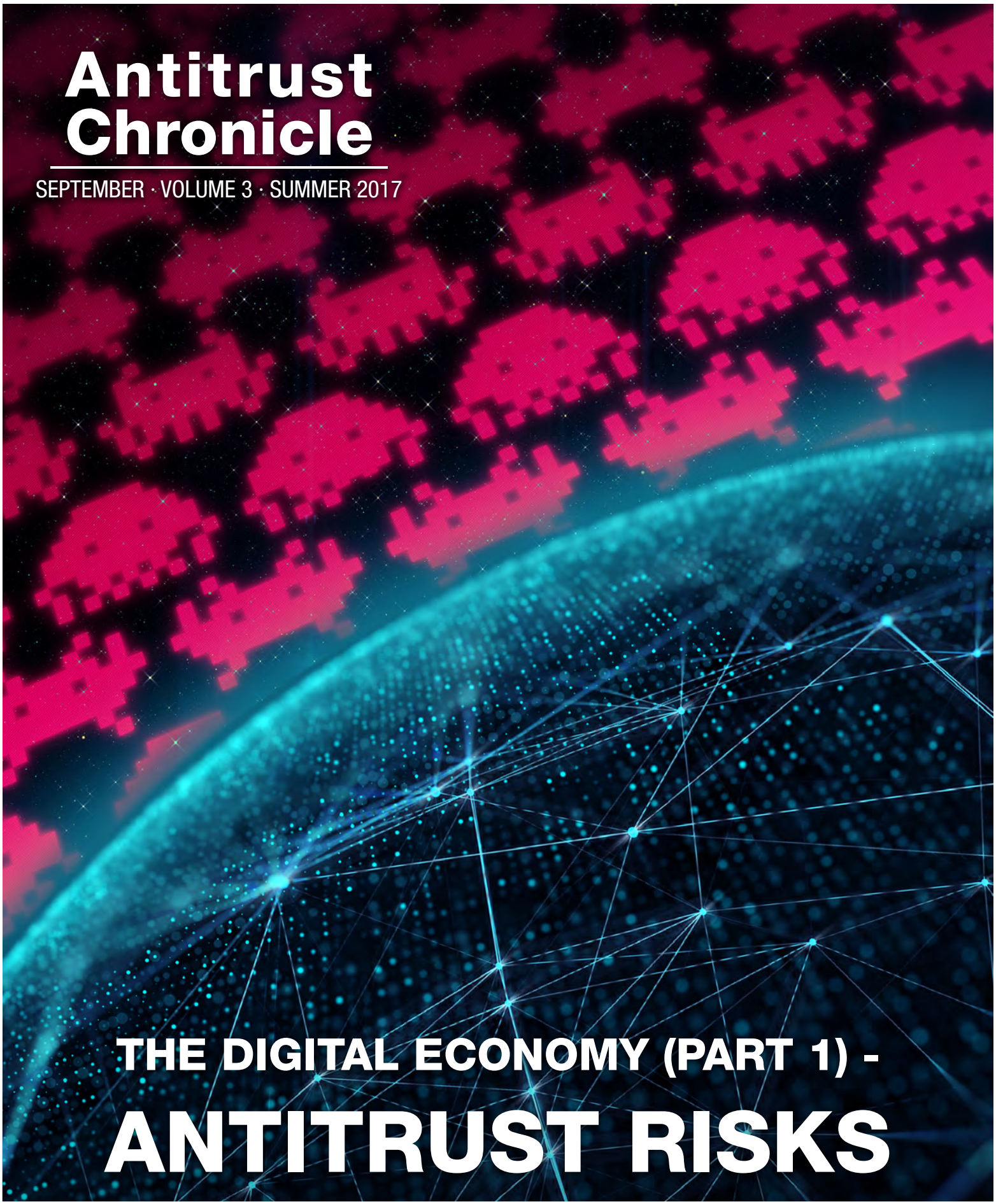

Antitrust Chronicle

SEPTEMBER · VOLUME 3 · SUMMER 2017

THE DIGITAL ECONOMY (PART 1) -

ANTITRUST RISKS

CPI COMPETITION POLICY INTERNATIONAL

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LETTER FROM THE EDITOR

Dear Readers,

For September, we are pleased to bring you part one of a three part series focusing on the Digital Economy. Part one will focus on Antitrust Risks. Parts two and three will focus on Mergers and IP-related issues respectively and will be published in the coming months.

It is generally safe to say that, today, more than ever, the digital economy reaches into most aspects of our lives. The digital economy has led to big changes in market structure creating debates on competition policy and regulatory issues. This month's articles cover a variety of topics around antitrust risks in the digital economy such as the latest news on the European Commission's *Google Search* decision, network effects, market power in multisided markets, buyer power, the fast evolving ride sharing sector and big data and privacy policies. These are all bleeding-edge topics for antitrust regulators, academics and practitioners.

We hope you enjoy reading this September 2017 edition of the CPI Antitrust Chronicle. CPI would like to thank CCIA for suggesting the topic and sponsoring this month's Chronicle.

Finally, we look forward to seeing many of you in Brussels later this month on September 25, 2017 at the Steigenberger Hotel for the LeadershIP EU conference which will feature dialogues between experts about the evolving international IP and Antitrust policy issues in the U.S. and the EU. CPI is proud to be one of the sponsors of the 2017 LeadershIP EU conference.

As always, thank you to our great panel of authors this month.

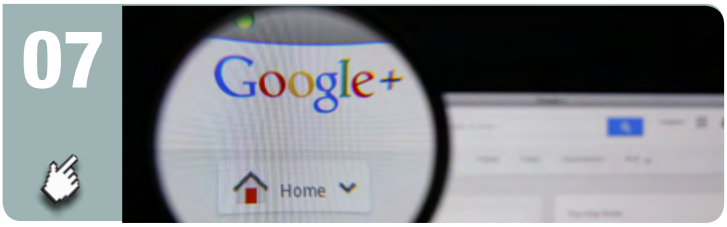
Sincerely,

CPI Team

LEADERSHIP

DISCUSS. DEBATE. UNITE. LEAD.

SUMMARIES



A Preliminary Assessment Of The European Commission's Google Search Decision

By Pinar Akman

This article provides some initial thoughts on the European Commission's infringement decision in *Google Search*. Pending a review of the full decision, the article briefly discusses three critical issues that go to the heart of the decision. The article offers thoughts on the abuse, the theory of harm and the remedy underlying the Commission's decision. It finds that, as of yet, important questions about these three aspects still remain and irrespective of how the Commission deals with these in the full decision, the *Google Search* case raises important questions about the correct application of the European prohibition of abuse of a dominant position.

Network Effects: March To The Evidence, Not To The Slogans

By David S. Evans & Richard Schmalensee

Though network effects are important for multisided platforms, the simple winner-take-all notion that they always give larger platforms an insurmountable advantage over smaller rivals has been disproven by numerous counterexamples. It is now being argued that big data is power, so that a firm that has more customer data than its rivals has an insurmountable advantage over them. This argument has no theoretical or empirical support, and it, too, has been disproven by numerous counterexamples.

For A Facts-Based Analysis Of Uber's Activities In The EU: Addressing Some Misconceptions

By Damien Geradin

This paper addresses some of the misconceptions about the nature of Uber's services, as well as encouraging a facts-based approach to the regulation of these services. Such a facts-based approach is particularly important at a time where the CJEU has been asked to deliver a preliminary ruling on questions related to the legal nature of Uber's services. Moreover, the EU seems at a cross-road with innovative, forward-looking regulations being adopted in some Member States, which allow Uber to offer its services, while ensuring that the public interest is preserved. This paper also seeks to show that Uber services do not have to be labelled as "transport services," to be subject to regulation. Under EU law, intermediation services can already be subject to non-discriminatory and proportionate regulatory frameworks designed to protect the public interest.

Buyer Power In The Big Data And Algorithm Driven World: The Uber & Lyft Example

By Ignacio Herrera Anchustegui & Julian Nowag

This article explores how big data and algorithms may create new possibilities for unilateral anticompetitive behavior in the form of overbuying and "reverse rebates," using as a case study the recent proceedings against Uber concerning its "Hell" program. The analysis provides us with the opportunity to re-explore traditional antitrust concepts, anchored on the purchasing of raw material, in the data and algorithm driven world. Our paper shows how big data and algorithms have the potential to make these exclusionary buying tactics far more targeted and therefore effective and efficient.

SUMMARIES

Turning The Corner: The Internet Of (Moving) Things

By Yves Botteman, Anthony J. LaRocca & Jonathan Sallet

Driverless cars are headed our way. With them will come additional competition questions concerning the creation of new vertical relationships among firms, the use of big data, standards and intellectual property and collaborative industry efforts.

Measuring Market Power In Multi-Sided Markets

By Kate Collyer, Hugh Mullan & Natalie Timan

With the dawn of the digital age, multi-sided markets are everywhere. From booking platforms for hotels to food delivery services as well as more traditional markets such as newspapers or radio broadcasting, multi-sided markets present competition experts with a unique set of challenges when it comes to the assessment of market power. In this article, the authors explore the key features of multi-sided markets that set them apart – the role of indirect network effects, tipping and single or multi-homing – and offer some practical suggestions for the assessment of market power.

Privacy Fixing And Predatory Privacy: The Intersection Of Big Data, Privacy Policies And Antitrust

By Benjamin R. Dryden & Shankar (Sean) Iyer

Under the right conditions, business practices that are good for consumer privacy can come at a cost to competition. This article considers the scenarios where privacy interests and competition might conflict. Specifically, the authors consider the potential economic and legal implications of "privacy fixing" – two competitors agreeing to a common set of privacy practices – as well as "predatory privacy" – a powerful firm's use of privacy practices to disadvantage rivals. The authors explore how an antitrust case might proceed under either theory, and conclude with remarks about what potential conflicts between privacy interests and competition might mean for businesses, trade associations and consumer protection agencies.

The Italian Big Data Inquiry: A Question Of Method

By Renato Nazzini

On May 30, 2017, the Italian Competition Authority ("ICA"), together with the Telecoms Authority ("AGCOM") and the Data Protection Authority ("DPR") (together, the "Authorities") launched an inquiry into "big data." This is the first time an inquiry has been carried out by the three Authorities and, while this clearly presents some challenges, it is also a significant opportunity to bring clarity in this field. In order to achieve this objective, it is suggested that three methodological issues are, among others, of fundamental importance: (1) getting the sequence right; (2) obtaining cross-sectors information; and (3) keeping conceptually different issues distinct (while appreciating their links, when relevant).

ANNOUNCEMENTS

ROUNDING THE BEND OF 2017

CPI wants to hear from you, our subscribers. In the coming months of 2017, we will be reaching out to members of our community for your feedback and ideas. Let us know what you want (or don't want) to see, at: antitrustchronicle@competitionpolicyinternational.com.

CPI ANTITRUST CHRONICLE NOVEMBER & DECEMBER 2017

The November 2017 Antirust Chronicle will address issues related to panels at the **LeadershIP EU conference**.

As a reminder to potential authors, our topic for the December 2017 Antitrust Chronicle is **The News and Antitrust**.

Contributions to the Antirust Chronicle are about 2,500 – 4,000 words long. They should be lightly cited (follow bluebook style for footnotes) and not be written as long law-review articles with many in-depth footnotes. As with all CPI publications, articles for the CPI Antitrust Chronicle should be written clearly and with the reader always in mind.

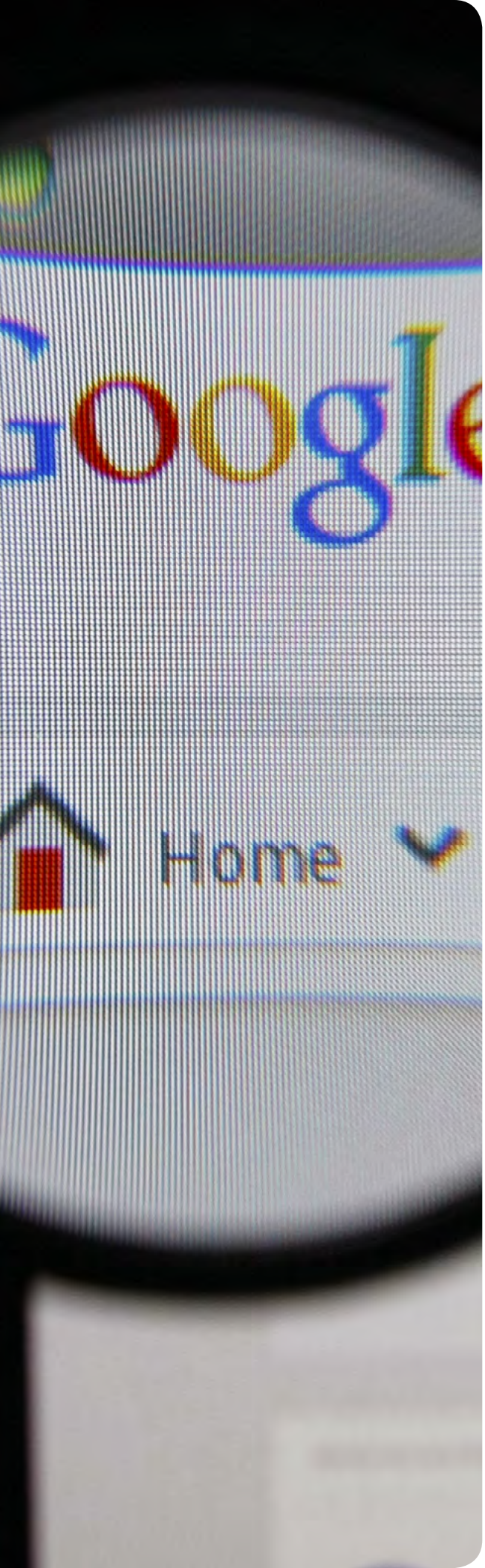
Interested authors should send their contributions for the December edition by November 20, 2017 to Sam Sadden (ssadden@competitionpolicyinternational.com) with the subject line "Antitrust Chronicle," a short bio and picture(s) of the author(s).

The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers in any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topic. Co-authors are always welcome.

WHAT'S NEXT?

This section is dedicated to those who want to know what CPI is preparing for the next month.

The October 2017 Antirust Chronicle will address issues related to **Inequality and Antitrust**. How might growing concerns about mounting inequality affect antitrust and competition policy? For instance, how does market power contribute to inequality, and what are some possible antitrust policy modifications that should be considered in response to inequality? Is antitrust law a viable wealth distribution device?



A PRELIMINARY ASSESSMENT OF THE EUROPEAN COMMISSION'S GOOGLE SEARCH DECISION

BY PINAR AKMAN [1]

I. INTRODUCTION

On June 27, 2017, the European Commission announced its decision to impose upon Google a record €2.42 billion fine for abusing its dominance as a search engine by giving illegal advantage to its own comparison shopping service.[2] The decision comes at the end of a 7-year-long period of investigations which at one point were almost closed with commitments.[3] The infringement, according to the European Commission, is that Google abused its dominant position on the internet search market to favor its own comparison shopping service over those of its rivals (i.e. comparison shopping sites such as Kelkoo, Idealo, etc.).[4] According to the Commission, the abuse consists in Google systematically giving prominent placement to its own comparison shopping service while subjecting comparison shopping services to Google's algorithm including demotions for organic results.[5] Notably,

1 Professor of Law, School of Law, University of Leeds. This piece has not been commissioned or funded by any entity. The author has previously conducted research commissioned by Google on the Google Search case. That research is published as Akman, "The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law," (forthcoming) (2017) University of Illinois Journal of Law, Technology and Policy and is available at http://illinoisjltp.com/journal/wp-content/uploads/2017/06/Akman.pdf. The current piece is an extended version of Akman, "Initial Reactions to the Infringement Decision in Google Search," Blog Entry, Antitrust & Competition Policy Blog, June 27, 2017. The author can be contacted at p.akman@leeds.ac.uk.

2 See "Statement by Commissioner Vestager on Commission decision to fine Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service," 6/27/2017, http://europa.eu/rapid/press-release_STATEMENT-17-1806_en.htm.

3 For then-Comm'r Almunia's statement that the commitments address the competition concerns of the Commission, see European Commission Press Release IP/14/116, "Antitrust: Commission obtains from Google comparable display of specialised search rivals," 2/5/2014, http://europa.eu/rapid/press-release_IP-14-116_en.htm.

4 "Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service," 6/27/2017, http://europa.eu/rapid/press-release_IP-17-1784_en.htm.

5 "Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service – Factsheet," 6/27/2017,

the Commission "does not object to the design of Google's generic search algorithms or to demotions as such, nor to the way that Google displays or organises its search results pages (e.g. the display of a box with comparison shopping results displayed prominently in a rich, attractive format)."[6] Rather, the Commission objects to the "fact that Google has leveraged its market dominance in general internet search into a separate market, comparison shopping."[7] The Commission considers *Google Search* to be a test case potentially setting a precedent "which can be used as a framework" to analyze the legality of similar conduct that Google may have engaged in regarding other Google products than comparison shopping.[8] Pending a full review of the Commission's decision which is yet to be published at the time of writing, some preliminary observations can be offered on the *Google Search* decision which saw the largest antitrust fine ever to be imposed on Google. This article will briefly examine in turn the pertinent issues on the basis of the publicly available information concerning the abuse, the theory of harm and the remedy in *Google Search.*

II. THE ABUSE

The first striking aspect of the decision is that the Commission still has not spelled out what is the relevant "abuse." As noted above, the Commission neither objects to Google's design of its pages by which Google displays its search results nor to Google's demotion of certain results.[9] Yet, when it explains how Google has abused its dominant position by giving its shopping product an "illegal advantage," the Commission precisely lists these two practices in order to explain the abusive conduct.[10] Consequently, what exactly the abusive conduct is remains unclear.

The specific existing law upon which the case has been built is also unclear. Commissioner Vestager in the Press Conference announcing the Commission's decision alluded to the practice not being a novel type of abuse by calling the decision "old school," but as this author has argued elsewhere, it is impossible to fit the existing facts of this case within existing case law.[11] Neither the Commissioner nor any other official of the Commission has so far stated which existing case law and which existing type of abuse this case falls under. Although the list of abusive practices in Article 102 TFEU is not exhaustive[12] and novel practices can be found abusive, the question of novelty is not insignificant in the context of the record fine that was imposed in this case. Fining a company more than twice as much any other company has been fined for an abuse of a dominant position in the history of EU competition law in a case where the practice is at least arguably a novel type of abuse does not follow certain previous practice of the EU Commission where no fine was imposed due to the practice being a novel abuse.[13]

Although it is acknowledged that the fact that a practice is novel does not, in itself, prevent the Commission from imposing a fine, in *Motorola* the Commission chose not to impose a fine because (i) the conduct was novel, and (ii) national courts had reached diverging conclusions on the issue (of whether seeking and enforcing an injunction against a willing licensee by the holder of a

http://europa.eu/rapid/press-release_MEMO-17-1785_en.htm 1-2.

6 Factsheet (note 5) 2.

7 Id.

8 Statement by Commissioner Vestager (note 2) 3.

9 See text to note 6, above.

10 See Factsheet (note 5) 2.

11 See Akman, "The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law," (forthcoming) (2017) Journal of Law, Technology and Policy, available at: http://illinoisjltp.com/journal/wp-content/uploads/2017/06/Akman.pdf.

12 See Case 6/72 *Europemballage Corporation and Continental Can Company Inc v. EC Commission* [1973] ECR 215, [26].

13 See Commission Decision, Case AT.39985 *Motorola - Enforcement of GPRS Standard Essential Patents* (Motorola) (summary at [2014] OJ (C 344) 6), ec.europa.eu/competition/antitrust/cases/dec_docs/39985/39985_928_16.pdf. In *Motorola* there were German court decisions which found Motorola's conduct to be lawful while a Dutch court had explicitly rejected the German approach; see ibid para 439.

standard essential patent was abusive).[14] It needs to be borne in mind that legal certainty is a fundamental principle of EU law,[15] and the Commission must be guided by the principle of proportionality in its enforcement.[16] The previous practice of not fining a company in case of a novel abuse is preferable for legal certainty purposes in the context of the inherently vague prohibition of "abuse" which provides little guidance to dominant undertakings in advance of engaging in a certain practice as to whether the practice is lawful or not where the practice is neither listed in the provision nor held to be previously abusive in the case law.

