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I. INTRODUCTION

Much has been said (and written) about “big data” as a new factor in European merger review. This focus of course begs the questions: “is this new”? Supermarket loyalty schemes and airline frequent flyer programs, for example, have been collecting significant amounts of data about us for many years. Weren't there a number of cases over the last 20 years, both behavioral and transactional, in which data played a central role? In the behavioral context, we can go all the way back to *IMS Health*. That was essentially about whether rights to the 1860 brick-structure impaired the ability of others to collect and manage data in the form required by pharmacies. Not dissimilarly, almost ten years ago, *TomTom/TeleAtlas* addressed the combination of two significant sets of mapping data.

That said, some things have changed. Increasing volumes of data are being collected and analyzed by a wide range of companies (not only those active in the digital economy). The data collected and the results of data analysis are being used in new and increasing numbers of contexts. Interestingly, there are also increasing numbers of entities with access to comparable sets of some types of data (e.g. location data for smartphone users). However, the collection and use of data (even large sets of data) is not a new phenomenon. As Commissioner Vestager put it, the developments outlined above, do not suggest that we “[...] need a whole new competition rulebook. . .”²

Data can clearly be relevant in competition assessments, but it bears thinking about how and why. The mere collection or possession of data is not in and of itself anticompetitive. Nor are most of the uses made of data. In the merger context, the Commission's recent cases have largely focused on whether data is monetized to fund a multi-sided platform, and, where it is, whether the acquisition of data that can be used for that purpose has the potential to be anticompetitive. In *Microsoft/LinkedIn* the analysis also looked at the potential use of data to improve an algorithm (or for “machine learning,” to use the language of the case). In other words, these assessments have largely focused on the use of the data as an “input” to one or more related markets, looking at the potential vertical effects of the acquisition of exclusive control over particular data sets.

There have, however, been a small number of cases that considered whether the combination of data sets could have anticompetitive horizontal effects. The first section below briefly considers these cases, with the remainder of the discussion focusing on the development of the approach to the potential vertical issues.

II. POTENTIAL HORIZONTAL EFFECTS

In both *TomTom/TeleAtlas* and *Nokia/Navteq*, the Commission considered potential markets for non-navigable and navigable digital map databases. Although the Commission conducted this analysis as part of its review of a vertical “stack” of markets – in which digital map databases were inputs to a potential intermediate market for navigation software and potential downstream markets for end user navigation apps and services – its analysis of the upstream digital map database markets was horizontal. This is hardly surprising, given that it was the combination of the datasets in this upstream market that was the trigger for the vertical foreclosure analysis. In *Nokia/Navteq* (the second of the two cases), the Commission assessed the horizontal overlap in the (following *TomTom/TeleAtlas*) two player market for navigable digital map databases – which, following the transaction, would be vertically integrated and competing with third parties to provide navigation services – looking at customer focus, market evolution, pricing, barriers to switching, and market entry). Ultimately, the Commission concluded that the merged company would be unlikely to pursue a strategy of closing off competitors – its ability to deny competitors access to map databases was limited by TeleAtlas. The Commission found that the merged company would lack incentives to close off supply of digital map databases to its competitors because a loss in sales of maps would not be compensated by increased sales of mobile telephones, and other mobile phone manufacturers would be able to compete with Nokia by working with independent developers of navigation apps or developing other features for their handsets.

Much more recently, in *Microsoft/LinkedIn*, the Commission assessed the impact of access to a combined data set (of information about individuals' jobs, career history and professional connections, email and other contacts and search behavior) on the potential online advertising market.³ The Commission identified two ways in which the combination of the two relevant data sets could raise horizontal issues: (i) the combination could increase market power in a hypothetical market for the supply of data or could increase barriers to entry/expansion in that market for actual or potential competitors that need the data to operate on that data market; and (ii) even if the parties had no intention or

² Vestager, “Competition in a big data world,” DLD 16 Conference, Munich, January 17, 2016.

