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**\* FINAL DRAFT \***

**THE BIG DATA RELEVANT MARKET AS A TOOL**  
**FOR A CASE BY CASE ANALYSIS AT THE DIGITAL ECONOMY:**  
**Could the EU decision at Facebook/WhatsApp merger have been different?**

**Vicente Bagnoli (\*)**

**Abstract:** The definition of the relevant market is the beginning of any competitive analysis, to identify what product or service people are dealing with, which players are in this market, such as producers, distributors and even consumers, their interests, the total market size, the existence of barriers to entry and the possibility of market power and dominant position. Such relevant market definition model is applied to define any market, even in the digital economy, but considering its own characteristics for the appropriate analysis. The present paper aims to analyze (limited to the information/figures and data available for public consultation) the merger Facebook/WhatsApp (Case n° COMP/M.7217) already decided by the EU Commission, by applying the Big Data Relevant Market and its structure - *Big Data capture*, *Big Data storage* and *Big Data analytics* - to conclude if the EU decision could have been different.

**Keywords:** Big Data; Relevant Market; Competition Law; Digital Economy; Facebook; WhatsApp.

**JEL Classification:** L4

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(\*) Professor of Law at Mackenzie University; PhD in Philosophy and General Theory of Law at Sao Paulo University - Law School; Master in Economic and Political Law at Mackenzie University - Law School; visiting researcher for Pos Doc at Max Planck Institute for Innovation and Competition; member of ASCOLA; member of the scientific committee of the Observatory on Competition Law Enforcement - Portuguese Catholic University of Porto; nongovernmental advisor of ICN; World Bank Group Short Term Consultant; Counselor of IBRAC; President of the Antitrust Section of the Brazilian Bar Association, Sao Paulo (2013-2015); Counselor of the Italian Chamber of Commerce of Sao Paulo - Italcam; bagnoli@vicentebagnoli.com.br

**Summary:** 1. Introduction; 2. Competition at the digital economy; 3. Case M.7217 – Facebook/WhatsApp; 4. Seizing the EU decision at Facebook/WhatsApp merger; 4.1 Consumer communications services; 4.2 Social networking; 4.3 Online advertising services; 5. Post-merger: new (or old) challenges for competition authorities; 6. The big data relevant market as a tool for a case by case analysis at the digital economy; 7. Conclusion: Could the EU decision at Facebook/WhatsApp merger have been different?

## 1. Introduction

The definition of the relevant market is the beginning of any competitive analysis, to identify what product or service people are dealing with, which players are in this market, such as producers, distributors and even consumers, their interests, the total market size, the existence of barriers to entry and the possibility of market power and dominant position. Traditionally two criteria are considered to define the relevant market: the product market, which includes products or services, and the geographic market; yet, there is also a third criterion, the time horizon.

In general, the product market considers products or services that are interchangeable or substitutable, especially because of its utility and price, but also consumer preferences. The geographic market refers to the area where competition between the products or services takes place. Finally, the time horizon considers on its analysis consumer habits and technological developments in different times.

Commonly such relevant market definition model<sup>1</sup> is applied to define any market, even in the digital economy, but considering its own characteristics for the appropriate analysis. For instance, the fast development in online commerce that sizes opportunities enhancing competition “by making markets more transparent, lowering consumers’ search costs, expanding the boundaries for trade and facilitating the emergence of new business models”<sup>2</sup> and the rethinking of the usage of traditional economic tools as the

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<sup>1</sup> Regarding market definition, Whish observes that: “First, market definition is not an end in itself. Rather it is an analytical tool that assists in determining the competitive constraints upon undertakings: market definition provides a framework within which to assess the critical question of whether a firm or firms possess market power. Second, both the product and geographic dimensions of markets must be analysed”. (in: R.WHISH. *Competition Law*. 6th ed. Oxford: Oxford University Press, 2009, pp. 26-27.)

<sup>2</sup> AUSTRALIAN CONSUMER AND COMPETITION AUTHORITY. Online Vertical Restraints Special Project Report, 2015 International Competition Network Annual Meeting, p. 2.

*hypothetical monopolist test for free products*, when the price to consumers is zero<sup>3</sup>. But probably, the most challenging issue in digital economy is how competition authorities shall deal with data, the world's most valuable resource that demands a new approach to competition rules<sup>4</sup>.

Cases already analyzed and most of them decided by competition authorities as showed below allow to conclude that investigations involving Big Data shall be improved, always having in mind the characteristics of a digital economy, “free” products and how to use traditional tools, the distinctiveness of platforms regarding traditional markets, the role of the players in the market, and even more important, the different stages or cycles of the Big Data that constitute different markets, but interconnected.

For instance, in most mergers cases analyzed a market for data had not been defined once the companies involved used their data only as an input for their own business<sup>5</sup>. However, as informed the European Data Protection Supervisor<sup>6</sup>: “(...) the evolution of the digital economy has been marked by an explosion of data collection. An equivalent, relevant market analysis today would examine new business models and assess the value of personal information as an intangible asset. It could be expected to reveal the need for undertakings to collect huge amounts of data to be able to monetize the service provided, mainly through advertising, and at the same time to compete with other paid-for service providers”.

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<sup>3</sup> A.P. GRUNES and M.E. STUCKE; *No Mistake About It: The Important Role of Antitrust in The Era of Big Data*. The Antitrust Source, April 2015. American Bar Association, p. 6. <http://ssrn.com/abstract=2600051> (last searched on 05-07-2016)

<sup>4</sup> in The Economist. *The world's most valuable resource is no longer oil, but data*. <http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource> (last searched on 05-20-2017)

<sup>5</sup> AUTORITÉ DE LA CONCURRENCE; BUNDESKARTELLAMT, *Competition Law and Data*. May, 2016, p. 45. available at [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (last searched on 05-30-2016).

<sup>6</sup> EUROPEAN DATA PROTECTION SUPERVISOR. *Preliminary Opinion of the European Data Protection Supervisor Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, 2014, p. 26.

Some questions can arise about how accurate are (or were) the competition/antitrust analysis concerning the Big Data, considering some decisions, especially the merger between Facebook/WhatsApp.

On the merger between Facebook/WhatsApp (COMP/M.7217) in line with the decisions in *Google/DoubleClick* and *Microsoft/Yahoo!Search Business* the online advertising market and its possible sub-segments was defined by the Commission as national in scope or alongside linguistic borders within the EEA<sup>7</sup>. On the subject of the geographic market of Big Data, wouldn't be appropriate to provide a more specific analysis if considered: (i) where the data are or can be captured; (ii) where those data are or can be stored; and (iii) where the data analyzed infer or can infer valuable information?

In the *Google/DoubleClick* merger case (COMP/M.4731), the European Commission analysis on advertisements identified paid services as relevant. In the Facebook/WhatsApp merger case (COMP/M.7217), the Commission analysis on the potential data concentration concluded that the merger did not cause any horizontal overlaps in the online advertising market or in any sub-segments thereof. But how vertical integrations could strengthen market power if considered not only the online advertising market, but all the stages where the companies could perform their activities, as capturing, storing and analyzing data?

Still at Facebook/WhatsApp merger case another two feasible theories of harm raised to verify if Facebook could strengthen its position in online advertising. By introducing advertising on WhatsApp the EU Commission considered the existence of a sufficient number of other existing and potential competitors. By using WhatsApp as a potential supply of user data for the reason of improving Facebook's advertising activities the EU Commission considered the existence of a large amount of Internet user data that are valuable for advertising purposes. The question just presented above could be repeated.

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<sup>7</sup> "The European Economic Area (EEA) was set up in 1994 to extend the EU's provisions on its internal market to the European Free Trade Area (EFTA) countries. Norway, Iceland and Liechtenstein are parties to the EEA. Switzerland is a member of EFTA but does not take part in the EEA. The EU and EEA partners (Norway and Iceland) are also linked by various 'northern policies' and forums which focus on the rapidly evolving northern reaches of Europe and the Arctic region as a whole". In [http://www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuId=FTU\\_6.5.3.html](http://www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuId=FTU_6.5.3.html) (last searched on 06-12-2017)

If the EU Commission considered at the mergers Tom Tom/Tele Atlas (COMP/M.4854) and Thomson Corporation/Reuters Group (COMP/M.4726), cases not directly related to digital market, considerable overlaps for some particular database/content datasets on the specific markets with high costs and lengthy of time to be replicated. At the merges Telefónica/Vodafone/Everything Everywhere (COMP/M.6314) and Publicis/Ominicom mergers (COMP/M.7023), cases directly related to digital markets, the EU Commission considered the existence of sufficient accessible data either for analytics or advertising for competitors of the post-merged players. Which is the difference in analyzing those cases as not directly or directly related to digital markets? Could the conclusions be different if considered how companies perform the capture, storage and analysis of data?