This is all the more so where a novel abuse is also not clearly a practice that does not constitute "competition on the merits" as is arguably the case in *Google Search* given that, for example, the U.S. FTC found the same practices to be product improvement to the benefit of consumers.[17] Indeed, the European Courts have noted that while "the use of imprecise legal concepts in making rules, breach of which entails the civil, administrative or even criminal liability of the person who contravenes them, does not mean that it is impossible to impose the remedial measures provided by law," this is only the case "provided that the individual concerned is in a position, on the basis of the wording of the relevant position and, if need be, with the help of the interpretation of it given by the courts, to know which acts or omissions will make him liable."[18]

Thus, the relevance of existing case law on the same conduct is obvious given that by the European Courts' own admission, Article 102 itself is drawn up "using imprecise legal concepts, such as … 'abuse.'"[19] Consequently, where there is no means of establishing on the basis of the provision itself and relevant case law on the topic that the conduct in question is unlawful, it becomes questionable whether liability and remedial measures can be imposed without infringing the principle of legal certainty.

III. THE THEORY OF HARM

Similarly to the type of abuse, and perhaps more importantly, the theory of harm in *Google Search* is also unclear. It is disappointing to see that the decision appears to revolve around harm to a group of competitors and in particular, how Google's practice led to a loss of traffic to some websites. There is practically no discussion of how the practice has affected Google's only trading partners – advertisers – and there is little convincing discussion of how the users – consumers – (might) have been harmed as a result of Google's practice. The suggestion that the practice leads to lack of innovation on both Google's and the comparison shopping sites' part and thereby harms consumers by reducing choice does not hold water. First, according to the EU's own statistics, Google is the world's fourth R&D investor, which has increased its investment in R&D by over 20 percent in 2016.[20] Second, the comparison shopping sites have likely lost business as a result of the normal dynamics of competition as they could not innovate to catch up with Amazon's numerous offerings to consumers. This factor raises questions about the causal link between Google's practices and the loss of business experienced by the comparison shopping sites in question. Whether the Commission has proven that in the absence

14 *Motorola* (note 13) [560]-[561]. Similarly, in Google's case, several courts around the world have dismissed claims identical in principle to those in *Google Search* for there not being an abuse of a dominant position. Of these, two have been decided by courts in EU Member States: *Verband Deutscher Wetterdienstleister eV v. Google*, Reference No. 408 HKO 36/13 (4/4/2013), Court of Hamburg in Germany and *Streetmap.EU Ltd v. Google Inc. and others* [2016] EWHC 253 (Ch) in the United Kingdom.

15 On legal certainty being a fundamental principle of EU law, see e.g. Case C-94/05 *Emsland-Staerke GmbH v. Landwirtschaftskammer Hannover* [2006] ECR I-2619, [43] and the cases cited therein; Case C-201/08 *Plantanol GmbH & Co KG v. Hauptzollamt Darmstadt* [2009] ECR I-08343, [46]; Case 348/85 *Kingdom of Denmark v. Commission* [1987] ECR 5225, [19].

16 Under Article 7(1) of "Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty," [2003] OJ L1/1, the Commission may only impose remedies that are "proportionate to the infringement committed."

17 See "Statement of Federal Trade Commission Regarding Google's Search Practices," *In the Matter of Google Inc.*, FTC File Number 111-0163, 3/1/2013 https://www.ftc.gov/system/files/documents/public_statements/295971/130103googlesearchstmtofcomm.pdf 3.

18 Case T-167/08 *Microsoft Corp v. European Commission*, 27/6/2012, ECLI:EU:T:2012:323, [84] with reference to Case C-303/05 *Advocaten voor de Wereld* [2007] ECR I-3633 and Case C-266/06 P *Evonik Degussa v. Commission* (22/5/2008) (not published in the ECR) [39].

19 *Microsoft* (note 18) [91].

20 See "The 2016 EU Industrial R&D Investment Scoreboard," http://iri.jrc.ec.europa.eu/documents/10180/1030082/The%202016%20EU%20Industrial%20R%26D%20Investment%20Scoreboard as noted in Petit, "My 2 cents on the EC decision against Google," https://medium.com/@nicolaspetit_89712/my-2-cents-on-the-ec-decision-against-google-683651adeee.

of Google's relevant practices the comparison shopping sites would have thrived despite the growing prominence of Amazon (i.e. the assessment of the counterfactual) can only be scrutinized once the full decision is published. Third, comparison shopping sites remain fully accessible to consumers who value their offerings, irrespective of where Google ranks them in its results. Fourth, as noted by this author elsewhere,[21] any space that was used to display results of comparison shopping services that no longer displays those results on Google's results pages, is taken up by links to other products/services, most notably to Amazon and eBay. This not only suggests a lack of harm to *competition* given that Amazon and eBay are also Google's competitors, but also represents an improvement in product design by increasing the diversity of results to the benefit of consumers, as noted by the FTC.[22] All in all, a robust theory of harm that demonstrates harm to consumers from Google's practices in this case appears to be still missing.

IV. THE REMEDY

The final striking aspect of the decision is the "remedy" that the Commission proposes (or fails to propose): the Commission states that Google must stop its illegal conduct within 90 days and it can do so by respecting "a simple principle: [i]t has to give **equal treatment** to rival comparison shopping services and to its own."[23] This is nothing but simple. Ordering a company which vehemently argues that it does indeed treat all equivalent services equally, falls well short of what would have been expected of the Commission in terms of identifying with sufficient legal certainty what the company should do to stop infringing the law. Further, the Commission notes that in order to comply with the principle of equal treatment, Google "has to apply the same methods and processes to position and display its own and rival comparison shopping services in its search results."[24]

Once one appreciates the fact that Google's shopping results are simply ads for products and Google treats all ads with the same ad-relevant algorithm and all organic results with the same organic-relevant algorithm, the Commission's order becomes impossible to comprehend. Is the Commission imposing on Google a duty to treat non-sponsored results in the same way that it treats sponsored results? If so, does this not provide an unfair advantage to comparison shopping sites over, for example, Google's advertising partners as well as over Amazon, eBay, various retailers, etc. which are the competitors of the comparison shopping sites but which do not receive such favorable treatment from Google but compete with them? In any case, the imposition of such a duty on Google implies that Google should forego the revenues which it could generate using its proprietary product in order to pay for the promotion of some of its rivals which can ultimately lead to more distortion of competition on the relevant markets due to distorted incentives and unequal treatment.

It is not even clear as of yet whether the remedy that is potentially being imposed on Google is a behavioral or structural one given that the "comparison shopping" function is an integrated part of Google's search engine for queries that do generate shopping results. For example, if Google has to close down its (comparison) shopping product in Europe or separate the comparison shopping business from the search engine to comply with the Commission's decision, the remedy can be considered to be structural.[25] By not spelling out precisely what the remedy should be, the Commission can indirectly avoid the burden to justify the imposition of structural remedies under Regulation 1/2003 which can only be imposed "either where there is no equally effective behavioral remedy or where any equally effective behavioral remedy would be more burdensome for the undertaking concerned than the structural remedy."[26]

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21 Akman (note 11) 72.

22 See FTC Statement (note 17) 3.

23 Statement by Commissioner (note 2) 2.

24 Id.

25 Structural remedies involve permanent changes to the structure of the dominant undertaking (e.g. an obligation to divest, a requirement to split up a dominant undertaking into independent units) while a behavioral remedy requires an undertaking to act or to refrain from acting in a specified way; see O'Donoghue & Padilla, *The Law and Economics of Article 102 TFEU* (2nd ed, Hart Publishing, 2014) 880.

26 Article 7(1) Regulation 1/2003.

In an *ex-post* scenario where the allegedly harmful conduct has already taken place as opposed to, for example, an *ex-ante* merger situation, it is unjustifiable for the Commission to fail to precisely set out what needs to be done by the infringing undertaking to bring an end to the infringement, not least because lack of compliance with the decision also risks periodic fines.[27] The remedy prescribed by the Commission is also significant because "[i]n many respects the remedy is an important cross-check on the coherence of the substantive case on abuse, as well as the enforcement justification for intervention. A bad remedy will usually mean a bad theory of harm in the case."[28]

Argumentum a fortiori, a remedy that has not been spelled out beyond an order to stop the infringing conduct which the alleged infringer argues not to have engaged in in the first place, does not fare well in terms of deciphering the abuse in the first place. Finally, the principle of legal certainty also applies in the imposition of remedies; any remedy must be clear and precise so that the undertaking may know without ambiguity its rights and obligations and take steps accordingly.[29] It is questionable whether the lack of a prescribed remedy in *Google Search* complies with the principle of legal certainty.

V. CONCLUSION

This article has briefly set out some of the problems that the currently available information on the European Commission's decision in *Google Search* presents, in particular, relating to the abuse, theory of harm and remedy aspects of the decision. Clearly, a fully-informed debate on the merits of the decision can only take place once the full decision is published. Yet, the investigation has taken over seven years and numerous statements, including a commitment proposal, have already been made publicly available. The central arguments of the case against Google have been set out, but how and why these constitute an infringement of the law prohibiting an abuse of a dominant position remain unclear. A convincing theory of harm that shows ultimate harm to consumers as opposed to some competitors of Google has not yet been established. Similarly, it remains unanswered how Google may remedy the abuse without either completely removing a service which arguably benefits European consumers or practically *paying* some of its rivals to use its own proprietary product to their benefit to the detriment of Google's own property rights as well as the detriment of other competitors on the market. Given all these controversies, it is unlikely that the *Google Search* decision will be the end of this legal story.

27 See Article 24 Regulation 1/2003.

28 O'Donoghue & Padilla (note 25) 927.

29 Hellstroem, Maier-Rigaud & Bulst "Remedies in European Antitrust Law," (2009) 76 (1) Antitrust Law Journal 43, 51 with reference to Joined Cases 92 & 93/87 *Commission v. French Republic et al* [1989] ECR 405, [22].

NETWORK EFFECTS: MARCH TO THE EVIDENCE, NOT TO THE SLOGANS

BY DAVID S. EVANS & RICHARD SCHMALENSEE [1]

I. INTRODUCTION

Economists began developing the theory of network effects in the 1970s. Significant progress was made through the 1990s, just in time for the birth of the new economy.

The basic idea was simple and powerful. In some cases a service is more valuable if more customers are using it because customers want to interact with each other. Then, if a firm moved fast and got some customers, those customers would attract more customers, which would attract even more. Explosive growth would ensue and result in a single firm owning the market forever. The winner would take all.

These interrelated customers are called a network, and the positive feedbacks between customers are called network effects. It looked like the theory was made to order for the Internet firms that flooded the economy in the mid-1990s, as well as some older high-tech firms.

Business gurus, venture capitalists and the tech media soon treated network effects as the magic elixir for making quick billions. And a few people did in fact make billions from firms powered by network effects. All this seemed to justify the huge market caps of dot-coms that aimed to exploit network effects.

Competition authorities, however, with support from some dismal scientists, saw the dark side of network effects. Firms could rig the race to become the winner and thereby "tip" the market to make themselves monopolies. And even if a firm won fair and square, network effects would result in insurmountable barriers to entry and would be the font of permanent monopoly power.

1 *Evans is the Chairman, Global Economics Group, and Executive Director, Jevons Institute for Competition Law and Economics and Visiting Professor, University College London. Schmalensee is Howard W. Johnson Professor of Economics and Management, Emeritus, Massachusetts Institute of Technology. This article is based in part on material that previously appeared in Chapter 2 of our book, *Matchmakers: The New Economics of Multisided Platforms*, Harvard Business Review Press, 2016, and our Harvard Business Review article, "Why Winner Takes All Thinking Doesn't Apply to Silicon Valley," Harvard Business Review Blog, May 4, 2016.

Network effects are now central to a debate about whether online platforms are "unstoppable."[2] A recent argument in this debate is that online platforms have troves of data that make network effects even more potent. Unfortunately, this view of network effects evolved from a seminal economic contribution to a set of slogans that don't comport with the facts.

II. THE ECONOMICS OF NETWORK EFFECTS

Jeffrey Rohlfs wrote the pioneering paper on network effects.[3] He focused on the early days of landline telephone service. A telephone was useless if nobody else had one. A telephone was more valuable if a user could reach more people. Economists called this phenomenon a *direct network effect*; the more people connected to a network, the more valuable that network is to each person who is part of it. Telephone companies tried to persuade households to subscribe to their new communication service. If enough did, if it attained what's known as critical mass, explosive growth would ensue, and the phone companies could make a lot of money.

Economists started applying the network effects theory to "high tech" back when that included fax machines. Several economists wrote influential papers on the most visible high-tech battle of the time: over the standard for videocassette recorders ("VCRs"). They argued that if two standards were roughly comparable in cost and performance, consumers would find the video-recording standard used by more people more attractive. That's because content providers, such as movie studios, would release more shows that consumers could watch on the VCRs based on the more popular standard. Because of this network effect, they theorized, the standard that got a head start, for whatever reason, and no matter how small, would ultimately win the race.

It didn't take long for a powerful empirical refutation of the simple version of the network effects theory. Venture capitalists poured money into Internet startups in the late 1990s and many set off on a race to become the winner-that-took-all. Many of the winners, however, with enormous market caps, folded or shriveled following the dot-com bust, while followers leapfrogged winners in the 2000s, and are still doing so. In 2001, for instance, *Industry Standard* described eBay as "unstoppable."[4] While eBay did survive the dot-com bust, its net revenue in 2016 was only about 7 percent of that of Amazon.

Still, the concept of network effects is important for online markets. It just needed some refinement. Much of that came from the work on multisided platforms that began around 2000. Three critical points have emerged.

A. Network effects are usually indirect, between different kinds of customers rather than direct for the same kind of customers.

As Rochet & Tirole realized in their pioneering paper,"[M]any, if not most markets with network externalities are characterized by the presence of two distinct sides whose ultimate benefit stems from interacting through a common platform."[5] That's obvious in the case of two distinct groups of customers, like smartphone users and app developers, but may still be true even when the customers all look the same.

When YouTube started, for instance, ordinary people used it both to upload videos and to watch videos. A mom might upload a video of her child's first birthday party and then watch a cute cat video that someone else had put up. People played different roles at different times. Since some people are more likely to upload videos and others are more likely to watch videos, YouTube had to court both types of people to make the network successful and couldn't count on the fact that many people did both.

Recognizing that network effects are often indirect is important for understanding platform businesses including those that prop up the new economy. Multisided platforms can't come galloping out of the gates as envisioned by simple winner-take-all stories. They have to figure out how to get all sides on board in order to create any value at all. Starting a new platform is more like trying to solve a hard math problem than running a 5k.

2 The Economist, "Regulating the Internet Giants: The World's Most Valuable Resource Is No Longer Oil, But Data," May 6, 2017, http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource.

3 Rohlfs, "A Theory of Interdependent Demand for a Telecommunications Service," *Bell Journal of Economics*, 1974.

4 Helft, "What Makes eBay Unstoppable," *The Industry Standard Magazine,* August 6, 2001, available at: http://www.siliconinvestor.com/readmsg.aspx?msgid=16151691.

5 Rochet & Tirole (2003), "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association*, 1(4): 990-1029.

YouTube didn't win the race to become the leading video sharing platform because it was first or because it got a nose ahead and vaulted to victory. It won because it figured out, over a very difficult start-up period when it could well have failed, the right formula for getting people to upload videos and getting people to view them.[6]

B. Network effects result from getting the right customers, and not just more customers.

Platforms create value when customers find good matches and enter into exchanges. Density trumps scale for most platforms. That's because most customers on most platforms are not very good matches for each other. Scale helps, of course, because if there are more customers, the chance that any particular customer will find a good match increases. But for any particular customer a smaller platform with many good matches is more attractive than a bigger platform with fewer good matches.

Simply building share is a naïve, and generally unsuccessful, strategy for most online platforms. Take OpenTable, which is now the leading platform for making reservations at fine dining establishments in the U.S. and a few other countries. When it launched in the late 1990s, its investors focused on signing on as many consumers and restaurants in the U.S. as quickly as possible. That was a losing strategy. What diners care about is finding the right restaurant nearby, and nearby diners the people that restaurants care about. A Thai restaurant in Chicago isn't valuable to us if we want to go out to dinner at an Italian restaurant in Boston. OpenTable, which almost failed, pivoted and focused on creating dense demand for people and restaurants in individual cities.[7]

OpenTable also illustrates how platforms can succeed by specializing. It didn't strive to get all restaurants or all diners on its platform. It has concentrated on relatively high-end restaurants.

C. Network effects can work in reverse.

Networks can have exponential growth when every additional customer attracts more customers. Unfortunately, the same principle can lead to exponential decline. Each lost customer induces other customers to leave, which induces more to leave. We see the physical manifestations of reverse network effects all across America in the form of dead or dying malls. Fewer people come to a mall, stores pull out of the mall, leading to even fewer people coming.

The early literature on network effects didn't pay much attention to the potential for this reversal of fortune. Economists initially focused on physical networks, such as telephones, where physical connections and equipment made it harder for people to switch networks. It is much easier for people to switch online platforms. They can typically try a new platform without dropping the old one, probably for free, and gradually shift over if they like it. Adding or dropping a platform often just involves a few clicks.

The history of communications platforms — messaging apps and social networks — over the last two decades illustrates the importance of reverse indirect network effects as well as the data that comes along with users. People value communications platforms that have more of the people with whom they want to interact. A naïve view of indirect network effects implies that a successful communications platform would be secure from competition because people wouldn't join or use a platform that didn't include most of their personal network.

The flaw in that reasoning is that people can use multiple online communications platforms, what economists call multihoming. A few people in a social network try a new platform. If enough do so and like it, then eventually all network members could use it and even drop their initial platform. This process has happened repeatedly. AOL, MSN Messenger, Friendster, MySpace and Orkut all rose to great heights, and then rapidly declined, while Facebook, Snap, WhatsApp, Line and others quickly rose.

Competition is far more complex, and interesting, when we account for these three economic aspects of network effects. Doing so is essential for conducting antitrust analysis that is grounded in business realities.

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6 For a detailed discussion see *Matchmakers*, Chapter 5.

7 See *Matchmakers*, Chapter 1, for further discussion.

III. CONFRONTING SLOGANS WITH FACT

Unfortunately, the simple network effects story leads to naïve armchair theories that industries with network effects are destined to be monopolies protected by insurmountable barriers to entry, and media-friendly slogans like "winner-take-all."[8] The basic empirical flaw in the simple network effects theory, and the associated slogans, is that it focuses on successful firms, at a point in time, observes they benefited from network effects, and concludes that they won it all and won't be displaced. Those facts, even if true, don't show that network effects are the source of their success or provide a moat around them. The "winner" could just be a lot more efficient or innovative than other firms. A true test of the theory would examine whether markets that have network effects have winners that can't be dislodged.