³ Commission Decision of December 6, 2016 in Case M.8124 – *Microsoft/LinkedIn*.

technical ability to combine the two data sets, they could have been competing prior to the transaction on the basis of the data that they each controlled (such that the concentration would eliminate that competition). This approach was entirely consistent with the Commission's approach to horizontal issues generally (including in the context of the analysis of intellectual property).

The Commission found that the transaction did not raise horizontal concerns because the parties did not (at the time) make data available to third parties for advertising purposes (such that the transaction would not limit the volume of data available to third parties for that purpose). It went on to find that there would remain large amounts of user data valuable for advertising purposes that was not under the exclusive control of Microsoft. The Commission concluded this analysis by noting that the parties were small players in the relevant market and only competed with each other to a very limited extent in the supply of online advertising inventory (and its possible segments).⁴

III. POTENTIAL VERTICAL EFFECTS

Most of the Commission's more recent data-related transactional reviews have focused on potential vertical effects that might arise from the use of the data as an input in related markets. The Commission has considered whether the data concerned cannot be replicated by rivals that and, without access to this data set, cannot compete in the related market.

A. Data as an Input

In its 2012 *UK mobile wallet* review, the Commission considered the impact of the transaction on the market for data analytics services.⁵ It characterized the data that would be collected or used by the joint venture to provide data analytics services as: (i) customer data collected by the mobile network operators (the parents of the joint venture) that was to be provided to the joint venture in anonymized form, (ii) data collected through the mobile wallet, and (iii) data collected under contracts with merchants (e.g. data collected through loyalty schemes and transactions). Having identified the types of data and the market in which it could be an "input," the Commission considered whether this particular combination of data (personal information, location data, response data, behavioral data and browsing data) would represent a "unique" data set that would become an "essential input" for targeted mobile advertising, such that other providers of mobile advertising intermediation services would be dependent on the joint venture for essential inputs or would be unable to compete. The Commission found that the data available to the joint venture would, to a large extent, also be available to a number of other entities, including Google, Apple, Facebook, card issuers, reference agencies and retailers. As the Commission noted, customers give personal data of this type to (or consent to its use by) many different entities, such that this particular type of data is generally considered to be a "commodity."⁶ It concluded that, while the broad range of data collected by the joint venture would be very valuable for its mobile data analytics and advertising services, many other strong players offered comparable data sets, such that competing providers of advertising services would not be foreclosed from an essential input.⁷

In short, in its 2012 *UK mobile wallet* analysis the Commission analyzed whether parties to a concentration would enjoy a competitive advantage in a market through a data set augmented as a result of the concentration as a result of being able to improve or target its products or services (in a manner that competitors are unable to match). In 2016, Commissioner Vestager described exactly that analytical approach when she noted that the Commission would consider "whether companies control unique data, which no one else can get hold of, and can use it to shut their rivals out of the market."⁸

The Commission has effectively been applying the following analytical framework to assess whether the ability to control "input" data impedes effective competition in a related market in which that data is used for some time:

- Is the data that is the "input" indispensable (e.g. there is no actual or potential substitute);
- Are there technical, legal or economic obstacles to sourcing comparable data from elsewhere; and

4 Id. at paras. 179-180.

5 Commission Decision of September 4, 2012 in Case COMP/M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*.

6 Id. at para. 543.

7 Id. at para. 557.

8 Vestager, Data Ethics event on "Data as Power," Copenhagen, September 9, 2016.

- Does exclusive access to the data set(s) reserve to the merged entity (through the ability to exclude others) the market in which the input is used.

As noted above, there are strong parallels between the approach to assessing the potential for data to foreclose access, and the approach to assessing the potential for the assertion of intellectual property to foreclose. The framework set out above echoes that in *Magill*.⁹ Not surprisingly, the threshold for a lack of access to data to have the ability foreclose is also very high.¹⁰

B. Implementation and Evolution of the Commission's Analytical Framework

The Commission has applied this framework over the last six years, elaborating further on certain elements.