At the case PeopleBrowsr Inc. vs. Twitter Inc. (case N° 3:12-cv-06120) the competition issue basically consisted in the decision of Twitter from ceasing the access of PeopleBrowsr to Twitter's Big Data Analytics. The companies settle the dispute, but more than analytics, how concentrate are the capture, storage and, finely, analysis of Big Data? Could it interfere in the dynamicity of the market once PeopleBrowsr remain depending on an authorized Twitter Data reseller to have access to Twitter's content?

In Google (Case AT.39740) investigation, since April 2015 the EU Commission narrowed down the claim to the preferential treatment of Google's search results as compared to those of its competitors, related to advertising data and advertising portability. How could precisely identify the market power and then the effects on advertising data and advertising portability without an accurate analysis on the capture, storage and analysis of Big Data?

The present paper aims to analyze (limited to the information/figures and data available for public consultation) the merger Facebook/WhatsApp (Case n° COMP/M.7217) already decided by the EU Commission, by applying the Big Data Relevant Market and its structure - *Big Data capture*, *Big Data storage* and *Big Data analytics* – in order to answer to some questions as:

(i) Regarding the geographic market of Big Data, wouldn't be appropriate to provide a more specific analysis if considered: (a) where the data are or can be

captured; (b) where those data are or can be stored; and (c) where the data analyzed infer or can infer valuable information?

(ii) How vertical integrations could strengthen market power if considered not only the online advertising market, but all the stages where the companies could perform their activities, as capturing, storing and analyzing data?

(iii) Which is the difference in analyzing cases as not directly or directly related to digital markets?

(iv) Could the conclusions be different if considered how companies perform the capture, storage and analysis of data?

(v) How the concentration of the capture, storage and the analysis of Big Data can interfere in the dynamicity of the market?

(vi) How the BDRM could precisely identify the market power and then the effects on advertising data and advertising portability with an accurate analysis on the capture, storage and analysis of Big Data?

(vii) Could the EU decision at Facebook/ WhatsApp merger have been different?

Depending on the answers that can be achieved with the BDRM applied to the merger Facebook/WhatsApp, the conclusion of the present paper will signalize if the BDRM is an efficient and effective tool for the analysis of Big Data and its effects on competition.

## **2. Competition at the digital economy**

As demonstrated by the OECD on its report *The Digital Economy*<sup>8</sup>, the competition in digital markets has its own characteristics, including trends as “*winner takes all*”, network effects, two-sided markets, or even multi-sided markets or platforms<sup>9</sup>, fast-paced innovation and high sums of investment. The digital economy is also characterized on its essential dynamic competition based on continuous cycles of

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<sup>8</sup> in OECD, *The Digital Economy*, 2012, p. 5

<sup>9</sup> J.S.FRANK. *Competition Concerns in Multi-Sided Markets in Mobile Communication*. in G. SURBLYTÉ. *Competition on the Internet*. MPI Studies on Intellectual Property and Competition Law, vol. 23. Berlin: Springer, 2015, p 85.

innovation, development and ruptures, but also market concentration involving different players with dominant position and a growing imbalance between large companies on the one hand, and small and medium-sized businesses and consumers on the other.

The development and improvement of several technologies and the emergence of others, as Hadoop<sup>10</sup>, the use of scale and cost reduction, and the need to advance in research and knowledge enabled the existence of the Big Data.

The Big Data, or the Age of Big Data, an extremely recent data revolution whose numbers confirm their greatness<sup>11</sup>, of rapid exponential growth worldwide and with immense consequences for society, characterized by obtaining a volume of data, information processing and at a speed previously impossible. The McKinsey consulting, for example, uses the term Big Data to refer to datasets whose size is beyond the capacity of a traditional database tool to capture, store, manage and analyze.<sup>12</sup> “Used well, big data analysis can boost economic productivity, drive improved consumer and government services, thwart terrorists, and save lives”<sup>13</sup>.

Companies always adapted to dealing with a variety of data and in diverse forms, using the correct technologies of Big Data can anticipate and solve business problems, to know better consumers and to foresee opportunities, thus becoming more competitive. The data generated every second can be structured data, those with pre-established strict standards, or unstructured data<sup>14</sup>, such as *emails*, images, videos, audio, documents, and also become increasingly the exposure of personal privacy<sup>15</sup>, corporate information and secret of States<sup>16</sup>.

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<sup>10</sup> in: M. CHEN S. MAO; Y. ZHANG; V.C.M. LEUNG, *Big Data: Related Technologies, Challenges and Future Prospects*. London: Springer, 2014, p. 16

<sup>11</sup> in M. CHEN S. MAO; Y. ZHANG; V.C.M. LEUNG, *Big Data: Related Technologies, Challenges and Future Prospects*. London: Springer, 2014, p. 3.

<sup>12</sup> in: M. CHEN S. MAO; Y. ZHANG; V.C.M. LEUNG, *Big Data: Related Technologies, Challenges and Future Prospects*. London: Springer, 2014, pp. 2-6

<sup>13</sup> THE WHITE HOUSE: Executive Office of the President. *Big Data: Seizing Opportunities, Preserving Values*, 2014, p. 5.

<sup>14</sup> J. FISHLEIGH. *A Non-Technical Journey into the World of Big Data: an Introduction*. Cambridge: Legal Information Management, 2014, p. 150.

<sup>15</sup> T. CRAIG; M.E. LUDLOFF *Privacy and Big Data*. Sebastopol, CA: O'Reilly, 2011.

<sup>16</sup> H. MOON; H.S. CHO. *Big Data and policy design for Data Sovereignty: A case study on copyright and CCL in South Korea*. In *Social Com*, 2013, p. 1026-1029.

The Big Data refers to an enormous set of digital data<sup>17</sup> held by companies, governments and organizations which analyzes extensively through algorithms<sup>18</sup>. Technically, *analytics* is the operation to access and extract the potential value of Big Data, which establishes rules allowing interpreting Big Data. The operation, in turn, is made by means of algorithms, a specific set of instructions for performing a procedure or for solving a problem. Precisely, the algorithms allow viewing, understanding and the consumption of the benefits of Big Data.

Since its beginning in 2001<sup>19</sup>, Big Data was identified as a 3 V's model, but especially from a legal perspective of analysis, Big Data adopted other three characteristics<sup>20</sup> and can be better identified for its virtuosity as a 6 V's model, namely: (i) *volume*; (ii) *velocity*; (iii) *variety*; (iv) *value*; (v) *veracity*; and (vi) *validation*.

The 6 Vs model that describes Big Data is: (i) *volume (great volume)* generation and mass data capture; (ii) *velocity (rapid generation, processing of data)* the rapid data capture opportunity to maximize their usefulness; (iii) *variety (various modalities, types of data)* the various data formats, namely, structured, semi-structured and unstructured; (iv) *value*, that means to extract value from a huge volume of data through high-speed in the capture and analysis; (v) *veracity*, the reliability of the data obtained to ensure the truth in their analysis to obtain accurate information; and (vi) *validation*, the ability to assure that multiple data sources when grouped make sense.

As explained by the OECD<sup>21</sup> the collaborative arrangements of firms combining their individual offerings to create coherent, customer-tailored solutions in Big Data as the data ecosystem that is seen as “a combination of layers corresponding to key roles of actors, where the underlying layers provide goods and services to the upper layers”. The

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<sup>17</sup> OECD (2015), *Data-Driven Innovation: Big Data for Growth and Well-Being*, Oecd Publishing, Paris. <http://dx.doi.org/10.1787/9789264229358-en>, p. 450

<sup>18</sup> in: R. CUMBLEY; P. CHURCH. *Is Big Data creepy?* In *Computer Law & Security Review* 29, 2013, pp. 601-609.

<sup>19</sup> M. CHEN S. MAO; Y. ZHANG; V.C.M. LEUNG, *Big Data: Related Technologies, Challenges and Future Prospects*. London: Springer, 2014, pp. 3-4

<sup>20</sup> C. AGNELUTTI. *Big Data: An Exploration of Opportunities, Values and Privacy Issues*. New York: Nova Science Pub Inc., 2014.

