

Market Definition and Market Power in Data: The Case of Online Platforms

Inge GRAEF^{*}

With the emergence of data as an asset for market players operating in the digital economy, questions have risen about the relevance of data for competition enforcement. This article focuses on the role of data in the competitive process between online platforms including search engines, social networks and e-commerce platforms. After arguing that situations can be identified in which access to data is a competitive advantage for incumbents and an entry barrier for new entrants, it is analysed how a relevant market for data can be defined and how market power can be established in such a market. Most providers of online platforms do not trade data as a stand-alone product as a result of which no supply and demand exists and no relevant product market for data can be defined under current competition law standards. However, it may still be appropriate for competition authorities in this situation to assess proposed concentrations and alleged abusive behaviour of dominant firms beyond the relevant markets for the services provided to users and advertisers. By defining a wider market for data, a form of potential competition can be taken into account whereby market players also compete for the asset that is used as an input to develop or improve services offered on online platforms.

1 INTRODUCTION

The competitive strength of online businesses is increasingly being determined by the amount and the quality of the data they hold. Many web-based companies can be seen as so-called multi-sided platforms bringing users and advertisers together. The use of data about the interests and behaviour of users forms an important means to attract customers on both sides of these platforms. The more detailed the profile is that a provider of a search engine, social network or e-commerce platform has about its users, the more precise possibilities it can offer to advertisers for selecting their intended audience. Advertisers benefit from better targeted advertising because of the higher probability that the advertised product is actually purchased by the users to which the ad is displayed. On the user side, the quality of the functionalities offered to users can be enhanced by using the collected data to increase the relevance of, for example, search results delivered by search engines,

^{*} PhD fellow of the Research Foundation – Flanders (FWO) affiliated to the KU Leuven Centre for IT & IP Law – iMinds, inge.graef@law.kuleuven.be.

suggested social network stories and interactions provided on social networking sites, and recommendations for future purchases made on e-commerce platforms.

The role of data in the competitive process between online platforms and companies in the digital economy in general is a contentious issue that has started to attract attention from policy makers as well as scholars in the competition law community.¹ Against this background, the article explores the use of data by providers of online platforms (section 2), the economic characteristics of data (section 3) and the extent to which control over data gives rise to a competitive advantage (section 4). After the relevance of data for competition enforcement has been established, the article analyses whether and how a relevant market for data can be defined (section 5) and how dominance with regard to data can be established (section 6) in the context of merger and abuse of dominance cases involving online platforms in EU competition law. While the concept of data markets is not new,² this article aims to advance the debate by providing concrete suggestions on how market definition and market power analysis relating to data on online platforms can take place in practice.

2 USE OF DATA BY PROVIDERS OF ONLINE PLATFORMS

2.1 TYPES OF DATA COLLECTED ON ONLINE PLATFORMS

Technological advances enabling the collection, analysis and storage of growing amounts of information have strengthened the ability and the incentive of companies to gather and use personal data.³ Data is often referred to as ‘*the new oil*’ or ‘*the new currency*’ of the twenty-first century.⁴ The phenomenon of data becoming a type of currency can be illustrated by the fact that companies start to offer consumers the possibility to replace part of the monetary payment for a product or service by giving permission to collect their data. For instance,

¹ See, among others: Preliminary Opinion of the European Data Protection Supervisor, *Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014, available at https://secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2014/14-03-26_competition_law_big_data_EN.pdf (accessed 18 Aug. 2015); A.V. Lerner, *The Role of “Big Data” in Online Platform Competition*, SSRN Working Paper (2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2482780 (accessed 18 Aug. 2015); A.P. Grunes and M.E. Stucke, *No Mistake About It: The Important Role of Antitrust in the Era of Big Data*, 14 Antitrust Source 1-14 (2015).

² The concept of data markets has been developed by P.J. Harbour and T.I. Koslov, *Section 2 In A Web 2.0 World: An Expanded Vision of Relevant Product Markets*, 76 Antitrust L.J. 769-797 (2010).

³ Speech former Competition Commissioner Almunia, *Competition and personal data protection*, Privacy Platform event: Competition and Privacy in Markets of Data Brussels, 26 Nov. 2012, SPEECH/12/860.

⁴ See, for example, the speech of former Consumer Commissioner Kuneva at the Roundtable on Online Data Collection, Targeting and Profiling, 31 March 2009, SPEECH/09/156: ‘*Personal data is the new oil of the internet and the new currency of the digital world*’.

American telecommunications company AT&T gives consumers who agree to be tracked online a discount of USD 29 per month on their broadband subscription and Amazon sells Kindle tablets and e-readers at a discounted price to consumers who are willing to accept targeted advertisements to be displayed on their device.⁵ Brick-and-mortar companies like supermarkets, banks, insurance, energy and telecommunications companies collect information about their customers such as transactional data, information about phone calls made by consumers and data relating to their financial position or energy consumption. Customer information is valuable for any business, but this is even more so for online businesses that employ business models depending on the acquisition and monetization of personal data.⁶ While it is not new for companies to gather information about their customers, the scope of the gathered data, the precision with which a company can link an action to a specific customer and the sheer quantity of information collected on the internet cannot be compared to the brick-and-mortar world.⁷

The user data held by online platforms consists of several types of information. On the one hand, users provide data themselves in the form of, for example, profile information, photos and lists of friends or contacts on social networks and search queries inserted in the search box of search engines and e-commerce platforms. On the other hand, providers of online platforms obtain or create data by means of analysing the behaviour and habits of users. The use of 'cookies' typically plays an important role in the collection of this type of behavioural data. Information about the user's interests and preferences is stored by the web browser in a text file that is sent back to the server every time the user accesses a server's page using the same web browser.⁸ In addition to, what it refers to as, 'volunteered data' explicitly shared by users and 'observed data' obtained by recording the actions of users online, the World Economic Forum distinguishes a third type of data: so-called 'inferred data' which can be derived from the analysis of volunteered or observed information.⁹ The last category may also be regarded

⁵ M. Bergen, *AT&T Gives Discount to Internet Customers Who Agree to Be Tracked. Customers Must Pay \$29 More to Avoid Targeted Ads*, Ad Age, 18 Feb. 2015, available at <http://adage.com/article/digital/t-u-verse-ad-tracking-discount-subscribers/297208/> (accessed 18 Aug. 2015).

⁶ H.A. Shelanski, *Information, Innovation, and Competition Policy for the Internet*, 161 U. Pa. L. Rev. 1663, 1678 (2013).

⁷ A. Goldfarb & C. Tucker, *Privacy and Innovation*, in *Innovation Policy and the Economy* 71 (J. Lerner and S. Stern eds, University of Chicago Press 2012).

⁸ For the installation of and access to cookies, consent of the user is required. See Art. 5(3) of the ePrivacy Directive (Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) [2002] OJ L 201/37) as amended by the Citizens' Rights Directive (Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 [2009] OJ L 337/11).

⁹ World Economic Forum, *Personal Data: The Emergence of a New Asset Class*, January 2011, p. 7.

as ‘metadata’ which is data that describes other data or, in other words, data about data.

2.2 DATA IN A MULTI-SIDED BUSINESS MODEL

The prevailing providers of online search engines and social networks including Google and Facebook give users free access to their service and rely on advertising to finance their business. Similarly, e-commerce platforms such as Amazon and eBay provide buyers free access to their platform and charge sellers different types of fees for putting their goods for sale on their website. These fees include charges for monthly subscriptions and individual transactions.¹⁰ Advertising services form an additional revenue source for both Amazon and eBay.¹¹ Since data is of particular relevance to the interaction between buyers and advertisers, the position of sellers in e-commerce platforms will not be considered here.¹² Search engines, social networks and e-commerce platforms act as intermediaries between different customer groups and can be regarded as multi-sided platforms.¹³ The essential feature which makes a business multi-sided is the existence of an indirect network effect that crosses customer groups.¹⁴ This implies that once more customers join one side of the platform, the value of the platform to its customers on the other side rises. As the number of Facebook users increases, for instance, more advertisers will be inclined to buy (additional) advertising space on Facebook, since they will reach a larger number of potential buyers.

¹⁰ See eBay, *Standard selling fees*, available at <http://pages.ebay.com/help/sell/fees.html> and Amazon, *Sell on Amazon*, available at <http://www.amazon.com/gp/seller-account/mm-product-page.html?topic=200274770> (both accessed 18 Aug. 2015).

¹¹ In addition to the fees Amazon receives from sellers and advertisers, it generates revenue by acting as a retailer and selling products on its own behalf.

¹² With regard to the advertising services provided by e-commerce platforms, only the interaction between buyers and advertisers is at issue since sellers do not belong to the audience of advertisers and rather want to vend their own products and services.

¹³ On search engines and social networks a third customer group can be identified consisting of, respectively, website owners and application developers. These customer groups will not be considered here further, as their role on the platform is subordinate to the interaction between users and advertisers. With regard to the role of website operators on search engines, the interaction with search engine providers seems to be rather one-sided as providers are free to crawl the internet and index content in order to provide relevant results in response to search queries of users. One can therefore question whether the interaction between search engine providers and web owners amounts to an economic exchange and whether a market for the indexing of web content exists. For conflicting views on this, see T. Hoppner, *Defining Markets for Multi-Sided Platforms: The Case of Search Engines*, 38 *World Competition* 349, 365 (Kluwer L. Intl. 2015) and G. Luchetta, *Is the Google Platform a Two-Sided Market?*, 10 *J. Competition L. & Econ.* 185, footnote 29 (Kluwer L. Intl. 2014).

¹⁴ D.S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 *Yale J. Regulation* 325, 331-333 (2003) and L. Filistrucchi, D. Geradin & E. Van Damme, *Identifying Two-Sided Markets*, 36 *World Competition* 33, 37-39 (Kluwer L. Intl. 2013).

