. 27 September 2016

http://tecnologia.elpais.com/tecnologia/2016/09/27/actualidad/1474975944_468987.html#?ref=rss&format=simple&link=seguir Also, Commissioner Vestager said she requested information from these companies. 09 September 2016.

<http://www.bloomberg.com/news/articles/2016-09-09/facebook-grilled-by-eu-s-vestager-over-whatsapp-merger-u-turn> The Spanish Data Protection Agency is also investigating it. "Protección de Datos investiga a Whatsapp por su nueva política de privacidad", *Sabemos Digital*. 05 October 2016. http://sabemos.es/2016/10/05/proteccion-datos-investiga-whatsapp-privacidad-facebook_27268/

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“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 EU competition law.”⁹⁵

“For the purposes of this decision, the Commission has analysed potential data concentration only to the extent that it is likely to strengthen Facebook's position in the online advertising market or in any sub-segments thereof. 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.”⁹⁶

This more limited vision of the scope of competition regulations has led to certain harm to the welfare of consumers and users as discussed.

The facts described show how a possible failure to act by the competition authorities cannot be resolved by a subsequent intervention by the agencies responsible for ensuring data protection. In this regard, it should be noted, for example, that the mergers are, where appropriate, only notified to the competition authorities and only they can impose structural conditions⁹⁷. Consequently, the assessment of a possible negative impact on the privacy of users as a result of such an operation can only be evaluated by the bodies responsible for the promotion and protection of competition and only they can make the merger conditional, for example, on the data of a service not being used by the purchaser.

Nonetheless, it should not be ignored that, in terms of price, users will obtain greater welfare (they no longer pay any amount for the use of WhatsApp) and that less privacy may even positively affect some of the qualitative factors⁹⁸. It is considered inappropriate not to consider also the issue of privacy (possible downgrade in quality) as well as a lower possibility of choice (less variety of “relevant” operators⁹⁹ with different offerings). That is, although perhaps the qualitative effects are more easily quantifiable (e.g. higher conversion rate of the ads), the qualitative effect should be weighed twice (also the eventual degradation in terms of privacy).

As has been pointed out, there may be a paradox because less privacy can at the same time mean less quality in terms of “intimacy”, but the information obtained from each user as explained could yield a better service that is more personalised to the given user. In any case, it should be for the consumer or user to choose the privacy

⁹⁵ Press release: *Commission approves acquisition of WhatsApp by Facebook*. 03 October 2014. http://europa.eu/rapid/press-release_IP-14-1088_en.htm.

⁹⁶ Paragraph 164 of the Decision of 3 October 2014. *Case No COMP/M.7217 - FACEBOOK/ WHATSAPP*. http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf.

⁹⁷ “Competition enforcement has been so effective not only because of the level of the fines but also because it disrupts how companies and organisations behave”. P. 15. *Opinion 8/2016 EDPS Opinion on coherent enforcement of fundamental rights in the age of big data*. 23 September 2016. European Data Protection Supervisor (EDPS). https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Events/16-09-23_BigData_opinion_EN.pdf

⁹⁸ For example, in the field of medicine, it is clear that less privacy can provide solutions more appropriate to each specific profile. “Project Hanover: ¿es el *big data* la esperanza contra el cáncer?” 29 September 2016. *El País*. http://tecnologia.elpais.com/tecnologia/2016/09/23/actualidad/1474647362_976680.html#?ref=rss&format=simple&link=guid 6es Jornades TIC Salut i Social 2016. El Repte de la Salut i el Benestar en la Societat Digital. 30 September 2016. Minute 44:50 seconds. Statement by Javi Creus *We know that data heal*. https://www.youtube.com/watch?v=MonYWFoW2_g; “The data released through the Open Data Initiative is being used to improve public health, energy efficiency, traffic flow, and even drought management. It is pioneering precision medicine for individual patients and making hospitals work better. There are apps created from the data that are helping families looking for colleges and consumers who want to avoid unhygienic restaurants”. Remarks of Commissioner Terrell McSweeney. *BIG DATA: INDIVIDUAL RIGHTS AND SMART ENFORCEMENT* European Data Protection Supervisor-BEUC Joint Conference Brussels, Belgium, 29 September 2016. P. 3 https://www.ftc.gov/system/files/documents/public_statements/987103/mcsweeney_-_euro_data_protection_conf_9-29-16.pdf

⁹⁹ The costs of switching in a service with strong network effects can be substantial. In other words, if all my acquaintances use a particular messaging service it is hard for me “to be able” to switch to another given my privacy preferences.

level, even knowing that a high level of privacy can lead to a relatively worse service¹⁰⁰.

This paradox does not arise when the data collected are not required for the service provided. Therefore, a clear recommendation accurately made by the data protection authorities is to minimise the volume of data collected¹⁰¹.

The difficulties in assessing this type of merger are not limited to establishing the issues subject to analysis. It is also a challenge to rethink the classical notion of defining the relevant market affected.

In the acquisition of Nest (domestic smart thermostats) by Google, which was approved in the early stage by the FTC¹⁰², one of the controversial issues is what market would be affected by that operation.

It seems unlikely that through this acquisition Google was showing an interest in becoming a supplier of thermostats. Rather, the purpose of the operation was to obtain the information collected by these devices in order to improve the ability to put together a user profile and thus improve its ability to offer potential advertisers greater certainty that their ads would reach the users they are most interested in them reaching.

Consequently, the determination of the relevant market – as it is linked to the data – seems to have no obvious physical relationship. And therefore, far from being able to define it in the scope of thermostats, a broader view is appropriate. In other words, the data transcend market configurations more linked to physical elements.

2.2.5 Coordinating prices or other commercial conditions (algorithms)

Economic operators have adapted to this new environment characterised by the relevance of the information, the data and the processing capacity. Accordingly, they use the new possibilities that this environment offers.

If it is true that collusive practices in the past necessarily required coordination between representatives of the various economic operators that determined strategic elements such as price, in this new environment fixing these elements can be established by algorithms. Consequently, a possible anti-competitive coordination may also be implemented through these automated mechanisms¹⁰³.