<sup>21</sup> OECD (2015), *Data-Driven Innovation: Big Data for Growth and Well-Being*, Oecd Publishing, Paris. <http://dx.doi.org/10.1787/9789264229358-en>, p. 34



global data ecosystem is growing fast due to the increasing number of players, many of them usually playing multiple roles in the Big Data market which *International Data Corporation* (IDC) estimated to grow to US\$ 23.8 billion per year by 2016, an increase of 31.7% per year<sup>22</sup>.

For companies, the epicenter of this dispute for competitive advantage resides on knowing in advance what the next step of a consumer will be. The consultancy firm Gartner Inc. pointed out that only 15% of Fortune 500 companies would be able to exploit Big Data as a competitive benefit by the end of 2015 and that only 8% of companies at that time utilizing Big Data analytics<sup>23</sup>. This battle can be understood once companies compete for strategic mergers and acquisitions focused on personal data that more than doubled between the years 2008 and 2012<sup>24</sup>.

The role of data, its increasing collection, processing and commercial use in digital markets as a competitive advantage and a business strategy is demonstrated by the OECD Report<sup>25</sup>: “The number of mergers and acquisitions (M&A) has increased rapidly from 55 deals in 2008 to almost 164 deals in 2012, with almost USD 5 billion being invested over that period. In the first half of 2013 alone, big data companies raised already almost USD 1.25 billion across 127 deals”.

In spite of the fact that competition authorities started to analyze in a case by case basis the possible competition issues that may arise from possession and use of data, as concluded the Autorité de la Concurrence and the Bundeskartellamt<sup>26</sup> in the end none were determined in the specific cases. Nevertheless, while many internet services are provided for “free” for consumers, in practice they involve the collection of personal

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<sup>22</sup> D. FEINLEIB. *Big Data Bootcamp*, New York: Apress, 2014, p. 16.

<sup>23</sup> R. KEMP. *Legal aspects of managing Big Data*. in *Computer Law & Security Review* 30, 2014, p. 482-483.

<sup>24</sup> A.P. GRUNES and M.E. STUCKE; *No Mistake About It: The Important Role of Antitrust in The Era of Big Data*. *The Antitrust Source*, April 2015. American Bar Association, p. 3. <http://ssrn.com/abstract=2600051> (last searched on 05-07-2016).

<sup>25</sup> OECD (2015), *Data-Driven Innovation: Big Data for Growth and Well-Being*, Oecd Publishing, Paris. <http://dx.doi.org/10.1787/9789264229358-en>, p. 94

<sup>26</sup> AUTORITÉ DE LA CONCURRENCE; BUNDESKARTELLAMT, *Competition Law and Data*. May, 2016, p. 3. available at [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (last searched on 05-30-2016).

data<sup>27</sup>. “This has spurred new discussions about the role of data in economic relationships as well as in the application of competition law to such relationships, in particular as regards the assessment of data as a factor of market power”<sup>28</sup>.

As pointed out by the Max Planck Institute for Innovation and Competition on its Position Statement on the European Commission’s *Public consultation on Building the European Data Economy*, cases in which private actors seek access to the data of other actors only for the purpose of strengthening their own decision making is a very complex issue that constitute the original area of competition policy. However, considering the introduction of a data access right for the beneficiaries of the use of devices in which sensors are embedded, “access regimes can be conceived provided that these regimes are targeted at an identifiable market failure and that they will enhance competition”<sup>29</sup>.

The importance of the competitive advantages of data linked with its collecting and exploitation is a significant subject. As observed Mundt: “Dominant companies are subject to special obligations. These include the use of adequate terms of service as far as these are relevant to the market. For advertising financed internet services such as Facebook, user data are hugely important. For this reason it is essential to also examine under the aspect of abuse of market power whether the consumers are sufficiently informed about the type and extent of data collected”<sup>30</sup>.

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<sup>27</sup> “If a market for personal data could be defined in the abstract, the next decisive step would be the delineation of the exact boundaries of this market and by that the identification of the relevant players in terms of significant competitive interactions”. S. VEZZOSO. *Pro-competitive regulation of personal data protection in the EU*. in J. DREX; V. BAGNOLI. *State-initiated restraints of competition*. Cheltenham: Edward Elgar, 2015, p. 2014.

<sup>28</sup> AUTORITÉ DE LA CONCURRENCE; BUNDESKARTELLAMT, *Competition Law and Data*. May, 2016, p. 3. available at [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (last searched on 05-30-2016).

<sup>29</sup> J.DREXL et alli. *Position Statement of the Max Planck Institute for Innovation and Competition of 26 April 2017 on the European Commission’s “Public consultation on Building the European Data Economy”*, p. 13.

<sup>30</sup> in Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules. Available at [http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02\\_03\\_2016\\_Facebook.html?nn=3591568](http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html?nn=3591568) (last searched on 05-30-2016)

Taking into account also the network effects<sup>31</sup> and the characteristics of the digital economy as a whole, personal data as an asset can be comprehended in two perspectives: one from the consumer side; and other from the business side.

From the consumer perspective, the refusal by a consumer to accept the terms and conditions that are imposed by a company for the access and use of a product, as an app, may result that the consumer no longer is connected with other people.

Still regarding the consumer perspective, as noticed at The NY Times, the most glaring and underappreciated fact of internet-age capitalism is that people are in an inescapable thrall to one of the handful of American technology companies that now dominate much of the global economy, the so called by the newspaper as the Frightful Five: Amazon, Apple, Facebook, Microsoft and Alphabet, the holding company of Google. “Their growth has prompted calls for greater regulation and antitrust intervention”<sup>32</sup>.

From the business perspective, mergers and acquisitions and market power, especially concerned with platforms, directly affects competition of smaller players that hardly can compete with players that act on different levels of the market and processing Big Data in their benefit<sup>33</sup>.

As observed Pitruzzella, “larger companies have access to larger datasets and therefore can offer more successful services to consumers, which in turn allow them to collect even more information and data. This self-reinforcing mechanism may be similar to a network effect driving market concentration”<sup>34</sup>.

Concerning to the business perspective, data is the commodity that spawns a lucrative, fast-growing industry, prompting antitrust regulators to step in to restrain those who control its flow, as noticed at The Economist. The giants that deal in data, the

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<sup>31</sup> S. VEZZOSO. *Internet Competition and E-Books: Challenging the Competition Policy Acquis?* in G. SURBLYTÉ. *Competition on the Internet*. MPI Studies on Intellectual Property and Competition Law, vol. 23., Berlin: Springer, 2015, p 33

<sup>32</sup> in The NY Times. *Tech's Frightful Five: They've Got Us*. [https://www.nytimes.com/2017/05/10/technology/techs-frightful-five-theyve-got-us.html?\\_r=0](https://www.nytimes.com/2017/05/10/technology/techs-frightful-five-theyve-got-us.html?_r=0) (last searched on 05-30-2017)

<sup>33</sup> V. BAGNOLI. *Competition for the Effectiveness of Big Data Benefits*, in. in *International Review of Intellectual Property and Competition Law*. Volume 46, Number 6, September 2015. Springer, 2015, pp.629-631.

<sup>34</sup> G. PITRUZZELLA. *Big Data, Competition And Privacy: A Look From The Antitrust Perspective*. in *Concorrenza e Mercato*, vol. 23/2016, especial edition Big Data e Concorrenza, Roma: Giuffrè Editore, 2016, p. 19.

oil of the digital era, are Alphabet, Google's holding company, Amazon, Apple, Facebook and Microsoft, the world five most valuable listed companies. "Their profits are surging: they collectively racked up over \$25bn in net profit in the first quarter of 2017. Amazon captures half of all dollars spent online in America. Google and Facebook accounted for almost all the revenue growth in digital advertising in America last year"<sup>35</sup>.

The circumstances in which a company, specially with existing market power, controls the collection of consumer data in a market where data is a considerable input into the products/services produced is undoubtedly the most worrying for end users and in some specific circumstances may warrant antitrust intervention<sup>36</sup>. Nevertheless, as noticed by the European Data Protection Supervisor<sup>37</sup> the truth is that: "A full market analysis for any of the 'free' digital services has yet to be carried out".

For an accurate comprehension of Big Data, in order to understand in practice how it is structured in the digital economy and its possible effects on competition, as market dominance and abuse of market power, the relevant market definition seems to be the appropriate tool, as will be presented in the following items.