In 2014's *Facebook/WhatsApp* decision, the Commission considered whether Facebook would acquire data that was likely to strengthen Facebook's position on the online advertising market (or any segments of it).¹¹ Specifically, it looked at whether the acquisition would give Facebook access to additional user data (generated through WhatsApp use) that would enable Facebook to better target ads shown to Facebook and Instagram users who were also WhatsApp users.

The Commission noted that, because WhatsApp did not collect user data that was valuable for advertising purposes (it essentially collected user names (or nicknames), mobile phone numbers and a certain amount of metadata), the transaction would not increase the amount of data potentially available to Facebook for targeting advertising.¹² However, it went on to consider whether, even if Facebook were to collect and use data from WhatsApp for advertising purposes, there would be a potential anticompetitive effect. It found, to the contrary – that large amounts of valuable user data (not within Facebook's exclusive control) would remain available to Facebook's competitors. It also found that there would be a sufficient number of alternative providers of online advertising services – there were a significant number of other market participants that also collected user data.¹³ As a result, the Commission concluded that the combination of the merging parties' data would not provide them with a non-replicable advantage, because competitors could obtain data and/or data analytics services in other ways (e.g. from data brokers or data analytics services providers, or by collecting and analyzing data themselves).

The Commission also followed this approach in *Verizon/Yahoo!*, looking at the data generated by users of Verizon and Yahoo!'s websites, apps and services that could be used by Verizon and Yahoo! to better target advertising on their websites and apps.¹⁴ It concluded that the combined data sets would not raise barriers to entry, not least because the parties were relatively small market participants. It went on to note that the parties' data sets were not unique.

Indeed, the market test in *Verizon/Yahoo!* suggested that the improved data capability resulting from the acquisition might enable the combined entity to better compete against its stronger rivals¹⁵ (as the Commission had also noted in its earlier *Microsoft/Yahoo!* review).¹⁶ In both of these cases, the Commission's assessment of the potential competitive effects of the data sets that the concentration would create concluded that the concentration would be pro-competitive, in that far from creating an ability to exclude, the increased scale post-transaction would create a more effective competitor.¹⁷ These two cases of course highlight the importance of market power in any input foreclosure analysis – if the entity acquiring the data lacks market power in the related markets in which the input can be used lacks both the ability and incentive to foreclose.

9 Joined Cases C-241/91 P and C-242-91 P, *RTE and ITP v. Commission* [1995] ECR I-00743.

10 See, for example, Case C-7/97, *Oscar Bronner GmbH & Co. KG v. Mediaprint Zeitungs und Zeitschriftenverlag GmbH & Co. KG* [1998] ECR I-07791 and Case C-418/01, *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG* [2004] ECR I-05039.

11 Commission Decision of October 3, 2014 in Case M.7217 – *Facebook/WhatsApp*.

12 *Id.* at para. 166.

13 *Id.* at paras. 188-189.

14 Commission Decision of December 21, 2016 in Case M.8180 – *Verizon/Yahoo!*.

15 *Id.* at para. 93.

16 Commission Decision of February 18, 2010 in Case M.5725 – *Microsoft/Yahoo! Search Business*.

17 *Id.* at para. 184.

Most recently, in *Microsoft/LinkedIn*, the Commission considered for the first time the potential for data to “improve” a service, specifically through developing and offering improved functionality. It considered whether Microsoft would be able to adopt an input foreclosure strategy by denying access to “LinkedIn full data”¹⁸ to competing providers of customer relationship management (“CRM”) software. In other words, it considered whether data could be used through “machine learning” to improve the merged entity’s product while foreclosing competitors from making comparable improvements by denying those competitors access to the relevant data.