¹⁰⁰ The European Data Protection Supervisor (EDPS) has also recommended exploring the possibility of creating a web space where users can interact without being monitored. "We also recommend that the EU institutions with external experts explore the creation of a common area, a space on the web where, in line with the Charter, individuals are able to interact without being tracked". *Opinion 8/2016 EDPS Opinion on coherent enforcement of fundamental rights in the age of big data*. 23 September 2016. European Data Protection Supervisor (EDPS).

https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Events/16-09-23_BigData_opinion_EN.pdf

¹⁰¹ "Data protection authorities need to enforce data minimisation, which requires personal information only to be processed where adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed." P. 7. *Opinion 8/2016 EDPS Opinion on coherent enforcement of fundamental rights in the age of big data*. 23 September 2016. European Data Protection Supervisor (EDPS).

https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Events/16-09-23_BigData_opinion_EN.pdf

¹⁰² 04 February 2014. <https://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notice/20140457>

¹⁰³ *Artificial Intelligence & Collusion: When Computers Inhibit Competition*. Ariel Ezrachi and Maurice E. Stucke. 08 April 2015. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2591874



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The US Department of Justice¹⁰⁴ and the CMA¹⁰⁵ have already penalised collusive practices implemented by using automated dynamic pricing. And the use of algorithms for pricing by companies such as UBER is the subject of judicial review itself in case it constitutes a collusive agreement between service providers¹⁰⁶.

2.2.6 The perfect discrimination

Charging different prices depending on the “group” to which the client belongs is a tried and tested practice. Often an amusement park offers tickets at a different price depending on the age (child, adult, senior).

However, in the current framework there are greater possibilities of systematic discrimination based on multiple factors (e.g. through the device by which a person accesses information. If he does so through an Apple device, he can be considered to have a higher level of income and, therefore, he is offered products at higher prices). This type of discrimination can reduce the category or group to the individual size (offer a different price for each of their customers) and are not easily detectable by users¹⁰⁷.

The more parameters are taken into account, the more the price will be individualised (it will be increasingly less likely that two different consumers will have exactly the same characteristics in relation to all the variables used to determine the price). And, continuing the example, it is unlikely that a single user will use devices other than their own to check for any such bias.

Moreover, companies hide these practices by offering highly personalised discounts or coupons.

These practices are subject to debate¹⁰⁸. Specifically, the Amazon case was analysed, as well as how these practices can affect not only consumers and users, but also operators who sell their products through this platform (a practice possibly distorting competition involving the setting of unfair prices).

Discrimination together with the ignorance of such practices and possible errors – presumably in favour of the party implementing them – lead us to think that they will end up having a negative impact on the welfare of consumers and users. In a perfectly competitive environment, such practices could even be positive for consumers and suppliers¹⁰⁹. However, in our opinion, the markets and the consumers and users themselves are not, in reality, perfectly versed in economic theory. The Office of Fair Trading said that the context of competition in the market impacted the likelihood that the price discrimination would harm consumers and users.¹¹⁰

¹⁰⁴ Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution. 06 April 2015.

<https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace>

¹⁰⁵ Online seller admits breaking competition law. 21 July 2016

<https://www.gov.uk/government/news/online-seller-admits-breaking-competition-law>. CMA issues final decision in online cartel case. 12 August 2016. <https://www.gov.uk/government/news/cma-issues-final-decision-in-online-cartel-case>.

¹⁰⁶ <http://business.cch.com/ald/MeyervKalanick3312016.pdf> Action filed on March 31, 2016.

¹⁰⁷ While working to reverse opacity in the setting of prices may fall within the scope of action of the consumer protection authorities or agencies, it is included in this work on competition to the extent that this opacity may distort competition (for example, the risk of possible abuses of dominant position increases such as the imposition of unfair prices - art. 2 Competition Act-).

¹⁰⁸ End of January 2016. *Amazon's Book Monopoly: A Threat to Freedom of Expression?*

http://www.ustream.tv/recorded/82066262?lang=es_ES (2hrs into the video).

¹⁰⁹ Page 16. *BIG DATA AND DIFFERENTIAL PRICING*. February 2015. “Executive Office of the President of United States of America. Economists typically see value-based pricing as a tool for expanding the size of the market by charging more to those willing to pay and less to those who are not”.

https://www.whitehouse.gov/sites/default/files/docs/Big_Data_Report_Nonembargo_v2.pdf

¹¹⁰ Page 8. *The economics of online personalised pricing*. Office of Fair Trading. May 2013

http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/research/oft1488.pdf

This may result in three serious forms of harm to consumers and users¹¹¹:

2.2.6.1 *The capturing of the consumer surplus by the offeror*

The more the offerors come to know the maximum sum that each consumer is willing to pay, the lower the remaining welfare that consumers may experience.

That is, if a user is willing to pay €30 for a shirt and he manages to purchase it for €20, his consumer surplus will be €10. But if the various shirts producers manage (to come close to) knowing the maximum amount the consumer is willing to pay (e.g. €29), the consumer will pay €29 and his surplus will be reduced to a single euro.

To the extent that general consumer welfare can be diminished and that their protection is the ultimate goal pursued by the competition authorities, as stated in the preamble of the Competition Act¹¹², competition authorities should pay attention to such practices¹¹³ and particularly when carried out by a dominant operator.

2.2.6.2 *Minor price differences*

Accordingly, the relationship between the suppliers and their users or consumers is altered. They go from being a supplier of a plurality of users to being a bilateral one-to-one supplier (individual price).

It entails, for example, that the price comparison between suppliers may lose some meaning. Each of them will probably try to identify the maximum payment willingness of the user and charge the maximum price. While there may be differences (probably not all offerors use the same algorithm and therefore take into account the same factors with equal magnitude) they are presumed to be lower than in the other scenario where a consumer can benefit from getting the product at a lower price because it is directed at a plurality of users supposedly with less payment willingness than him.

Continuing with the potential buyer of the shirt, when he turns to an alternative supplier, the latter will again probably attempt to approach the maximum price he is willing to pay (€30). Maybe it will differ from the previous one and instead of €29 it will estimate it at €27. But in any case, the potential earning by the competition in terms of price would be significantly reduced (to only €3). It would not be rational to offer the shirt for €20. Previously, as the operators were (absolutely) unaware of the payment willingness of each individual, it would not have been ruled out that the consumer would have obtained the shirt for €20 or €10.