It only takes one counterexample to disprove a theory, but in the case of simple network effects our counterexample cup "runneth over." Systematic research on online platforms by several authors, including one of us, shows considerable churn in leadership for online platforms over periods shorter than a decade.[9] Then there is the collection of dead, or withered platforms, which dot this sector, including Blackberry and Windows in smartphone operating systems; AOL in messaging; Orkut in social networking; and Yahoo in mass online media.[10]

The winner-take-all slogan also ignores the fact that many online platforms make their money from advertising. As many of the firms that died in the dot-com crash learned, winning the opportunity to provide services for free doesn't pay the bills. When it comes to micro-blogging Twitter has apparently won it all. But it is still losing money because it hasn't been very successful at attracting advertisers, which are its main source of income. Ignoring the advertising side of these platforms is a mistake. Google is still the leading platform for conducting searches, for free, but when it comes to product searches, which is where Google makes all its money, it faces serious competition from Amazon. Consumers are roughly as likely to start product searches on Amazon, the leading e-commerce firm, as on Google, the leading search-engine firm.[11]

IV. THE BIG DATA SLOGAN

The winner-take-all slogan can claim to be based on the simple theory of network effects. One can't claim any theoretical foundation for the new slogans around "big data." The *Economist* proclaims that, "The world's most valuable resource is no longer oil, but data." It then links data to network effects. "With data there are extra network effects. By collecting more data, a firm has more scope to improve its products, which attracts more users, generating even more data, and so on." As far as we know there is no rigorous theoretical or empirical support for these statements.

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8 The following is a collection of relatively recent examples. The Economist, "Regulating the Internet Giants: The World's Most Valuable Resource Is No Longer Oil, But Data," May 6, 2017, http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource; Taplin, "Is It Time to Break Up Google?" New York Times, April 22, 2017, https://www.nytimes.com/2017/04/22/opinion/sunday/is-it-time-to-break-up-google.html; Manjoo, "Tech's Frightful Five: They've Got Us," New York Times, May 10, 2017, https://www.nytimes.com/2017/05/10/technology/techs-frightful-five-theyve-got-us.html; Taplin, "Is It Time to Break Up Google?" New York Times, April 22, 2017, https://www.nytimes.com/2017/04/22/opinion/sunday/is-it-time-to-break-up-google.html; Straub, "Managing in an Age of Winner-Take-All," Harvard Business Review, April 7, 2015, https://hbr.org/2015/04/managing-in-an-age-of-winner-take-all; Grunes & Stucke (2015), "No Mistake About It: The Important Role of Antitrust in the Era of Big Data," Antitrust Source, 14(4), https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/apr15_full_source.authcheckdam.pdf; Stucke & Grunes (2016), Big Data and Competition Policy, Oxford: Oxford University Press.

9 Evans, "Attention Rivalry Among Online Platforms," *Journal of Competition Law & Economics*, Volume 9, Issue 2, 1 June 2013, Pages 313–357, https://doi.org/10.1093/joclec/nht014 and Boik, Greenstein & Prince, "The Empirical Economics of Online Attention," (June 2017). Kelley School of Business Research Paper No. 16-57, available at: https://ssrn.com/abstract=2807046.

10 For more details see Evans, "Why the Dynamics of Competition for Online Platforms Leads to Sleepless Nights But Not Sleepy Monopolies," (July 25, 2017). Available at: https://ssrn.com/abstract=3009438.

11 Sterling, "Survey: Amazon Beats Google as Starting Point for Product Search," Search Engine Land, June 28, 2016, http://searchengineland.com/survey-amazon-beats-google-starting-point-product-search-252980; Del Rey, "55 Percent of online Shoppers Start Their Product Searches on Amazon," ReCode, September 27, 2016, https://www.recode.net/2016/9/27/13078526/amazon-online-shopping-product-search-engine.

Like the simple theory of network effects, the "big data is bad" theory, which is often asserted in competition policy circles as well as the media, is falsified by not one, but many, counterexamples. AOL, Friendster, MySpace, Orkut, Yahoo and many other attention platforms had data on their many users. So did Blackberry and Microsoft in mobile. As did numerous search engines including AltaVista, Infoseek and Lycos. Microsoft did in browsers. Yet in these and other categories, data didn't give the incumbents the power to prevent competition. Nor is there any evidence that their data increased the network effects for these firms in any way that gave them a substantial advantage over challengers.

In fact, firms that, at their inception, had no data whatsoever sometimes displaced the leaders. When Facebook launched its social network in India, in 2006, in competition with Orkut, it had no data on Indian users since it didn't have any Indian users. That same year Orkut was the most popular social network in India, with millions users and detailed data on them.[12] Four years later Facebook was the leading social network in India.[13]

Spotify provides a similar counterexample. When Spotify entered the U.S. in 2011, Apple had more than 50 million iTunes users and was selling downloaded music at a rate of one billion songs every four months.[14] It had data on all those people and what they downloaded. Spotify had no users, and no data, when it started. Yet it has been able to grow to become the leading source of digital music in the world.

In all these and many other cases the entrants provided a compelling product, got users, obtained data on those users, and grew. The point isn't that big data couldn't provide a barrier to entry, or even grease network effects. As far as we know, there is no way to rule that out entirely. But there is no empirical support, at this point, that this is anything more than a possibility, which one might explore in particular cases.

V. MARCH TO THE EVIDENCE

Nothing we've said here in intended to endorse a "go-easy" policy towards online platforms when it comes to antitrust enforcement. Indirect network effects could result in some categories being natural monopolies with high barriers to entry. It is even possible that having mounds of data could help. Our point is that this is far from inevitable.

Moreover, online platforms, whether they have won a category or not, could certainly engage in anticompetitive practices. There's no particular reason to believe these firms are going to behave like angels. Whether they benefit from network effects or not, competition authorities ought to scrutinize dominant firms when it looks like they are breaking the rules and harming consumers. As always, the authorities should use evidence-based analysis grounded in sound economics. The new economics of multisided platforms provides insights into strategies these firms may engage in as well as cautioning against the rote application of antitrust analysis designed for single-sided firms to multisided ones.

It is time to retire the simple network effects theory, which is older than the fax machine, in place of deeper theories, with empirical support, of platform competition. And it is not too soon to ask for supporting evidence before accepting any version of the "big data is bad" theory. Competition policy should march to the evidence not to the slogans.

12 Alexa, "Top Sites in India," August 30, 2006, https://web.archive.org/web/20060830074546/http://www.alexa.com:80/site/ds/top_sites?cc=IN&ts_mode=country&lang=none.

13 Fitzsimmons, "Facebook Overtakes Orkut in India," Adweek, August 25, 2010, http://www.adweek.com/digital/facebook-overtakes-orkut/.

14 Rao, "Apple: iTunes Now Has 20M Songs; Over 16B Downloads," TechCrunch, October 4, 2011, https://techcrunch.com/2011/10/04/apple-itunes-now-has-20-million-songs-over-16-billion-downloads/.

FOR A FACTS-BASED ANALYSIS OF UBER'S ACTIVITIES IN THE EU: ADDRESSING SOME MISCONCEPTIONS

BY DAMIEN GERADIN [1]

I. INTRODUCTION

When Uber launched its activities in Europe, it met rapid commercial success. People enjoyed the convenience of booking a ride through their smartphone, as well as a service that was cheaper, more reliable and of a higher quality than what was traditionally offered by taxis. As its success grew, Uber was, however, subject to harsh criticism by taxi companies and trade associations, which launched massive demonstrations[2] and filed lawsuits in multiple Member States to have Uber banned from the streets.[3] These legal challenges often argued that Uber engaged in "unfair competition" because it did not comply with the regulatory requirements that were imposed on taxis.[4] Where these actions were successful, they effectively deprived people from the ability to use Uber services or at least UberPOP,[5] which relies on non-professionally licensed drivers.

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2 See, e.g. Thomson, Rahn & Rascouet, "Uber Demonstrations Snarl Traffic From London to Berlin," *Bloomberg*, June 11, 2014, available at: https://www.bloomberg.com/news/articles/2014-06-10/uber-protests-spread-across-europe-as-taxi-app-backlash-grows; Rubin & Scott, "Clashes Erupt Across France as Taxi Drivers Protest Uber," *The New York Times*, June 25, 2015, available at: https://www.nytimes.com/2015/06/26/business/international/uber-protests-france.html?_r=0.

3 Wallace, "Uber's global ambitions hit roadblocks," *CNN Tech*, December 12, 2014, available at: http://money.cnn.com/2014/12/12/technology/uber-ban-global-spain-india-portland-duplicate-2/.

4 Bartunek, "Uber will appeal order to shut Brussels service using non-professional drivers," *Reuters*, September 24, 2015, available at: www.reuters.com/article/us-uber-brussels-idUSKCN0RO1PW20150924; Vitaud "Uber in Italy: A lot of Opposition, but Ultimately It will Take all the Market," *Medium Corporation*, January 26, 2016, https://medium.com/@Vitolae/uber-in-italy-a-lot-of-opposition-but-ultimately-it-will-take-all-the-market-15a338fa2a90#.eo3ql9ch7.

5 UberPOP is an intermediation service which connects riders with non-professionally licensed drivers in EMEA. UberX is a similar service, but it involves professionally licensed drivers.

While disruptive technologies or business models are often a subject of controversy, what is still lacking in most EU Member States several years after Uber started its activities is a regulatory framework that accounts for the specificities of its services. Regulatory change is impeded by the emotional nature of the debate where Uber is often characterized as a villain, stealing business away from taxi companies and replacing good jobs by precarious ones.[6] However, these allegations, which are largely based on misconceptions about Uber's activities, prevent a constructive, forward-looking debate on how to take advantage of the major opportunities created by Uber and other companies offering online intermediation services in terms of user convenience, affordability and quality of service, road safety, and reduced urban congestion.[7]

Against this background, the key objectives of this paper are to address some of the most common misperceptions about the nature of Uber's services, as well as to encourage a facts-based approach to the regulation of these services. Such a facts-based approach is particularly important at a time where the Court of Justice of the European Union (the "CJEU") has been asked to deliver a preliminary ruling on questions related to the legal nature of Uber's services.[8] Moreover, the EU seems at a crossroads with innovative, forward-looking regulations being adopted in some Member States, which allow Uber to offer its services, while ensuring that the public interest is preserved.[9] This paper also seeks to show that Uber services do not have to be labelled as "transport services," which they are not, to be subject to regulation. Under EU law, intermediation services can already be subject to non-discriminatory and proportionate regulatory frameworks designed to protect the public interest.

This paper is divided in five sections. Section II discusses the regulatory responses that have been given to the arrival of Uber in the EU. It also discusses the impact of the pending preliminary reference before the CJEU in the *Asociación Profesional Élite Taxi v. Uber Systems Spain, S.L.* case on such responses, as well as the development of some platforms-friendly regulatory framework in some EU Member States. Section III addresses some of the most common misconceptions about Uber's services that contribute to impede a meaningful discussion as to the way in which such services should be regulated. With the aim to sow the seeds for a regulatory framework that would allow Uber to compete while ensuring that the public interest is preserved, Section IV comprises my preliminary views on two questions that are particularly important: (i) whether Uber should be labelled a "transport service" to allow Member States to regulate its services, and (ii) what should be the core principles of the regulatory framework that should be applied to Uber and other online intermediation platforms. Finally, Section V concludes.

II. UBER'S ARRIVAL IN THE EU AND THE REGULATORY RESPONSES

Uber's arrival in Europe was met with success in many cities.[10] Both riders and drivers are attracted to Uber's intermediation platform for a variety of reasons. On the rider side, Uber offers a convenient service and reliable service at attractive rates.[11] Nothing is easier but to book a ride from one's smartphone, the only thing needed being a credit card. Riders also value the possibility to rate drivers, which in turn increases quality of service as low performing drivers are weeded out from the platform.[12] Drivers are also attracted to the Uber platform as the only thing needed, at least for the UberPOP service, is to own a driving license and a car. This offers

6 See, e.g. Leonard, "Why Uber must be stopped," *Salon*, August 31, 2014, available at: www.salon.com/2014/08/31/why_uber_must_be_stopped/.

7 See Deloitte Access Economics, "Economic effects of ridesharing in Australia, Uber," 2016, https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economic-effects-ridesharing-australia-010216.pdf.

8 Case C-434/15: Request for a preliminary ruling from the Juzgado Mercantil No 3 de Barcelona (Spain) lodged on August 7, 2015 — *Asociación Profesional Élite Taxi v. Uber Systems Spain*, S.L., OJ 2015, C 363/21.

9 See infra text accompanying notes 26-29.

10 Megaw, "Uber expansion leaves taxi industry in urgent need of a lift," *Financial Times*, May 16, 2016, available at: https://www.ft.com/content/c4ded228-1910-11e6-bb7d-ee563a5a1cc1.

11 Telegraph Staff, "Proof that Uber costs less than black cabs," *The Telegraph*, September 30, 2015, available at: www.telegraph.co.uk/technology/uber/11902613/Proof-that-Uber-costs-less-than-black-cabs.html.

12 Lenzo, "Understanding Uber's five-star rating system," *CNBC*, February 23, 2016, available at: www.cnbc.com/2016/02/23/understanding-ubers-five-star-rating-system.html.

job opportunities to low-skilled workers,[13] but also the ability for people employed in low-paid jobs or students to supplement their revenues by driving a few hours during their free time.[14] Uber's success is thus explained by the fact that it efficiently connects drivers and riders, while handling the payment for the transaction and ensuring that the overall service runs smoothly.

Taxi companies, however, saw Uber as a major threat to their business. This led them to put pressure (e.g. through demonstrations and lobbying activities) on governments and regulatory authorities to take measures to ban Uber's activities, as well as to file lawsuits to have these activities declared illegal because Uber does not meet the regulatory requirements applying to the taxi industry.[15] UberPOP was thus prohibited in several Member States,[16] obliging Uber to phase out the service and, whenever allowed by local regulations, offer its UberX service instead.[17] In many cities, these limited opportunities for growth as professionally licensed drivers are often in short supply. This not only deprived non-professionally licensed drivers from earning opportunities, but also riders from the innovative and inexpensive service they sought and enjoyed, as well as cities and communities from new mobility solutions.

This does not mean that Uber and other intermediation services will permanently face a regulatory standstill. History teaches that while incumbents may be initially successful at delaying new technologies and business models, there generally comes a point in time where legal and regulatory hurdles get cleared. For instance, while generic drugs were met with a great deal of resistance from originator drug companies,[18] efforts by pharmaceutical companies to block their market entry have been largely defeated and now many originator companies have developed their own generic brands.[19] Similarly, statutory monopolists in areas such as air transport, energy and telecommunications services fiercely resisted the liberalization of their industry by the EU in the 1980s and 1990s,[20] but these services are now entirely liberalized to the benefit of consumers and society as a whole.[21] In other words, while incumbents may build a dam around their industry, it does not usually take long before cracks start to appear under the combined pressure of innovative companies and consumers seeking to enjoy better and cheaper services. There is no reason to believe that the current backward-looking frame of reference still pursued by regulatory authorities should not evolve in the future to accommodate Uber and other providers of online intermediation services.

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13 Chassany, "Uber: A route out of the French banlieues," *Financial Times*, March 3, 2016, available at: https://www.ft.com/content/bf3d0444-e129-11e5-9217-6ae3733a2cd1 ("In French suburbs such as Bobigny, however, the rise of Uber and other French minicab services represents something else: a foothold in the job market for thousands of undereducated youngsters of immigrant descent.").

14 See, e.g. Rogers, "Lured by income and flexibility, retirees becoming Uber drivers," *CNBC*, June 17, 2015, available at: www.cnbc.com/2015/06/17/lured-by-income-and-flexibility-retirees-becoming-uber-drivers.html.

15 Chassany, "Protection of privilege is driving France's taxi wars," *Financial Times*, December 29, 2015, available at: https://www.ft.com/content/c5e367b2-a96f-11e5-955c-1e1d6de94879.

16 See, e.g. Davies "Uber suffers legal seatback in France and Germany," *The Guardian*, June 9, 2016, available at: https://www.theguardian.com/technology/2016/jun/09/uber-suffers-legal-setbacks-in-france-and-germany; Drozdiak, "Uber's Low-Cost Service UberPop Banned in Brussels," *Wall Street Journal*, September 24, 2015, available at: https://www.wsj.com/articles/ubers-low-cost-service-uberpop-banned-in-brussels-1443106617.

17 Bartunek, "Uber to suspend unlicensed UberPOP service in Brussels," *Reuters*, October 13, 2015, available at: www.reuters.com/article/us-uber-tech-belgium-idUSKCN0S71VQ20151013 (reporting that as UberPOP was now banned, the company would "now concentrate on building up its more expensive UberX service, which uses professionally licensed drivers."); Cook, "Uber is suspending one of its services in France after taxi drivers rioted in the streets," *Business Insider*, July 3, 2015, available at: uk.businessinsider.com/uber-suspends-uber-pop-in-france-2015-7?r=US&IR=T (reporting that given the illegality of UberPOP in France the company would "transfer drivers of its uberPOP service to UberX, a more expensive service that will continue to operate.").

18 See, e.g. Rappeport, "Pfizer tactics to combat generic drugmakers," *Financial Times*, December 5, 2011, available at: https://www.ft.com/content/7219cb50-1d3f-11e1-a134-00144feabdc0.

19 Baigorri et al, "Novartis Said to Hold Talks to Buy Generics Maker Amneal," *Bloomberg*, November 13, 2016, available at https://www.bloomberg.com/news/articles/2016-11-13/novartis-said-to-hold-talks-to-buy-u-s-generics-maker-amneal.

20 State monopolies lobbied their governments and the European Commission to delay liberalization directives because such directives would allegedly harm the viability of their operations and would lead to significant job losses. See, generally, on the liberalization process Geradin, *The Liberalization of State Monopolies in European Union and Beyond*, Kluwer Law International, 1999.

21 There is significant evidence, for instance, that the liberalization of air transport services in the EU has considerably increased the offering for flights and has significantly decreased prices. The arrival of low-cost companies has also increased demand and stimulated regional airports.

In this respect, there are signs that the regulatory regimes Member States are trying to impose on Uber may soon be evolving. First, the CJEU has an opportunity to clarify the legal nature of Uber services and, in the process, to clear the path for sounder regulatory regimes. In *Asociación Profesional Élite Taxi v. Uber Systems Spain, S.L.*,[22] the CJEU is asked to clarify whether UberPOP is a "transport service" or an "information society service," which can benefit from the free movement provisions included in the TFEU, particularly Article 49 (free establishment) and 56 (free movement of services), but also from the guarantees offered in the so-called "Services Directive"[23] and "E-Commerce Directive."[24] As I have argued elsewhere,[25] there is every reason to believe that UberPOP should not be labelled a "transport service" as Uber can best be described as an online market-making or intermediation platform that connect "producers" (in this case drivers) with "consumers" (riders) and facilitate their interactions and exchanges. In other words, Uber does not create value by performing transport services (it does not own any cars and employ any drivers), but by enabling interactions between two categories of distinct users of its platform. Should the CJEU decide that UberPOP is an information service, this would clear many of the regulatory obstacles created in the Member States without however, as I will discuss below, preventing Member States from adopting non-discriminatory and proportionate regulatory regimes designed to protect the public interest.

Second, some EU Member States have not been waiting the outcome of the *Asociación Profesional Élite Taxi v. Uber Systems Spain, S.L.* to develop forward-looking regulatory regimes offering Uber a framework under which it can legally operate its services. For instance, Estonia adopted a new Public Transport Act ("PTA") in February 2015, which comprises a regulatory regime applying to occasional service providers, such as the drivers that typically operate under the UberPOP banner.[26] The PTA defines "occasional services" as "the carriage by road, except for regular services and taxi services, and the main characteristic of which is the carriage of groups of passengers constituted on the initiative of the customer or the carrier."[27] Providers of occasional services are subject to a mandatory license comprising requirements, such as obligations to register as commercial or non-commercial entity, to show the absence of criminal convictions, the need to appoint a transport manager, etc.[28] Moreover, in September 2016, Lithuania amended its Road Transport code to allow Uber and other competing platforms to operate their services, while ensuring that the public interest would be met.[29] For instance, pursuant to these amendments, drivers must declare their intention to provide services through these platforms to their municipality, their cars must be inspected and they must declare their income to the State Tax Inspectorate.[30] The Road Transport Code does not, however, subject Uber and other platforms to an authorization or licensing regime.