In return for giving users free access to their functionalities, providers of search engines, social networks and e-commerce platforms gather data about their profile, interests and online behaviour. The collection of personal data consequently operates as an indispensable currency used to compensate the providers for the delivery of their services to users.¹⁵ One may also regard the provision of personal data by users or their exposure to targeted advertisements as costs they have to incur in order to be able to use the online functionalities without having to pay a monetary fee.¹⁶ Providers of online platforms employ the collected user data as an input of production to improve their services by increasing the relevance and quality of the functionalities provided to users and by offering better targeted advertising services.

Search engine providers rely on an algorithm to return relevant results to the search queries of users. To improve their search algorithm and the performance of the search functionality delivered to users, well-known search engines including Google, Yahoo and Bing collect and store information about users. This information includes the date and time of the search, the location of the user (based on the Internet Protocol (IP) address) and data about the search queries that users have looked for as well as the links that are subsequently clicked on. These query logs or search logs are used by the search engines to improve the relevance of their search results in the future by looking at, for example in which language, from which geographical location, and at what time of the day a user enters a particular search query.¹⁷ Social network providers are able to improve the quality of their service to users by increasing the relevance of social interactions and suggested contacts that are displayed to a particular user. An algorithm is used to select which pieces of information are most relevant for a specific user. For example, the stories that are displayed in a user's News Feed on Facebook are influenced by the connections and activity of that user on the platform.¹⁸ Within the functioning of e-commerce platforms, the recommendation or recommender system plays a central role. The collection and analysis of data about the purchasing behaviour of users, their virtual shopping cart and the items they have viewed, liked or rated permits the platform to better predict in what products users are interested based on their similarity with other users. Think of, for example, the products that Amazon features under 'Customers Who Viewed This Item Also

¹⁵ Preliminary Opinion of the European Data Protection Supervisor (2014), *supra* n. 1, at para. 1.

¹⁶ Newman refers to these costs as, respectively, information and attention costs. See J.M. Newman, *Antitrust in Zero-Price Markets: Foundations*, SSRN Working Paper, 32-33 (2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2474874&download=yes (accessed 18 Aug. 2015).

¹⁷ See, for example F. Silvestri, *Mining Query Logs: Turning Search Usage Data into Knowledge*, 4 Found. & Trends in Info. Retrieval 1-174 (2010).

¹⁸ Facebook, 'How News Feed Works', available at <https://en-gb.facebook.com/help/327131014036297/> (accessed 18 Aug. 2015).

Viewed' or 'Customers Who Bought This Item Also Bought'. In order to return the most relevant purchase suggestions to users, recommendation systems typically use an algorithm based on so-called 'collaborative filtering'. This is a method of making automatic predictions about the interests of users by collecting preferences from many users.¹⁹

Advertisements on search engine platforms take the form of sponsored search results. Search engine providers sell advertising space by letting companies bid on keywords that they deem relevant to their business. An auction determines the rank of the advertisements in the search results taking into account the maximum bid of the advertiser for the keyword and the relevance of its advertisement to the user's search query. Social network providers utilize information about the content that users upload and the profile that they have constructed to sell targeted advertising. The main distinction with advertising on search engines is that social network providers are able to sell advertisements containing social context. For example, Facebook enables the display of stories about social actions a user's friends have taken, such as 'liking' a page or checking in to a restaurant, as advertisements.²⁰ Advertisements on e-commerce platforms like Amazon are displayed to users in several places such as in the search results and on product pages. Advertisers can add keywords to their product ads which enables Amazon to show them to potentially interested customers conducting a search on its website. On the basis of the product category and the description provided by the advertiser, Amazon determines where advertisements appear in accordance with what is most relevant to users.²¹

In addition to using data as an input of production to improve their services on the user and advertiser side of their platform, providers may rely on their datasets as an additional revenue stream if they sell it as a commodity or a raw material to third parties.²² For example, Twitter licenses data to companies using Twitter data to build products, to analyse internally or to serve other commercial purposes.²³ Amazon, Facebook and Google, to the contrary, all clarify in their privacy policies that they do not sell data to third parties.²⁴ They do not share data

¹⁹ See also J.P. Mangalindan, *Amazon's recommendation secret*, Fortune, 30 Jul. 2012, available at <http://fortune.com/2012/07/30/amazons-recommendation-secret/> (accessed 18 Aug. 2015).

²⁰ Facebook, *An Update to Facebook Ads*, 9 Jan. 2014, available at <https://www.facebook.com/notes/facebook-and-privacy/an-update-to-facebook-ads/643198592396693> (accessed 18 Aug. 2015).

²¹ Amazon, *Amazon Sponsored Products. Top Questions. Overview*, available at <http://services.amazon.com/services/sponsored-products-questions.htm> (accessed 18 Aug. 2015).

²² H.A. Shelanski (2013), *supra* n. 6, at 1680 and 1682.

²³ Gnip is one of the authorized resellers of Twitter data. See <https://gnip.com/sources/> (accessed 15 Aug. 2015).

²⁴ See respectively: Amazon.com Privacy Notice, *Does Amazon.com Share the Information It Receives?*, available at https://www.amazon.com/gp/help/customer/display.html?nodeId=468496#GUID-A2C397AB-68FE-4592-B4A2-7550D73EEFD2__SECTION_3DF674DAB5B7439FB2A9B4465BC3E

with advertisers and only use the information that they have collected about their users in order to provide advertisers the possibility to target their ads to particular categories of users.

3 ECONOMIC CHARACTERISTICS OF DATA

3.1 NUANCING THE NON-RIVALROUS NATURE OF DATA

When assessing to what extent the scale of data to which incumbent online platforms have access may constitute a competitive advantage, the economic characteristics of data should be considered. Data is a so-called non-rivalrous good which means that the fact that a certain entity has collected a piece of data does not preclude others from gathering identical information. Consumers commonly provide general information such as their home address, phone number, gender and date of birth to many entities as a result of which the same data may be used by different firms at the same time.²⁵ Furthermore, the value of data often does not lie in the collected information itself but instead depends on the knowledge that can be extracted from it.²⁶ This implies that different entities may generate the same knowledge by gathering distinct types of data. For example, a search engine provider may get to know the music preferences of a particular user by way of analysing the search queries that a user has inserted while a social network provider is able to gain the same knowledge by looking at the profile information that the user has shared on its platform.

At the same time, claims about the wide availability of data have to be nuanced considering that situations can be identified in which providers of online platforms will be able to exclude competitors by preventing or restricting access to information for which few or no substitutes are available. Firms whose business model is built on the acquisition and monetization of personal data feel the need for keeping their datasets to themselves. Some providers of online platforms try to shield data away from competitors: in the case of Facebook, for example, by prohibiting third parties in its general conditions from scraping content off its

0AC; Facebook Help Centre, *Does Facebook sell my information?*, available at <https://www.facebook.com/help/152637448140583>; Google Privacy, *Is Google using my data? What for?*, available at <https://support.google.com/googleforwork/answer/6056650?hl=en> (all accessed 18 Aug. 2015).

²⁵ UK Competition & Markets Authority, *The commercial use of consumer data. Report on the CMA's call for information*, June 2015, para. 3.6, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/435817/The_commercial_use_of_consumer_data.pdf (accessed 18 Aug. 2015) and D.S. Tucker & H.B. Wellford, *Big Mistakes Regarding Big Data*, 14 Antitrust Source 1, 3 (2014).

²⁶ G.A. Manne & R.B. Sperry, *The Problems and Perils of Bootstrapping Privacy and Data into an Antitrust Framework*, 5(2) CPI Antitrust Chronicle 1, 9 (2015).

platform²⁷ or, in the case of Google, by restricting the portability of advertising campaigns and by requiring websites to enter into exclusivity agreements for search advertisements.²⁸ By engaging in such actions, these providers aim to reserve data to themselves and prevent competitors from making use of their data sources.²⁹

3.2 PROTECTION OF DATA UNDER INTELLECTUAL PROPERTY AND TRADE SECRET LAW

In addition, providers of online platforms may rely on intellectual property and trade secret law to protect the data they have collected. Copyright and sui generis database protection are of particular relevance with regard to intellectual property rights. While users hold copyright over original posts, photos and videos uploaded to online platforms, providers of these platforms may be able to claim copyright protection over the databases they have created on the basis of the data collected about users. Under the Database Directive, a database is defined as ‘*a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means*’.³⁰ The Database Directive provides for a dual regime of protection of databases by granting copyright protection to the structure of original databases and by establishing a newly created sui generis right protecting the content of databases in general. Under Article 3(1) of the Directive, ‘*databases which, by reason of the selection or arrangement of their contents, constitute the author’s own intellectual creation*’ are protected by copyright. As made clear by the European Court of Justice in *Football Dataco*, this has to be understood as requiring that the database be original in the sense that ‘*through the selection or arrangement of the data which it contains, its author expresses his creative ability in an original manner by making free and creative choices and thus stamps his “personal touch”*’.³¹ The setting up of datasets by providers of online platforms does not seem to be solely dictated by rules or technical considerations in the sense that there is room for their providers to make free and creative choices with regard to the

²⁷ Under Facebook’s Statement of Rights and Responsibilities on Safety, Facebook prohibits automatic collection of user content: ‘*You will not collect users’ content or information, or otherwise access Facebook, using automated means (such as harvesting bots, robots, spiders, or scrapers) without our prior permission*’, available at <https://www.facebook.com/legal/terms> (accessed 18 Aug. 2015).

²⁸ Speech former Competition Commissioner Almunia, *Statement of Commissioner Almunia on the Google antitrust investigation*, Press room Brussels, 21 May 2012, SPEECH/12/372.

²⁹ A.P. Grunes & M.E. Stucke (2015), *supra* n. 1, at 7.

³⁰ Art. 1(2) of Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases (Database Directive) [1996] OJ L 77/20.

³¹ Case C-604/10, *Football Dataco Ltd and Others v. Yahoo! UK Ltd and Others*, judgment of 1 March 2012, not yet reported, para. 38.

selection or arrangement of the data. As a result, their datasets are capable to qualify for copyright protection under the Database Directive.