¹¹¹ Page 16. *BIG DATA AND DIFFERENTIAL PRICING*. February 2015. "Executive Office of the President of United States of America. For example, big data may facilitate discrimination against protected groups, and when prices are not transparent, differential pricing could be conducive to fraud or scams that take advantage of unwary consumers. This final section of the report considers how big data and differential pricing relate to existing anti-discrimination and consumer protection laws that might address these issues". https://www.whitehouse.gov/sites/default/files/docs/Big_Data_Report_Nonembargo_v2.pdf

¹¹² "Esta eficiencia productiva se traslada al consumidor en la forma de menores precios o de un aumento de la cantidad ofrecida de los productos, de su variedad y calidad, con el consiguiente incremento del bienestar del conjunto de la sociedad" [In This productive efficiency is passed onto the consumer in the form of lower prices or an increase in the quantity of the products on offer, their variety and quality, thereby increasing the welfare of society as a whole].

¹¹³ "La competencia en términos de precio podría quedar reducida a las diferencias entre las mismas en averiguar la disponibilidad máxima al pago de cada usuario individual. Y, en un entorno con creciente información, las mismas pueden ser cada vez menos significativas". [The competition in terms of price could be reduced to the differences between them in determining the maximum payment willingness of each individual user. And in an environment with increasing information, they may be becoming increasingly less significant.]



(II) CHALLENGES FOR COMPETITION

2.2.6.3 Market exclusion

In any case, the greatest harm to users would be the exclusion of the possibility of entering a contract¹¹⁴. This circumstance has also been examined by various bodies. One of the better received proposals is the same as that pointed out above, which was able to contribute to a more competitive environment (determining that the ownership of the data lies with the users)¹¹⁵:

“One way to limit unfair or inaccurate applications of big data might be to give consumers greater control over their information. Data brokers claim that strong property rights over personal information could produce large transaction costs that would undermine valuable applications of big data. Economic theories also suggest that such property rights would not fully resolve the privacy problem. For example, adverse selection issues could re-emerge through voluntary disclosure of information. Nevertheless, a property rights approach to privacy seems particularly appealing where big data leads to concerns about fairness in the application of risk-based pricing strategies, and information intermediaries may have insufficient incentives to ensure the accuracy of personal information.”

In short, big data can both be a mechanism for inclusion in the market (lowering the price for those with less availability), but also of exclusion¹¹⁶.

¹¹⁴ “Thus, those users might not see their needs met and therefore would not benefit from competition among offerors. The “no market” is a market failure that should be corrected. “

¹¹⁵ Page 18. *BIG DATA AND DIFFERENTIAL PRICING*. February 2015. Executive Office of the President of United States of America.

https://www.whitehouse.gov/sites/default/files/docs/Big_Data_Report_Nonembargo_v2.pdf

¹¹⁶ *Big Data. A Tool for Inclusion or Exclusion?* January 2016 FTC. <https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf>

(III) NEED FOR CHANGE

1. Regulatory changes

The current environment undoubtedly presents new challenges¹¹⁷ and the question is whether the authorities now have appropriate tools to respond effectively to them.

1.1 Procurement

One of the first and most important recommendations that has been made is to consider elements other than price as essential competition elements. This approach flows from the economic value of the data and the commercial use thereof. However, not only are competition authorities “price-centric”; so are procurement agencies.

This entails, for example, that the tender for a public contract for the transformation of a city into a smart city is conducted through the least pro-competitive award procedure in the event that the tenderer does not seek any monetary compensation. In such a case, from the price-centric viewpoint, it would be a contract of little weight, such that it would not be necessary to ensure a minimum competitive basis.

In this sense, NYC is developing the “linkNYC” project with Sidewalk labs (the Google business unit researching smart cities)¹¹⁸. It is clear that if today a company offers such services at zero cost in Spain, from a viewpoint of strict compliance with the law, it could become the winning bidder through an award procedure that is not consistent with the true (non-monetary) importance of the project.

This implies the urgent need to promote the reformulation of the public procurement regulations which, in order to ensure a competitive basis, take into consideration only the price factor as a cost.

1.2 Protection of competition

In the same vein as mentioned in connection with the procurement regulations, it is likely that the rules on the protection of competition also require an adaptation to this new reality (data economy). As stated by Ms Vestager, maybe it is not necessary to have a “whole new competition rulebook for the big data world” in early 2016¹¹⁹, but it is becoming increasingly clear that “new European regulations are part of the answer”, also in the words of Ms Vestager a few months later in September 2016¹²⁰.

In this sense, some specific aspects are described below which perhaps should be reviewed and/or adapted.

¹¹⁷ An assessment that is shared by the OECD which will address these challenges (big data and competition) at the next meeting to be held in Paris from 28 November to 2 December. By way of background, the Secretariat of the OECD has prepared some interesting notes. *BIG DATA: BRINGING COMPETITION POLICY TO THE DIGITAL ERA*. 27 October 2016.

[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP\(2016\)14&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP(2016)14&docLanguage=En). Also in relation to these challenges

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/09_06_2016_ThinkTank.html

¹¹⁸ http://www.ara.cat/economia/Ignasi-Vilajosana-No-capital-aconseguir_0_1594640547.html

<https://www.wired.com/2016/02/googles-city-fixing-sidewalk-labs-is-finally-getting-to-work/>

¹¹⁹ “We don’t need a whole new competition rulebook for the big data world. Just as we didn’t need one for a world of fax machines, or credit cards, or personal computers.” *Competition in a big data world*. Margaret Vestager. 17 January 2016

https://ec.europa.eu/commission/2014-2019/vestager/announcements/competition-big-data-world_en

¹²⁰ “[...] we need to start looking at mergers with valuable data involved, even though the company that owns it doesn’t have a large turnover. [...] I think there’s a strong case for new EU rules as part of the answer. [...] if we do find that new EU legislation is the best way forward, I hope to put a proposal on the table early next year.” *Big data and competition*. 29 September 2016

http://ec.europa.eu/commission/2014-2019/vestager/announcements/big-data-and-competition_en

1.2.1 Regarding merger control

1.2.1.1 Thresholds

The Competition Act and Regulation 139/2014 at European level contain certain limits on market share and business volume below which it is assumed that mergers are not likely to distort competition and, therefore, should not even be subject to notification to the competition authorities.