While such developments are encouraging, it remains a fact that misconceptions about Uber's activities continue to contribute to regulatory inertia in most Member States, and are used by taxi companies and associations to gain political support for the status quo. In the next section, I seek to clear up some of these misconceptions by providing facts-based evidence of the real nature and impact of Uber and other online intermediation services providers.

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22 Case C-434/15, supra note 8.

23 Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market, O.J. 2006, L 376/36.

24 Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce in the Internal Market, O.J. 2000, L 178/1.

25 See Geradin, "Online Intermediation Platforms and Free Trade Principles – Some Reflections on the Uber Preliminary Ruling Case," in *Internet - Competition and Regulation of Online Platforms*, Ortiz, Ed., *Competition Policy International*, 2016, at p. 119.

26 See: https://www.riigiteataja.ee/en/compare_original?id=505022016010.

27 Id. at § 5.

28 Id. at §§ 41 et seq.

29 Republic of Lithuania, Road Transport Code, Amendments to Articles 7 and 18, September 27, 2016, available at: https://www.e-tar.lt/portal/legalAct.html?documentId=32caf3508c8111e6b969d7ae07280e89.

30 Id.

III. CLEARING UP MISCONCEPTIONS: FOR A FACTS-BASED ANALYSIS OF UBER'S ACTIVITIES

Since its arrival in Europe, Uber has received considerable media attention. While quality newspapers and magazines tend to provide a fair account of Uber's activities, in many other instances these activities are mischaracterized. In this section, I seek to address some of the main misconceptions that contribute to impeding a meaningful discussion as to the ways in which Uber's services should be regulated.

A. Myth No 1: Uber is Another Form of Taxi Service

For the reasons already mentioned above, Uber is not a taxi company. It does not own cars and does not employ drivers. Uber is a software company, which is essentially staffed by software engineers.[31] The bulk of its expenditures are linked to the maintenance and the development of its software platforms, as well as to the promotion of its intermediation services to both drivers and riders. Unlike in a taxi business, both riders *and* drivers are Uber's customers. As a matter of fact, Uber generates revenues by charging a service fee to the driver on each ride that is intermediated via its platform.

Uber is analogous to the dispatch services that have for a long time existed in the taxi industry where some companies not only provide taxi services, but also dispatch rides to independent taxis against the payment of a fee. The key differences between traditional dispatch centers and Uber's intermediation services relate to the technology at stake and the fact that Uber does not allocate trips to drivers (as usually done by taxi dispatchers), but rather offers riders' booking requests to nearby available drivers that can then accept or reject them. Uber does not rely on telephone operators, but on a software platform that connects riders and drivers more efficiently as it can collect information from the drivers and the riders' smartphones instantaneously. Software platforms like Uber thus offer major improvements in the dispatch task, including increased speed and accuracy. As will be seen below, Uber's software platform also allows the development of new innovative services, such as UberPOOL (allowing a rider to share part or all of her ride with one or more other riders headed in the same direction and thus benefit from reduced cost for her own trip),[32] which would not be possible to develop by traditional dispatch centers.

It is also important to note that Uber's intermediation platform is by no means unique. Nothing prevents taxi companies from developing their own platform or using one of the third-party platforms that is available on the market,[33] and many taxi companies are now using their own apps. Moreover, nothing prevents drivers and riders from using more than one platform, and many engage in so-called "multi-homing."[34]

B. Myth No 2: Uber Hurts Taxi Companies because it Takes Business Away from Them

While the drivers using the Uber platform compete with taxi drivers for riders (and thus inevitably take some business away from them), it would be a mistake to think that this competition is a "zero-sum" game where each rider using Uber's platform would be taken away from the taxi companies. There is evidence that wherever it is present, Uber and other platforms enlarge the market to

31 See Carson, "You know Travis Kalanick. Meet the 23 other power players of Uber," *Business Insider*, January 29, 2016, available at: uk.businessinsider.com/the-power-players-of-uber-2016-1?r=US&IR=T/#ryan-graves-was-the-companys-first-employee-and-first-ceo-1 (In January 2016, Uber was reported to have 1,200 software engineers).

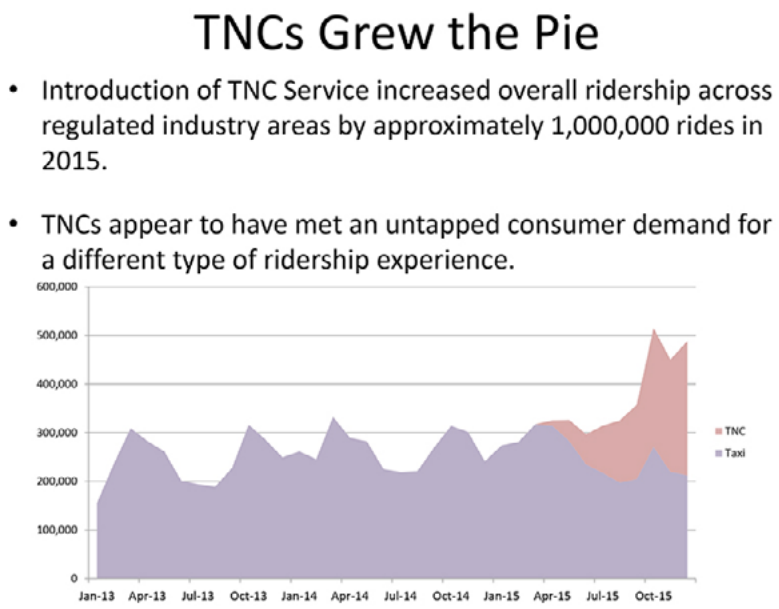
32 See: https://help.uber.com/h/5d3fa7d0-9831-4ead-b4f4-0299eb443ea2.

33 For instance, in Brussels, "Taxi Verts," one of the largest taxi companies, is now using "eCab" to dispatch cars to riders. See: http://www.taxisverts.be/en/taxi-brussels-app-iphone-smartphone-android/. The same application is used by G7, the largest taxi company in France, https://www.e-cab.com/fr/. This app is also used in Germany, the Netherlands and Canada.

34 On multi-homing, see Evans & Schmalensee, "The Antitrust Analysis of Multi-Sided Platform Businesses," (Coase-Sandor Inst. L. & Econ., Working Paper No. 623, 2013) ("An economic agent single-homes if she uses only one platform in a particular industry and multi-homes if she uses several. In the cases of payments, consumers and merchants both generally use several payment platforms and therefore multi-home in this sense.").

a considerable extent.[35] For instance, an analysis of Taxicab and TNC ("Transportation Network Companies," such as Uber and Lyft) Ridership Data 2013 – 2015 carried out by the City of New Orleans' taxicab regulator (see Figure 1) reveals that the introduction TNC service in New Orleans grew the market considerably in 2015.[36]

Figure 1: New Orleans and Taxicab & For Hire Bureau Data Ride Analysis



Similarly, a study conducted by Deloitte Access Economics found that 61 percent of UberX rides are new in the point-to-point transport market, due to either UberX's differentiated service offering (36 percent) or price point (25 percent).[37] It also found that in the city of Los Angeles, Uber's market entry more than doubled the size of the market. While the overall size of the point-to-point transport market at the beginning of 2012 – when UberX entered the market – was approximately U.S. $46 million per quarter, at the end of 2014, total revenue in the market exceeded U.S. $100 million per quarter (see Figure 2).[38]

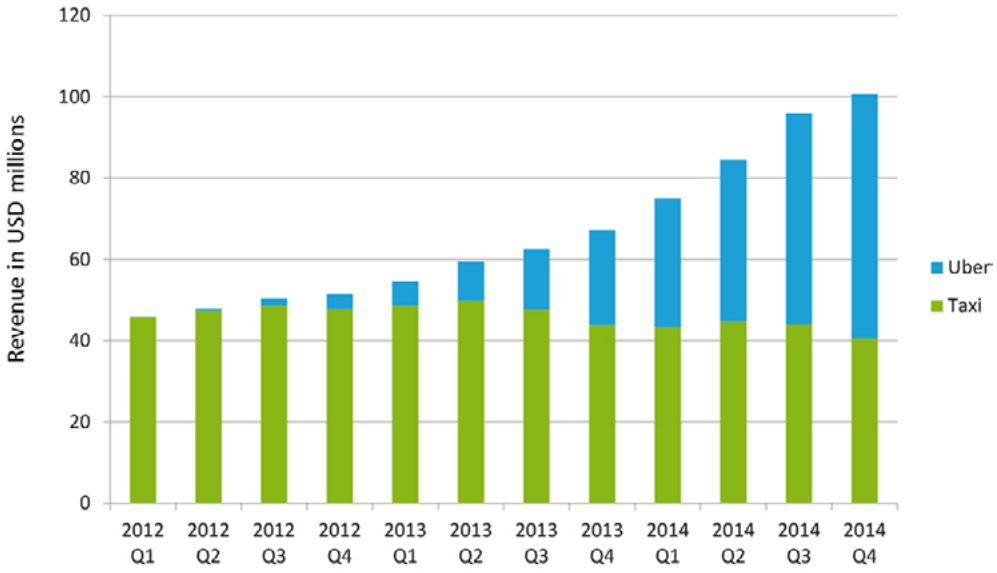
35 Schmidt, "From scarcity to abundance: growing the overall pie," *Uber Under the Hood*, January 12, 2016, available at: https://medium.com/uber-under-the-hood/from-scarcity-to-abundance-growing-the-overall-pie-by-sophie-schmidt-a2e5a24bbc71#.1mhfwcrsc ("What's interesting is that rather than simply displacing taxi, apps like Uber appear to be growing the overall transportation pie. It's not a zero-sum game. This is most likely because ridesharing has attracted a whole new group of passengers, people who rarely used taxis and drove themselves instead. In Los Angeles, for example, the for-hire vehicle market (which includes taxis, private cars and ridesharing) grew by nearly 400 percent in Uber's first three years. Of course LA is well known for its basic public transit and limited number of taxis (which are restricted to certain zones), so it may be something of a special case. But according to Portland's own regulator, the total number of taxi and ridesharing trips in the city grew by more than 40 percent in the first three months after Uber and Lyft's arrival."); Gaskell, "Study Explores The Impact Of Uber On The Taxi Industry," *Forbes*, January 26, 2017, available at: https://www.forbes.com/sites/adigaskell/2017/01/26/study-explores-the-impact-of-uber-on-the-taxi-industry/#10fa46c16b0f ("In much of the discourse around this issue, the suggestion seems to be that the market is of a fixed size, and therefore Uber drivers are taking income from licensed drivers. I suspect however, that the reality is that Uber et al have significantly increased the size of the market, especially in off-peak times where dissatisfaction with licensed drivers is at its peak.").

36 See Operational Updates on the Taxicab and For-Hire Vehicles Bureau & Analysis of Taxicab and TNC Ridership Data 2013 – 2015, available at: http://nola.gov/nola/media/One-Stop-Shop/Taxi/Taxi-Bureau-Update-to-Council-Transportation-Committee-(Feb-22,-2016).pdf?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term.

37 Deloitte Access Economics, "Economic effects of ridesharing in Australia, Uber", 2016, available at: https://www2.deloitte.com/pg/en/pages/economics/articles/economic-effects-ridesharing-australia-uber.html, at 4.

38 Id. at 58.

Figure 2: Total revenue in point-to-point transport market in Los Angeles



There are several reasons explaining why Uber and other platforms grow the market.

First, because rides intermediated by Uber, in particular with regards to its UberPOP product, are generally cheaper than those provided by taxis,[39] people who would not normally use taxi services for financial reasons (students, low-income families, etc.) may order rides through Uber's platform. Similarly, because of the cheaper rates (except possibly during "surge pricing" episodes, see below), people using their car in city centers may also decide to switch to Uber or other competing platforms.[40]

Second, because of the set number of licensed taxis, there may be periods of the day or circumstances where demand for rides exceeds the supply offered by taxis (e.g. Friday and Saturday evenings, large popular events (football games, concerts, etc.), rainy days, etc.). Uber has sought to address this problem not only by adding supply to the market, but also through its dynamic pricing model (often referred to as "surge pricing"), which adjusts prices as circumstances warrant.[41] In times of high-demand for rides on Uber's platform, higher prices motivate drivers to postpone to join the platform, while simultaneously motivating riders to defer low-value trips.[42]

39 Hamilton, "Road-testing the taxis: Uber was cheaper and quicker than a black cab," *The Independent*, June 10, 2014, available at: www.independent.co.uk/voices/road-testing-the-taxis-uber-was-cheaper-and-quicker-than-a-black-cab-9524060.html; Global Editorial, "In the Uber-vs-taxi battle, less regulation is the way to go," *The Globe and Mail*, November 29, 2015, available at: www.theglobeandmail.com/opinion/editorials/in-the-uber-vs-taxi-battle-less-regulation-is-the-way-to-go/article27516180/ (reporting that "[a]ccording to a new report by the City of Ottawa, Uber prices are 36 per cent cheaper than the average taxi fare, and the average wait time for passengers is under four minutes, compared to between five and 15 for a regular cab.").

40 Krug, "Ditching my car for Uber saves me over 6 days and $11,000 a year," February 9, 2015, *Business Insider*, available at: uk.businessinsider.com/how-using-uber-and-lyft-saves-me-money-2015-2?r=US&IR=T.

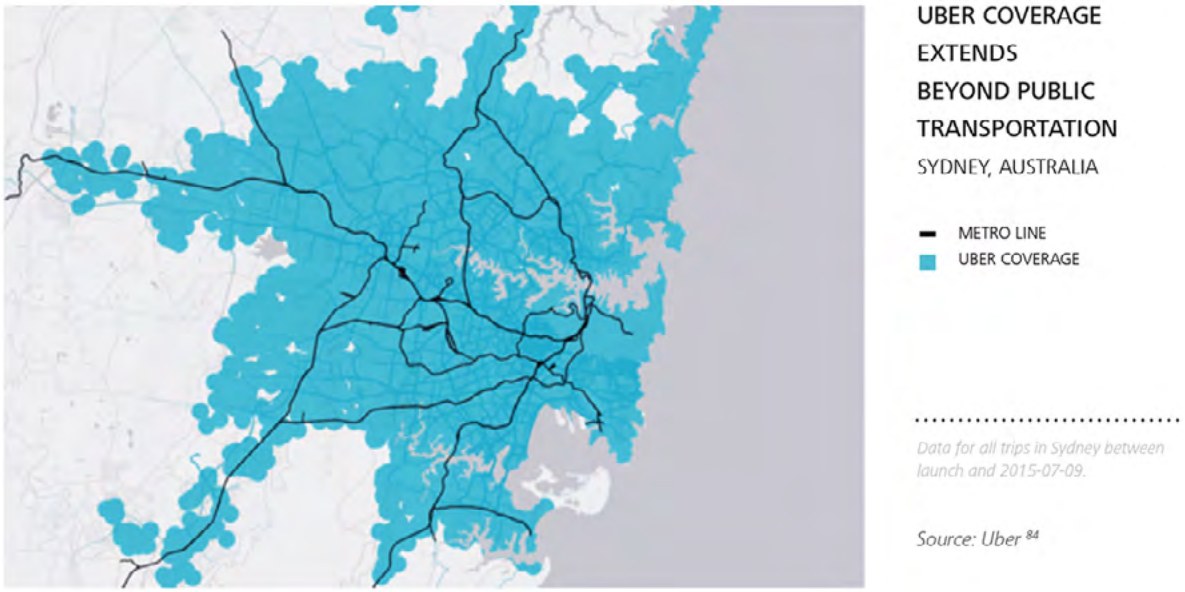
41 UBER, "What is Surge Pricing?," available at: https://help.uber.com/h/6c8065cf-5535-4a8b-9940-d292ffdce119; see also Hall et al., "The Effects of Uber's Surge Pricing: A Case Study," September 2015, (unpublished manuscript), available at: http://faculty.chicagobooth.edu/chris.nosko/research/effects_of_uber's_surge_pricing.pdf.

42 Einav et al., "Peer-to-Peer Markets," (Nat'l Bureau of Econ. Research, Working Paper No. 21496, 2015), http://www.nber.org/papers/w21496; Weinner "Is Uber's surge pricing fair?," *The Washington Post*, December 22, 2014, https://www.washingtonpost.com/blogs/she-the-people/wp/2014/12/22/is-ubers-surge-pricing-fair/?utm_term=.fbb7ac6e0931 ("When Uber engages in surge pricing, it's simply a response to an imbalance between supply and demand. As Uber explains, when demand suddenly increases, Uber raises the prices for a ride as a way to get more drivers, i.e. supply, on the road. No need for anyone to figure out what price will work because if prices are too high, demand will fall, whereas if prices are too low then supply will fall. At some point, the invisible hand of the market gets the prices just right so that there are enough Uber drivers to take riders where they want to go.").

Third, some cities have also been chronically undersupplied for many years due to the insufficient number of licenses with the result that such licenses are traded for very large sums of money.[43] For instance, in 1937, the city of Paris decided to cap the number of taxi licenses at 14,000. In 2017, despite the considerable growth of the city's population and wealth, the number of cabs had only increased by 29 percent, to 17,770.[44] Similarly, in New York City, the number of taxi licenses (so-called "medallions") was set at 16,900 in 1937.[45] The number dwindled to 11,787 following the Great Depression and stayed at the same level until the mid-1990s,[46] where it grew to 13,437 as of 2014.[47]

Fourth, data shows that drivers using Uber's platforms tend to better cover areas that are traditionally underserved by taxis and other modes of transportation, which tend to concentrate on urban centers.[48] For instance, based on Uber data,[49] the above mentioned Deloitte Access Economics study found that, in the Sydney area, "64 per cent of Uber rides start in 'transport deserts' located 800 metres or more from medium frequency public transport."[50] (See Figure 3) In addition, a recent independent study showed that, as measured by wait times, neighborhoods with lower average income experienced better service from UberX.[51]

Figure 3: Transport deserts in Sydney



43 See Horwitz & Cumming, "Taken for a Ride," *Slate*, June 6, 2012, available at: www.slate.com/articles/business/moneybox/2012/06/taxi_medallions_how_new_york_s_terrible_taxi_system_makes_fares_higher_and_drivers_poorer_.html.

44 See the data provided by the police, which is available at: https://www.prefecturedepolice.interieur.gouv.fr/Demarches/Professionnel/Transports/Taxis-parisiens.

45 See Van Gelder, "Medallion Limits Stem From the 30's," *New York Times*, May 11, 1996, http://www.nytimes.com/1996/05/11/nyregion/medallion-limits-stem-from-the-30-s.html.

46 Id.

47 See "2014 TaxiCab Fact Book," New York Taxi & Limousine Commission (2014), http://www.nyc.gov/html/tlc/downloads/pdf/2014_taxicab_fact_book.pdf.

48 McArdle, "Uber Serves the Poor by Going Where Taxis Don't," *Bloomberg*, July 20, 2015, available at: https://www.bloomberg.com/view/articles/2015-07-20/uber-serves-the-poor-by-going-where-taxis-don-t ("Uber provides the biggest benefit to people who live in lower-income neighborhoods, not in rich ones. That's where dispatch is often unreliable, where street hails are rare, and where many residents don't have a car. A new study suggests that in low-income areas, this benefit of Uber is potentially very large.").

49 Uber, "Connecting Sydney's Villages," May 28, 2015, available at: http://newsroom.uber.com/sydney/2015/05/connecting-sydneys-villages/.

50 Deloitte Access Economics, supra note 37, at 48.

51 Langston, "Uber service faster in low income Seattle neighborhoods, initial study finds," *Phys.Org*, October 25, 2016, available at: https://phys.org/news/2016-10-uber-faster-income-seattle-neighborhoods.html.

Fifth, Uber-mediated services offer several advantages compared to taxi services, such as the fact that they do not require cash payments, safety is enhanced by the fact that the identity of the driver is known and that the rides are traceable electronically. Leaving aside price differences, these features have encouraged people who would not normally use taxi services to request rides via Uber.