Irrespective of the eligibility of a database for copyright protection with regard to the selection or arrangement of the data, a database as a whole may qualify for protection under the sui generis database right created by Article 7(1) of the Database Directive³² if ‘*there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents*’. The European Court of Justice argued that investment in data-generating activities have to be disregarded when assessing whether the dataset qualifies for sui generis protection.³³ The fact that a database producer creates data itself, as is the case for providers of online platforms who create so-called inferred data by analysing the information collected about users, does not, in the Court’s view, as such preclude the producer from claiming protection under the sui generis right. As long as a producer can establish that the obtaining, presentation or verification of the data required substantial investment ‘*which was independent of the resources used to create those materials*’, its database may benefit from sui generis protection.³⁴ This is likely to be the case for online platforms since significant resources are required to set up a tool for collecting pre-existing information about the profile and interests of users that is not generated by the providers as such.

Providers of online platforms may also benefit from trade secret protection for their datasets.³⁵ Unlike copyright and sui generis database protection which grant right holders an exclusive right to prevent third parties from using the subject matter of protection, a trade secret is only protected against conduct that affects its secrecy in an unlawful manner. Trade secret protection cannot be invoked against the use of information obtained through legitimate means such as independent discovery or creation. There is not yet a harmonized system for the protection of trade secrets in the European Union. In November 2013, the Commission adopted a proposal for a Directive on the protection of undisclosed know-how and business information (‘proposal for a Directive on trade secrets’) with the objective of aligning the laws dealing with trade secrecy in the EU Member States though

³² See Art. 7(4) of the Database Directive.

³³ Case C-46/02 *Fixtures Marketing Ltd v. Oy Veikkaus Ab* [2004] ECR I-10365, para. 34; Case C-203/02 *The British Horseracing Board Ltd and Others v. William Hill Organization Ltd* [2004] ECR I-10415, para. 31; Case C-338/02 *Fixtures Marketing Ltd v. Svenska Spel AB* [2004] ECR I-10497, para. 24; Case C-444/02 *Fixtures Marketing Ltd v. Organismos prognostikon agonon podofairou AE (OPAP)* [2004] ECR I-10549, para. 40.

³⁴ See the statements of the European Court of Justice in Case C-46/02 *Fixtures Marketing Ltd v. Oy Veikkaus Ab* [2004] ECR I-10365, paras 39–40; Case C-203/02 *The British Horseracing Board Ltd and Others v. William Hill Organization Ltd* [2004] ECR I-10415, paras 35–36; Case C-338/02 *Fixtures Marketing Ltd v. Svenska Spel AB* [2004] ECR I-10497, paras 29–30; Case C-444/02 *Fixtures Marketing Ltd v. Organismos prognostikon agonon podofairou AE (OPAP)* [2004] ECR I-10549, paras 45–46.

³⁵ Their algorithms may also be the subject of trade secret protection.

the introduction of common definitions, procedures and sanctions.³⁶ With regard to the scope of protection of trade secrets, the proposed Directive follows the three requirements set out in Article 39(2) of the TRIPS Agreement:³⁷ (1) the information is secret in the sense that it is not generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; (2) the information has commercial value because it is secret; and (3) the rightful holder has taken reasonable steps to keep the information secret.³⁸ By keeping their datasets secret by way of, for example, non-disclosure or confidentiality agreements, providers of online platforms may be able to protect the information that they have collected under national trade secret laws. The recitals of the proposal for a Directive on trade secrets and the accompanying impact assessment, respectively, state that undisclosed know-how and business information as protected under the Directive may cover ‘*a diversified range of information, which extends beyond technological knowledge to commercial data such as information on customers and suppliers*’³⁹ and that ‘*[i]nformation kept as trade secrets (such as list of clients/customers; internal datasets containing research data or other) may include personal data*’⁴⁰ thereby confirming that user data falls within the ambit of trade secret protection. Since the success of an online platform is at least partly determined by its control over user data and other data that is relevant for improving the quality of its services, this information has considerable commercial value when it is shielded from competitors.⁴¹ While factual data about users such as their age, gender and occupation can hardly qualify as secret information, data relating to the interests they have expressed on a particular online platform, information about their online behaviour or the online purchasing history of users may not be generally known and thus qualify for trade secret protection.

³⁶ Proposal for a Directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure (proposal for a Directive on trade secrets), COM(2013) 813 final.

³⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights, Annex 1C to the Agreement Establishing the World Trade Organization of 1994.

³⁸ Art. 2(1) of the proposal for a Directive on trade secrets.

³⁹ Recital 1 of the proposal for a Directive on trade secrets.

⁴⁰ Annex 21 of the Commission Staff Working Document, Impact Assessment, *Accompanying the document proposal for a Directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure*, 28 Nov. 2013, SWD(2013) 471 final, p. 254.

⁴¹ See J. Drexler, *Droit de la concurrence et propriété intellectuelle à l'ère du numérique*, A quoi sert la concurrence? (2014), available at <http://aquoisertlaconcurrence.org/articles/droit-de-la-concurrence-et-propriete-intellectuelle-a-lere-du-numerique/> who argues that in the online environment competition policy will interact with personal data and trade secret protection.

3.3 AVAILABILITY OF DATA AND ITS DIVERSITY IN VALUE

Arguments put forward for claiming that multiple online platforms are easily able to collect relevant information include the alleged ubiquitous nature of data and low costs of data collection, storage and analysis.⁴² While some types of data such as basic contact and demographic information may indeed be purchased from data brokers and other companies, the information that search engines, social networks or e-commerce platforms need to operate their services is specific and does not seem to be readily available on the market. As argued by Grunes & Stucke, providers of online platforms would not be investing considerable amounts of money in developing free services for users in order to collect and analyse relevant information if data was so widely and freely available as asserted.⁴³ With regard to the collection, storage and analysis of data, the costs involved in setting up the necessary tools for these activities are typically fixed whereas the marginal costs of increased production are low. As a result, economies of scale are created which may give rise to an entry barrier for small companies and new entrants.⁴⁴

Another important characteristic of data is its diversity in value. While some data including name and date of birth has lasting value and only has to be collected once by a specific entity, other types of data, such as the search queries that users have been looking for, are more transient in value and are relevant over a shorter period of time.⁴⁵ The latter types of data lose value over time as a result of which firms have to continue to gather up-to-date information about the interests and preferences of users in order to be able to return relevant responses to users and to deliver targeted advertising services to advertisers. The control over these types of data may therefore not in itself give rise to a durable barrier to entry.⁴⁶ Nevertheless, where access to data is exclusive and collection of data is subject to economies of scale or network effects a competitive advantage can well arise.

⁴² See D.S. Tucker & H.B. Wellford (2014), *supra* n. 25, at 3.

⁴³ A.P. Grunes & M.E. Stucke (2015), *supra* n. 1, at 7.

⁴⁴ UK Competition & Markets Authority (2015), *supra* n. 25, at paras 3.41-3.43.

⁴⁵ UK Competition & Markets Authority (2015), *supra* n. 25, at para. 3.6 and D.S. Tucker & H.B. Wellford (2014), *supra* n. 25, at 4.

⁴⁶ See also the speech given by UK Competition & Markets Authority Chief Executive Alex Chrisholm, at the UEA Centre for Competition Policy Annual Conference in Norwich, *Data and trust in digital markets: what are the concerns for competition and for consumers?*, 19 Jun. 2015 stating that: 'Some data loses value over time, so it is hard to see how persistent, unmatched competitive advantage could be maintained. However some data has persistent value – for example in relation to customer transaction history on auction sites – and it is easier to see how the control of this data could become a barrier to entry'.

4 DATA AS A COMPETITIVE ADVANTAGE?

It is uncontroversial that providers of search engines, social networks and e-commerce platforms employ a business model that relies on the acquisition and monetization of user data. An issue which is currently subject to debate is whether the effort required to collect the data necessary to be able to compete on equal footing with incumbents amounts to a strong competitive advantage and barrier to entry.⁴⁷ Online platforms form part of the so-called ‘network economy’ which consists of firms that rely on interconnection for the transmission of their goods or services. Many network industries are characterized by economies of scale and network effects. Economies of scale arise when the incremental costs of creating additional units decline as the scale of production increases.⁴⁸ Network effects are present when the utility that a consumer derives from consumption of a good increases with the number of others purchasing the good. A network effect is either direct when a product or service becomes more valuable as the number of users grows, or indirect when the increasing number of users of a good leads to more complementary products or services that raises the value of the network.⁴⁹ The presence of economies of scale or network effects may lead to entry barriers that protect the position of incumbents and make it difficult for new entrants to gain a foothold on the market.

4.1 ROLE OF DATA ON THE USER AND ADVERTISER SIDE OF ONLINE PLATFORMS

With regard to the performance of search engines, it has been reported that next to a well-functioning search algorithm the availability of data on previous search queries is crucial. The more search data the search engine can access, the more relevant the search results that it returns will be. Argenton & Prüfer refer to this phenomenon as an indirect network externality on the ground that users do not take into account that they enable a search engine provider to improve the relevance and quality of its search results by inserting additional search queries and by clicking on particular search results.⁵⁰ Others argue that this type of indirect benefit should rather be referred to as a learning economy because users are not

⁴⁷ See for example the response of A.P. Grunes & M.E. Stucke (2015), *supra* n. 1 to D.S. Tucker & H.B. Wellford (2014), *supra* n. 25.

⁴⁸ C. Shapiro & H.R. Varian, *Information Rules. A Strategic Guide to the Network Economy* (Harvard Business School Press 1999), 3.

⁴⁹ M.L. Katz & C. Shapiro, *Network Externalities, Competition, and Compatibility*, 75 *Am. Econ. Rev.* 424, 424–425 (1985).