1.2.1.2 Data

As stated by Ms Vestager “a company might even buy up a rival just to get hold of its data, even though it hasn’t yet managed to turn that data into money”¹²¹.

In light of the current limits, this type of operation would not even have to be notified, even if it presented significant implications in terms of competition. For this reason, Ms Vestager pointed out that “we are therefore exploring whether we need to start looking at mergers with valuable data involved, even though the company that owns it doesn’t have a large turnover.”¹²² Furthermore, the European Data Protection Supervisor had recommended “updating the rules on how authorities apply merger controls better to protect online privacy, personal information and freedom of expression”¹²³.

This exploration has led to the start of a public consultation process¹²⁴ in order to obtain views on the operation of merger control. The first point makes reference precisely to the notification thresholds and lays out doubts concerning whether they are effective insofar as they rest exclusively on monetary turnover.

In this sense, there may be companies with great potential (for example, in the pharmaceutical or technological sector) that have stores of very relevant assets (drug patents not yet marketed or a multitude of still untapped information) but which have not yet found a reflection in their cash income.

Improper operation of the thresholds is merely a consequence of the lower correlation between monetary income and importance as a result of the intrinsic value of the information. All this leads us to reflect on the desirability of revising the competition rules in order to cover those business merger operations in which there is no correlation between income levels (essentially those of the acquiree) and the economic importance of the operation.

At the time it was acquired by Facebook, WhatsApp did not have high levels of turnover – it did not exceed the thresholds – although the operation was very significant¹²⁵ (valued at \$19 billion).

¹²¹ “Data could be an important factor in how a merger affects competition” said Ms Vestager. “A company might even buy up a rival just to get hold of its data, even though it hasn’t yet managed to turn that data into money”.

European Commission may consider customer data concerns in mergers. 29 September 2016. *Financial Times*. <https://www.ft.com/content/415351b8-3ec6-3d1e-9677-ff0e54cc9101>

¹²² “We are therefore exploring whether we need to start looking at mergers with valuable data involved, even though the company that owns it doesn’t have a large turnover.” *European Commission may consider customer data concerns in mergers*. 29 September 2016. *Financial Times*. <https://www.ft.com/content/415351b8-3ec6-3d1e-9677-ff0e54cc9101>

¹²³ “Finally, we recommend updating the rules on how authorities apply merger controls better to protect online privacy, personal information and freedom of expression”. *P. 3 Opinion 8/2016 EDPS Opinion on coherent enforcement of fundamental rights in the age of big data*. 23 September 2016. European Data Protection Supervisor (EDPS).

https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Events/16-09-23_BigData_opinion_EN.pdf

¹²⁴ *Mergers: Commission seeks feedback on certain aspects of EU merger control*.

07 October 2016. http://europa.eu/rapid/press-release_IP-16-3337_en.htm;

¹²⁵ “The Transaction does not have a Union dimension within the meaning of Article 1(2) or Article 1(3) of the Merger Regulation as the EU turnover of one of the Parties (WhatsApp) amounted to only EUR [...] in 2013”. Page 1 of the Decision of 3 October

Operators such as LinkedIn¹²⁶, Wallapop or Waze, to name a few examples, can also have large stores of information without presenting high levels of turnover.

1.2.1.3 Embryonic operations

The desirability of this review becomes greater if one takes into account that an increasing number of mergers may occur at an early stage of the journey of the absorbed entity (and, therefore, that the acquiree does not have a level of income that exceeds the thresholds required to notify of the merger).

This circumstance (mergers in initial stages of development of a business project) is due to the detection capabilities enjoyed by some operators in relation to initiatives with an interesting potential (competitive radar). Thus, the operator that manages a platform has valuable information regarding initiatives that arouse the most interest among users.

Imagine, for example, that Google, which operates the online app store Google Play, notes that a traffic information app is experiencing growing success in terms of users¹²⁷. And, in light of this initial success, it may eventually choose to purchase it.

We might consider that these operations should be validated insofar as the acquired operator does not represent a competitive threat (probably due to the state of development of the initiative). However, this line of reasoning would mean that it would be increasingly difficult for potential acquirees to represent a threat to the acquirer, which would have an increasingly greater size and capacity. It would therefore be important to determine at what point an operator becomes dominant and, therefore, can abuse its position in quantitative and qualitative terms, as well as to what extent the operation increases barriers to market entry (to be able to compete effectively), regardless of the real threat that the acquired operator could represent.

1.2.1.4 Alternative indicators

Based on the above, it would be necessary to reconsider the use of the amount of revenue as the only element to determine the importance of a given merger.

As noted in the public consultation launched by the European Commission, the notion of significant potential market (either on the basis of patents or user information) could be captured by the economic value that the parties themselves attach to the operation¹²⁸. Consequently, the economic value of the transaction could be a good indicator of its importance to the extent that in principle it reflects the importance that the parties themselves attach to it.

However, taking into account this factor creates a major problem, since this value is set by the parties and, in order to avoid merger control, they could try, through

2014. *Case No COMP/M.7217 - FACEBOOK/ WHATSAPP*.

http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf

¹²⁶ In this interesting conference in Brussels on 3 October 2016, Damien Neven noted at 1:15:55 that perhaps LinkedIn does not have a turnover that would permit the review by the European competition authorities, as it does not exceed the legal thresholds established for this purpose. "Big data, digital platforms and market competition". <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>

¹²⁷ Note that Google can also observe this trend through interactions it receives through its browser.

¹²⁸ "Under current EU Merger Regulation thresholds, acquisitions of target companies that do not yet generate significant turnover but that have a high market potential, which may be reflected in a high purchase price, do not have to be notified to the Commission. This can happen, in particular, in the digital services sector".

Mergers: Commission seeks feedback on certain aspects of EU merger control.

07 October 2016. http://europa.eu/rapid/press-release_IP-16-3337_en.htm;

complex payment structures¹²⁹, to present an image of an operation that has a lower economic value than it would have in reality.

Additionally, the real economic value of a merger that occurs at an early stage of the life cycle of the acquired operator may also not exceed the monetary threshold that could possibly be set to trigger the obligation to notify the operation to the competition authorities.

Therefore, even taking into account the possible inclusion of the price factor of the merger as a notification threshold, this measure may not be enough.