Finally, thanks to its platform, Uber provides services that simply were not provided by taxis, such as UberPOOL, a service whereby an Uber rider can share part or all her ride with one or more other riders headed in the same direction and thus benefit from reduced cost for of her own trip.[52] This further enlarges the market by making the service more affordable.[53]

As these factors show, while drivers using the Uber app and taxi companies may compete for the same riders, this is by no means a zero-sum game as the number of riders is not static. In fact, the more promising area of growth for Uber and other companies offering intermediation services is not to take away riders from taxis, but to convince people to no longer use their cars and opt instead for ride-sharing options.[54]

It is also important to note that while they grow the market to the benefit of users, Uber and other intermediation platforms also contribute to a variety of policy objectives, such as increasing road safety, reduce pollution and traffic congestion. For instance, a recent study has shown that the entry of Uber in an area reduces congestion. The factors contributing to that outcome include the facts that: Uber can decrease the number of cars on the road by having more than one person in the car; it can reduce car ownership; ride-hailing services can lead people to drive less in general and use alternatives such as buses, bicycles and walking; Uber's surge-pricing strategy, which increases prices during periods of high demand, has the potential to delay or divert peak-hour demands because riders may wait to travel or use public transit instead; and Uber drivers are less likely than taxi drivers to spend time wandering streets to find passengers.[55] Another independent study has shown that Uber reduces the rate of alcohol related motor vehicle homicides.[56] Thus, Uber and other online intermediation platforms contribute to achieving a variety of public interest objectives.

C. Myth No 3: Uber Destroys Good Jobs and Replaces Them by Precarious Ones

One of the claims that is regularly made by Uber critics is that Uber would destroy good (employee) jobs for precarious (self-employed) ones.[57] Such claims are unfounded for at least two reasons. First, data does not suggest that Uber eliminates taxi jobs. For instance, an independent study examining the impact of Uber's expansion on workers in point-to-point transportation services across U.S. cities over the period 2009 to 2015 found that "the labour supply of traditional taxi drivers increased in cities where Uber was

52 See supra note 32.

53 In the UK, UberPOOL has been met with success. See Rodioinova, "UberPOOL gets more than 1 million customers," *The Independent*, May 2016, available at: http://www.independent.co.uk/news/business/news/uberpool-gets-more-than-1-million-customers-a7068841.html ("More than 1 million Londoners have opted to share their Uber journey with the company's uberPOOL service since it launched last December. The service, which operates in central London as well as Heathrow Airport, enables passengers to save money by turning the usual Uber into a minibus service by matching people heading in the same direction. It also ensures drivers earn more than if they were to carry just one passenger through longer journeys and by increasing the number of people travelling in the car. Uber claims the growth of these shared trips has helped to reduce air pollution in London. Globally, 20 per cent of Uber journeys are now done via UberPOOL, the company said in May. This means that if the company is sacrificing margin on individual journeys – uberPOOL fares 25 per cent cheaper than the typical Uber journey – it is potentially growing the overall number of rides, giving it a larger economy of scale.").

54 See Krugel, "Uber doesn't consider taxi industry its main competition," *Calgary Herald*, April 4, 2016, available at: calgaryherald.com/business/local-business/uber-legal-director-says-taxi-industry-not-ride-sharing-apps-main-competition (quoting Uber Canada's Legal Director for whom "taxis aren't Uber's main competition — private car ownership is.").

55 Li et al., "Do Ride-Sharing Services Affect Traffic Congestion? An Empirical Study of Uber Entry," September 14, 2016, available at https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2838043.

56 Greenwood & Wattal, "Show Me the Way to Go Home: An Empirical Investigation of Ride Sharing and Alcohol Related Motor Vehicle Homicide," *Fox School of Business Research Paper No. 15-054*, January 31, 2015, available at: https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2557612.

57 See "Uber: risk without autonomy or control," *The iLabour Project Investigating the Construction of Labour Markets, Institutions and Movements on the Internet*, November 1, 2016, available at: ilabour.oii.ox.ac.uk/2077-2/.

introduced relative to cities where it was not."[58] Second, while it is true that Uber relies on partner-drivers operating independently, this is hardly a distinguishing feature compared to the taxi industry. Except for a few countries, the clear majority of taxi drivers in EU Member States are independent workers. For instance, it has been reported that 84 percent of taxi drivers in Belgium are self-employed,[59] while the number of self-employed taxi drivers in France reaches 97 percent.[60] Thus, besides the fact that Uber does not necessarily take away business from taxi companies (as it grows the market), it does not turn employees into self-employed workers. In this respect, given the flexibility of Uber's platform, nothing in the Uber business model prevents self-employed drivers to work at the same time as taxi drivers and Uber drivers.

As to those who believe that drivers using the Uber platform are false independent contractors,[61] they misunderstand the relationship between Uber and these drivers. First, while Uber seeks to match requests from riders with drivers in an efficient manner, drivers are free to accept these requests or not. Moreover, drivers using the Uber platform drive whenever they want for as long (or little) as they want, and may even decide not to drive at all for a time (e.g. if they find better opportunities).[62] Finally, nothing prevents drivers from "multi-homing," and thus drive using both the Uber app and any of its competitors' apps.[63]

One possible difference between taxi drivers and drivers using the Uber platform is that drivers using this platform can drive on a part-time basis only (this is particularly true for unlicensed drivers in countries where UberPOP is allowed).[64] But part-time work is frequent in many industries (e.g. catering industry, entertainment industry, etc.) and given the important fluctuation of demand for rides during the day, part-time work seems particularly well suited to market needs. In addition, in most if not all EU Member States, part-time work is regularly used by students and low-income workers to complement their revenues. In this respect, generating revenue opportunities for these categories should be a virtue rather than a vice of Uber's intermediation services.

D. Myth No 4: Uber Needs to be Regulated like Taxi Companies to prevent "Unfair Competition"

One of the claims that is often made by taxi companies and associations is that taxi regulations should be extended to Uber to prevent "unfair competition."[65] Claims of unfairness or discrimination are often made when competing businesses are subject to different regulatory requirements or when one category of businesses completely escapes regulation. While it seems fair that businesses offering similar services should be subject to similar rules, the relevant questions here are (i) whether Uber and taxi companies offer similar services and, if not, (ii) whether the regulatory requirements applying to taxis should be extended to Uber.

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58 Berger et al., "Drivers of Disruption? Estimating the Uber Effect," January 23, 2017, available at: www.oxfordmartin.ox.ac.uk/downloads/academic/Uber_Drivers_of_Disruption.pdf.

59 See blog post by Bart Tommelein Vice-Minister-President of the Flemish Government, Flemish Minister for the Budget, Finance and Energy referring to a study of the Belgian Social Security, available at: http://www.tommelein.com/uber-chauffeurs-zijn-zelfstandigen/.

60 Rabreau, « Les vrais salaires des chauffeurs de taxis, » *Le Figaro*, June 15, 2016, available at: www.lefigaro.fr/economie/le-scan-eco/dessous-chiffres/2016/02/02/29006-20160202ARTFIG00010-les-vrais-salaires-des-chauffeurs-de-taxis.php.

61 Fox, "Uber and the Not-Quite-Independent Contractor," *Bloomberg*, June 23, 2015, available at: https://www.bloomberg.com/view/articles/2015-06-23/uber-drivers-are-neither-employees-nor-contractors.

62 Johnson, "How to Make Money Driving for Uber," *The Simple Dollar*, January 18, 2017, available at: www.thesimpledollar.com/how-to-make-money-driving-for-uber/ ("Obviously you won't make any money when you're not working, but the fact that you can opt in and out as your schedule permits makes driving for Uber a unique gig. And if you want to earn more, you have that choice. With Uber, you decide when you are available and ready for business.").

63 See Choudary, "Uber vs. Lyft: How Platforms Compete on Interaction failure," November 5, 2015, available at: https://medium.com/platform-thinking/uber-vs-lyft-how-platforms-compete-on-interaction-failure-30f59fdca137#.rttsmz8t2 ("[M]ultihoming costs for drivers to co-exist on Uber and Lyft are relatively low. Many drivers participate on both platforms. Given the ease of booking rides, multi-homing costs are very low for travelers/riders on these platforms as well.").

64 Lawler, "Uber Study Shows Its Drivers Make More Per Hour And Work Fewer Hours Than Taxi Drivers," *Tech Crunch*, January 22, 2015, available at: https://techcrunch.com/2015/01/22/uber-study/ ("Unlike cab drivers, most Uber partners don't see the platform as a full-time job. Across its 20 largest markets, 80 percent of its partners drove fewer than 35 hours a week, and more than half were working between one and 15 hours each week. That compares to more than 80 percent of cab drivers who logged 35 hours or more based on U.S. Census Data.").

65 See supra note 4.

As to the first question, we have seen in Section A that Uber does not offer services that are similar or even comparable to taxi companies. While Uber is a software company offering intermediation services, taxi companies are in the business of *physically* transporting people from point A to point B. Thus, on top of matching a rider with a driver, they deliver a transportation service, which is not the case of Uber.

As to the second question, the regulations that apply to taxis were developed at a time when the technology used for online intermediation services did not exist (and was not even dreamed about) and when such services could thus not even have been contemplated.[66] In addition, the application of taxi regulations to Uber would eliminate most of the key efficiencies brought about by its intermediation platform.[67] For instance, the strict limitation on the number of licenses that applies in many European cities is fundamentally at odds with Uber's objective of balancing supply with demand. As we have seen, this licensing system has the effect of creating an imbalance between supply and demand at certain times of the day or in certain circumstances. Uber's platform solves that problem by adding supply when demand is high, and by more efficiently matching drivers with riders than a telephone dispatch system would be able to do. Moreover, the regulation of taxi rates is fundamentally at odds with the dynamic pricing system used by Uber. Because regulated taxi rates are set in a rigid manner, there are frequent imbalances between supply and demand. As we have seen, Uber has solved this problem by increasing the price of rides (surge pricing) when demand exceeds supply, hence increasing the number of drivers while decreasing the number of riders. The efficiency created by dynamic pricing would be eliminated if rate regulations were applied to Uber or to drivers using the Uber app.

In this respect, it is even questionable whether current taxi regulations should still be applied to taxis. Even in the absence of Uber and other intermediation platforms, it is far from obvious that these rules serve consumers well. One of the reasons why Uber met commercial success when arriving in Europe is that many taxi users were dissatisfied with the cost of taxi services, the quality of these services and some of the practices frequently observed in the industry (e.g. inability to pay by debit or credit cards as vehicles do not have the necessary equipment or this equipment is not functioning properly, etc.).[68] Instead of using the arrival of Uber as an opportunity for asking regulators to revisit taxi rules, it seems that most taxi companies and associations have used them as a shield against competition.[69]

This is not to suggest that Uber services should be left totally unregulated, but that the regulatory framework that applies to these services should be tailored to simultaneously: (i) allow Uber to compete and deliver the efficiencies generated by its platforms, and (ii) assure that public interest is guaranteed.[70] I address this issue in Section IV below.

66 For a discussion of the history of taxi regulation, see Geradin, "Should Uber be Allowed to Compete in Europe? And if so How?," *Competition Policy International*, June 2015.

67 International Transport Forum, "App-Based Ride and Taxi Services, Principles for Regulation," *Corporate Partnership Board Report*, 2016, available at: http://www.itf-oecd.org/sites/default/files/docs/app-ride-taxi-regulation.pdf, at 7. ("Currently, regulatory oversight of taxis and CTAs is in many cases tilted towards incumbent service providers, often because of the specificity of taxi operations, notably street hailing, but in some instances also as a result of market capture by existing service providers. Rules governing market entry, geographic restrictions and fare setting for taxis are neither in line with the reality of mobility demand in many cities, nor are they adapted to the types of services provided by CTAs.").

68 Wallsten, "The Competitive Effects of the Sharing Economy: How is Uber Changing Taxis?," Technology Policy Institute, Studying the Global Information Economy, June 2015, available at: https://www.ftc.gov/system/files/documents/public_comments/2015/06/01912-96334.pdf , at 19 ("In particular, in Chicago the data suggest that complaints about things a driver might do to affect quality—use of air conditioning, 'broken' credit card machines, rudeness, and talking on cell phones—all seem to have decreased along with Uber's rise. Sometimes credit card machines are "broken" (i.e., the driver refuses to use it) and sometimes they are really broken.") Interestingly, competition from Uber made taxi associations support mandatory card payments, notably in the US. See "All London black cabs to take card payments from October," *The Guardian*, February 3, 2016, available at: https://www.theguardian.com/uk-news/2016/feb/03/all-london-black-cabs-to-take-card-payments-from-october ("Groups representing taxi drivers said the decision by TfL, which regulates public transport in the capital, would benefit both drivers and customers. The move by TfL's board followed a consultation in which 86% of respondents backed the move.").

69 Wilshire at al., "France, Uber in culture crash: Taxi drivers violently protest ride-share app," *Los Angeles Times*, June 26, 2015, available at: www.latimes.com/world/europe/la-fg-uber-france-taxi-html-20150625-htmlstory.html; See Global Editorial, supra note 39, ("If they thought it through, cabbies would abandon the current model and push for one that, as the Competition Bureau says, has the lightest possible regulatory touch, and whose regulations are the same for all drivers, old or new. Don't limit entry into the market and don't set fares; do require car inspections, police background checks and a reasonable level of insurance.").

70 See Edelman & Geradin, "Efficiencies and Regulatory Shortcuts: How Should we Regulate Companies like Airbnb and Uber," 19 (2016) *Stanford Technology Law Review* 293.

IV. REGULATING UBER AND OTHER INTERMEDIATION PLATFORMS WISELY: SOME PRELIMINARY THOUGHTS

How to develop a regulatory framework that would allow Uber to compete while ensuring public interest is a complex question that I intend to address in a subsequent paper. In this paper, I nevertheless share my preliminary views on two questions that are particularly important: (i) whether Uber should be labelled as a "transport service" to be properly regulated and (ii) what should be the core principles of regulation that should be applied to Uber and other intermediation platforms.

A. Should Uber be Labelled as a "Transport Service" to be Adequately Regulated?

This first question is at the core of the *Asociación Profesional Élite Taxi v. Uber Systems Spain, S.L.* case currently pending before the CJEU, where, as noted above, the CJEU is essentially asked to clarify whether UberPOP is a "transport service" or an "information society service" within the meaning of EU law. Whether UberPOP is a transport or an information society service is a legal question, which I have addressed at length in an earlier paper.[71] In my view, Uber and other online intermediation platforms should be regulated as information society services for the reasons evoked in Section II above.

One legitimate question is whether Member States would still be able to regulate Uber services should the CJEU decide that they are information society services or should such a finding mean that Uber services would have to be left entirely unregulated. There is no doubt that Member States would be able to regulate these services if they were recognized as information society services by the CJEU, but that the rules adopted by the Member States should not prevent Uber from enjoying its freedom to provide services across the internal market. That is the case for the following reasons.

First, if UberPOP were found to be an information society service, this would mean that its intermediation services would fall within the scope of the Services Directive (Directive 2006/123) and the E-Commerce Directive (Directive 2000/31), as well as under Article 49 and 56 TFEU. UberPOP could thus benefit from the freedom to provide services guarantees contained in these directives and in these TFEU provisions. For instance, Article 3(2) of the E-Commerce Directive contains the general principle that: "Member States may not, for reasons falling within the coordinated field, restrict the freedom to provide information society services from another Member State."

However, Article 3(4) of the same directive provides that Member States may nevertheless adopt measures derogating from the freedom to provide information society services if such measures are: (i) necessary for reasons of public policy, the protection of public health, public security, the protection of consumers; (ii) taken against a given information society service which prejudices the objectives referred to in point (i) or which presents a serious and grave risk of prejudice to those objectives; (iii) proportionate to those objectives.[72] Thus, nothing prevents Member States to regulate UberPOP or other Uber services provided they meet the conditions specified in Article 3(4).

In this respect, while license requirements restrict the freedom to provide intermediation services across Member States, there may also be circumstances where regulation may be needed to achieve legitimate public interest objectives, such as public security and protection of consumers.[73] It could, for instance, be argued that by connecting prospective passengers with unsafe drivers (or drivers using unsafe cars), Uber could harm its users (riders and/or drivers) and non-users (third-party passengers or pedestrians). Thus, for instance, a measure requiring Uber to comply with safety measures going beyond those it voluntarily performs may not in itself be a breach of Article 3(4) of E-Commerce Directive provided, of course, that the measure adopted is proportionate to the

71 See Geradin, supra note 25.

72 Similarly, Article 9(1) of the Services Directive provides that "Member States shall not make access to a service activity or the exercise thereof subject to an authorisation scheme unless the following conditions are satisfied: (a) the authorisation scheme does not discriminate against the provider in question; (b) the need for an authorisation scheme is justified by an overriding reason relating to the public interest; (c) the objective pursued cannot be attained by means of a less restrictive measure, in particular because an a posteriori inspection would take place too late to be genuinely effective."

73 See Edelman & Geradin, supra note 70.

objective sought. By contrast, imposing licensing requirements that have the object or effect of creating barriers to entry cannot be compatible with that provision.

In other words, UberPOP does not need to be considered as a "transport service" to be subject to regulation. Member States can regulate UberPOP and other intermediation services provided they do not unduly interfere with Uber's freedom to provide these services in the internal market.

B. What Should be the Core Principles of Regulation Applied to Uber and Other Intermediation Platforms?

As noted in the introduction, one of the key objectives of this paper is to encourage a facts-based approach to the regulation of Uber and other companies' intermediation services. A first step in that direction is to give a correct legal qualification to these services as "information society services" rather than "transport services," which they are not when the facts are properly considered. Such a legal qualification would allow Member States to regulate these services to ensure public interest, while protecting Uber and other online intermediation platforms from regulatory requirements that would unduly interfere with their freedom to provide their services.

The next step is to determine what regulatory framework is needed to allow Uber to compete and deliver the efficiencies generated by its platforms, while ensuring public interest. Once the efficiencies brought by the Uber platform (and thus the benefits that this platform can bring to consumers and society) are properly understood, the best way to lead the path to sound regulation is to determine the requirements that are needed to correct market failures.[74] Market failures arise in situations where the free operation of the market fails to achieve desirable outcomes. Safety may, for instance, be an issue for people requesting a ride through the Uber platform. Safety may have several dimensions, such as, whether the driver is safe (absence of criminal record), whether the car is safe (because it is well maintained, etc.). Riders may also be concerned about fraud (misuse of their credit card details), the protection of their privacy (as their ride will leave an electronic trace), etc. Finally, society may want to ensure that the services intermediated through platforms are accessible to disfavored groups, such as people with limited mobility. Thus, the question is whether regulatory intervention is needed to address these legitimate concerns or whether they will be sufficiently addressed by the platforms and/or its users without such an intervention. There is no easy response to that question, but for the fact that it should be answered in a facts-driven manner.

Another important issue is whether the regulatory requirements that may be needed to correct market failures should be imposed on the platform or on its users. While, for instance, background checks on drivers should arguably be conducted by the platforms, it is questionable whether the platforms are best placed to guarantee car safety considering that drivers relying on the Uber platforms use their own car to provide the service. Thus, it may be more effective to require drivers intending to use an intermediation platform to have their vehicles checked on a regular basis. The same can be said about regular health checks (e.g. to ensure that drivers have a good eyesight, do not have neurological diseases making driving dangerous,etc.).

An additional question is whether rules need to be specifically adopted for intermediation services when cross-sectoral regulation already exists. For instance, there may be no need to impose specific requirements on platforms designed to prevent credit-card fraud or protect the privacy of drivers and riders when general rules designed to ensure these objectives have already been adopted by the public authorities. For instance, Article 5 of the E-Commerce Directive provides that the Member States should adopt measures designed to ensure that service providers make accessible a series of information to the recipients of the service and the competent authorities. Overlapping regulatory requirements may bring no additional value, while making entry more difficult and costly.