⁵⁰ C. Argenton & J. Prüfer, *Search Engine Competition with Network Externalities*, 8 *J. Competition L. & Econ.* 73, 79 (2012). In other words, the impact of the behaviour of users on the performance of the search engine in general is external to the individual decisions of users to make another search query.

concerned with the future success of the search engine when they enter a new search query while this is a necessary requirement for a network effect to arise.⁵¹ In a speech, the former Commissioner for Competition referred to ‘*strong economies of scale in user information that allow search engines to improve the service they bring to their users*’ without specifying whether these scale economies have to be regarded as network effects.⁵² Although there is discussion about the exact nature of the benefit that users enjoy of past searches on search engines, it is largely undisputed that the search results that a search engine produces become more relevant in accordance with the number of search queries entered by users.⁵³ If the number of active users and thus the number of exchanges increases, a search engine will become better at returning relevant responses to users. Since relevance is also critical to, respectively, recommendation systems and social network features, the same applies to the role of data on the user side of e-commerce platforms and social networking sites.

On the advertiser side of online platforms, the collected data is monetized to fund the usually free delivery of functionalities to users by giving advertisers the possibility to target their advertisements to specific groups of users. Under the pay-per-click advertising model that is most commonly employed on online platforms, advertisers only pay the provider once a user has actually clicked on an advertisement. By accumulating more data about users, the provider is able to increase its revenues because with more user information available it will become better at displaying ads to users that are of such relevance that they will actually click on them. In addition, better targeting possibilities will also attract more advertisers to the platform because of the higher probability that a user buys the advertised product or service.⁵⁴ This will again raise the revenues of the provider.

⁵¹ R.H. Bork & J.G. Sidak, *What Does the Chicago School Teach About Internet Search and the Antitrust Treatment of Google?*, 8 J. Competition L. & Econ. 663, 688-691 (2012) and G. Luchetta (2014), *supra* n. 13, at 196.

⁵² Speech former Competition Commissioner Almunia, *Competition in the online world*, LSE Public Lecture London, 11 Nov. 2013, SPEECH/13/905.

⁵³ D.S. Evans, *The Economics of the Online Advertising Industry*, 7 Rev. Network Econ. 359, 373 (2008); J. Grimmelmann, *The Structure of Search Engine Law*, 93 Iowa L. Rev. 1, 10-11 (2007); C. Argenton & J. Prüfer (2012), *supra* n. 50, at 76; G. Luchetta (2014), *supra* n. 13, at 196.

⁵⁴ In the context of the *Microsoft/Yahoo* merger decision, Microsoft submitted that ‘*increased scale also impacts on the advertiser experience, since a higher degree of user engagement and a better ability of the platform to show relevant ads impacts on advertiser ROI [return on investment]. Higher query volume in turn generates ad inventory. A larger inventory translates into more opportunities for advertisers to reach and target their intended audience. More advertisers lead to more ads for the search engine to choose from for any given query. This, in turn, improves ad relevance and the likelihood that a user will click on an ad and ultimately convert his click into a purchase. As a result, the inventory becomes more valuable to advertisers who see their return on investment increase*’. See Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, para. 163.

This phenomenon can be referred to as economies of scale with regard to the monetization of user data by providing targeted advertising services.⁵⁵

4.2 DIMINISHING RETURNS TO SCALE

However, the benefits relating to the availability of data for the provision of services on the user as well as the advertiser side are subject to diminishing returns to scale.⁵⁶ In other words, the value of having additional information declines as the amount of data rises. The strength of the benefits on both sides of the platform thus depends on the volume at which the returns from extra data start to diminish.⁵⁷ If the benefits of having additional information start to decline only at a very high amount of data, large volumes of data can give rise to, respectively, a competitive advantage for incumbent platforms and an entry barrier for new entrants and potential competitors.

Manne & Wright argue that above a certain minimum scale that is necessary to develop an effective search algorithm for a search engine additional searches and users only provide a limited advantage.⁵⁸ Similarly, Bork & Sidak state that only a low number of searches have to be conducted in order for a new search engine to initiate the process of learning by doing and to start competing with the incumbent provider.⁵⁹ According to Lerner, there are many inputs other than search data to provide high quality search results such as engineering resources and web crawling and indexing technologies.⁶⁰ In the *Microsoft/Yahoo* merger decision, the European Commission found no evidence that scale leads to more relevant search results. Google argued that the importance of scale has been largely overstated, because the value of incremental data declines as the amount of data increases. Nevertheless, the respondents to the market investigation almost unanimously indicated that a large volume of search queries is an important aspect of a successful search engine. Scale seems particularly important for being able to improve the relevance of less frequent search queries (so-called ‘tail’ queries). For

⁵⁵ See the discussion in A.V. Lerner (2014), *supra* n. 1, at 41–44.

⁵⁶ Lerner also argues that at a certain point a further increase in user volume may have the effect of lowering advertising prices because a rise in user queries on, for example, a search engine will lead to an increase in the supply of ad slots. According to basic economic principles, an increase in supply leads to a lower price, all else equal. In addition, Lerner states that monetization is affected by other factors such as engineering efforts to improve the technologies for ad targeting. See A.V. Lerner (2014), *supra* n. 1, at 41–44.

⁵⁷ H.A. Shelanski (2013), *supra* n. 6, at 1681.

⁵⁸ G.A. Manne & J.D. Wright, *Google and the Limits of Antitrust: The Case Against the Case Against Google*, 34 Harv. J.L. & Pub. Policy 171, 212 (2010).

⁵⁹ R.H. Bork & J.G. Sidak (2012), *supra* n. 51, at 688–691.

⁶⁰ A.V. Lerner (2014), *supra* n. 1, at 30–32.

the most frequent queries, the relevance gap between Google and, respectively, Microsoft and Yahoo identified in the market investigation was only very small.⁶¹

The probability that a search engine provider can match the tail query with a similar query that it has already seen before is likely to increase in accordance with the amount of search data that is available.⁶² Furthermore, a search engine has to keep gathering information to ensure that its search algorithm is constantly updated as the needs and intentions of users looking for information may change. In this regard, the former Commissioner for Competition argued in a speech: '*the more people use a search engine the better it gets, because engineers need search data to refine their algorithms*'.⁶³ In the context of the *Microsoft/Yahoo* merger decision, Microsoft argued that with larger scale a search engine can run tests on how to improve the algorithm and that it is possible to experiment more and faster as traffic volume increases because experimental traffic will take up a smaller proportion of overall traffic.⁶⁴ As a result, there are several ways in which search engines and other online platforms benefit of larger scale and additional data.

4.3 IDENTIFYING SITUATIONS IN WHICH ACCESS TO DATA AMOUNTS TO A COMPETITIVE ADVANTAGE

Whether data gives rise to a barrier to entry thus depends on the factual circumstances of the case which means that it cannot be excluded at the outset that user data constitutes an entry barrier. It is important to note that it is not only essential for an online platform to have access to information on past events but also to be able to collect and process real-time data.⁶⁵ If the intent of users making search queries changes due to a recent event, it is vital for a search engine to learn quickly and adapt to the new demands as soon as possible. When a celebrity dies, for example, search engines want to stop sending users to general pages about the performer and instead refer them to the latest news. How well a search engine is able to do this depends on how quickly it can get the required data. For an incumbent search provider it is easier to collect up-to-date information, because it has already established a large base of returning users which enables it to quickly adapt to new preferences of users. Google will thus adapt faster than Bing, because

⁶¹ Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, paras 160–174.

⁶² However, Lerner argues that tail queries are also subject to diminishing returns to scale, because the provision of relevant search results in response to these queries involves clever engineering and good web crawling technologies rather than the use of search data. See A.V. Lerner (2014), *supra* n. 1, at 38.

⁶³ Speech former Competition Commissioner Almunia, *Competition in the online world*, LSE Public Lecture London, 11 Nov. 2013, SPEECH/13/905.

⁶⁴ Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, para. 162.

⁶⁵ See also section 3.3 above.

more people come to Google first.⁶⁶ It therefore seems to be a combination of factors which may result into strong market positions of incumbent online platforms.

Markets in which online platforms compete are often by nature quite concentrated because the indirect network effects crossing customer groups and the scale economies tend to limit the number of viable firms in a market.⁶⁷ This is especially the case for multi-sided markets where users single-home and use only one provider for a specific service. Since users and advertisers expect to gain more value and are attracted to platforms with the largest group of customers on both sides, small and new firms may face difficulties in attaining a critical mass and in successfully launching their own platform.⁶⁸ The transient nature of some of the data that providers need to provide relevant services to users and advertisers arguably reinforces the operation of indirect network effects. Because providers have to continue to gather real-time data about current preferences and interests of users, it is not sufficient to have a large dataset with information on past events and past behaviour of users. Even if potential competitors are able to purchase relevant data from data brokers and other market players, providers with an established user base are in a better position to update their databases and therefore have a competitive advantage over smaller platforms and new entrants which may be slower in adapting to the changing needs of users.

At the same time, it has to be recognized that in addition to relevant and recent data, engineering resources and a well-functioning underlying technology including an algorithm are required to successfully operate an online platform.⁶⁹ But even though access to a large and up-to-date database is in itself no guarantee for the success of an online platform, data remains a necessary input of production for the delivery of services to users and advertisers that are of the quality and relevance they expect. In this regard, a chief scientist of Google even suggested: '*We don't have better algorithms than anyone else. We just have more data*'.⁷⁰ If data is an important input of production for the services provided on the online platform and the specific information necessary to compete on equal footing with the incumbent is not readily available to new entrants and potential competitors

⁶⁶ K. O'Toole, *Susan Athey: How Big Data Changes Business Management. The Stanford economist explains how troves of digital data will reshape competition*, Insights by Stanford Business, 20 Sep. 2013, available at <http://www.gsb.stanford.edu/insights/susan-athey-how-big-data-changes-business-management> (accessed 18 Aug. 2015).

⁶⁷ D.S. Evans, *Competition and Regulatory Policy for Multi-Sided Platforms with Applications to the Web Economy*, SSRN Working Paper, 13 (2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1090368 (accessed 18 Aug. 2015).

⁶⁸ UK Competition & Markets Authority (2015), *supra* n. 25, at paras 3.45 and 3.56.

⁶⁹ In the context of search engines, see A.V. Lerner (2014), *supra* n. 1, at 30-32.