Finally, the risks that an operation will impact the competition are greater the larger the acquirer is (in addition, its ability to detect an “interesting” competing operator may mean that the operation does not present a high transaction price). Thus, it might be desirable to analyse the possibility that those operators who have achieved a significant market share (in any of the markets in which they operate) have a duty to notify all acquisitions they make¹³⁰.

1.2.2 In relation to the control of anti-competitive practices

There seems to be greater consensus in considering that the instruments already available to the competition authorities to detect anti-competitive practices are sufficient. And it may be true that in this area it is not necessary to rethink such essential aspects as it is in relation to merger operations. However, there are two aspects that should definitely be subject to analysis.

The first is to ensure that the unlawful competition practices encompass all those practices that have restrictive effects on competition. In this sense, it is known that technology enables autonomous decision-making based on the data reality it captures.

In this case, we would not be dealing either with a tacit or even an explicit agreement between competitors, making it difficult to claim a possible breach of Article 1 of the Competition Act. However, the use of algorithms would mean, if each competitor implemented its algorithm, that the balance solution would involve zero price differentiation (the algorithm would end up learning that if the price drops, the competitors also immediately reduce it, with the effect that in the new balance scenario all lose out and, therefore, the price would not be lowered again).

As noted by Maurice Stucke, “computers and particularly artificial intelligence might¹³¹ help facilitate collusion in ways that the current antitrust tools can’t readily address”¹³².

¹²⁹ LBOs and the Size of Transaction Test. 06 October 2016. FTC. <https://www.ftc.gov/news-events/blogs/competition-matters/2016/10/lbos-size-transaction-test>

¹³⁰ The Competition Act already combines factors related to market share and, reaching a certain point (50% ex art. 8.1 a) *in fine*), the merger must be notified irrespective of whether the turnover of the acquired company does not exceed €10 million.

¹³¹ A post “How Pricing Bots Could Form Cartels and Make Things More Expensive” by Stucke and Ezrachi dated 27 October 2016 in the *Harvard Business Review* described 4 scenarios that consider that an algorithm could enable collusion. <https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and-make-things-more-expensive>

¹³² “Namely that computers and particularly artificial intelligence might help facilitate collusion in ways that the current antitrust tools can’t readily address.” 26 September 2016. *How Can Antitrust Be Used to Protect Competition in the Digital Marketplace?* <https://promarket.org/digital-market-not-going-correct/>. In the same vein, it was reflected upon in the post *Cuando el Cartelista es un Robot* [When the Cartel Runner is a Robot] of 29 October 2016 by Antonio Robles <http://derechocompetencia.blogspot.com.es/2016/10/cuando-el-cartelista-es-un-robot.html>. In particular, reference was made to the fact that the problem might *no ser solo de tipificación o detección, sino de imputación* (not only be classification or detection, but rather attribution).

In view of the above, it may be appropriate to conduct a review of the rules in terms of ensuring that practices that can significantly and negatively impact competition can be sanctioned even though their implementation is based on the use of algorithms (problems of classification and even perpetration should be addressed).

2. Changes in the modus operandi of the competition authorities

In any case, the context characterised by technology and the information economy entails not only raising the possibility of such regulatory reforms, but also pushing to revise the modus operandi of the competition authorities.

2.1 Greater coordination

As noted, it is considered essential that the competition authorities take into account qualitative factors, such as privacy. However, data protection authorities are the specialists in this field, such that their cooperation with the competition authorities is particularly positive.

From a broader perspective, both disciplines operate with the same goal: the welfare of consumers and users. A goal that is also shared by the consumer authorities or agencies. In view of such a coincidence and the possible synergies between all of them, the European Data Protection Supervisor has formulated the proposal for a Digital Clearing House (DCH) for market regulators of all shapes and sizes¹³³. The Digital Clearing House would¹³⁴ involve a voluntary network of regulators in order to share information in relation to possible abuses in the digital ecosystem and together find the best way to address them. The coordination should also allow a coherent approach by all the authorities involved in relation to the protection of individual rights.

2.2 Greater speed

One of the most significant features of the new economic environment is the speed at which events and advances occur (and also the processing of information, with velocity being one of the four essential characteristics of big data).

In this sense, in a recent speech¹³⁵ by the Commissioner of the FTC, Terrell McSweeney explained that the two and a half years she had been in office amounted to: 2.5 trillion searches on Google and self-driving cars going from being a mere experiment to a reality that was already in the streets of some cities.

Following the example of Ms McSweeney, if the proceedings up to the possible imposition of a sanction and structural conditions are prolonged for two and a half years, it would mean that

¹³³ "We have launched a Digital Clearing House (DCH) for digital market regulators of all shapes and sizes."

BIG DATA RIGHTS: LET'S GET TOGETHER. 06 October 2016. Giovanni Buttarelli.

https://secure.edps.europa.eu/EDPSWEB/edps/site/mySite/Big_data_rights_Lets_get_together

¹³⁴ "This Opinion therefore recommends establishing a Digital Clearing House for enforcement in the EU digital sector, a voluntary network of regulatory bodies to share information, voluntarily and within the bounds of their respective competences, about possible abuses in the digital ecosystem and the most effective way of tackling them. This should be supplemented by guidance on how regulators could coherently apply rules protecting the individual." P. 3 Opinion 8/2016 *EDPS Opinion on coherent enforcement of fundamental rights in the age of big data*. 23 September 2016. European Data Protection Supervisor (EDPS). https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Events/16-09-23_BigData_opinion_EN.pdf

¹³⁵ "I was sworn in as a Commissioner two and a half years ago or about 2.5 trillion Google searches ago. At that time, self-driving cars were an experimental oddity confined to the backlots of some tech companies. Two weeks ago, a fleet of semi-autonomous Ford Fusions took to the streets of Pittsburgh to pick up passengers for Uber." *BIG DATA: INDIVIDUAL RIGHTS AND SMART ENFORCEMENT* European Data Protection Supervisor-BEUC Joint Conference Brussels, Belgium, 29 September 2016. Remarks of Commissioner Terrell McSweeney

https://www.ftc.gov/system/files/documents/public_statements/987103/mcsweeney_-_euro_data_protection_conf_9-29-16.pdf

in the interim Google would have been able to perform 2.5 trillion searches, which in the light of the network economies discussed above gives an advantage in the market that is difficult to reverse, meaning that no matter how severe the penalty eventually imposed, it will not achieve one of its goals: deterrence.