### **3. Case M.7217 – Facebook/WhatsApp**

On August 29<sup>th</sup>, 2014, the European Commission received a notification of the proposed concentration by which Facebook, Inc. ("Facebook", USA) acquires the whole of WhatsApp Inc. ("WhatsApp", USA) by way of purchase of shares for US\$ 19 billion, which contributes to Facebook's strategy of focusing its business on mobile development.

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<sup>35</sup> in The Economist. *The world's most valuable resource is no longer oil, but data.* <http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource> (last searched on 05-21-2017)

<sup>36</sup> G. PITRUZZELLA. *Big Data, Competition And Privacy: A Look From The Antitrust Perspective.* in *Concorrenza e Mercato*, vol. 23/2016, especial edition Big Data e Concorrenza, Roma: Giuffrè Editore, 2016, p. 15-27.

<sup>37</sup> EUROPEAN DATA PROTECTION SUPERVISOR. *Preliminary Opinion of the European Data Protection Supervisor Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, 2014, p. 26.

Facebook is a provider of websites and applications for mobile devices ("apps") offering social networking, consumer communications and photo/video sharing functionalities, and also provides online advertising space. In particular, offers the social networking platform called "Facebook", the consumer communications app "Facebook Messenger" and the photo and video-sharing platform "Instagram". WhatsApp is a provider of consumer communications services via the mobile app called "WhatsApp", but does not sell advertising space.

Pursuant the Council Regulation (EU) n° 139/2004 on the control of concentrations between undertakings (the EU Merger Regulation) on its Article 4, and following a referral pursuant to Article 4(5), within the meaning of Article 3(1)(b), a concentration shall be deemed to arise where a change of control on a lasting basis results from the acquisition, by one or more persons already controlling at least one undertaking, or by one or more undertakings, whether by purchase of securities or assets, by contract or by any other means, of direct or indirect control of the whole or parts of one or more other undertakings, which does not have a Union dimension<sup>38</sup> and which is capable of being reviewed under the national competition laws of at least three Member States, shall be notified jointly by the parties to the merger or by those acquiring joint control as the case may be, before any notification to the competent authorities, inform the Commission by means of a reasoned submission that the concentration should be examined by the Commission.

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<sup>38</sup> Within the meaning of Article 1 of the EU Merger Regulation, without prejudice to Article 4(5) and Article 22, this Regulation shall apply to all concentrations with a Community dimension as defined in this Article. 2. A concentration has a Community dimension where: (a) the combined aggregate worldwide turnover of all the undertakings concerned is more than EUR 5 000 million; and (b) the aggregate Community-wide turnover of each of at least two of the undertakings concerned is more than EUR 250 million, unless each of the undertakings concerned achieves more than two-thirds of its aggregate Community-wide turnover within one and the same Member State. 3. A concentration that does not meet the thresholds laid down in paragraph 2 has a Community dimension where: (a) the combined aggregate worldwide turnover of all the undertakings concerned is more than EUR 2 500 million; (b) in each of at least three Member States, the combined aggregate turnover of all the undertakings concerned is more than EUR 100 million; (c) in each of at least three Member States included for the purpose of point (b), the aggregate turnover of each of at least two of the undertakings concerned is more than EUR 25 million; and (d) the aggregate Community-wide turnover of each of at least two of the undertakings concerned is more than EUR 100 million, unless each of the undertakings concerned achieves more than two-thirds of its aggregate Community-wide turnover within one and the same Member State. 4. On the basis of statistical data that may be regularly provided by the Member States, the Commission shall report to the Council on the operation of the thresholds and criteria set out in paragraphs 2 and 3 by 1 July 2009 and may present proposals pursuant to paragraph 5. 5. Following the report referred to in paragraph 4 and on a proposal from the Commission, the Council, acting by a qualified majority, may revise the thresholds and criteria mentioned in paragraph 3.

On October 3<sup>rd</sup>, 2014, the European Commission concluded that the deal would raise no competition concerns and authorized the proposed acquisition of WhatsApp by Facebook understanding that Facebook Messenger and WhatsApp are not close competitors and that consumers would continue to have a wide choice of alternative for consumer communications apps after the merger. As observed the Commission<sup>39</sup>, although consumer communications apps are characterized by network effects, the analysis of the proposed acquisition showed that Facebook and WhatsApp even as one entity would continue to face sufficient competition after the deal.

The Commission's analysis focused on three sectors: (i) consumer communications services, (ii) social networking services, and (iii) online advertising services.

Regarding consumer communications services, the Commission focused its assessment on apps for smartphones and concluded that Facebook Messenger and WhatsApp are not close competitors once Facebook Messenger is a standalone app integrated with the Facebook social network and WhatsApp access is provided through phone numbers. Despite their popularity, both WhatsApp and Facebook Messenger already have large customer bases, the Commission<sup>40</sup> observes that a number of factors mitigate the network effects in this particular case: (i) the consumer communications apps market is fast growing and characterized by short innovation cycles in which market positions are often rearranged; (ii) launching a new app is reasonably simple and does not require significant time and investment; and (iii) customers can and do use multiple apps at the same time and can switch from one app to another without difficulty.

Concerning social networking services, the Commission concluded their market boundaries are continuously evolving and Facebook and WhatsApp are, if anything, distant competitors in this area, and “whether or not WhatsApp is considered a social network, competition is unlikely to be negatively affected by the merger for such services”<sup>41</sup>.

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<sup>39</sup> in [http://europa.eu/rapid/press-release\\_IP-14-1088\\_en.htm](http://europa.eu/rapid/press-release_IP-14-1088_en.htm) (last searched on 06-01-2017)

<sup>40</sup> in [http://europa.eu/rapid/press-release\\_IP-14-1088\\_en.htm](http://europa.eu/rapid/press-release_IP-14-1088_en.htm) (last searched on 06-01-2017)

<sup>41</sup> in [http://europa.eu/rapid/press-release\\_IP-14-1088\\_en.htm](http://europa.eu/rapid/press-release_IP-14-1088_en.htm) (last searched on 06-01-2017)

Finally, considering online advertising even if WhatsApp is not active in this market, the Commission understanding was that despite Facebook would introduce advertising on WhatsApp and/or start collecting WhatsApp user data, the merger would not raise competition concerns since: (i) a sufficient number of alternative providers to Facebook for the supply of targeted advertising will be still available; and (ii) Facebook doesn't have exclusive control of a large amount of internet user data that are valuable for advertising purposes.

It is worthwhile to highlight that the investigation conducted by the Commission analyzed potential data concentration issues only to the scope that it could weigh down competition in the online advertising market and any privacy-related concerns from the increased concentration of data within the control of Facebook as a result of the deal with WhatsApp is not a matter of the EU competition law.

#### **4. Seizing the EU decision at Facebook/WhatsApp merger**

The EU Commission decision on the merger Facebook/WhatsApp<sup>42-43</sup> that “decided not to oppose the Transaction and to declare it compatible with the internal market and with the EEA Agreement”<sup>44</sup> focused on three sectors considered significant, defining the relevant market as: (i) consumer communications services; (ii) social networking; and (iii) online advertising services.

##### **4.1 Consumer communications services**

Consumer communications services are multimedia communications solutions that allow people to reach other contacts in real time. At the beginning those services were developed and offered as software applications for personal computers ("PCs"), but

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<sup>42</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf) (last searched on 06-02-2017)

<sup>43</sup> In the published version of the decision used for the analysis and development of the present paper, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) N° 139/2004 concerning non-disclosure of business secrets and other confidential information.

<sup>44</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.35, paragraph 191 (last searched on 06-02-2017)

progressively were shifted away from PCs towards smart mobile devices, especially smartphones and tablets, becoming "consumer communications apps" that enable communication in various forms, such as voice and multimedia (text, photo or video) messaging, video chat, group chat, voice call, and sharing of location.

Considering the explanation above, consumer communications services can be related with "free goods", once many of those apps are "zero cost" for consumers, and it is a huge source of data, what makes valuable for competition purpose an analysis on it relevant market for the comprehension of big data.

The European Commission understood that market segmentation by functionality, by platform or by operating system, the most relevant for the evaluation of the deal Facebook/WhatsApp is the segmentation based on platforms because WhatsApp is offered only for smartphones and there are no plans to expand its offering to other platforms. Therefore, as noted the Commission, "the present case can be assessed on the basis of a relevant product market including only consumer communications apps for smartphones"<sup>45</sup>.