⁷⁰ See M. Asay, *Tim O'Reilly: 'Whole Web' is the OS of the future*, CNET, 18 March 2010, available at http://news.cnet.com/8301-13505_3-10469399-16.html (accessed 18 Aug. 2015).

(either by purchasing it elsewhere and substituting it with other existing data sources or by collecting the required information themselves), the databases held by incumbent providers of online platforms may well give rise to an entry barrier.⁷¹

5 MARKET DEFINITION FOR DATA

5.1 SUPPLY AND DEMAND FOR DATA?

When evaluating alleged abusive behaviour and proposed concentrations, competition authorities and courts start their analysis by defining the relevant market. The relevant product market includes all products or services which are regarded as substitutes by consumers on the basis of their characteristics, prices and intended use.⁷² So far, the European Commission has not yet had to define a market for personal data or for any of its particular usages.⁷³ In its *Facebook/WhatsApp* merger decision, the Commission explicitly stated that it had not investigated any possible market definition with respect to the provision of data or data analytics services, since neither of the parties involved was active in any such potential markets.⁷⁴ WhatsApp does not collect personal data and Facebook only uses the information about its users for the provision of targeted advertising services. Facebook does not sell user data to third parties and does not offer data analytics services as a result of which the Commission did not see a reason to consider the existence of a potential market for personal data.⁷⁵ Under current competition law standards, a correct market definition requires the existence of supply and demand for the product or service.⁷⁶ While Twitter licenses data to third parties and is thus active on a ‘real’ market for data, other providers of online platforms do not trade data. The prevailing providers of online

⁷¹ See UK Competition & Markets Authority (2015), *supra* n. 25, at paras 3.56 and 3.58. For other proponents of the view that data may constitute entry barriers, see Preliminary Opinion of the European Data Protection Supervisor (2014), *supra* n. 1, at paras 66–68; H.A. Shelanski (2013), *supra* n. 6, at 1679; N. Newman, *Search, Antitrust and the Economics of the Control of User Data*, 31 Yale J. Regulation 401, 401 (2014); D. Geradin & M. Kuschewsky, *Competition Law and Personal Data: Preliminary Thoughts on a Complex Issue*, SSRN Working Paper, 2 (2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2216088 (accessed 18 Aug. 2015); L. Kimmel & J. Kestenbaum, *What's Up with WhatsApp? A Transatlantic View on Privacy and Merger Enforcement in Digital Markets*, 29 Antitrust Magazine 48, 52 (2014); A.P. Grunes & M.E. Stucke (2015), *supra* n. 1, at 7–8.

⁷² Commission Notice on the definition of relevant market for the purposes of Community competition law [1997] OJ C 372/5, para. 7.

⁷³ Speech former Competition Commissioner Almunia, *Competition and personal data protection*, Privacy Platform event: Competition and Privacy in Markets of Data Brussels, 26 Nov. 2012, SPEECH/12/860.

⁷⁴ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 72.

⁷⁵ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 72.

⁷⁶ See Commission Notice on market definition, paras 13–23.

social networks, search engines and e-commerce platforms such as Facebook, Google and Amazon all clarify in their privacy policies that they do not sell data to third parties.⁷⁷ They only use the information they have collected about their users as an input to provide relevant services to users and advertisers. Since the user data only forms an intermediary product and is not sold or traded, no demand and supply exists as a result of which the substitutability of the data cannot be assessed and no relevant market can be identified.⁷⁸

Furthermore, one can doubt whether the interaction from users to providers of online platforms has to be considered an economic exchange. Although one may argue that users are increasingly aware that they give access to their personal information by utilizing online services,⁷⁹ the provision of data seems to be a side effect or a by-product of the use of these platforms rather than a supply of a product by users in exchange for being able to employ search or social networking functionalities. Contrary to usual economic transactions, users as suppliers of data cannot determine the amount and type of information they want to supply and do not have any influence on what they will get in return. Instead, the providers of the online services unilaterally decide what type and which amount of data will be retrieved and impose their practices on users as a take-it-or-leave-it offer.⁸⁰ Current competition law standards only allow for the definition of a market for data in case the information is actually traded. Examples are the data licensing activities of Twitter and the sale of collected personal information about consumers by data brokers to other businesses. Under prevailing competition law principles, the relevant market for online services such as search engines, social networks and e-commerce platforms thus cannot take data as object as long as there is no economic transaction between the respective providers and users for data, and the providers of these online platforms do not sell or trade data to third parties.

⁷⁷ See the sources mentioned *supra* n. 24.

⁷⁸ D.S. Tucker & H.B. Wellford (2014), *supra* n. 25, at 4-5 arguing that personal data cannot constitute a relevant product market unless it is sold to customers.

⁷⁹ See R. Casadesus-Masanell & A. Hervas-Drane, *Competing with Privacy*, Harvard Business School Working Paper 13-085, 4 (2013), available at http://www.hbs.edu/faculty/Publication%20Files/13-085_95c71478-a439-4c00-b1dd-f9d963b99c34.pdf (accessed 18 Aug. 2015) who 'expect consumers to become increasingly familiar with privacy tradeoffs in the marketplace'.

⁸⁰ See also A. Gebicka & A. Heinemann, *Social Media & Competition Law*, 37 *World Competition* 149. 156 (Kluwer L. Intl. 2014) who argue against the notion of a market for user data by stating: 'Competitive pressure – or its absence – could not adequately be taken into consideration if the kind of services offered to the consumer is modified or disappears entirely behind the general commercial interest underlying any business activity'.

5.2 CURRENT APPROACH TOWARDS MARKET DEFINITION OF ONLINE PLATFORMS

In previous competition cases, the European Commission delineated the relevant market for online platforms around the services or functionalities offered and defined separate product markets for the user and advertiser side of online search engines and social networks. In the *Microsoft/Yahoo* merger decision, the Commission only assessed the legality of the transaction with regard to the market for online advertising. Although it did not take a position on whether web search should be regarded as a relevant market of its own,⁸¹ the Commission did consider the link between the user and advertiser side by examining potential anticompetitive effects of the transaction on innovation, relevance and variety of internet search to users.⁸² In its abuse of dominance investigation against Google,⁸³ the Commission seems to distinguish two interrelated markets with regard to Google's search engine: internet search for users and online search advertising for advertisers. In a press release, the Commission stated that it '*has concerns that Google may be abusing its dominant position in the markets for web search, online search advertising and online search advertising intermediation in the European Economic Area (EEA)*'.⁸⁴ In its *Facebook/WhatsApp* merger decision, the Commission similarly identified separate relevant markets for the services provided to users on the one hand and the services offered to advertisers on the other hand. On the user side, the Commission explored the possibility of defining a relevant market for consumer communications services and social networking services. With regard to market definition on the advertiser side, the Commission examined whether the online advertising market should be further divided in specific segments for search and non-search advertising, and mobile and PC-based advertising.⁸⁵

Since the providers of these online platforms use data only as an input of production and do not sell or trade it to third parties, a 'real' market for data cannot be identified and a market determination based on the services provided on online platforms seems to stand closer to economic reality. It is important to note that the fact that no market for the provision of data could be defined in

⁸¹ Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, paras 85–87.

⁸² Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, paras 202–226.

⁸³ In November 2010, the European Commission opened an investigation against Google in response to complaints from competitors about Google's search activities. See Press Release European Commission, *Antitrust: Commission probes allegations of antitrust violations by Google*, IP/10/1624, 30 Nov. 2010.

⁸⁴ Press Release European Commission, *Antitrust: Commission seeks feedback on commitments offered by Google to address competition concerns*, IP/13/371, 25 Apr. 2013. The market for online search advertising intermediation is not relevant here, since it does not involve advertising on Google's search engine pages.

⁸⁵ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, section 4 on relevant markets.

Facebook/WhatsApp did not form a reason for the European Commission to refrain from assessing potential data concentration concerns. Respondents to the market investigation had expressed the concern that a potential integration between Facebook's social networking platform and the consumer communications application WhatsApp would allow Facebook to have access to additional data from WhatsApp users to be monetized through advertising.⁸⁶ The Commission argued that even if Facebook were to start collecting and using data from WhatsApp users in order to improve targeted advertising on its social network, the merger would not raise competition concerns considering that '*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*'.⁸⁷

5.3 DATA AS A SPECIALIZED ASSET

Current competition law standards do not allow for the definition of a relevant market for data as long as the data is not truly traded. Nevertheless, there are cases in which the definition of an additional relevant market for user data may be appropriate. The traditional market definition exercise only addresses existing competition for the specific services offered to users and advertisers on online platforms. By defining a wider market for data, competition authorities and courts will be able to take a form of potential competition into consideration whereby online platform providers also compete in a market for data that can be deployed for improving the quality and relevance of their services.

The discussion on the definition of data-related relevant markets was launched by former US Federal Trade Commissioner Pamela Jones Harbour. In her dissenting statement in response to the decision of the Federal Trade Commission to clear the *Google/DoubleClick* merger in 2007, she expressed concerns about the combination of the datasets of the two companies. In order to enable a proper competition analysis of the data issues, she suggested to define '*a putative relevant product market comprising data that may be useful to advertisers and publishers who wish to engage in behavioral targeting*'.⁸⁸ In a subsequent law journal article, Pamela Jones Harbour and her former advisor Tara Isa Koslov argue that the definition of markets for data, separate and apart from markets for the services fuelled by this data, would reflect reality where internet companies often derive

⁸⁶ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 184.

⁸⁷ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 189.