It would therefore be advisable for competition authorities to have available the resources (human and material) needed to give the fastest possible response to such violations. Even the most renowned experts in the field advocate¹³⁶ *ex ante* interventions, as they believe they are the most appropriate mechanisms for technology markets advancing at a rapid pace.

2.3 New instruments (technological and soft law)

Some economic operators have powerful instruments of a technological nature at their disposal, as a result of these, it is desirable that the authorities that are required to control their behaviour have at least the same tools. Otherwise, the imbalance could substantially determine the tasks assigned to these supervisory authorities.

2.3.1 Regarding behaviour control

Faster responses require the availability of instruments capable of offering them. The speed of the technological tools is unmatched. Consequently, it would be desirable for the competition authorities to have instruments of this nature at their disposal to contribute to a rapid detection and response capacity.

From the website (<http://focusontheuser.eu/es#download>) an open source code can be downloaded that allows users to obtain results without the bias that Google allegedly introduced in favour of its vertical search engines (i.e. links with the highest number of opinions would appear and not those necessarily corresponding to Google plus – see Figure 3).

Services to detect legal violations are appearing based on technology solutions precisely in response to situations where these offences occur in the digital realm. An example could be the company <https://www.redpoints.com/>, which protects digital content from “piracy”.

2.3.2 Regarding the promotion of competition

The new possibilities offered by technology (dynamism¹³⁷, reputation¹³⁸, transparency¹³⁹, processing by algorithms¹⁴⁰) may also lead to alternative ways to regulate the sector, and

¹³⁶ “In our research we venture beyond ex-post intervention and also consider possible ex-ante instruments. Pre-emptive intervention, when carefully executed, may offer us a fine-tuned mechanism adequate for fast-moving technology markets. It may provide competition agencies with a range of tools to change the dynamics of market power, the transparency of the market, or the way online companies are able or allowed to present the goods they are selling.

Ex-ante means, can enable the competition agencies and other regulators to focus on the competition dynamics and better align the interests of the super-platforms and consumers.”

26 September 2016. *How Can Antitrust Be Used to Protect Competition in the Digital Marketplace?*

<https://promarket.org/digital-market-not-going-correct/> Statements by Maurice Stucke.

¹³⁷ It allows reinterpreting the concept of proportionate restriction and demanding that this quality be checked on an ongoing basis over time. In relation to (short-term) tourist rental, the ACCO suggested that any restrictions be dynamic (at a specific point in time based on data collected at each moment) P. 23-24 *PEER-TO-PEER TRANSACTIONS (P2P). A STEP FORWARD*. May 2016 ACCO. Xavier Puig and Susanna Grau. http://acco.gencat.cat/web/.content/80_acco/documents/arxius/actuacions/P2P-Un-pas-endavant_DEF_es-vX.pdf; explanatory video: <https://www.youtube.com/watch?v=x-SvhmVJdEU>

¹³⁸ It makes it possible to mitigate negative external factors. The ACCO also suggested in relation to tourist rental (short-term) that the reputation of potential tenants be used to establish a liability regime that encourages the landlord to include in its decision on whether or not to rent the property the probability that the tenant will cause problems. This scheme should help to mitigate the negative external factors of the activity without the need to restrict it. P. 28-29 *PEER TO PEER TRANSACTIONS (P2P). A STEP FORWARD*. May 2016 ACCO. Xavier Puig and Susanna Grau. http://acco.gencat.cat/web/.content/80_acco/documents/arxius/actuacions/P2P-Un-pas-endavant_DEF_es-vX.pdf;

¹³⁹ Information is an essential requirement for competition to exist. It has already been pointed out that when the potential buyer or user does not have information, the optimal strategic practice on the part of operators is quality degradation (*race to the bottom*). For example, if we know for certain the characteristics of a product such as its origin or the treatment received by the workers that produce it, etc., this can also constitute an element of competition.

therefore the competition authorities should consider them when making their recommendations in the context of promoting competition.

2.4 New approach to mergers

As noted above, to provide effective control of merger operations, it may be necessary to effect regulatory reform. However, the challenges in this area will probably require a change in the modus operandi of the competition authorities.

2.4.1 The definition of the relevant markets

The first hurdle faced by competition authorities when they are required to analyse a merger in which the “information” component is very significant¹⁴¹, is to define the relevant market.

In operations of this kind, as shown by the example of the transaction between Google and Nest, the data/information transcend physical markets. That is, it is probable that identifying “thermostats” as a relevant market in the context of that operation would not have been successful.

Data or information have a very particular feature that explains this great difficulty in categorisation. As noted by Hal Varian¹⁴², Chief Economist of Google, technology and data can be applied to various purposes¹⁴³.

Unlike a furniture factory that cannot easily be allocated to clothing manufacture, data can easily be put to new uses with relative ease.

For example, Facebook, which in principle is a social network, has started using its infrastructure and most likely the data it stores in order to create a platform for the sale of items (thus beginning to compete with operators that are not a social network such as eBay or Wallapop)¹⁴⁴.

Facebook is also entering the¹⁴⁵ market for work applications through Workplace¹⁴⁶, thus competing with Slack or Microsoft, which in addition to its office pack would seem to be very interested in this segment, as demonstrated by the acquisition of LinkedIn.