The Commission's analysis pointed that while different services as text messaging, photo or video messaging or calls may take different approaches to facilitating consumer communications, that does not put those services into different markets or market segments and there was a range of competitors which functionalities greatly overlapped with those offered by Facebook and WhatsApp.

Since consumer communications apps are mainly offered free of charge and in any event not priced per messages and considering that the Facebook and WhatsApp combined position would be attenuated in a market including traditional electronic communications services such as voice calls, SMS, MMS, or e-mails, the Commission assessed the effects of the deal in the narrowest relevant product market for consumer communications services, that is the market for consumer communications apps for smartphones.

It is necessary to highlight that no mention was made by the Commission about big data and its concerns to consumer communications apps for smartphones.

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<sup>45</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.4, paragraph 21 (last searched on 06-02-2017)



Regarding the geographic market definition for consumer communications apps even if the analysis conducted by the Commission revealed that no major differences existed in the offering of consumer communications apps across the world and the consumer communications apps offered do not differ depending on the region or country concerned, either in terms of price, functionalities, platforms or operating system, certain consumer communications apps enjoy a greater reach than others in certain world regions. “In this context, while there are indications that the geographic scope of the consumer communications apps market could be global, the Commission considers that the relevant geographic market for the assessment of the case is EEA-wide in line with a more conservative approach”<sup>46</sup>.

Once again it is needed to emphasize that no mention was made by the Commission about big data and its concerns to consumer communications apps for smartphones. Especially considering that even if there are substitutes among apps, one should evaluate the characteristics of a digital economy, as the ‘network effects’, the transaction costs to replace an app even at “zero cost” for consumer, which may characterize a barrier to entry and the existence of a dominant position.

The analysis of the Commission about the competitive assessment of consumer communication services considered that Facebook and WhatsApp operate two consumer communications apps, Facebook Messenger and WhatsApp itself, in competition with a number of other players worldwide such as LINE, Viber, Threema, Telegram, Snapchat and WeChat, and also companies that provide smartphone hardware and operating systems as Apple with iMessage, BlackBerry with BBM, Samsung with ChatON, Google with Google Hangouts and the Android messaging platform, Microsoft with Skype.

The competitive interaction between consumer communications apps appears to be the attempting to offer the best communication experience and their improvement to gain the largest user base that is a key innovation driver.

If in one hand a consumer communications app is perceived as a trend amongst users it is also an important factor in attracting other users shaping the competitive environment, on the other hand price is a factor that strongly contributes to the

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<sup>46</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.7, paragraph 40 (last searched on 06-02-2017)

popularity of a consumer communications app once users in general are very price-sensitive expecting the app being provided for free.

At this point it is able to understand that in fact there is a strong correlation of ‘net effect’ and ‘free products’.

Despite the figures<sup>47</sup> that shows the combined share of Facebook and WhatsApp in the EEA market for consumer communications apps on iOS and Android smartphones in the period between November 2013 and May 2014 was around [30-40]% (WhatsApp: [20-30]%; Facebook Messenger: [10-20]%), followed by Android's messaging platform ([5-10]%), Skype ([5-10]%), Twitter ([5-10]%), Google Hangouts ([5-10]%), iMessage ([5-10]%), Viber ([5-10]%), Snapchat ([0-5%]) and other market players with a share of [0-5]% or less, the Commission understanding was that high market shares are not necessarily indicative of market power and, therefore, of lasting damage to competition due the recent and fast-growing sector which is characterized by frequent market entry and short innovation cycles.

Regarding the consumer’s ability to switch providers the Commission concluded that there are no significant costs preventing consumers from changing among different consumer communications apps, but switching providers may be not easy in terms of convenience due to the need for users to reconstruct their network.

The consumer communications apps market has been characterized by disruptive innovation and there are no significant conventional barriers to entry for a new consumer communications app to enter the market to be accessible to users for download.

Some information collected by the analysis developed by the Commission indicated that barriers to entry would be represented by lack of data portability and interoperability among consumer communications apps. Anyway, the Commission remarks that the deal would have any impact on the interoperability issues only if Facebook decided to merge the two platforms or allowing cross-platform communication.

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<sup>47</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.18, paragraph 99 (last searched on 06-02-2017)

Finally, concerning the market for consumer communications apps the Commission concluded that the deal Facebook/WhatsApp does not give rise to serious doubts as regards its compatibility with the EU internal market.

## **4.2 Social networking**

The social networking services are usually defined as services which allow users to connect, share, communicate and express themselves online or through a mobile app, usually provided without any monetary charges – “free products”, but normally monetized through advertising, charges for premium services, and it is important to highlight, through personal data.

Facebook's social networking service consists in: (i) user profile, what means the user online identity, information about jobs, school and university attended, relationship status, birthday, life events and likes and interests as music and movies; (ii) newsfeed, that is a regularly updating personalized stories as posts, photos, friends information, pages and entities that the user is connected; and (iii) timeline, that allows users to organize and display events and activities as interests, photos, education, work history, relationship status, and contact information. WhatsApp is not active in social networking and is notably focused on facilitating fast and simple communications between and among users. Other entrepreneurs at social networking service are Google+, LinkedIn, MySpace, Pinterest and InterNations.

Social networking services and consumer communications apps differences are becoming indistinct once each service adopts traditional functionalities of the other such as the exchanging content of text messages, video, audio and photos. But the understanding of the EU Commission states that “on a general level, social networking services tend to offer a richer social experience compared to consumer communications apps”<sup>48</sup>.

In this sense, the conclusion on product market definition adopted by the Commission was that since the deal of Facebook and WhatsApp would not give rise to

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<sup>48</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.9, paragraph 54 (last searched on 06-02-2017)

serious doubts as to its compatibility with the internal market under any alternative market definition a potential market can be left open.

Regarding the geographic market definition, the Commission adopted a more conservative approach to consider EEA-wide the market for social networking services, even with indications that it could be global.

For the competitive assessment analysis the Commission observed that Facebook operates – at the time of the analysis - the world's largest social network which connects over 1.3 billion users worldwide and from 200 to 300 million in the EEA.

If consumer communications apps such as WhatsApp are included in the market for social networking services includes, the number of alternative service providers is high. Notwithstanding, the Commission concluded that these providers are not close competitors in the potential market for social networking services due the significant differences between the functionalities and focus of Facebook and WhatsApp.

It is important to highlight that the Commission considered that the integration of WhatsApp could strengthen Facebook's position in the potential market for social networking services, but as evidenced during the analysis nothing supported a future integration and in any event, an integration of WhatsApp with Facebook would be mitigated by the fact that a large number of WhatsApp's active users are already users of Facebook eliminating any potential net gain in terms of new members.

For all that, the Commission considered that the deal Facebook/WhatsApp “would not give rise to serious doubts as to its compatibility with the internal market as regards the potential market for the provision of social networking services”<sup>49</sup>.

### **4.3 Online advertising services**

Regarding the online advertising services Facebook's activities consist of the provision of online advertising services on Facebook's social networking platform, but do not serve any ads on Facebook Messenger app at the time of EU Commission's analysis on the deal Facebook/WhatsApp.

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<sup>49</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.29, paragraph 163 (last searched on 06-02-2017)

Facebook collects and analyses data about the users of its social networking platform to serve advertisements on behalf of advertisers. Each particular user is targeted, but the data are not sold neither Facebook provides data analytics services to advertisers or other third parties as a separate product from the advertising space itself.

During the time of the investigation WhatsApp didn't sell any form of advertising or stored or collected data about its users that would be valuable for advertising purposes, besides messages that are not stored in WhatsApp's servers, but only on the users' mobile devices or chosen cloud.

In relation to the provision of data or data analytics services the Commission understanding was not to investigate any possible market definition once neither Facebook nor WhatsApp were active in such both potential markets.

The conclusion on product market definition adopted by the Commission was that online advertising constitutes a relevant market separate from offline advertising and “whether segments of that market constitute relevant markets in their own right can be left open for the purposes of this decision, because the Transaction would not give rise to serious doubts as to its compatibility with the internal market under any such narrower product market definition”<sup>50</sup>.

Concerning the geographic market definition the understanding of the Commission was to define the online advertising market and its possible sub-segments as national in scope or alongside linguistic borders within the EEA considering for that some factors as customers' purchasing preferences, customers' languages and the presence of support and sales networks located at national level.