⁸⁸ Dissenting Statement of Commissioner Pamela Jones Harbour, *Google/DoubleClick*, FTC File No. 071-0170, 20 Dec. 2007, p. 9, available at http://www.ftc.gov/sites/default/files/documents/public_statements/statement-matter-google/doubleclick/071220harbour_0.pdf (accessed 18 Aug. 2015).

value from data far beyond the initial purposes for which the data has been collected in the first place.⁸⁹

The definition of an input market for data would also be consistent with the nature of online platforms which do not gain revenue by selling their services or technology to consumers like ‘traditional’ ICT companies, but rely on deriving benefits from valuable information they collect about their users.⁹⁰ Furthermore, this way a more forward-looking stance towards market definition can be taken whereby it is possible to look beyond current usages of data in the relevant markets for existing products and services.⁹¹ Acquisitions in the online environment are said to be increasingly motivated by the underlying dataset of the target undertaking. In addition, particular types of conduct whereby incumbent providers try to leverage their strong market position or to extend their services to other markets may have as objective the accumulation of additional data to be used to improve their own platform.⁹² Competition concerns relating to ever-expanding datasets may not sufficiently be taken into account when relying solely on relevant markets for the end products or services. For assessing proposed acquisitions and conduct of providers of online platforms under EU merger and abuse of dominance standards, the definition of an additional input market for data is useful to evaluate the competitive situation beyond the relevant markets for the current services offered to users and advertisers. For example, Nest, a producer of smart home devices such as thermostats and smoke detectors, was not competing with Google in any relevant product market at the time it was acquired by Google. Nevertheless, this move of Google has reinforced its position with regard to access to data about the behaviour of consumers.⁹³ The acquisition of Nest has arguably not only impacted Google’s ability to improve the relevance of existing services offered to users and advertisers on its search platform, but may also enable Google to develop new products on the basis of the new insights gained by analysing the additional data from Nest and combining it with its own information. The US

⁸⁹ P.J. Harbour and T.I. Koslov, *supra* n. 2, at 773.

⁹⁰ C. Butts, *The Microsoft Case 10 Years Later: Antitrust and New Leading “New Economy” Firms*, 8 Nw. J. Tech. & Intell. Prop. 275, 290 (2010). See also S. Weber Waller, *Antitrust and Social Networking*, 90 N.C.L. Rev. 1771, 1784-1785 (2012) and F. Thépot, *Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets*, 36 World Competition 195, 217-218 (Kluwer L. Intl. 2013).

⁹¹ See also P.J. Harbour and T.I. Koslov, *supra* n. 2, at 784.

⁹² A.P. Grunes & M.E. Stucke (2015), *supra* n. 1, at 3.

⁹³ N. Newman, *Why Antitrust Authorities Should Block Google’s Takeover of Nest’s ‘Smart Home’ Business*, Huffington Post, 15 Jan. 2014, available at http://www.huffingtonpost.com/nathan-newman/why-antitrust-authorities_b_4603053.html (accessed 18 Aug. 2015).

Federal Trade Commission, which cleared the deal in February 2014,⁹⁴ would have been able to assess such concerns by defining a relevant market for data.

In order to allow for an analysis of competitive constraints in a potential market for data even if no supply and demand for data in the strict sense exists, regard could be had to the concept of ‘competition in innovation’ introduced in the 2011 Guidelines on the Applicability of Article 101 TFEU to Horizontal Co-operation Agreements (EU Horizontal Guidelines). Research and development (R&D) cooperation may not only affect competition in existing markets, but also competition in innovation and competition in new product markets. In the EU Horizontal Guidelines, the European Commission acknowledges that where R&D cooperation concerns the development of new products or technology replacing existing ones or creating a completely new demand, the effects on competition in innovation can in some cases not be sufficiently assessed by analysing competition in existing product or technology markets.⁹⁵ To address this issue, the Commission suggests to rely on R&D investments for assessing whether horizontal cooperation agreements raise competition concerns under Article 101 TFEU. In case it is possible to identify competing R&D poles that are aimed at developing substitutable products or technology, the Commission proposes to analyse whether after the relevant cooperation agreement there will be a sufficient number of remaining R&D poles.⁹⁶ If the precise R&D efforts are unobservable, it may still be possible to identify the assets to which potential competitors need access in order to compete with the incumbent. In the Commission’s view, these so-called ‘specialized assets’ may include access to financial and human resources, know-how and patents.⁹⁷

Because users commonly have free access to online platforms, they choose their provider on the basis of aspects other than price such as quality and the level of innovation that a service offers.⁹⁸ As a result, in the online environment market players similarly do not merely compete by lowering their prices and improving their products in existing markets but also by introducing new products and

⁹⁴ US Federal Trade Commission, *Early Termination Notice 20140457: Google Inc.; Nest Labs, Inc.*, 4 Feb. 2014, available at <https://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices/20140457> (accessed 18 Aug. 2015).

⁹⁵ Communication from the Commission – Guidelines on the applicability of Art. 101 of the Treaty on the Functioning of the European Union to horizontal cooperation agreements (EU Horizontal Guidelines) [2011] OJ C11/1, para. 119. In the previous version of the EU Horizontal Guidelines, reference was made to ‘innovation markets’ instead of ‘competition in innovation’. However, the Commission did not define the term innovation market. See Commission Notice – Guidelines on the applicability of Art. 81 of the EC Treaty to horizontal cooperation agreements [2001] OJ C3/02, para. 60.

⁹⁶ EU Horizontal Guidelines, paras 119–120.

⁹⁷ EU Horizontal Guidelines, para. 120.

⁹⁸ Case No COMP/M.6281 – Microsoft/Skype, 7 Oct. 2011, paras 81–84 and Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, para. 119.

services which shift demand and create a new market of their own.⁹⁹ Following the approach introduced in the area of Article 101 TFEU in the EU Horizontal Guidelines, the European Commission could also make market definition more conducive to innovation in the other branches of competition enforcement. In the context of online platforms, data may be considered as a specialized asset to which competing providers need access in order to develop their own services for users and advertisers. The application of the notion of specialized assets would allow competition authorities and courts to define a potential market for data in addition to the actual relevant markets for the services provided to users and advertisers. In this way, it becomes possible to analyse the competitive constraints applicable to the input or resource to which potential competitors of incumbent online platforms need access in order to compete in future product markets.

5.4 SUBSTITUTABILITY OF DIFFERENT TYPES OF DATA

5.4[a] *Previous Mergers in Data-Related Markets*

If a particular type of data is not traded by providers of online platforms, no supply and demand for the data exists and, as a consequence, only a hypothetical market can be defined. In such cases, the definition of the relevant market is not based on concrete market experience but can only be founded on assumptions about how the market could be structured. The key issue for determining the boundaries of a potential relevant market for data is the substitutability of different types of data. Although no relevant market for personal data has yet been defined in a competition case, the European Commission does have experience in reviewing mergers between firms providing data-related services. These cases did not involve hypothetical or potential markets but ‘real’ markets where the data or data analytics services at issue were truly traded. Nevertheless, hints can be derived from these merger decisions on how to define a potential market for data used as an input of production on online platforms.¹⁰⁰

⁹⁹ In the business literature, this phenomenon is referred to as ‘disruptive innovation’. See J.L. Bower and C.M. Christensen, *Disruptive Technologies: Catching the Wave*, 73 Harv. Bus. Rev. 43, 43-53 (1995).

¹⁰⁰ In addition to the *Publicis/Omnicom* and *Telefónica/Vodafone/Everything Everywhere* mergers discussed here, the *TomTom/Tele Atlas* (Case No COMP/M.4854 – *TomTom/Tele Atlas*, 14 May 2008) and the *Thomson/Reuters* (Case No COMP/M.4726 – *Thomson Corporation/Reuters Group*, 19 Feb. 2008) merger decisions as well as the commitment decision in the 2012 abuse of dominance case against Thomson Reuters (Case AT.39654 – *Reuters Instrument Codes*, 20 Dec. 2012) dealt with data-related markets. Since these cases did not involve the use of data for advertising purposes or for the development of other services similar to the ones offered by providers of online platforms, they will not be considered. For a further development of the concept of data markets in the US *Google/DoubleClick* merger and other US competition cases, see P.J. Harbour and T.I. Koslov, *supra* n. 2, at 783-792.

In 2014, the European Commission assessed possible ‘big data’ implications of the *Publicis/Omnicom* merger in the advertising, marketing and communication services sector. Although many respondents to the market investigation argued that big data was still in its infancy stage at the time of the merger, competitors and media owners active in online advertising expected its relevance to increase in the future. Since a large majority of respondents had stated that competitors would at least be similarly placed to the merged entity to get access to big data analytics, the Commission concluded that there would remain a sufficient number of alternative providers of big data analytics after the merger. As a result, no serious doubts arose from the merger in relation to big data.¹⁰¹ The most relevant statements, as far as market definition for data is concerned, can be found in *Telefónica/Vodafone/Everything Everywhere*. In the 2012 merger decision evaluating the joint venture between these UK mobile operators, the Commission considered whether separate relevant markets had to be defined for the provision of data analytics services for static online advertising and mobile advertising. According to the vast majority of respondents to the market investigation, these two types of data analytics had to be considered as complementary and could not be substituted by each other because the two services collect a different type of information and amount of consumer details. A market player submitted that the information collected via mobile data analytics is more personal, geo-located, and can be cross-referenced with call behaviour, which cannot be offered by online data analytics to a comparable extent. While the Commission left the precise product market definition open, it argued that there were possibly separate relevant markets for online and mobile data analytics.¹⁰² As regards the data analytics activities of the joint venture, the Commission concluded that the operation was not likely to significantly impede effective competition since there would be various other players having access to a comparable set of data and offering services in competition with the joint venture.¹⁰³

5.4[b] *Offline versus Online Data*

Whereas brick-and-mortar undertakings such as retailers, telecom operators, banks and insurance companies also collect personal information, this data cannot necessarily be considered substitutable to the data gathered by providers of online platforms. Each of these entities is involved in a different activity and consequently

¹⁰¹ Case No COMP/M.7023 – *Publicis/Omnicom*, 9 Jan. 2014, paras 625–630.

¹⁰² Case No COMP/M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, 4 Sep. 2012, paras 199–203.