The inability to foresee the use of the data makes it difficult to determine the market potentially affected by a merger. Consequently, two options emerge: first, conceptualising a generic information-data market. Notwithstanding this alternative, while it minimises

¹⁴⁰ Algorithms make it possible to capture many elements in order to provide a solution or quantification based on such diversity. The ACCO suggested in this sense to use the possibilities offered by the algorithms for calculating compensation to offset the costs of transition to the competition in those markets where, through its actions, the legislator has encouraged investments that, in the case of liberalising the activity, perhaps may not have been redeemed. This would require considering aspects such as: (i) *inversiones realizadas necesarias para acceder al mercado según la normativa vigente*; (ii) *el momento en que se realizaron las inversiones*; (iii) *el momento en que se produce la modificación regulatoria*; (iv) *intensidad del cambio* y (v) *factor relativo a la recuperación de la inversión (ajustable a cada mercado y deberá tomar en consideración la existencia de beneficios extraordinarios por haber operado en mercados restringidos a la competencia)* [(i) investments necessary to enter the market under current regulations; (ii) the time at which the investments were made; (iii) the time at which the regulatory modification occurs; (iv) the intensity of the change and (v) the factor relating to the recovery of the investment (adjustable to each market and taking into account the existence of extraordinary benefits due to having operated in markets restricted for the competition)] P. 35 *PEER-TO-PEER TRANSACTIONS (P2P). A STEP FORWARD*. May 2016 ACCO. Xavier Puig and Susanna Grau. http://acco.gencat.cat/web/.content/80_acco/documents/arxiu/actuacions/P2P-Un-pas-endavant_DEF_es-vX.pdf; explanatory video: <https://www.youtube.com/watch?v=L3xQZpz8C2Y>

¹⁴¹ In this type of merger it is likely that the acquisition apparently seems not to present competition problems as it does not directly acquire a competitor. e.g. Google acquired Nest. However, this appearance is not sufficient to conclude the absence of competition issues.

¹⁴² *Big data, digital platforms and market competition*. <http://bruegel.org/events/big-data-digital-platforms-and-market-competition/>. 03 October 2016. Bruegel.

¹⁴³ *Repurpose of Technology*

¹⁴⁴ 03 October 2016. <https://techcrunch.com/2016/10/03/facebook-marketplace-2/>

¹⁴⁵ 10 October 2016. “Workplace, la herramienta de Facebook para el trabajo” [Workplace, the Facebook tool for work] | Technology | EL PAÍS http://tecnologia.elpais.com/tecnologia/2016/10/10/actualidad/1476087975_448581.html

¹⁴⁶ <https://workplace.fb.com/>

categorisation errors, it seems too vague, as it does not allow the competition authorities to assess any problems resulting from a merger.

It appears to be insufficient to conceptualise the market, affected by the acquisition of WhatsApp by Facebook, as only a data market, because it is too broad and does not allow the identification of the potential effects. For example, the market actually affected (social networks? purchases? digital services to corporations?).

The second option would require the notifiers to outline the actual use they will give to the information collected as a result of the merger. This would have at least three positive effects: (i) define the area affected and therefore the potential impact in terms of competition, (ii) prevent the “accumulation of data without a clear purpose” (it has already been indicated that the accumulation of information without a specific purpose only produces a reduction in privacy without leading, at least initially, to a better product or service), and (iii) be consistent with the data protection regulations that make multiple references to the purpose/use/destination of the data obtained as a further limit on their use.

This possibility (necessity that the notifying parties outline the area in which they will make use of the information resulting from the acquisition) presents at least three complications: (i) it is very significant strategic information for the operators; (ii) it limits their freedom of operation (changing their business purpose) – although, as noted, this limitation is already imposed by data protection regulations – and (iii) it is very a difficult element for the regulators to control.

In any case, the definition of the relevant markets in mergers characterised by the importance of the data is an unresolved problematic issue that will require an urgent and profound reflection. Preliminary attempts have been made to tackle this issue by noting as a possible solution that operators should outline the subsequent use of the data collected as a result of the merger.

Finally, it should be noted that mechanisms that traditionally could facilitate the definition of the relevant market, such as the *small but significant and non-transitory increase in price* (SSNIP) test, have become ineffective, since they are useful in these cases.

2.4.2 An all-inclusive vision

An additional difficulty for competition authorities is reviewing a single merger from all the angles in which competition concerns may arise. These different views shall include at least the following¹⁴⁷:

- (i) the impact on each side of the two-sided market;
- (ii) the degrading of quality on the free side (including the privacy protections on the data collected and its uses);

One of the main challenges that the new economic environment raises for the competition authorities is to assess and quantify quality as a parameter that significantly affects the welfare of consumers and users. Aware of this challenge, in 2013 the OECD made public a document on this issue¹⁴⁸ and

¹⁴⁷ “(i) the merger’s impact on each side of the multi-sided platform (both on advertisers and Twitter users), (ii) whether the merger increases the likelihood of the firm degrading quality on the free side (including the privacy protections on the data collected and its uses), (iii) whether the data from the acquired or acquiring entity helps the firm attain or maintain its power in any market, and (iv) whether the merger increases entry barriers in the social network market or other markets.”

Description by Maurice Stucke regarding a possible acquisition of Twitter by Google. 26 September 2016. *How Can Antitrust Be Used to Protect Competition in the Digital Marketplace?*

<https://promarket.org/digital-market-not-going-correct/>

¹⁴⁸ OECD Policy Roundtables: *The Role and Measurement of in Competition Analysis*, 28 October 2013, <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>,

more recently it has published an interesting study which explores the adaptation of the *small but significant and non-transitory increase in price* (SSNIP) in terms of quality (privacy) subject to compliance with certain conditions to examine mergers between operators which base their business model on the revenue from advertisers¹⁴⁹. That is, it would be desirable for competition authorities to be able also to quantify qualitative parameters in order that they can incorporate them into their considerations without making them subjective.

- (iii) information acquired as a result of the operation helps the operator achieve or maintain its power in any market; and
- (iv) the increase to maintain barriers to entry in the market directly affected or in other markets.

2.4.3 Analysis period

Similarly, the scrutiny of an operation is always implicitly forward looking in the sense that it should attempt to perceive the future risks it may pose for competition.

Consequently, it would be interesting for competition authorities to examine *a posteriori* the effects of the merger in order to learn from them. That is, to what extent they were able to foresee the effects on competition that ultimately occurred and whether the decisions adopted (validate the operation, impose conditions or prevent it) were appropriate. It would involve methodologically incorporating this revision in order to learn from the actions taken and improve future decisions.

The data protection supervisor at European level made a pronouncement in this sense when claiming that the merger between Facebook and WhatsApp, and Google and DoubleClick must be learned from. In particular, it said that in its opinion the competition authorities should have had a more long-term analysis¹⁵⁰.

Note that the review would also occur in relation to those concentrations validated by the competition authorities, which would make it possible to detect any costs of the non-intervention. It is evident that non-intervention can have significant costs for competition that will most likely not be recouped by the free operation of the market (in this sense it is fitting to consider phenomena such as those relating to the above mentioned network effects).