The Commission initially noted that it was not clear that LinkedIn full data would be an “important input” (within the meaning of the Non-Horizontal Guidelines¹⁹) in the near future. Prior to the concentration, LinkedIn had not made its full data available to third parties for machine learning, and it was unclear whether it would have started licensing its full data absent the transaction. The Commission also stressed the potential pro-competitive effects of Microsoft using LinkedIn full data to improve its CRM software solutions (noting the possibility of new products and/or improvements to existing products).²⁰

Despite this, the Commission went on to conduct an “even if” analysis. It found that, even if LinkedIn data were to be used for machine learning in CRM, the concentration would not foreclose competing CRM providers. In particular, it concluded that the merged entity would not have the ability to implement a foreclosing strategy for a number of reasons. First, LinkedIn did not have sufficient market power in the hypothetical market for the provision of data for the purposes of machine learning in CRM software solutions. Second, European data protection rules limit Microsoft’s ability to process LinkedIn full data. Third, LinkedIn full data was not (and would not become in the relevant timeframe) an essential input for machine learning-enabled CRM functionality. At the time of the concentration, all major CRM vendors either had already started adding advanced machine learning-based functionalities to their CRM services or were planning on doing so in the near future. However, none of these offerings had been developed with or required access to LinkedIn full data. Fourth, LinkedIn full data would only be one of the many types of data available for this purpose, and there were many other possible source of data that could also be used for machine learning.²¹ As a result, the Commission concluded that it was unlikely that the use of LinkedIn full data for machine learning only in Microsoft’s CRM software would affect a “sufficiently important” proportion of Microsoft’s CRM competitors (such that there would be a significant price increase or reduction in incentives in the market to innovate).²²

IV. THE NATURE OF THE DATA ITSELF

The Commission’s consideration of the potential use of data in the markets for both online advertising and CRM software and productivity software solutions highlights a key feature of data – it can be used as an input to a range of purposes that fall into different relevant markets. It is important to identify the market(s) in which the data is used as an input, since that frames the nature and scope of the potential alternative types and sources of data (and thereby the “uniqueness” or replicability of the data). There may well be alternative sources that are comparably useful in some related markets but not in others, for example.

In this context, it is also crucial to consider whether alternative data sets must contain the same data or whether it is sufficient that the alternatives be comparable. For example, it is implicit in the Commission’s cases to date about user data collected and used by providers of consumer apps that alternative data that can be used to improve online ad targeting need only be comparable. They do not need to provide exactly the same data about exactly the same users to represent viable alternative data sets. Similarly, the market investigation in *Microsoft/LinkedIn* made it clear that the data sets available to competing CRM solution providers are comparable, in the sense that they have comparable utility in enabling software like CRM to “learn.” There are, however, some, albeit very limited, circumstances in which the actual data must be replicated. For example, in the *Reuters Instrument Codes* case, the short alphanumeric codes that identify securities and their trading locations,

18 “LinkedIn full data” refers to all the data that LinkedIn collects, or could collect, and store about its users and their activity, such as professional details, connections, interests, posts, endorsements. See, *Microsoft/LinkedIn*, at para. 58.

19 Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p. 6–25.

20 *Microsoft/LinkedIn*, at paras. 246-250.

21 *Id.* at paras. 257-264.

22 Indeed, LinkedIn full data appears to be relevant only for machine learning in the CRM B2B marketing and B2B Sales segments, which accounted for less than 30 percent of the entire CRM software solutions. Moreover, LinkedIn was only one of many data sources available to competing CRM software providers. See, *Id.* at paras. 275-276.

could not be “replicated” by anything else. Similarly, there was no alternative to the “final price” used to value credit default swaps (which are traded over the counter not on exchanges) for entities creating indices based on those prices in the *Markit/ISDA* case.

It is important that analyses of the replicability of data carefully consider these issues. For that reason, the very term “big data” is not helpful in the development of the analytical framework, since its breadth and imprecision is inconsistent with the way we need to think about data in these analyses.

V. CONCLUSION

The cases to date suggest that there is a framework for assessing both the potential horizontal and vertical issues that concentrations focused on data can raise. They also make it clear that the Commission’s approach to identifying data that cannot be “replicated” has been measured and careful, as is its review of the potential for data to foreclose market access.