Besides the fact that regulatory requirements must pursue legitimate public interest objectives and must be non-discriminatory and proportionate as requested by the Services and E-Commerce Directives, and that they should be based on facts, they should be technology neutral, and highly adaptable to changes in circumstances. While intermediation platforms are based on innovative technologies, there is no doubt that these technologies will continue to evolve. Radical shifts, such as the use of self-driving cars,[75] are just around the corner. Hence, the regulatory frameworks adopted must be sufficiently flexible to adapt to technological innovation.

74 On the notion of market failure, see Ledyard, *Market Failure*, *in* 5 *The New Palgrave Dictionary of Economics* 300 (2d ed. 2008).

75 See San Francisco, your Self-Driving Uber is arriving now, available at: https://newsroom.uber.com/san-francisco-your-self-driving-uber-is-arriving-now/ (announcing that, starting on December 14, 2016 "riders who request an UberX in San Francisco will be matched with a Self-Driving Uber if one is available.").

V. CONCLUSION

The arrival of Uber and other intermediation platforms in Europe has been a subject of controversy. While even Uber's fiercest critics recognize that its online intermediation platform may be a source of efficiencies, many still cry foul because Uber would engage in "unfair competition" as it would fail to comply with taxi regulations. In this paper, I suggest that the question of whether Uber should be regulated and, if so how, should be addressed based on facts rather than rumors or perceptions. In addition, regulatory requirements should be limited to address legitimate public interest objectives, be non-discriminatory and proportionate, be imposed on the market actor that is best able to achieve these objectives, be technology-neutral and highly adaptable to ever changing circumstances.

BUYER POWER IN THE BIG DATA AND ALGORITHM DRIVEN WORLD: THE UBER & LYFT EXAMPLE

BY IGNACIO HERRERA ANCHUSTEGUI [1]
& JULIAN NOWAG [2]

I. INTRODUCTION

In these times of big data and algorithms,[3] well-established antitrust paradigms are continually being challenged and might need to be adjusted. The focus of the literature and case law so far has been on issues surrounding collusion[4] or access to big data in the online word.[5] However, a recent class action against Uber[6] was brought under unfair competition and privacy law rather than under the antitrust rules,[7] and centered on the use of a program called "Hell." This case provides an example of another legal arena where big data and algorithms invite us to revisit antitrust paradigms; in this case: unilateral conduct in form of overbuying and "reverse rebates."[8] In the following, we will

1 University of Bergen and Bergen Center for Competition Law and Economics (BECCLE). The research for this paper has been possible thanks to the financial support of the Antitrust Section of the American Bar Association and the Scholar in Residence Program and the AkademiaAvtalen funding program by Statoil and the University of Bergen.

2 Lund University and Oxford CCLP. We would like to thank Ida Wiig Sørensen for her comments on a previous draft. The usual disclaimer applies. The authors have contributed equally to this paper.

3 Software, algorithm, and program are used interchangeably in this paper.

4 See Ezrachi & Stucke Virtual Competition (Harvard University Press 2016) as well as OECD, "Algorithms and Collusion - Background Note by the Secretariat," (June 9, 2017) DAF/COMP(2017) 4; see also Petit, "Antitrust and Artificial Intelligence - A Research Agenda," (June 28, 2017), https://ssrn.com/abstract=2993855.

5 See e.g. Stucke & Grunes, *Big Data and Competition Policy* (OUP 2016); Sokol & Comerford, "Antitrust and Regulating Big Data," (September 4, 2016). 23 George Mason Law Review 119 (2016), https://ssrn.com/abstract=2834611; Rubinfeld & Gal, "Access Barriers to Big Data," (August 26, 2016), https://ssrn.com/abstract=2830586.

6 *Michael Gonzales v. Uber Technologies, Inc*, Case 3:17-cv-02264-JSC, U.S. District Court for the Northern District of California.

7 On the "more traditional" class action case alleging the orchestration of a hub and spoke cartel, see e.g. Nowag, "The Uber-Cartel? Uber between Labour and Competition Law," (2016) 2016 Lund Student EU Law Review Vol 3. https://ssrn.com/abstract=2826652.

8 In this paper uses the term reverse rebates is used to refer to compensation paid by a *buyer*

briefly highlight the relevant facts of the case, exploring relevant behavior from a buyer power-oriented, antitrust perspective. Nonetheless, answering the question of whether the behavior actually amounts to a form of monopolization under Section 2 of the Sherman Act or an abuse under Article 102 TFEU is not the purpose of this paper. Our aim is to explore new possibilities for anticompetitive behavior created by the use of data, algorithms and programs like "Hell."

The case brought before the District Court for the Northern District of California concerns the use of the program "Hell" by Uber to identify drivers who would also offer their services on the competing platform, Lyft. The program collected information on the availability of Lyft drivers in the area using false Lyft accounts. Combining this data with the data on individual drivers offering services on the Uber platform, allowed Uber to accurately identify drivers that "double-apped" over time, i.e. those who were simultaneously driving for both Uber and its competitor Lyft. Once these "double-appers" had been identified, Uber engaged in behavior aimed at ensuring that those drivers offered their services exclusively to Uber. In particular, Uber "sen[t] more riders to double-appers than to those who drove solely for Uber. [And moreover, Uber] would give them special bonuses for meeting a certain number of rides per week."[9]

Thus, the "Hell" program allowed Uber to grant targeted "reverse rebates"[10] or bonuses that could have exclusionary effects. Concomitantly, the additional rides that double-appers were offered could lead to a form of targeted overbuying which would also raise rival's costs because Uber would buy more from those drivers than it would otherwise have done under normal conditions.

II. REVERSE REBATES

The described conduct could be seen as granting special bonuses in the form of additional payments and a higher average pay per day[11] in order to induce drivers to drive exclusively for Uber. The vast amounts of data collected through "Hell" allowed Uber to precisely target these reverse rebates to particular drivers. By means of these bonuses Uber secures its input, a driver available for hire, to its own platform. This use of upstream-reverse rebates or "supra-competitive bonuses" with an exclusivity effect are an interesting contrast to the more frequently discussed downstream rebates from seller to buyer.[12] These reverse rebates over the purchasing of drivers' services might have effects on both the upstream and downstream markets in the form of exclusionary buyer power exertion.[13]

There are several examples from both the U.S. and the EU of abuse of buyer power. The common feature of these cases is the attempt to increase rival's costs to exclude the rivals from either the upstream or the downstream relevant markets. The use of big data, however, provides a novel development regarding buyer power exclusion worthy of analysis. By engaging in this exclusionary behavior, a powerful buyer can increase its rivals' costs in a much more targeted way, dramatically reducing costs for the acquirer of the input when compared to traditional modalities of the same conduct. In the case of Uber and Lyft, for example, the use of big data meant that the rebates were only offered to double-appers rather than to all drivers in general, as further discussed below.

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to a *seller* in contrast to the usual flow from the *seller* to the *buyer*. These payments allow the seller to give the buyer preferential treatment as compared to its competitors.

9 As reported by endgaget.com, see Moon "Uber's 'Hell' program tracked and targeted Lyft drivers," (April 13, 2017), https://www.engadget.com/2017/04/13/uber-hell-program-lyft-drivers.

10 In this paper we use the term reverse rebates to refer to a form of compensation paid by a buyer to a seller to incentivize the latter to provide to the buyer more or better goods and/or services than to a competitor.

11 The higher average pay results from the increased number of rides. A driver has high fixed costs for the car and there are sometimes also long idle times. The increased number of rides that double-appers would receive meant that the idle time decreased while the utilization rate of the car increased thus leading to higher profits.

12 For some recent cases dealing with rebates granted by sellers to buyers in the downstream market see, inter alia: Case C-23/14 *Post Danmark* EU:C:2015:651; Case T-286/09 *Intel v. Commission* EU:T:2014:547; Opinion of Advocate General Wahl in Case C-413/14 P *Intel Corporation v. Commission* EU:C:2016:788; Case T-203/01 *Michelin v. Commission*, EU:T:2003:250.

13 On reverse rebates and buyer power, see Herrera Anchustegui, *Buyer Power in EU Competition Law* (University of Bergen 2017). A summary available at: https://www.academia.edu/32246988/Buyer_Power_in_EU_Competition_Law?auto=download&campaign=weekly_digest.

In the EU, for example, *British Airways v. Commission*,[14] concerned upstream rebates: exclusionary buyer power was used by means of bonuses which were paid to travel agents to incentivize them to sell more BA tickets. The conduct had an exclusivity enhancing effect as it made access to end consumers via the travel agents[15] more difficult for BA's competitors. Hence, buyer power in the input market affected the downstream market in a form of leveraging of market power.

This theory of harm has some similarities with the Uber "Hell" law suit. Uber's "Hell" program helped to identify drivers that also drove for the competition. Uber would then grant more rides and/or grant fidelity bonuses to these double-appers if they reached a certain minimum number of rides per month. This meant an increase in those drivers' overall-profit per time period. This behavior is liable to increase the rival's costs, i.e. that is to say Lyft's. The conduct encourages drivers to provide more rides on the Uber platform, simultaneously reducing the time they are able to provide their services on the Lyft platform. Further, it would make sense for Uber to obtain as many drivers as possible for rides from Lyft. This would reduce Lyft's ability to offer rides, unless Lyft also increased payment to its drivers, either through higher bonuses or by reducing the fees charged to drivers. Uber's behavior would therefore also raise its rival's costs in the upstream input market. However, it needs to be noted that this rise would be substantial as long as Lyft does not employ a similar program to identify double-appers. If that were the case, Lyft would have to offer higher pay to all its drivers. So, while the "Hell" program allows Uber to target only the marginal drivers, Lyft cannot compete unless it makes use of similar data and algorithmic schemes to identify double-appers.

Two points should be considered when assessing exclusionary effects of such conduct. First, waiting time is an essential feature of the quality of ride hailing platforms. Any restrictions, therefore, on the number of drivers available on the platform at any given time, may lead to longer waiting times and a significant reduction in the quality of the platform. Second, it is likely[16] that double-appers were not informed by Uber that they received additional bonuses and frequent rides because they also used to drive for Lyft. One might, therefore, argue that normal market forces were put out of play and that the algorithm allowed Uber to increase rivals costs in an extremely efficient way by reducing costs incurred by the bonus program and additional rides.[17]

III. OVERBUYING

Exclusionary buyer power can also be exerted through overbuying, which may have an upstream or downstream market focus. In both cases the buyer either acquires more goods then objectively needed or pays more than the market value for the goods, with the aim of excluding a competitor.[18] In buyer power cases[19] a "dualistic approach" should be employed[20] so that buyer power implications upstream as well as in the related downstream market are assessed. Such an approach is particularly appropriate for platforms because it reflects its two-sided nature.[21] Such platforms exist where an "economic catalyst" is used to connect two groups of customers who depend not only on each other, but also on the platform, in order to capture the value of their transaction.[22]

14 Case T-219/99 *British Airways v. Commission* EU:T:2003:343; and Case C-95/04 P *British Airways v. Commission* EU:C:2007:166.

15 Back in those days the main option to sell tickets to the end consumers.

16 The information available seem rather not incomplete in this regard. Yet, it would be illogical to inform drivers because this would incentivize them to continue as double-appers and might induce other drivers to also start double-apping to obtain these benefits.

17 Whether this would be efficiency enhancing or reducing overall is a very interesting empirical question.

18 Salop, "Anticompetitive Overbuying by Power Buyers," (2004-2005), 72 Antitrust Law Journal 669; Kirkwood, "Buyer Power and Exclusionary Conduct: Should Brooke Group Set the Standards for Buyer-Induced Price Discrimination and Predatory Bidding?," (2004-2005), 72 Antitrust Law Journal 625.

19 Both with regard to exploitation and exclusion.

20 HerreraAnchustegui, supra note 13; Herrera Anchustegui, Market Definition in Buyer Power Cases: Revisiting Some Traditional Views (2015), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2600471. This dualistic approach is not exclusive to buyer power cases. In fact, the Commission adopted it for the evaluation of concentrations. It shall take into account the structure of all markets concerned and the position of the undertakings involved, the rivals, and end consumers when determining the operation's effects, see Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation) [2004] OJ L 24/1, Article 2.1(a) and (b).

21 On the challenges of multisided markets for competition law, see Gürkaynak, İnanılır, Diniz & Yaşar, "Multisided markets and the challenge of incorporating multisided considerations into competition law analysis," (2017) 5 Journal of Antitrust Enforcement 100.

22 See Evans & Schmalensee, "The Industrial Organization of Market with Two-Sided Platforms," in The Oxford Handbook of International Antitrust Economics,

The leading case in this this regard is the U.S. Supreme Court's *Weyerhaeuser*.[23] It concerned the overbuying of tree logs with the aim of raising rival's cost in the upstream input market. The U.S. Supreme Court used the traditional predatory pricing test,[24] as overbuying was seen as the mirror image of predatory pricing, where a short-term loss is incurred to exclude rivals. The U.S. Supreme Court highlighted that predatory buying schemes are rarely effective, and that where the exclusionary conduct fails, end consumers benefit from a surplus in downstream available goods and, thus, likely lower retail prices. The U.S. Supreme Court, therefore, established that for an overbuying claim to be successful the plaintiff must provide evidence not only of the upstream overbuying, but equally of predation at the retail level.

If the aim is overbuying for the purposes of upstream exclusion, Uber's "Hell" operation breaks with the "traditional" approach: The naked overbuying (hoarding) of driver services does not seem to make economic sense because these services are only available within a specific timeframe and cannot be stored for later use. Similarly, the case does not appear as an attempt to exercise exploitative buyer (monopsony) power over drivers.

Yet it might lead to exclusion from the input market, the market for drivers. In this case, the input market could be foreclosed by the overbuying mechanism of "Hell," particularly when drivers would not have Uber's competitors to offer their services to.[25] Thus, due to Uber being the sole outlet of the driver's services, it could lower the price paid to drivers for their service,[26] possibly reducing the amount of available drivers in the downstream market. This monopsony theory, however, would fail to explain how Uber would restrict its purchases when its demand for drivers is dictated by consumers' demands for rides.[27]

Alternatively and more likely, Uber would target either upstream markets by charging drivers a higher fee for its connection service, or downstream markets by increasing fares. An (at least partly) successful exclusion of Lyft from the market for drivers could create downstream effects and imply higher end consumer prices, if it is caused due to withholding and/or exercising monopoly power downstream, since there would be less (or no) competition in the retail market. This effect would be further reinforced if normal taxis could not provide competitive pressure because their fares are set at a higher price, leaving them unable to compete. Moreover, even without restricting purchases, but simply exerting anticompetitive bargaining power, dominant buyers that are also dominant sellers can exert market power to the detriment of both suppliers and consumers, particularly in the long run.[28] More generally, a program like "Hell" reduces Uber's costs for any form of predation[29] because it makes it more targeted. In fact, it might even allow a form of targeted shifting of the demand so that only inputs critical for the rival are acquired. It is also possible that this happens without, or with only very limited, overbuying as such.[30] While traditional predation is expensive because it involves lowering prices indiscriminately, this form of big data driven predation allows for targeted price discrimination[31] within predatory pricing and targeted

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Volume 1 Edited by Blair & Sokol (OUP 2015). For an overview on other definitions see Gürkaynak, İnanılır, Diniz, and Yaşar (n 32), 100-105. Crucially in this context are network effects and economies of scale, as one side influences the other, see the foundational paper, Rochet & Tirole, "Platform Competition in Two-Sided Markets," (2003), 1 Journal of the European Economic Association 990.

23 *Weyerhaeuser Company v. Ross-Simmons Hardwood Lumber Company, Inc.*, 127 S. Ct. 1069 (2007).

24 The so called Brooke Group test, see *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

25 Unless entry takes place.

26 E.g. by increasing the fee it charges on the ride.

27 However, it might be possible that Uber could increase the fees it charges to the driver to the equilibrium levels. Thus, the level where the reduction in rides offered on the platform is offset by the increase in fees charged to the driver. The likelihood of reaching such an equilibrium is more likely with the usage of big data driven algorithms.

28 For a discussion of buyer power competitive risks depending on the market power as a buyer and seller see: Chen, "Buyer power: Economic theory and antitrust policy," (2007), 17 Research in Law and Economics, 22.

29 In predation cases, questions of deep pockets are typically asked with regard to the possibility to recover the costs of predation, see for example: Hylton, *Weyerhaeuser, Predatory Bidding, and Error Costs*, (2008) 1; Salop, supra note 18; Kirkwood, supra note 18; Zerbe Jr, "Monopsony and The Ross-Simmons Case: A Comment on Salop and Kirkwood," 72 Antitrust Law Journal (2004-2005) 717.

30 That is to say, cases where the overall input is not changed but where the demand is simply shifted to the input critical to the rival.

31 With regard to price discrimination towards consumers see e.g. Ezrachi & Stucke, *Virtual Competition*, (Harvard University Press 2016) p. 83ff.

strategies only applicable to the marginal group of double-appers.[32] Thus, "Hell," and big data in general, may make predation cheaper, more precise, and more effective. If this is the case, one could imagine that predation is more likely to be successful. As the costs are smaller, the timeframe for recovering such costs via supra-competitive prices is also smaller. Similarly, the cost benefit analysis between the predation costs and the gains from a reputation for predation might raise further barriers of entry.

Turning now to overbuying and its possible effects on the downstream market, the use of "Hell" and the associated conduct might also be seen as an attempt at raising a rival's costs through overbuying.[33] The targeted increase in pay for double-appers could equally affect the downstream market and increase Uber's market power by raising rivals' costs, and making them less competitive, possibly leading to their market foreclosure.

The targeting of the double-appers means that Lyft would need to match or surpass the price[34] that Uber pays these drivers, which in turn increases Lyft's costs regarding these specific double-appers. In this regard, it is important to note that as long as Lyft does not use a similar algorithm driven approach[35] to identify double-appers, the costs for Lyft would be even greater as it would have to offer the increase across the board and not only to those marginal drivers. This increase in costs is likely to raise Lyft's prices *vis-à-vis* end consumers, reducing competitiveness, while allowing Uber to either equally increase price while staying competitive or substantially increasing its market share.

IV. CONCLUSION AND FOOD FOR THOUGHT

In this short paper we have examined the possible antitrust implications of the use of software like "Hell" on competition from a buyer's perspective, while not engaging in a concrete analysis of Uber's conduct. This analysis provided us with the opportunity to re-explore traditional antitrust concepts, anchored on the purchasing of raw material, in the data and algorithm driven world. In particular, the paper explored how companies can use big data in anticompetitive strategies, such as granting supra-competitive bonuses, overbuying, and raising rival's costs through overbuying with regard to input.

However, we ought to remark on the fact that aggressive bidding for an input is price competition as well. Buyers that value a good more than others are inclined to pay more for it. From this fight-for-input-perspective, if Uber pays more to double-appers, it may be because this higher price is the real input's market price. This could happen in new and highly dynamic markets where there are no traditional references for the "value" of the input; i.e.: the drivers' services. Alternatively, the overpaying could be due to error, or simply due to the fact that Uber puts a higher value on the services of these drivers – conduct which is not necessarily anticompetitive, and the reason why successful overbuying cases are rare and difficult to prove. Also, it is possible that Uber pays more for its input while reducing its profit margins and preserving, or even lowering, the price it offers to end consumers as a sign of efficiency. This would benefit drivers as they are paid a higher service fee, and would have either neutral or positive effects on end consumers, as output is increased and prices remain constant or even decrease.