¹⁰³ Case No COMP/M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, 4 Sep. 2012, paras 557–558.

has access to a particular kind of information about consumers such as transactional data, call data records and information relating to the financial position of consumers. These different types of data are clear supplements giving a more comprehensive picture of a specific consumer once brought together. But even though the information held by the different entities will overlap to a certain extent, the data gathered by any of the above mentioned brick-and-mortar companies may not in itself enable providers of online platforms to offer services to users and advertisers that are of the relevance they expect. The scope and specificity of information collected on the internet is not comparable to the data to which brick-and-mortar undertakings have access. While offline retailers and online e-commerce platforms both gather information about the purchasing behaviour of consumers, a provider of an e-commerce platform is able to collect much more detailed information by analysing the behaviour of users on its platform. By looking at the product pages that a user viewed, the provider can, for example, easily find out which products a user has considered to buy before making his or her final purchase decision. A traditional retailer, to the contrary, might never know whether a shopper put a product back on the shelf before going to the check out.¹⁰⁴ For this reason, it is doubtful whether the information held by brick-and-mortar retailers can serve as a substitute for the detailed data to which providers of e-commerce platforms have access. An analogy can be drawn with advertising where the European Commission held that separate relevant markets have to be defined for offline and online advertising because of the more precise targeting possibilities and measurement of effectiveness of ads.¹⁰⁵ A similar reasoning could be applied to distinguish separate relevant markets for data collected offline and online.

5.4[c] *Subsegmenting the Market for Online Data*

Within a potential market for online data, a further segmentation may be made between search data, social network data and e-commerce data as input for the services offered to users and advertisers. The data that a search engine needs to be able to offer a search functionality to users consists of the search queries that users have looked for and the links subsequently clicked on.¹⁰⁶ This type of data is different from the information collected by a social network provider which includes profile information shared by users and the interactions in which users engage on the platform. E-commerce data, in turn, involves information about the

¹⁰⁴ H.A. Shelanski (2013), *supra* n. 6, at 1679.

¹⁰⁵ See Case No COMP/M.4731 – *Google/DoubleClick*, 11 March 2008, paras 45–46.

¹⁰⁶ In the context of the US *Google/DoubleClick* merger decision, P.J. Harbour and T.I. Koslov, *supra* n. 2, at 784 refer to ‘a possible market for “data gathered via search”’.

purchasing behaviour of users, their virtual shopping cart and the items they have viewed, liked or rated. As a result, each of these online platforms needs a specific type of data to deliver good quality services to users thereby diminishing the substitutability of different kinds of data. A similar reasoning can be made for the data required to provide relevant services on the advertiser side of online platforms.

In merger cases such as *Google/DoubleClick*, *Microsoft/Yahoo* and *Facebook/WhatsApp*, and in the ongoing *Google* investigation, the European Commission considered the definition of separate relevant markets for search and non-search advertising.¹⁰⁷ In the *Facebook/WhatsApp* merger decision, the Commission even referred to the possibility of defining a specific relevant market for non-search advertising on social networking sites.¹⁰⁸ If separate relevant markets are distinguished for these types of advertising, it would be logical to define separate relevant markets for the data that is used as an input for providing different kinds of advertising services too. Whereas social network providers target advertisements on the basis of the information they have gathered about the demographics and interests of users, targeting of advertising on search engines and e-commerce platforms takes place on the basis of the intent of the user revealed by entering a search query or a product that he or she is interested in. The substitutability of the data needed to provide, on the one hand, social network advertising and, on the other hand, search advertising therefore seems limited. Since providers of search engines and e-commerce platforms are both active in search advertising, the data they collect on their respective platforms may be considered interchangeable to a certain extent. However, the data of a provider of an e-commerce platform relates more specifically to the purchasing behaviour of users. On a horizontal search engine, search queries do not only consist of products or services a user is looking for. For that reason, e-commerce data can only partially substitute the information to which a horizontal search engine needs access for being able to provide search advertising services on its platform.

With regard to social network data, a distinction may even be made between information collected by microblogging services such as Twitter and general social networking sites including Facebook. The *PeopleBrowsr v. Twitter* case that occurred in the United States is relevant in this regard. Twitter had informed PeopleBrowsr,

¹⁰⁷ Case No COMP/M.4731 – *Google/ DoubleClick*, 11 March 2008, paras 48–56; Case No COMP/M.5727 – *Microsoft/Yahoo! Search Business*, 18 Feb. 2010, paras 62–75; Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 76. In a 2013 press release in the *Google* investigation, the European Commission stated: ‘*Google also has a very strong position in the market for online search advertising*’ thereby appearing to take the view that online search advertising constitutes a relevant market of its own. See Press Release European Commission, *Antitrust: Commission seeks feedback on commitments offered by Google to address competition concerns*, IP/13/371, 25 Apr. 2013.

¹⁰⁸ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para.77.

a company that analyses Twitter data in order to provide a data analytics service to its clients, that it would be losing its full access to the stream of tweets from December 2012 onwards and instead had to approach one of Twitter's certified data resellers to gain access to the required data. PeopleBrowsr argued that it needed access to the full stream of tweets to be able to deliver its services to customers and stated in a court document that Twitter data is a unique and essential input because tweets are '*contemporaneous reports on users' experiences that provide unique feedback regarding consumers' reactions to products and brands*'. In addition, it claimed that the way in which Twitter enables users to respond to each other by retweeting each other's content or mentioning each other in their own tweets, forms a web of interactions that '*provides unique insight about which members of communities are influential*'. While data from social networking sites as Facebook may serve as a valuable complement, Twitter data could in PeopleBrowsr's view not be replaced by data from these sources. According to PeopleBrowsr, social networking sites '*do not provide the same rich set of public data regarding users' sentiments and influence*'.¹⁰⁹ Because the parties settled their dispute, the competent US court did not have to express its opinion on the substitutability of Twitter data in the proceedings on the merits.¹¹⁰ Nevertheless, the *PeopleBrowsr v. Twitter* case indicates that separate relevant markets may even have to be identified for data collected on different types of social networks.

5.4[d] *Lessons from Statements in Merger Decisions Involving Data Concentration*

In conclusion, a potential market for the platform as a whole can be defined consisting of the data needed to provide services to users and advertisers. This way both sides of the platform are taken into account: the user side where the data is collected and the advertiser side where the data is monetized.¹¹¹ The substitutability of data can be assessed by looking at the functionality of the services that the provider of the online platform at stake is able to offer on the basis of the collected data. Since search engines, social networks and e-commerce platforms each provide a specific functionality to users and a particular type of ad

¹⁰⁹ Declaration of John David Rich in support of plaintiff's application for a temporary restraining order in the case *PeopleBrowsr v. Twitter* in the Superior Court of the State of California, County of San Francisco, November 2012, paras 4-5, available at <http://www.scribd.com/doc/114846303/Rich-Declaration-PB-v-TW-Restraining-Order-28-Nov-12> (accessed 18 Aug. 2015). See also *PeopleBrowsr, Inc. et al. v. Twitter, Inc. (PeopleBrowsr)*, No. C-12-6120 EMC, 2013 WL 843032 (N.D. Cal. 6 Mar. 2013), at 1.

¹¹⁰ See '*PeopleBrowsr and Twitter settle Firehose dispute*', 25 Apr. 2013, available at <http://blog.peoplebrowsr.com/2013/04/peoplebrowsr-and-twitter-settle-firehose-dispute/> (accessed 18 Aug. 2015).

¹¹¹ F.Thépot (2013), *supra* n. 90, 217-218.

targeting to advertisers, the data required to offer each of these services is also distinct and arguably should be included in three separate relevant markets.

However, the Commission has not distinguished between different types of data in previous merger cases where the combination of the datasets of the merging parties were identified as a possible competition concern in markets for online advertising and data analytics services. In *Google/DoubleClick*, the Commission referred to portals, other major web publishers, internet service providers, Microsoft and Yahoo as players which ‘*have the ability to collect large amounts of more or less similar information that is potentially useful for advertisement targeting*’.¹¹² On this basis, it concluded that the combination of the information on search behaviour from Google and web-browsing behaviour from DoubleClick would not give the merged entity a competitive advantage that could not be matched by competitors.¹¹³ In the context of its appraisal of the joint venture between UK mobile operators Telefónica, Vodafone and Everything Everywhere, the Commission assessed whether the joint venture would foreclose competing providers of data analytics services or advertising services by combining different types of data and by so creating a unique database that no competing provider would be able to replicate.¹¹⁴ The Commission concluded that the information available to the joint venture was ‘*also available to a large extent to both existing and new market players such as Google, Apple, Facebook, card issuers, reference agencies or retailers*’.¹¹⁵ Similarly, in its *Facebook/WhatsApp* merger decision the Commission referred to data collection across the web in general without differentiating between different types of advertising. The Commission considered Google, Apple, Amazon, eBay, Microsoft, AOL, Yahoo, Twitter, IAC, LinkedIn, Adobe and Yelp as market participants that collect user data alongside Facebook.¹¹⁶ The reasoning applied in these cases thus implies that the Commission regards the data collected by companies active on the internet as substitutable. However, important differences can be identified between the nature of the data gathered and used by, for example, search engines, social networks and e-commerce platforms. In *Telefónica/Vodafone/Everything Everywhere*, the Commission considered the data held by other internet players as substitutes to the data to which the merged entity would have access. At the same time, and rather inconsistently, it argued that separate relevant markets possibly existed for the provision of data analytics services for static online advertising, on the one hand, and mobile advertising, on the other

¹¹² Case No COMP/M.4731 – *Google/DoubleClick*, 11 Mar. 2008, para. 269.

¹¹³ Case No COMP/M.4731 – *Google/DoubleClick*, 11 Mar. 2008, paras 269–272 and 365–366.

¹¹⁴ Case No COMP/M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, 4 Sep. 2012, para. 539.

¹¹⁵ Case No COMP/M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, 4 Sep. 2012, para. 543.

¹¹⁶ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, paras 188–189.

hand, on the ground that these two services collect a different type of information and amount of consumer details.¹¹⁷ Such differences seem to be even more substantial for search, social network and e-commerce data that is used as an input to provide targeted advertising possibilities. It thus remains to be seen if an all-encompassing market for internet data will be defined once the Commission is confronted with a case in which it has to determine the relevant market for user data collected by a particular internet player.