The competitive assessment analysis developed by the EU Commission considered the potential data concentration to reinforce Facebook's position in the online advertising market or in any sub-segments thereof.

It is important to observe that the Commission considered that any privacy-related concerns from the increased concentration of data within the control of Facebook as a result of the deal with WhatsApp would be the scope of the EU data protection rules and not a matter of the EU competition law rules.

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<sup>50</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.13, paragraph 79 (last searched on 06-02-2017)

Once WhatsApp was not a player in the provision of online advertising services, none horizontal overlap was verified. Furthermore, taking into account that WhatsApp neither collect data about its users nor store the content of messages non valuable data for advertising purposes is generated, meaning that the deal do not increase the amount of data potentially available to Facebook for advertising purposes.

Nevertheless, to verify if the deal with WhatsApp could increase Facebook's position in the online advertising market the Commission analyzed two main possible theories of harm: (i) introducing advertising on WhatsApp, and/or (ii) using WhatsApp as a potential source of user data for the purpose of improving the targeting of Facebook's advertising activities outside WhatsApp.

Regarding the possible theory of harm of introducing advertising on WhatsApp it could be possible by the analysis of the collected data from WhatsApp's users and the result would strengthening Facebook's position in the online advertising market or sub-segments thereof. Notwithstanding, despite of introducing advertising on WhatsApp the Commission concluded that “there will continue to be a sufficient number of other actual and potential competitors who are equally well placed as Facebook to offer targeted advertising”<sup>51</sup>.

Finally, the second theory of harm of using WhatsApp as a potential source of user data for the purpose of improving the targeting of Facebook's advertising activities outside WhatsApp, despite the fact that the only data in which WhatsApp has about its users is their names and the mobile phone numbers associated with the accounts, a number of respondents as informed by the Commission expected that the increased amount of data which will come under Facebook's control resulted of the deal with WhatsApp would materially reinforce Facebook's position in the provision of online advertising services.

The Commission understanding was that even if Facebook started to utilize WhatsApp user data to improve targeted advertising on Facebook's social network, there will continue to be a significant number of market participants that collect user data and that are not within Facebook's exclusive control as Google, Apple, Amazon, eBay, Microsoft, AOL, Yahoo!, Twitter, IAC, LinkedIn, Adobe and Yelp. In

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<sup>51</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.32, paragraph 179 (last searched on 06-02-2017)

conclusion, the Commission considered that the deal Facebook/WhatsApp “does not give rise to serious doubts as to its compatibility with the internal market as regards the market for the provision of online advertising services, including its potential sub-segments”<sup>52</sup>.

## **5. Post-merger: new (or old) challenges for competition authorities**

Since the decision of the EU Commission not opposing to the deal Facebook/WhatsApp and to declaring it compatible with the internal market and with the EEA Agreement, three investigations (at least<sup>53</sup>) were opened by competition authorities.

In Germany the Bundeskartellamt initiated in March 2016 a proceeding against Facebook - Facebook Inc., USA, the Irish subsidiary of the company and Facebook Germany GmbH, Hamburg - on suspicion of having abused its market power by infringing data protection rules with its specific terms of service on the use of user data.

The initial suspicion was that Facebook has abused its possibly dominant position in the market for social networks violating data protection provisions consisted in the use of unlawful terms and conditions that could represent an abusive imposition of unfair conditions on users.

According to the Bundeskartellamt, some indications of market analysis show that Facebook has a dominant market position in the separate market for social networks, collecting a large amount of personal user data from various sources and creating user profiles Facebook facilitates its advertising customers on targeting sharply their businesses.

To have access to Facebook social network, users have to agree to Facebook's collection and use of their data by accepting the terms of service. Even if it can be considered a matter of data protection law, as observed the Bundeskartellamt “if there

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<sup>52</sup> [http://ec.europa.eu/competition/mergers/cases/decisions/m7217\\_20141003\\_20310\\_3962132\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf), p.34, paragraph 190 (last searched on 06-02-2017)

<sup>53</sup> In some jurisdiction, as according to the Brazilian Competition Law, preliminaries investigations are classified/confidential.

is a connection between such an infringement and market dominance, this could also constitute an abusive practice under competition law”<sup>54</sup>.

The proceeding is still underway at the Bundeskartellamt.

In Italy the Autorità Garante della Concorrenza e del Mercato – AGCM in May 2017 fined WhatsApp in 3 million euro for having forced its users to share their personal data with Facebook, closing 2 investigations opened in October 2016 concerning infringements of the Consumer Code<sup>55</sup>.

One investigation consisted that WhatsApp forced its users to accept in full the new Terms of Use, specifically the condition to share their personal data with Facebook. According to the AGCM, WhatsApp induced its users to believe that without conceding such approval the service would be blocked. The other investigation consisted in an alleged unfair nature of some contractual clauses included in WhatsApp “Terms of Use” considered as illicit the contract terms.

Despite the legal basis of the decisions of AGCM are consumers law, the analysis took in account the competition understandings of the EU Commission on Case M.7217 – Facebook/WhatsApp. It is important to consider that AGCM plays a role of competition and consumer authority and as mentioned by the Bundeskartellamt on its press release opening the Facebook preceding an infringement of data protection law related with market dominance can represents an abusive conduct under competition law.

As can be observed, the investigations in Germany and in Italy bring some challenges for competition authorities somehow already mentioned at the merger Facebook/WhatsApp, bringing together a suspicious thought if the analysis covered all the complexities related to data in the digital economy.

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<sup>54</sup>[http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02\\_03\\_2016\\_Facebook.html?nn=3599398](http://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html?nn=3599398) (last searched on 06-02-2017)

<sup>55</sup> <http://www.agcm.it/en/newsroom/press-releases/2380-WhatsApp-fined-for-3-million-euro-for-having-forced-its-users-to-share-their-personal-data-with-facebook.html> (last searched on 06-07-2017)



## **6. The big data relevant market as a tool for a case by case analysis at the digital economy**

The definition of the Big Data Relevant Market<sup>56</sup> (or simply BDRM) explains the whole picture of this market on its different stages, even more that “the use of big data is becoming a key way for leading companies to outperform their peers”<sup>57</sup> and since the issue is competition, beyond innovation and welfare, it brings together some awareness regarding market power and abuse of dominance as exclusionary practice.

Considering that the access to a large volume and variety of data is a competitive advantage on the market, the collection of data may indicate barriers of entrance to new entrepreneurs that are unable to have access to the same kind of data as already established companies have, either collecting or paying for those data<sup>58</sup>.

The definition of an additional input market for data is helpful to assess the competitive circumstances further than the relevant markets for the existing services offered to users and advertisers, notably when assessing proposed acquisitions and conduct of providers of online platforms under merger and abuse of dominance standards. In this sense, Graef gives as an example the acquisition of Nest by Google approved by the US Federal Trade Commission in 2014. Nest was a producer of smart home devices, for example thermostats and smoke detectors, and wasn't a competitor of Google in any relevant product market. However, the deal with Nest strengthened Google's accessing data regarding consumer's behavior. Further than impact Google's capability to improve the relevance of existing services offered to users and advertisers on its search platform, Nest acquisition may also facilitated Google's development of new products by analyzing additional data and combining it with the data already held.

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<sup>56</sup> V. BAGNOLI. *The Big Data Relevant Market*. in *Concorrenza e Mercato*. vol. 23/2016 special number *Big Data e Concorrenza*, Roma: Giuffrè Editore, 2017. p. 73-94.

<sup>57</sup> MCKINSEY GLOBAL INSTITUTE. *Big data: The next frontier for innovation, competition, and productivity*, 2011, p. 6.

<sup>58</sup> AUTORITÉ DE LA CONCURRENCE; BUNDESKARTELLAMT, *Competition Law and Data*. May, 2016, p. 11. available at [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (last searched on 05-30-2016).

As concluded Graef, the US FTC “would have been able to assess such concerns by defining a relevant market for data”<sup>59</sup>.

Taking into account that big data is not an undistinguished pool of data once there might be a diverse types of information that satisfy different needs of a variety of companies Pitruzzella states that, “the definition of relevant markets for data prompts the need to undertake a substitutability analysis in order to identify a relevant market for data (services) and assess the competitive constraint between the parties”<sup>60</sup>.