Yet, in this paper we focused on the anticompetitive ways in which big data and algorithms like 'Hell' might be used. We have explained how a program like "Hell" could be employed by Uber to grant higher bonuses to double-appers, ensuring that these drivers drove for Uber and not Lyft and, limiting Lyft's ability to offer services to end consumers. With regard to overbuying, Uber could have acquired more services from drivers than objectively needed in order to prevent Lyft from acquiring this input, or at least increase

32 And not to e.g. Uber-exclusive drivers.

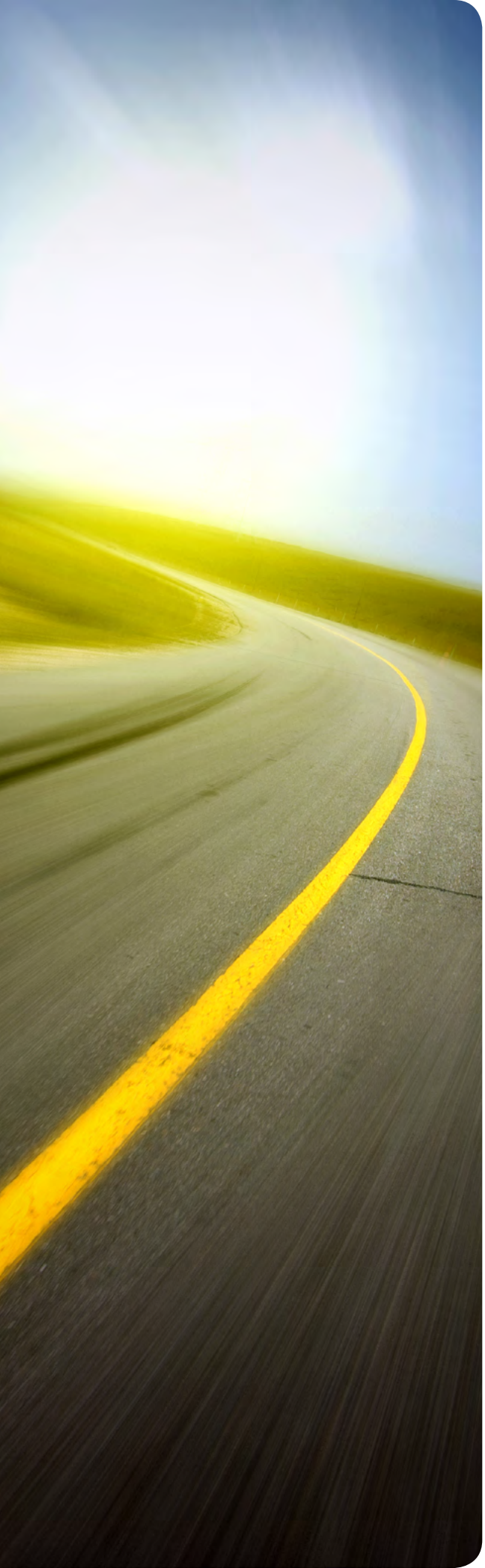
33 Hviid & Olczak, "Raising Rivals' Fixed Costs," 23 International Journal of the Economics of Business (2016), 19. For general literature on raising rival's costs see: Krattenmaker & Salop, "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price," 96 The Yale Law Journal (1986), 209; Scheelings & Wright, "Sui Generis: An Antitrust Analysis of Buyer Power in the United States and European Union," 39 Akron Law Review (2006), 207, p. 215. Also generally, see Scheffman & Higgins, "Raising Rivals' Costs," in Blair & Sokol (eds), *The Oxford Handbook of International Antitrust Economics*, vol 2 (Oxford University Press 2015).

34 By means of bonuses and more rides.

35 One should bear in mind that in this case the class action suit alleges that the approach breached unfair competition and privacy rules, because Uber used fake Lyft profiles to get access to its competitor's platform to see which drivers were available.

Lyft's costs, and aiming at distorting upstream conditions. Concerning the theory of harm of raising rivals' costs by overbuying, the targeted use of buyer power could also increase Lyft's costs and, force Lyft to charge higher prices downstream to end consumers which would in turn either force Lyft to exit the market or would allow Uber to raise prices downstream.

What is novel and important in this case, is that the use of big data and programs such as "Hell" have the potential to make exclusionary buying tactics far more efficient. The program shows how big data and surveillance can be used in new and ingenious ways in a competitive setting, allowing for targeted conduct such as overbuying. This allows undertakings to move away from "traditional" tactics – purchasing of all or most of the input in a given market – and instead target market players with new levels of precision. This conduct can take the form of targeted rebate schemes, targeted overbuying, or more generally a strategic and targeted raising of rivals' costs. Big data and surveillance allows such conduct to be implemented more efficiently, that is to say cheaply. We end our contribution with a call for further empirical research into whether this improved efficiency is overall welfare enhancing or rather problematic for the markets' competitiveness.



TURNING THE CORNER: THE INTERNET OF (MOVING) THINGS

BY YVES BOTTEMAN, ANTHONY J. LAROCCA & JONATHAN SALLET [1]



I. INTRODUCTION

The Internet of Things ("IoT") connects devices that can communicate to each other, to the Internet, and even to non-machines (that is to say, people). Such devices include a large variety of high-end consumer products (e.g. connected fridges and homes, healthcare and fitness devices, automated cars); industrial products (e.g. sensors aimed at improving manufacturing processes); and public utilities (e.g. smart streetlights that enable automatic control of brightness).

Even as the IoT matures, the auto sector — the "Internet of Moving Things" — is racing ahead as automakers, suppliers and service providers look to new technology to enhance the driving and ownership experience (and to gain a competitive edge).

II. FROM AUTOS TO AUTONOMOUS VEHICLES

Over the past decade, the IoT has developed tremendously, owing in particular to the plunging price of sensors, the development of smartphones and the ubiquity of Wi-Fi. And this is only the beginning: one consultancy estimates that there will be no less than 25 billion "Internet-connected things" by 2020, delivering close to $2 trillion of economic benefits globally. And the growth in autonomous vehicles industry is no different — one study has concluded that the market will reach between $42 to $77 billion from 2024 to 2035 for both partially and fully autonomous vehicles.[2]

1 The authors wish to thank Camille Keres and Tracy Huang for their invaluable assistance.

2 The Boston Consulting Group, *Autonomous Vehicle Adoption Study*, https://www.bcg.com/en-us/expertise/industries/automotive/autonomous-vehicle-adoption-study.aspx.

This method of transportation has come a long way since the humble but stationary gasoline engine developed by Carl Benz in 1879, which ran for the first time on New Year's Eve.[3] In the decades that followed, cars evolved into innumerable sizes and shapes and increased in safety, space and speed.

Some predict that, going forward, only about 10 percent of the financial value to be captured from the IoT will come from the "things" themselves; the vast majority is likely to be generated from the connectivity of those things to the Internet and how data is produced.[4] Partnerships between tech companies and auto companies are becoming increasingly common as companies look for ways to capitalize on their partners' comparative advantage. For instance, Waymo and Lyft have joined forces, with Waymo benefitting from Lyft's ride-data, and Lyft benefiting from Waymo's advanced technology.[5] Toyota, Ericsson, Intel and others have recently announced a consortium to support autonomous vehicles, real-time maps and driving assistance based on cloud computing.[6]

For the above reasons, the IoT has caught the attention of regulators and policy makers around the globe. The European Commission ("EC") is leading a number of IoT related initiatives in an effort to position the EU as the next "IoT champion." These initiatives include the creation, in July 2016, of a specialized unit within DG Connect focusing on the IoT, as well as the launch of the Alliance for Internet of Things Innovation ("AIOTI"),[7] an association aimed at developing and supporting the dialogue and interaction among the IoT players in the EU. And in the U.S., the FTC and National Highway Traffic Safety Administration recently teamed up to hold a workshop to explore the consumer privacy and security issues surrounding smart vehicles.[8]

So far, a great deal of attention has been focused on privacy and data-security issues raised by IoT devices including autonomous cars, which collect, store and analyze massive amounts of data – very often on a cross-border basis – to produce recommendations, reports and decisions. But, going forward, competition issues may well become important as well.

III. CARS AND COMPLEMENTS

The promise of the IoT is to connect a number of "things" to the Internet. As such, the IoT is complementary to the ICT sector. This leads to vertical integration of physical goods, sensors and apps. Vertical integration has historically been regarded as beneficial for competition between brands.

However, in recent years, regulators on both sides of the pond have recognized that such integration may be a source of antitrust problems as well. Typical vertical antitrust concerns include the ability of integrated businesses to raise rivals' costs in either an upstream or downstream market or to foreclose access to a key input or output.

- In the context of vertical integration, antitrust officials are likely to examine the following characteristics among vendors in the marketplace that surrounds autonomous vehicles: a large customer/user base of the undertakings involved either on the apps side or the connected devices side or both. A number of IoT solutions will most likely benefit from large user bases; competition officials are likely to be looking at both benefits to users and any potential for consumer lock-in effects;

3 Daimler, *Company History*, https://www.daimler.com/company/tradition/company-history/1885-1886.html.

4 Patel & Veira, *Making connections: An industry perspective on the Internet of Things*, 2014, http://www.mckinsey.com/industries/semiconductors/our-insights/making-connections-an-industry-perspective-on-the-internet-of-things.

5 Isaac, *Lyft and Waymo Reach Deal to Collaborate on Self-Driving Cars*, N.Y. Times (May 14, 2017), https://www.nytimes.com/2017/05/14/technology/lyft-waymo-self-driving-cars.html?_r=0.

6 Toyota – USA Newsroom, *Industry leaders to form consortium for network and computing infrastructure of automotive big data*, (August 10, 2017), http://corporatenews.pressroom.toyota.com/releases/industry+leaders+consortium+network+computing+infrastructure+automotive+big+data.htm.

7 European Commission, *The Alliance for the Internet of Things Innovation (AIOTI)*, https://ec.europa.eu/digital-single-market/en/alliance-internet-things-innovation-aioti (last consulted on August 18, 2017).

8 Fair, *Connected, collected, protected? FTC-NHTSA event explores drive toward connected cars*, Federal Trade Commission (April 5, 2017), https://www.ftc.gov/news-events/blogs/business-blog/2017/04/connected-collected-protected-ftc-nhtsa-event-explores-drive.

- The potential network effects associated with the use of a connected device. Network effects arise where the value of a connected device is dependent on the number of others using it (e.g. because the added value of the connected device lies in its ability to communicate with other devices). For those IoT devices generating network effects, the result can be a "winner-take-all" outcome (like the battle in the 1980s between competing standards for home video devices); and

- The development of proprietary ecosystems (as opposed to open ecosystems) preventing interoperability between IoT solutions.

Antitrust risk cannot, of course, be measured in the abstract. But these factors are likely to be part of the analysis, as well as data, which we discuss next.

IV. DATA AND DRIVERLESS VEHICLES

A. Big Data

The IoT collects and analyses huge amounts of data. As identified by WIRED Magazine, data from the autonomous driving sector can come from a variety of sources: safety and security devices, in-car intelligence and assistance displays, automation systems, and onboard sensors, to name a few.[9] Therefore, the IoT for autonomous vehicles is a prime producer of big data, typically defined as "the combination of a high volume and variety of data updated at a high velocity."[10] Beside privacy and security issues (which we do not address here), some argue that such massive data collection may also cause competitive harm, by:

- Raising barriers to entry by creating massive data bases that cannot be replicated by competitors. In the U.S., Commissioner Terrell McSweeny has acknowledged the propriety of asking whether, in the merger context, an incumbent may possess "significant advantages" over new entrants when the firm has a database that would be "difficult, costly, or time consuming for a new firm to match or replicate."[11]

- In their joint study on big data, the French Competition Authority and the German Federal Cartel Office[12] recalled that, under EU case-law, a refusal to provide access may be deemed exclusionary only where, among other requirements, the data amounts to an "essential facility," i.e. the data is indispensable for competitors to provide services to their consumers. Arguably, proving that data amounts to an essential facility will not be an easy task. Also, such a theory of harm would arguably only apply to IoT solutions that require pre-existing data bases.

So far, the application of the above theories of harm remains to be seen, as the autonomous vehicle space is in its nascent stages. This said, big data is an increasingly hot topic, and antitrust regulators are starting to take a look. Recently, Commissioner Vestager stated that:

> that for us, data and the value they represent is . . . very important for how the business community develops and how businesses can serve the market, that the value of data as an asset, as a barrier to entry, as a sort of innovation, that it can be used as much as possible but not cause competition concerns.[13]

9 Stewart, *Mapped: The Top 263 Companies Racing Toward Autonomous Cars*, WIRED, (May 10, 2017), https://www.wired.com/2017/05/mapped-top-263-companies-racing-toward-autonomous-cars/.

10 Boutin & Clemens, *Defining "Big Data" in Antitrust* (March 21, 2017), https://www.competitionpolicyinternational.com/wp-content/uploads/2017/08/CPI-Boutin-Clemens.pdf.

11 McSweeny, Comm'r, Fed. Trade Comm'n, Panel Discussion: Why Regulate Online Platforms: Transparency, Fairness, Competition, or Innovation— Opening Remarks at CRA Conference (Dec. 9, 2015), https://www.ftc.gov/system/files/documents/public_statements/903953/mcsweeny_-_cra_conference_remarks_9-12-15.pdf.

12 French Autorité de la concurrence and German Bundeskartellamt publish joint paper on data and its implications for Competition Law, 2016, http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf.

13 Lipman, Law360, "EU's Vestgaer On Google, Privacy And Merger Review Reform," (Sept. 1, 2017), https://www.law360.com/competition/articles/959932/

Last year, Commissioner Vestager also spoke about how data "could be an important factor" in merger review and gave the example of a company buying a rival to obtain its data as an example where review may be warranted, even though the acquiring company has a small turnover.[14] At the same time, commentators have questioned the extent to which antitrust is a suitable vehicle for consideration of Big Data issues.[15]

As parties engage with enforcers and test theories in specific cases, more principles with regards to what enforcers will focus on will emerge over time.

B. Data Portability

Data portability deals with the ease and right to which an individual can transfer data and other material from one service to another.

In *Facebook/Whatsapp* (2014),[16] the EC considered that the lack of portability of all data and message history on Whatsapp would not be a significant barrier to consumers switching messaging apps. However, it drew this conclusion on the basis of practical considerations, namely: (1) messaging history does not carry long-term value for consumers; (2) messaging history would still be accessible on the consumer's smartphone, even if the user starts using another messaging app; and (3) the contact list could be ported. This decision suggests that the lack of data portability may well raise antitrust concerns in the EU, at least where the data is valuable to the consumer and would be lost should the consumer switch providers.

In Europe, the General Data Protection Regulation,[17] enacted after the adoption of the *Facebook/Whatsapp* decision, grants consumers a right to data portability as far as personal data is concerned. However, this rule does not apply to non-personal data, i.e. data that does not allow the identification of a natural person. It remains an open question whether this regulation will eventually address the portability of unstructured data, generated by, for example, the many sensors and applications attached on a self-driving car.[18]

In the U.S., while no formal regulation has been adopted regarding data portability, the prior administration engaged the public to gather viewpoints on the issue. For example, in 2016, President Obama's Office of Science and Technology Policy issued a Request for Information ("RFI") regarding data portability.[19] The RFI acknowledged both the positives and negatives associated with data portability and its impact on competition. On one hand, the RFI noted that data portability could increase the ease of switching among consumers, which would heighten the intensity with which businesses competed to win business. On the other hand, lower switching costs may cause businesses to be more selective in their initial customer acquisition strategy or invest less in customer relationships.

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eu-s-vestager-on-google-privacy-and-merger-review-reform?nl_pk=8a5277b9-efb2-43e4-a4f1-d241a9d97d90&utm_source=newsletter&utm_medium=email&utm_campaign=competition.

14 *Big Data and Competition*, Speech of Margrethe Vestager, EDPS-BEUC Conference on Big Data, Brussels (Sept. 29, 2016), https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/big-data-and-competition_en.

15 Sokol & Comerford, *Antitrust and Regulating Big Data*, 23 George Mason Law Review 119 (2016).

16 Case No. COMP/M.7217 – *Facebook/Whatsapp*, ¶ 113.

17 2016 O.J. (L119) 1 - Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC.

18 The Economist, *Data is giving rise to a new economy* (May 6, 2017), https://www.economist.com/news/briefing/21721634-how-it-shaping-up-data-giving-rise-new-economy (noting a change in the quality of data from stocks of digital information to rapid real-time flows of unstructured data).

19 Request for Information Regarding Data Portability, The White House – President Barack Obama, https://obamawhitehouse.archives.gov/webform/request-information-regarding-data-portability.

V. INTERSECTIONS AND INTELLECTUAL PROPERTY

The IoT is predicated on the idea of things communicating with each other. Accordingly, they need to speak the same "language;" in other words, they need common standards.

The first generation IoT suffered from lack of common standards, as IoT devices experienced limited ability to talk to each other. But the industry has seen recently the development of open and interoperable platforms, based on common standards.[20]

From an antitrust perspective, standardization happens when businesses agree to join forces to set a common standard, either within a standard setting organization ("SSO") or in an ad-hoc organization. As such, standardization is based on an agreement between companies, sometimes involving competitors. Standardization agreements can be pro-competitive if they encourage innovation. Typically, in the IoT sector, it is commonly accepted that the adoption of standards will deliver significant benefits, by allowing greater interoperability between IoT devices, both within a given solution or a given sector.

Yet, standardization may raise concern. For instance, an SSO may prevent a business from accessing the results of the standardization process without legitimate reasons. Or standardization may confer significant market power on those stakeholders that hold standard essential patents ("SEPs"), which implement "patent hold-up strategies," e.g. excessive royalties to their competitors so as to exclude them from the market. In order to prevent the implementation of such strategies, while fostering innovation, SSOs usually require that SEP holders license their patent on FRAND (fair, reasonable, and non-discriminatory) terms.

Over the past years, SEPs have intersected with important antitrust concerns, both in the EU and in the U.S. The debate has crystalized on a number of practical issues, including whether a SEP holder may seek injunctive relief against a potential infringer, despite its commitment to license the SEP on a FRAND basis. For example, in *Huawei* (2015),[21] the European Court of Justice ("CoJ") clarified the conditions under which a SEP holder may bring an action for a prohibitory injunction against a potential infringer. Where the SEP holder had committed to license its patent on SEP terms, the CoJ found that such an action would not be deemed abusive provided that: (1) prior to bringing the action, the SEP holder presented a specific, written offer for a license, and (2) the alleged infringer continues to use the patent without responding diligently to that offer. Regarding the patents covering self-driving car technology, the litigation between Waymo and Uber offers a glimpse of the IP litigation to come.

In the U.S., the FTC is currently embroiled in litigation against Qualcomm, Inc., where it is fighting to secure an injunction against Qualcomm for its allegedly exclusionary conduct in its licensing practices. The FTC alleges that Qualcomm, a dominant supplier of baseband processors and a licensor of patents declared by Qualcomm to be essential, has harmed competition by (1) withholding its processors unless a customer accepts a license to SEPs on terms preferred by Qualcomm, and (2) refusing to license cellular SEPs to its competitors in violation of its FRAND commitments.[22] The FTC's complaint has since survived Qualcomm's recent motion to dismiss.[23] The district court held that the FTC has adequately alleged facts that Qualcomm's royalties are above FRAND levels and that its "no license, no chips" policy is anticompetitive when viewing Qualcomm's practices as a whole.[24]

Different participants in this industry are taking varying approaches regarding collaboration over standards, with some choosing to pursue open-platform models, while others work within proprietary systems. For instance, Lyft's approach is to use an Open Platform Initiative to develop the technology in conjunction with automakers and tech companies, while Uber's approach is to maintain unitary management of the software and the hardware.[25]

20 See Open Connectivity Foundation, https://openconnectivity.org/ (last consulted on August 18, 2017).

21 C-170/13 – *Huawei Technologies Co. Ltd v. ZTE Corp. and STE Deutschland GmbH*.

22 *FTC v. Qualcomm, Inc.*, No. 5:17-cv-00220, Complaint (Feb. 1, 2017), https://www.ftc.gov/system/files/documents/cases/0038_2017_02_01_redacted_complaint_per_court_order_dkt.pdf.