2.4.4 Inversion of the burden of proof

From the foregoing, the difficulty faced by competition authorities in this area (mergers based on data) is clear. This difficulty has led people – such as Acting Assistant Attorney General Hesse – to suggest the possibility of inverting the burden of proof in relation to such operations, so that it is the operators who must prove the public interest of the operation and not the consumers or regulators. The data protection supervisor at European level echoed this view¹⁵¹.

¹⁴⁹ *Online services and the analysis of competitive merger effects in privacy protections and other quality dimensions*. Keith Waehrer. Bates White, LLC. 08 July 2016. <http://waehrer.net/Merger%20effects%20in%20privacy%20protections.pdf>

¹⁵⁰ "We have to learn from the Facebook/WhatsApp and Google/DoubleClick mergers. I argue that, yes, the competition authorities could have been more longer term in their assessment of potential effects on consumer welfare". *Big data: individual rights and smart enforcement*, speech at the EDPS-BEUC Joint Conference European Commission, Berlaymont, Brussels, 29 September 2016, Giovanni Buttarelli. https://secure.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/EDPS/Publications/Speeches/2016/16-09-29_Speech_EDPS_BEUC_BigData_EN.pdf

¹⁵¹ "And as Assistant Attorney General Hesse suggested, the burden of proof for big data mergers should be on the merging parties to demonstrate the public interest, the burden should not be on the consumer or the regulator." *Big data: individual rights and smart enforcement*, speech at the EDPS-BEUC Joint Conference European Commission, Berlaymont, Brussels, 29 September 2016, Giovanni Buttarelli.



(III) NEED FOR CHANGE

It is clear that this possibility is at the extreme of refusing a merger if the parties cannot adequately justify the efficiencies arising therefrom. In other words, it is a transition from the current position of considering by default that only when mergers present serious competition concerns should they be questioned towards a new approach based on the understanding that only if operators show that the operation is aligned with the public interest may it be permitted to materialise. In any case, the opinion transcribed above (inversion of the burden of proof) is a line of thought on which to reflect.

(IV) CONCLUSIONS

The economic environment is changing and today displays new characteristics due mainly to the growing importance of data in terms of volume, variety, processing velocity and value (big data).

As a result of the big data phenomenon, the yield (value) that can be obtained from the data has increased, which has led to the reinforcement of strategies involving offering products and services below cost because the losses are offset through the aforementioned yield of the data gathered from such products and services. However, the offering of products or services at zero cost does not prevent them from being harmful to consumers – especially in relation to their quality (also understood as privacy) – and therefore the competition authorities should bear in mind that a zero-cost product or service is not without impairment of consumer welfare.

Also, another element linked to big data, processing velocity, has led to the emergence of phenomena such as *machine learning*¹⁵². Machines learn based on each interaction with them. Thus, an operator that reaches a substantial level of interactions (information) can provide a higher level of quality than another even though the former has a somewhat less precise algorithm. The data (interactions) can generate an irreplicable advantage. For this reason, more and more mergers are explained on the basis of obtaining information (they generate a substantial competitive advantage also derived from the exclusion of competitors from having the same information). And for this reason, more and more markets are demonstrating an uncompetitive structure (with very dominant operators) with the risks that this entails. It is recommended in this sense exploring the possibility of guaranteeing the user's ownership of all the information that has been collected from him so that he can control who has access to it, which in turn could facilitate access to the market by new operators (they could have the entire history of the interactions of a user if the latter so authorises it).

The foregoing makes it imperative that the competition authorities expand their vision (including various aspects of the price) and maintain a more careful and vigorous attitude both in relation to offences and mergers.

The “new” *modus operandi* of the competition authorities could be expressed among other things in (i) greater coordination between the competition authorities and data protection authorities insofar as it will become increasingly necessary for competition authorities to assess aspects of the quality and the level of privacy offered by operators, (ii) the use of the possibilities offered by new technologies for improved detection of unlawful practices or to make pro-competitive regulatory proposals, (iii) a new method for assessing operations involving an all-encompassing view of all the potential harmful effects thereof (impact on both sides of the platform, probability of quality degradation, impact on the market power of the contracting parties and possible increase in entry barriers). In turn, it favours (iv) greater speed in the responses offered by the competition authorities since a temporary advantage may allow some benefit from network effects that could lead to a very significant competitive advantage.

¹⁵² *Machine learning*, as one of the most important facets of the field of artificial intelligence, raises ethical issues and significant scientific challenges. “Google, Amazon, Facebook y Microsoft se unen para que la inteligencia artificial salga a la calle” [Google, Amazon, Facebook and Microsoft join forces to bring artificial intelligence to the streets]. 01 October 2016. *La Vanguardia*. <http://www.lavanguardia.com/tecnologia/20161001/41684797831/inteligencia-artificial-google-facebook-amazon-apple.html> <http://www.partnershiponai.org/>



(IV) CONCLUSIONS

The current environment, in words of *The Economist*, is a “huge problem” which means that “Prudent policymakers must reinvent antitrust for the digital age.”¹⁵³ The main regulatory aspects it is believed should be subject to change as regards competition would be (i) the thresholds of the merger (they do not capture the importance of those mergers with low turnover) and (ii) unlawful competition practices, insofar as the decisions taken independently by algorithms can lead to restrictions on competition which, due to the way they are adopted, are not subject to the prohibition under Article 1 of the Competition Act or 101 TFEU.

Finally, the reconfiguration of procurement regulations is also considered necessary in order to adequately ensure competition in the field of public procurement. Currently, procurement procedures are determined solely by the monetary value to be paid by the government. Therefore, an operation in which the payment is made with data would involve a procedure that least guarantees competition in an acquisition which actually may be significant.

¹⁵³ *A giant problem*. 17 September 2016. “Prudent policymakers must reinvent antitrust for the digital age. That means being more alert to the long-term consequences of large firms acquiring promising startups. It means making it easier for consumers to move their data from one company to another, and preventing tech firms from unfairly privileging their own services on platforms they control (an area where the commission, in its pursuit of Google, deserves credit). And it means making sure that people have a choice of ways of authenticating their identity online.”

http://www.economist.com/news/leaders/21707210-rise-corporate-colossus-threatens-both-competition-and-legitimacy-business?fsrc=scn/tw_ec/a_giant_problem