Understanding the whole structure of the relevant market of Big Data facilitates comprehend how in fact it works, the players acting on each level or stage of the market, if the available data confer a significant competitive advantage or even market power for the owner of it and if those data are even though an essential facility to new entrants or for competitors that remain in the market<sup>61</sup>.

The Big Data cycle begins with the generation of data, whether structured data, such as scientific research, or unstructured data, such as *emails* sent and received. Its goal is the use or consumption of such data, once processed into valuable information for companies, retail chains and governments, for instance, who use them in many different ways, from the development of public policies, to a competitive advantage to win customers and expand market share. Both the beginning and the end of Big Data by analogy would be the beginning of an economic activity in nature itself, in this case data, and it ends with the final consumer, what means the use or consumption of the information generated by the Big Data.

The structure of the Big Data market, therefore, can be segmented into three parts, where in fact the process of Big Data actually occurs, namely: (i) *Big Data capture*; (ii) *Big Data storage*; and (iii) *Big Data analytics*. In each of these phases (or stages or levels) of Big Data the productive chain or economic activity that is the Big Data market, are included consumers, entrepreneurs, public institutions, non-profit

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<sup>59</sup> I.GRAEF. ‘Market Definition and Market Power in Data: The Case of Online Platforms’. *World Competition* 38, n° 4 (2015): 473–506. Kluwer Law International BV, The Netherlands, p. 494.

<sup>60</sup> G. PITRUZZELLA. *Big Data, Competition And Privacy: A Look From The Antitrust Perspective*. in *Concorrenza e Mercato*, vol. 23/2016, especial edition Big Data e Concorrenza, Roma: Giuffrè Editore, 2016, p. 20.

<sup>61</sup> AUTORITÉ DE LA CONCURRENCE; BUNDESKARTELLAMT, *Competition Law and Data*. May, 2016, pp. 15-16. available at [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (last searched on 05-30-2016).

organizations, governments, among others. While some of these players are involved in only one or some sectors of this market, others competitors are engaged in the whole chain, acting in the different stages of the so called Big Data Relevant Market.

The *Big Data Capture* is the first level or stage of the Big Data Relevant Market where data are captured, both personal and public data, from the use of mechanisms developed for this purpose. This process, sometimes called collection, access or acquisition of data is the recording of data that goes into a computer system.

This process of capturing data occurs in all sectors of the economy and the data is gathered from a multitude of sources. Some examples of data capture are: (i) *cell phones companies*, that have detailed data about customers, including their location and call log; (ii) *internet service companies* that may have access to detailed information of *internet usage* by its customers; (iii) store chains, airlines, gas stations, for example, hold their detailed consumer information, such as purchase profile, from *cards and loyalty programs*.

The *Big Data Storage* is the second level or stage of the Big Data Relevant Market where the data captured is stored, which will be accumulated and aggregated in large quantities and organized and stored in datasets for later use.

A data storage service with enough space (or capacity or volume) needs to provide an effective access interface to analyze a large amount of data, such as transactions by credit or debit card, accounts, logins, authentic details, personal contacts, comments on social networks, posted photos and videos, stored for a wide range of providers' services, as financial institutions and telephone companies, transportation companies, hospitals or medical clinics and government agencies.

The *Big Data Analytics* is the third level or stage of the Big Data Relevant Market where the analysis of captured data that have been stored in datasets and combined with other information take place to show trends for the analysis and development of profiles, records, macro trends, which is applied for a variety of purposes. In this market, therefore, data merge from different sources, such as public, private, consumers, companies, institutions, government agencies, and from analytical infer valuable information.

The potential that are generated with the aggregation and analysis of data, whose information obtained may be translated into new opportunities, new ideas, new

solutions and become a competitive advantage for companies leading to market power. Among the traditional players there are retailers, providers of management services to clients, software, business intelligence systems and loyalty programs. New players which start to operate in the market are companies involved in *online advertising*, market research companies, and experts in data analysis, suppliers and *data brokers*.

The table below tries to demonstrate in a structured manner the Big Data Relevant Market, as described before:

**Table 1 - Big Data Relevant Market (BDRM Structure)**

<b>Data Generation (Big Data generation)</b>	<b>Data Capture (Big Data capture)</b>	<b>Data Storage (Big Data storage)</b>	<b>Data Analysis (Big Data analytics)</b>	<b>Data Usage (Big Data utilization)</b>
<b>start</b>	<b>1st stage</b>	<b>2nd stage</b>	<b>3rd stage</b>	<b>end</b>
<ul style="list-style-type: none"> <li>√ structured data</li> <li>√ semi structured data</li> <li>√ unstructured data</li> <li>√ scientific research</li> <li>√ personal data</li> </ul>	<ul style="list-style-type: none"> <li>√ cell</li> <li>√ blogs</li> <li>√ loyalty programs</li> <li>√ apps</li> <li>√ sensors</li> </ul>	<ul style="list-style-type: none"> <li>√ phone companies</li> <li>√ government agencies</li> <li>√ social networks</li> <li>√ medical services</li> <li>√ retailers</li> <li>√ service providers</li> </ul>	<ul style="list-style-type: none"> <li>√ retailers</li> <li>√ service providers</li> <li>√ public administration</li> <li>√ financial institutions</li> <li>√ health insurance companies</li> <li>√ marketing companies</li> <li>√ data analytics</li> <li>√ data brokers</li> </ul>	<ul style="list-style-type: none"> <li>√ companies</li> <li>√ governments</li> <li>√ public agencies</li> <li>√ final consumer</li> </ul>

Source: Created by the author and published at V. BAGNOLI. *The Big Data Relevant Market*. in *Concorrenza e Mercato*. vol. 23/2016 special number *Big Data e Concorrenza*, Roma: Giuffrè Editore, 2017. p. 73-94.

Despite the definition of Big Data Relevant Market has not been tested yet in any case analyzed by a competition authority, the accurate analysis of the BDRM in three sub-markets or stages can help evaluate more precisely the whole market structure and estimate the undertakings' market power.

That is even more significant if considered that the information and knowledge originated from Big Data are not available to everyone in the same amount and quality and that the accessibility to these technologies may give a competitive surplus to those who hold them. The precise identification of which are the players and their respective shares in the capture, in the storage and in the analysis of Big Data can

explain better how the BDRM works and how concentrated it is. It is important to consider that one player can perform its business in only one of the stages of the BDRM or can also perform its activities in more than one or even on the three stages of the BDRM.

The BDRM signalizes that the Big Data cycle not only deals with overlaps on horizontal bases, but also on vertical bases revealing existing or potentially enhances of market power and dominance.

Identifying and understanding the Big Data Relevant Market structure (*Big Data capture, Big Data storage and Big Data analytics*) from the Competition Law perspective may also lead to comprehend better the performance of companies in the Big Data market and verify precisely competition issues as market power, barriers to entrance and abuses of dominance.

## **7. Conclusion: Could the EU decision at Facebook/WhatsApp merger have been different?**

The EU decision (COMP/M.7217) at Facebook and WhatsApp deal focused on three sectors considered significant, defining the relevant market as: (i) consumer communications services; (ii) social networking; and (iii) online advertising services; but at the same time showed that an accurate analysis of Big Data wasn't held once it did not specified what could be the relevant market of Big Data.

Despite the Commission (DG-Comp) analyzed the potential data concentration only to the extent of possible strengthening of market position in the online advertising market or in any sub-segments thereof, since only Facebook was an active provider of online advertising services the Commission considered that the merger did not provoke any horizontal overlaps.

Another two possible theories of harm were raised to verify if Facebook could strengthen its position in online advertising by: (i) introducing advertising on WhatsApp; and (ii) using WhatsApp as a potential supply of user data for the reason of improving Facebook's advertising activities.

For the first possible theory of harm the Commission concluded that: “regardless of whether the merged entity will introduce advertising on WhatsApp, there will continue to be a sufficient number of other actual and potential competitors who are equally well placed as Facebook to offer targeted advertising”<sup>62</sup>. For the second possible theory of harm the understanding of the Commission was that: “regardless of whether the merged entity will start using WhatsApp user data to improve targeted advertising on Facebook’s social network, there will continue to be a large amount of Internet user data that are valuable for advertising purposes and that are not within Facebook’s exclusive control”<sup>63</sup>.