6 MARKET POWER IN DATA

Because of the alleged ubiquitous and non-rivalrous nature of information, it has been argued that it is implausible for an undertaking to obtain market power with respect to user data.¹¹⁸ However, as discussed above in the context of whether a competitive advantage relating to data exists, such claims have to be nuanced. While an incumbent cannot prevent potential competitors or new entrants from gathering similar factual information such as the age, gender, profession and location of a user, the specific data that is necessary to compete on an equal footing with a prevailing search engine, social network or e-commerce platform provider may not be readily available to others. As an illustration, reference can be made to the argument of PeopleBrowsr in its court case against Twitter that Twitter data is not substitutable to user information from other social networks including Facebook. Particular types of user data may thus not be as widely available as claimed as a result of which it is not unlikely for an undertaking to have a dominant position in a certain market for data. Furthermore, providers of online platforms may rely on trade secret protection to prevent others from obtaining confidential user data by illegitimate means and invoke intellectual property rights in order to protect the exclusivity of their datasets. Although ownership of an intellectual property right does not equal with a dominant position in a given market,¹¹⁹ the fact that a particular provider relies on intellectual property law to protect its dataset may form an indication that the provider is using its exclusive access to certain data to put rivals at a disadvantage and to prevent new entry.

The question is how the existence of a dominant position in a market for data can be measured and in particular how value can be attributed to data. The

¹¹⁷ Case No COMP/M.6314 – *Teléfono UK/Vodafone UK/Everything Everywhere/JV*, 4 Sep. 2012, paras 199, 200 and 202.

¹¹⁸ D.S. Tucker & H.B. Wellford (2014), *supra* n. 25, at 12.

¹¹⁹ The European Court of Justice explicitly stated in *Magill*: ‘So far as dominant position is concerned, it is to be remembered at the outset that mere ownership of an intellectual property right cannot confer such a position’. See Joined cases C-241/91 and C-242/91 *Télévis Eireann and Independent Television Publications Ltd v. Commission of the European Communities (Magill)* [1995] ECR I-743, para. 46.

amount or quality of data that an undertaking controls do not seem to constitute adequate indicators for market power, because the datasets of different providers cannot be easily compared in this regard. It may be hard, if not impossible, to distinguish different pieces of information and assign value to each of them individually. Factual information including the age and occupation of a particular user will normally have lower value than data that is harder to get hold of such as information relating to the behaviour of a specific user on an online platform or predictive data relating to likely future purchases.¹²⁰ Nevertheless, it seems challenging to quantify this difference in value. A more objective way to measure the competitive strength of providers active in a market for data would be to look at their ability to monetize the collected information. The revenue gained by a provider through licensing of data to third parties, delivering targeted advertising services or offering other paid products and services to customers having data as input indicates how successful it is in the market. Since the value of a dataset depends in particular on how it is employed by its owner and not merely on its sheer volume, market shares can be calculated in a reliable way by looking at the share of the total turnover earned by undertakings active in a potential market for a specific type of data. This way the analysis of dominance does not only take into account the value of the dataset in itself but also the success of a provider in putting in place relevant resources and technologies for monetizing the data.

In case a particular market player does not offer paid products or services to customers on the basis of the collected data and does not monetize its dataset in another way, its dominance in a potential market for data cannot be established by following this approach. When the data is only used as an input for products or services for which no direct profits are realized, no data-related revenues can be identified and no value can be attributed to the data in this way. An example of a company which could be considered active in a potential market for data but which does not monetize the data by licensing it to third parties or by providing targeted advertising is WhatsApp. Since WhatsApp does not have any data-related revenues, its position in a potential market for data cannot be established by looking at its share of the turnover made by undertakings in this market. If possible competition problems cannot be sufficiently addressed in the 'real' relevant markets for the end product or service (in the case of WhatsApp possibly the relevant market for consumer communications services) and there is still a need to assess the competitive effects in a potential input market for data in the absence of any data-related revenues, competition authorities and courts could look at potential competition as a proxy for dominance.

¹²⁰ See UK Competition & Markets Authority (2015), *supra* n. 25, at paras 2.53–2.54.

Instead of merely relying on market shares, the European Commission is increasingly taking into account potential competition in its assessment of dominance in dynamic markets. In its *Microsoft/Skype* merger decision, the Commission argued that market shares only provide a limited indication of competitive strength in the context of the market for internet consumer communications services because of the nascent and dynamic nature of the sector as a result of which market shares can change quickly within a short period of time.¹²¹ In its *Cisco* judgment in which the legality of the decision of the Commission to approve the *Microsoft/Skype* merger was evaluated, the General Court confirmed this finding of the Commission and argued that ‘*the consumer communications sector is a recent and fast-growing sector which is characterized by short innovation cycles in which large market shares may turn out to be ephemeral*’. In such a dynamic context, ‘*high market shares are not necessarily indicative of market power and, therefore, of lasting damage to competition*’ in the view of the General Court.¹²² Even though Microsoft would post-merger have a market share of 80 to 90% on the narrowest possible relevant market for video calls delivered on Windows-based PCs, the Commission and the General Court concluded that the concentration would not give rise to competition concerns because of the dynamic character of the sector and the existence of sufficient alternative providers to which consumers could easily switch.¹²³ In its *Facebook/WhatsApp* merger decision, the Commission referred to and relied upon the statement of the General Court that high market shares do not necessarily point towards market power in the market for consumer communications services.¹²⁴ A similar reasoning may be applied in future cases involving online platforms such as social networks, search engines and e-commerce platforms that all form part of a dynamic sector.

In situations where data is not traded as a stand-alone product and a ‘real’ market for data does not exist, it would be particularly relevant to analyse the likelihood that other undertakings hold similar information or that new entrants are able to collect the required data themselves thereby putting the incumbent under competitive pressure. If there are no readily available substitutes traded on the market by others, potential competition is the only restraint to which the holder of the data may be subject. The presence of the following non-exhaustive

¹²¹ Case No COMP/M.6281 – *Microsoft/Skype*, 7 Oct. 2011, para. 78.

¹²² Case T-79/12, *Cisco Systems Inc. and Messagenet SpA v. Commission*, judgment of 11 Dec. 2013, not yet reported, para. 69. A similar reasoning has been applied by the Guangdong Court in the *Qihoo/Tencent* case with a reference to the Commission decision in *Microsoft/Skype*, see T. Jiang, *The Qihoo/Tencent Dispute in the Instant Messaging Market: The First Milestone in the Chinese Competition Law Enforcement?*, 37 *World Competition* 369, 380 (Kluwer L. Intl. 2014).

¹²³ Case No COMP/M.6281 – *Microsoft/Skype*, 7 Oct. 2011, paras 120–132 and Case T-79/12, *Cisco Systems Inc. and Messagenet SpA v. Commission*, judgment of 11 Dec. 2013, not yet reported, paras 68–95.

¹²⁴ Case No COMP/M.7217 – *Facebook/WhatsApp*, 3 Oct. 2014, para. 99.

circumstances may in particular be considered to point towards market power in a market defined around data: (1) data is a significant input into the end products or services delivered on online platforms; (2) the incumbent relies on intellectual property law to protect its dataset as a result of which competitors cannot freely access the necessary data; (3) there are few or no actual substitutes readily available on the market for the specific information needed to compete on equal footing with an incumbent; (4) it is not viable for a potential competitor to collect data itself in order to develop a new dataset with a comparable scope to that of the incumbent (for example due to network effects).¹²⁵

7 CONCLUSION

While data is in general regarded as a non-rivalrous good, it can still form a competitive advantage for incumbents and an entry barrier for competitors and new entrants in case a provider keeps its dataset to itself and few or no substitutes are readily available on the market. Because of the fact that certain types of information decline in value over time, it is vital for market players to keep gathering and verifying data. In order to be able to adapt to the changing interests and preferences of customers, providers of online platforms have to update their databases on a continuous basis. Incumbents are in a better position in this regard, because they already have a stable base of returning users on which they can rely to collect real-time data. Although good engineering resources and a well-functioning algorithm are also needed to successfully operate an online platform, data remains an important input of production for the delivery of good quality and relevant services to users and advertisers.

Relevant product markets for online platforms are currently defined around the specific service or functionality provided to users and advertisers. Because most of the prevailing providers do not trade data to third parties and only use the collected information as an input for their end products and services, no 'real' market exists in which supply and demand for data can be identified. Nevertheless, in some instances there may be a need for competition authorities and courts to address possible competition concerns beyond the relevant markets for the end product or service and also analyse the competitive situation in a potential market for data used for improving the services provided on online platforms. This would also allow for a more forward-looking approach to market definition which does not merely rely on the way in which data is currently used for the development of existing end products and services. By regarding data as a specialized asset in

¹²⁵ Circumstances (1) and (3) are also mentioned in UK Competition & Markets Authority (2015), *supra* n. 25, at para. 3.78 as market indicators suggesting a greater likelihood of competition concerns.

analogy to the EU Horizontal Guidelines, competitive constraints can be assessed that relate to the input to which competitors or new entrants need access in order to develop their own services for users and advertisers. A hypothetical or potential market for data can be defined by looking at the substitutability of different types of data and in particular at the functionality which can be offered with a specific set of data as input. In this way, separate relevant markets can possibly be defined for offline and online data and, as further subsegmentations within the latter market, for search, social network and e-commerce data.

As regards market power in data, it is important to find an objective manner to attribute value to data. The turnover generated by a provider through the monetization of data by licensing information to third parties, delivering targeted advertising services or offering other paid products and services to customers on the basis of the collected data, may form an indication of its competitive strength in a potential market for a particular type of data. In the absence of any data-related revenues, potential competition may form an adequate proxy for dominance in relevant markets defined around data. Such an approach will enable competition authorities and courts to analyse a form of rivalry whereby market players do not only compete in existing relevant markets for end products or services but also in a potential market for data used as an input to launch innovative future products and services.