Since the case was declared by the EU Commission compatible with the internal market and with the EEA Agreement, three investigations were opened by competition authorities. In Germany the Bundeskartellamt initiated in March 2016 a proceeding against Facebook, still underway, that was supposed to abuse its possibly dominant position in the market for social networks violating data protection provisions consisted in the use of unlawful terms and conditions that could represent an abusive imposition of unfair conditions on users. In Italy the Autorità Garante della Concorrenza e del Mercato – AGCM in May 2017 considered WhatsApp guilty for having forced its users to share their personal data with Facebook.

As observed Pitruzzella, “the extent to which big data is the source of competitive advantage and a barrier to entry is not a matter of theory, but an empirical question that has to be addressed with regards to individual markets and specific circumstances”<sup>64</sup>.

The already mentioned investigations in Germany and in Italy somehow confirms that the EU decision on the deal Facebook/WhatsApp offers some dubious thoughts about how precisely it was taken.

The relevance of Big Data in merger investigations as states Pitruzzella is not restricted how data is negotiated in a market, but includes how companies collect and analyze a vast amount of data and use it as an input to provide goods/services to end users and companies. “The fact that no market for data exists, does not imply that data

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<sup>62</sup> Case n° COMP/M.7217, Facebook/Whatsapp, §179.

<sup>63</sup> Case n° COMP/M.7217, Facebook/Whatsapp, §189.

<sup>64</sup> G. PITRUZZELLA. *Big Data, Competition And Privacy: A Look From The Antitrust Perspective*. in *Concorrenza e Mercato*, vol. 23/2016, especial edition Big Data e Concorrenza, Roma: Giuffrè Editore, 2016, p. 19.

is an irrelevant factor in assessing the effects of a merger. The claim that big data only rarely has anything to do with market definition or competitive effects because it usually is not traded in market is thus unfounded”<sup>65</sup>.

The Big Data Relevant Market structure, segmented in *Big Data capture*, *Big Data storage* and *Big Data analytics* from the Competition Law perspective may also lead to comprehend better the performance of companies in the Big Data market and verify more precisely competition issues in the deal Facebook/WhatsApp as market power, barriers to entrance and abuses of dominance.

Regarding *consumer communications services*, the EU Commission focused its assessment on apps for smartphones and concluded that Facebook Messenger and WhatsApp are not close competitors once Facebook Messenger is a standalone app integrated with the Facebook social network and WhatsApp access is provided through phone numbers. Concerning *social networking services*, the Commission concluded their market boundaries are continuously evolving and Facebook and WhatsApp are, if anything, distant competitors in this area and competition is unlikely to be negatively affected by the merger. Considering *online advertising* even if WhatsApp is not active in this market, the Commission understanding was that despite Facebook would introduce advertising on WhatsApp and/or start collecting WhatsApp user data, the merger would not raise competition concerns.

The table below aims to demonstrate in a structured manner the Big Data Relevant Market in the deal Facebook/WhatsApp:

**Table 2 – Facebook/WhatsApp Big Data Relevant Market (BDRM Structure)**

<b>Data Generation (Big Data generation)</b>	<b>Data Capture (Big Data capture)</b>	<b>Data Storage (Big Data storage)</b>	<b>Data Analysis (Big Data analytics)</b>	<b>Data Usage (Big Data utilization)</b>
<b>start</b>	<b>1<sup>st</sup> stage</b>	<b>2<sup>nd</sup> stage</b>	<b>3<sup>rd</sup> stage</b>	<b>end</b>
√ personal data	√ Facebook √ WhatsApp	√ Facebook	√ Facebook	√ online advertising

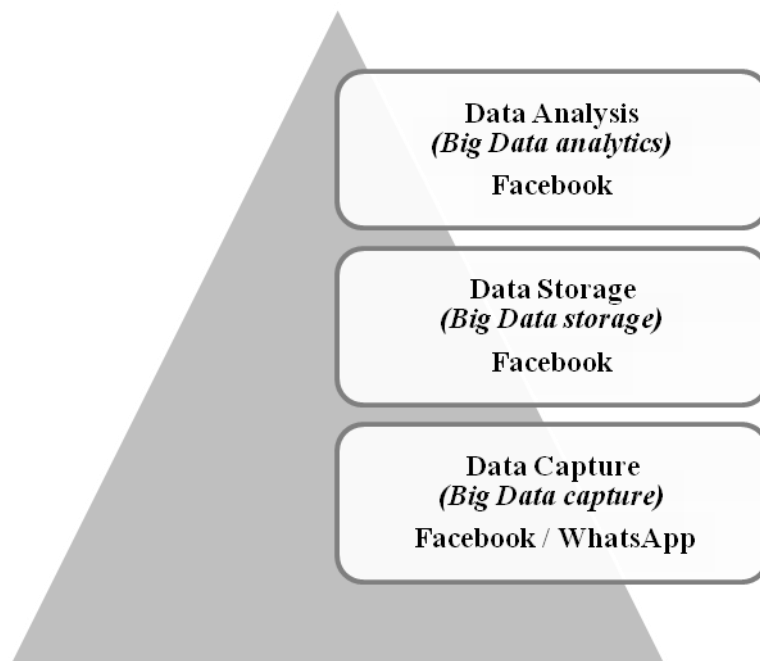
Source: Created by the author for the present paper.

<sup>65</sup> G. PITRUZZELLA. *Big Data, Competition And Privacy: A Look From The Antitrust Perspective*. in *Concorrenza e Mercato*, vol. 23/2016, especial edition Big Data e Concorrenza, Roma: Giuffrè Editore, 2016, p. 20.

As demonstrated in the table above, Facebook and WhatsApp were somehow competitor at the Big Data Capture stage, meanwhile Facebook also performs at the segments of Big Data Storage and Big Data Analytics.

Pondering any strengthens of dominance in *online advertising market* resulted by the acquisition of WhatsApp by Facebook can be demonstrated by the vertical concentration on the Big Data Relevant Market as showed on the table below:

**Table 3 – Facebook/WhatsApp vertical concentration on the Big Data Relevant Market (BDRM Structure)**



Source: Created by the author for the present paper.

Considering all that was mentioned in the present paper it is possible to conclude that the analysis (limited to the information/figures and data available for public consultation) on the merger case Facebook/WhatsApp (Case n° COMP/M.7217) by applying the Big Data Relevant Market and its structure - *Big Data capture, Big Data storage* and *Big Data analytics* – shows that:



(i) Regarding the geographic market of Big Data, it is appropriate to provide a more specific analysis considering: (a) the *geolocation* where the data is captured; (b) the place where data is stored; and (c) the areas where the data analyzed infer valuable information.

(ii) Regarding vertical integrations it could strengthen market power in different stages where companies perform their activities, as capturing, storing and analyzing data, and the competition effect could be at the end of the cycle at the online advertising market.

(iii) Regarding the difference in analyzing cases as not directly or directly related to digital markets, digital markets has its own characteristics for the appropriate analysis as more transparency, lowering consumers' search costs, expanding the boundaries for trade and facilitating the emergence of new business models; to rethink the usage of traditional economic tools as the hypothetical monopolist test for free products, when the price to consumers is zero; and what data, but more specifically personal data, do represents to entrepreneurs as a competitive asset/advantage.

(iv) Regarding how companies perform the capture, storage and analysis of data it can totally change a case by case analysis and thereof a conclusion, for instance it is important to consider that there are different kinds of data for different and specific usage/purposes, and also as an example if considered that the data captured by WhatsApp is shared with Facebook, then storage and analyzed for online advertisement.

(v) Regarding the concentration of the capture, storage and the analysis of Big Data it can interfere in the dynamicity of the BDRM by reinforcing or even creating market power and barriers to entrance, making possible abuse of dominance as exclusionary practice.

(vi) Regarding the identification of the market power and then the effects on advertising data and advertising portability an accurate analysis on the BDRM - capture, storage and analysis - offers a more precisely view of the whole market, since it cycles begins with the collection of data and goes until its ends with the usage of data.

(vii) Regarding the EU decision at Facebook/ WhatsApp merger it could have been different if considered the BDRM - capture, storage and analysis – as a whole, furthermore if WhatsApp could represents – even if as a potential player – a company to capture personal data what could reinforce Facebook's performance in online

advertisement or the merger itself could simply represent an exclusion of a potential competitor of the market.

The answers achieved with the BDRM applied to the merger Facebook/WhatsApp, even with the absence of information/figures for a more accurate analysis on the merger itself and its possible effects on competition, signalize that BDRM is an efficient and effective tool for the analysis of Big Data and its effects on competition.