23 Id., Order Denying Motion to Dismiss (June 26, 2017), https://www.ftc.gov/system/files/documents/cases/0133_2017_06_26_order_and_opinion_denying_motion_to_dismiss.pdf.

24 Id.

25 Isaac, *Lyft to Develop Self-Driving Car Technology in New Silicon Valley Facility*, N.Y. Times (July 21, 2017), https://www.nytimes.com/2017/07/21/

VI. COOPERATION AND CARS

Besides standardization, IoT providers may need to engage in other forms of cooperation. Cooperation may serve many goals, including achieving interoperability between competing services or creating a new IoT service by combining two complementary products, and may take several forms, from simple R&D agreements to more sophisticated joint ventures, mergers or acquisitions.

Regardless of their form, collaborative efforts in the IoT sector seem to have been looked at favorably by antitrust regulators. For instance, IoT-related mergers have not faced significant challenge on the antitrust front, owing perhaps to their vertical nature, their integrative efficiencies as well as the fact that IoT markets are, for now, nascent.

This said, collaborative efforts in the IoT sector may raise antitrust concerns, especially where the collaboration leads to the exchange of sensitive information or, even, to the conclusion of anticompetitive agreements – as illustrated by the ongoing EC investigation into the German car industry. Based on the limited information available at that stage, German car-makers, including Volkswagen, Audi, BMW, Porsche and Daimler, used to organize industry forums aimed at discussing technology practices and regulatory standards. They are accused of having used these forums to agree on costs, suppliers, technologies as well as the prices of diesel emission treatment systems.[26]

In the U.S., with major car companies like Ford, GM, Audi, BMW, Tesla, Nissan and Mercedes-Benz promising to deliver on self-driving cars in the short term,[27] information sharing concerns may arise as companies race to develop the next big smart vehicle in collaboration with other manufacturers.[28] While the antitrust agencies have not taken specific action yet in the autonomous vehicle industry, the FTC has investigated and entered into a consent decree regarding a production joint venture between GM and Toyota in the 1980s.[29] The case bears a striking resemblance to the efforts of autonomous vehicle players today, as one of the goals of the joint venture was to enable GM and Toyota to exchange learnings on manufacturing and use of labor. Citing information exchange concerns, the consent decree, among other things, required that discussions regarding product designs, sales or production forecasts and the cost of products supplied by GM and Toyota could only occur to further the joint venture's needs.

Most significantly, the Commission subsequently eliminated the restrictions on the JV in light of new entry and expansion in the automobile industry, and the presence of other joint ventures among automobile companies. The Commission believed that the information sharing restrictions now prevented the joint venture from competing effectively. Therefore, the GM/Toyota example demonstrates that while regulators evaluate information-sharing risks and may impose restrictions, room exists for arguing for little to no restrictions depending on industry conditions.

technology/lyft-self-driving-car-technology.html (comparing the Lyft model to Google's Android OS and the Uber model to Apple's OS).

26 See Meredith, *German automakers might face EU fines after allegations but no global legal threat, analyst says*, CNBC (July 25, 2017), https://www.cnbc.com/2017/07/25/germany-automakers-bmw-vw-daimler-audi-porsche-no-global-legal-threat-analyst-says.html (last consulted on August 18, 2017).

27 Stewart, *As Self-Driving Cars Approach, the Auto Industry Races to Rebuild*, WIRED (Jan. 15, 2017), https://www.wired.com/2017/01/self-driving-cars-approach-auto-industry-races-rebuild/.

28 Krok, *Fiat Chrysler partners with BMW, Intel, Mobileye on self-driving cars,* CNET (Aug. 16, 2017), https://www.cnet.com/roadshow/news/fiat-chrysler-partners-with-bmw-intel-mobileye-on-self-driving-cars/ (describing Fiat Chrysler's MOU with BMW Group, Intel, and Mobileye on co-developing an autonomous driving platform).

29 *Antitrust Issues Related to Benchmarking and Other Information Exchanges*, Remarks of J. Thomas Rosch, Commissioner, FTC, ABA Section of Antitrust Law and ABA Center for Continuing Legal Education's Teleseminar on Benchmarking and Other Information Exchanges Among Competitors (May 3, 2011), https://www.ftc.gov/sites/default/files/documents/public_statements/antitrust-issues-related-benchmarking-and-other-information-exchanges/110503roschbenchmarking.pdf.

VII. CONCLUSION: MORE AROUND THE CORNER

The IoT holds great promises for the future of a large number of industries, including autonomous vehicles. But it is also a nascent industry, which means that antitrust analysis in the IoT field is also at a very early stage, and most theories of harm remain to be tested. As various forms of strategic cooperation and acquisitions in the IoT sector multiply, it is fair to assume that merger control, rather than mere antitrust enforcement against specific operators, is likely to be instrumental in testing how existing antitrust instruments apply and cope with this particular race into the future.

MEASURING MARKET POWER IN MULTI-SIDED MARKETS

BY KATE COLLYER, HUGH MULLAN & NATALIE TIMAN [1]



I. INTRODUCTION

Digital markets are becoming an increasingly important feature of every economy. Online platforms are now commonly used to compare goods and services ranging from hotels to insurance, as well as to purchase diverse goods and services. Many of these platforms can be described as multi-sided, and understanding the nature of competition in such markets is crucial for competition authorities. This article[2] focuses specifically on the market power aspect of the nature of competition and provides practical and pragmatic suggestions on how to measure market power in such multi-sided markets. The paper draws operational conclusions on how to adapt existing enforcement and merger assessment tools to address some of the challenges posed by multi-sided markets.

The first section of the paper sets out some important features of multi-sided markets, including indirect network externalities, single-homing and multi-homing, price structure and tipping. The second section provides some practical steps in assessing market power in multi-sided markets and the final section sets out some measures of market power, and how they may need adaptation in multi-sided markets.

II. FEATURES OF MULTI-SIDED MARKETS

Multi-sided markets are platforms that match two or more groups of customers. Evans & Schmalensee (2007) define multi-sided platforms as having (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst of the platform to facilitate value creating interactions between them.

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2 An earlier draft of this paper was discussed at a Hearing on "*Rethinking the Use of Traditional Antitrust Enforcement Tools in Multi-Sided Markets*," that was held by the OECD Competition Committee on June 22, 2017 in Paris.

This section sets out some key features of multi-sided markets that may be important to an assessment of market power.

A. Indirect Network Externalities

As the definition makes clear, indirect network externalities ("INE") are an important feature of multi-sided markets. The benefit one side of the market derives from being on the platform depends on the number of customers on the other side of the market, and vice versa.[3] As a result, the demands of each group of customers are interlinked and this generates feedback loops between them.

INE distinguish multi-sided markets from other markets such as a vertical supply relationship. These INE go in both directions, but are not necessarily equally strong in each direction. When there are strong INE in both directions, the interaction between these INE on both sides can create a feedback loop that may have second and third and fourth order effects. For instance, the ultimate effect of a price increase to one side of the market could be much greater if it led to further feedback loops with participants increasingly leaving both sides of the market as the market becomes less valuable to each group of customers. The strength of these feedback loops may enhance or constrain the platform's market power and should be taken into account in any assessment.

B. Single-Homing and Multi-Homing

The extent of single-homing and multi-homing by customers on each side of the market is a key competitive aspect of multi-sided platforms (Rochet & Tirole, 2003). If customers on one side only join one platform, then customers on the other side can only access those customers by joining the same platform. Armstrong (2006) shows that this creates "competitive bottlenecks," with single-homing customers on one side and multi-homing customers on the other, the platform competes aggressively for the single-homing customers and once they are on board it earns profits from customers on the other side who multi-home.[4] Below, we suggest some practical ways to identify the extent of single- and multi-homing and thereby assess market power.

C. Price Structure

In a multi-sided market, the price structure reflects the interlinked demands of the two groups of consumers and the need to get both sides on board. This often results in complex pricing where the price to each group of consumers does not reflect the marginal cost of supplying them.

To see the importance of price structure in multi-sided markets, consider the example of a platform supplying businesses on one side of the market and consumers on the other side. Assume that in this example consumers are more sensitive to price than businesses. In order to get consumers on board, the platform allows them to use the service without charge, but the businesses pay (a fixed fee and/or commission) to be present on the platform. The platform needs to set a fee to businesses that ensures their participation and takes account of the feedback loops between both sides of the market. Fewer businesses will choose to use the services of the platform at higher prices and this will reduce the attractiveness of the platform to consumers on the other side of the market, etc.[5]

As this example shows, the platform must be able to use the price structure to internalize the externalities arising from the INE. Platforms will always be able to control the price structure in markets where the two sides do not transact. However, in markets where the sides do transact, one side of the market can reflect some of the increased costs of doing business on the platform in the

3 For example, the more businesses that join a platform, then the more consumers find that platform to be attractive; and the more consumers join a platform, then the more businesses find that platform to be attractive. In addition, the platform may allow advertisers to promote themselves to consumers (or businesses, or both), which may be a third side of the market.

4 Firms compete aggressively on the side that uses a single network in order to charge monopoly prices on the other side that is trying to reach them. Armstrong, 2006, "Competition in Two-Sided Markets," *The RAND Journal of Economics,* 37(3): 668-91. As a result, competition between platforms can have large price effects on the side of the market that uses a single platform and little or no effect on the side that uses multiple platforms. Rysman, 2009, "The Economics of Two-Sided Markets," *Journal of Economic Perspectives* – Volume 23, Number 3: 125-143.

5 The platform may operate at a loss-making level for some time while it seeks to build up participation on both sides of the market.

price charged for transactions. Businesses on one side of the market may pass-through the fees they are charged by the platform to the consumers on the other side of the market when transacting with those consumers through the platform. This may undermine the platform's price structure and limit its ability to internalize the externalities by facilitating value creating transactions between the two sides. For example, when a business passes through platform commissions to consumers, it will not consider how this may reduce consumers' demand for the platform's services, which then affects the demand of all business customers for the platform's services. It is only the platform which can take these externalities into account in its pricing to both sides of the market.

Therefore, in addition to the complex pricing that can be a feature of multi-sided markets, it will also be important to consider the degree of pass-through when considering the extent to which multi-sidedness affects the behavior of the platform.[6]

D. Tipping

Network externalities can lead to markets tipping to one, or a few, providers. The feedback loops that can arise when there are strong INE mean that multi-sided markets tend to be relatively concentrated. A multi-sided market may be less likely to tip the more differentiated the offering from competing platforms are and the more that customers on one or more sides multi-home. Scale economies and having a critical mass of consumers may also be important in determining the concentration of a market with platforms because they influence their financial viability.

Once a market tips, the joint behavior of consumers and businesses may mean that the market power of the platform becomes well-established. It may take considerable coordination by both consumers and businesses to switch to another platform to restore competition. Such coordination may be unlikely in the absence of major technological changes in the sector. For these reasons, establishing whether there is a "first-mover-advantage" may be important in identifying current market power and the potential longevity and sustainability of this market power.

E. When the Multi-Sided Nature of the Market is Relevant to Assessing Market Power

This discussion suggests that any assessment of market power in multi-sided markets should take account of these features. The standard results from one-sided markets do not apply directly to multi-sided markets and any assessment of market power needs to take this into account explicitly (as we show below). Many of our standard tools for assessing market power are more complex to apply in multi-sided markets and may need to be adapted. At a minimum, this may involve simply taking into account the impact multi-sidedness has on the platforms' business strategy and decisions.

III. MEASURING MARKET POWER IN MULTI-SIDED MARKETS

In this section, we identify some practical approaches which authorities should consider when measuring market power in multi-sided markets. We discuss these practical approaches before going on to identify measures of market power.

A. Understand the Nature of Competition and Identify the Market(s) Where Market Power Relevant to the Theory of Harm is Expected to Arise

As a first step, an assessment of market power should start from a solid understanding of the nature of competition in the market under consideration. It should then proceed with an analytical framework that takes account of any important features arising from the multi-sidedness of the market.

6 We note that there is a debate as to whether a further distinction might be made between those markets where a platform is closely involved in the transaction (such as online travel agents or Amazon Marketplace), and those markets where the platform is less closely involved. Where a platform is closely involved in the transaction, it might be possible to define the market as the supply of the underlying product or service to consumers/customers, rather than as the supply of intermediation services. This would have consequences for the way in which market power were assessed. See BKartA, B6-113/15, Working Paper – "Market Power of Platforms and Networks," June 2016.

When thinking about market power and the effect of the conduct, it is important to identify clearly the nature of competition, including understanding the extent to which multi-sidedness with multiple consumer groups and interlinked demand affects market power. This is most likely to be where there are (strong) INE. In addition, in multi-sided markets, competitive constraints on market power may come directly or indirectly from any and all sides of a competing platform. For example, if a platform tries to engage in exclusion on one side, a rival may be able to respond with strategies on the other side. This suggests the need to look at all sides of the market when assessing market power.

The market power we are interested in also depends on the conduct or agreement that we are interested in. Therefore, measuring market power will be specific to the conduct under investigation. It is important, at least from an economics perspective, that market power is not considered in isolation from the conduct and the theory of harm.[7]

B. Take a Sequential Approach to Measuring Market Power in Multi-Sided Markets

Given the potential feedback loops between different sides of a market, a purist approach may suggest measuring market power by assessing all sides of the market simultaneously. However, this is likely to be a very challenging task and may not be practical, or even possible. When the multi-sided nature of the market appears important, then a reasonable and pragmatic approach is to start by using standard tools to assess market power for each side of the market separately and then factor in the indirect network effects by using a range of evidence and judgement. As we discuss below, care will be needed when using and drawing inferences from our standard tools.

IV. MEASURES OF MARKET POWER

In this section, we focus on identifying different measures of market power and explain how these relate to the conduct considered. These measures of market power are not exclusive to multi-sided markets. However, we explain how they may need to be adapted when used in multi-sided markets and we identify some additional challenges that may arise in this context and where care will need to be taken when interpreting the results of standard measures.[8]

Any assessment of market power should be based on a thorough assessment of the competitive constraints and, in multi-sided markets, it will often be necessary to use multiple sources of evidence and always consider the linked nature of demand.

A. Market Shares and Concentration

Shares of supply can be a useful indicator of concentration and therefore market power, particularly for homogenous products or services. Their usefulness depends on how well the market is defined in the first place. There are challenges to using market shares as an indicator of market power in multi-sided markets, particularly for platforms.

The first challenge is how to measure market share. It is not always clear how shares should be computed to take account of the multi-sidedness of the market. The pragmatic solution would be to follow the sequential approach outlined above and to measure market shares on all sides of the platform. Market shares can then be evaluated within the overall analytical framework that takes account of the nature of the linked demands and the feedback loops. This flexible approach allows for more weight to be attached to high market shares on one side of the market if the evidence suggests, for example, that that side is prone to single-homing.

7 Some questions that one might ask include: (i) How does any potential market power arise in a market that has indirect network effects and aspects of multi-sidedness? (ii) How is the behavior under investigation related to the market power in the relevant market? (iii) Are the network effects and multi-sided nature of the market important to the market power? (iv) Are the network effects and multi-sided nature of the market important to the behavior being investigated? (v) Is the behavior being investigated important for the network effects in the market (e.g. foreclosure which may lead to the market tipping permanently or preventing some potentially important innovation)?

8 As an aside we note that the cellophane fallacy presents a particular challenge when measuring market power in multi-sided markets, outside of the context of mergers. This standard problem may arise in any market because, in the presence of market power, prevailing prices would not equate to competitive prices and the application of the hypothetical monopolist test to prevailing prices is likely to lead to the relevant market being defined too broadly (i.e. including products which are not close substitutes at competitive prices).

As with all markets, it will be necessary to think through which shares one wishes to measure. For example, it will not be possible to compute value shares on both sides if one side does not pay for using the platform. It may then be necessary to measure the number or value of transactions to calculate market shares. The standard problem of interpretation also arises with, for example, concerns regarding the relevance of market shares as measures of market power in markets where services/products are differentiated.

In multi-sided markets, it may be challenging to distinguish between customers and competitors because customers on one side of the market may also be competitors to the platform. For example, hotels that list on an online travel agent platform might also compete directly for bookings. To take another example, third party sellers are customers on Amazon Marketplace and might also compete with Marketplace to attract direct sales. Care will be needed to ensure that customers and competitors are correctly identified and captured in measures of market shares.

Authorities typically aim to identify longer term measures of market power (e.g. sustained high levels of market share) rather than measures which take a snapshot of a market in flux or out of equilibrium. However, a multi-sided market with network externalities may be prone to tipping and authorities may wish to intervene earlier. In that context, care will be needed to identify whether indications of market power at a relatively early stage in the development of the market may lead to long term market power.

The challenges outlined above indicate that care needs to be taken when interpreting what market shares and, more generally, concentration indicate about market power in multi-sided markets.

B. Margins, Profitability and Pricing

As with market shares, measures of margins and profitability can be used to assess market power. Alongside the usual pitfalls of using such measures, multi-sided markets present additional problems given the existence of feedback loops and the complexity of pricing structures. Theoretical models have been developed that explicitly take account of the linked nature of demand in multi-sided markets and could provide a basis for measuring margins or profits. However, these models are complex and may not be practical to implement.

Following the sequential approach described above, it may be more pragmatic to measure margins or profits to each group of consumers and then take account of the strength of feedback loops and the implications for inferences regarding market power. This would need to be done carefully and recognizing that examining margins on one side of the market alone could give false indications of market power.

It may also be informative to consider changes in margins or profits over time. For example, it may be possible to examine whether commission levels have increased with concentration in the market, while service or quality levels, or marketing to the other side of the market, has not increased concurrently. This might provide an indication of market power.

C. Single-Homing vs Multi-Homing

The extent to which customers on one side of the market single- or multi-home affects the single-or multi-homing choice of customers on the other side of the market. Examining the extent of single- or multi-homing on each side can provide an indication of likely market power on each side.

Businesses will benefit from listing on more than one platform if they can play-off the platforms against each other or if listing on more than one platform expands the number of consumers in the aggregate. For example, a platform may be good at bringing consumers to the market who would otherwise not participate. If, on the other hand, some consumers single-home to platform A and others single-home to platform B, then businesses will find it necessary to use both platforms to reach both sets of consumers). However, single-homing by different groups of consumers, and multi-homing by none, can lead to market power for each platform.[9]

9 There is an open question as to whether it makes sense to find all platforms as having market power. Furthermore, do they have market power in the supply

In markets where INE are strong it will be important to measure the extent of single- or multi-homing on each side of the market before considering any feedback loops. In practice, this can be done by gathering information on the following questions:

Competition in the Paid Side of the Market

- **What proportion of customers on the free side of the market single-home?** This will partially determine the extent of multi-homing on the paid-for-side. If there is single-homing by at least some consumers, then businesses have a strong incentive to list on that platform. Therefore, single-homing may give rise to the platform having market power.

- **What proportion of customers on the paid-for-side of the market single-home?** If all businesses single-home on one platform, it may be an indication of market power. However, multi-homing by the paid-for-side of the market does not imply the absence of market power if consumers single-home. This is because businesses may need to list on more than one platform to attract single-homing consumers.

- **How important is the platform for attracting customers to the paid side?** If a business on one side of the platform could attract consumers directly, without listing on the platform, then the platform is less likely to have market power.

Competition in the Free Side of the Market

- **How important is the platform for a consumer when choosing the product it wishes to purchase and the supplier it uses?** A platform is less likely to have market power if consumers can easily find and purchase their preferred product through other channels.

- **How loyal are consumers to one platform?** A platform is more likely to have market power if it has a loyal set of customers who are less willing to switch away from it.

- **How easy is it for consumers to search across competing platforms?** A platform is more likely to have market power the harder it is for consumers to search and compare deals across competing platforms.

Information on customer behavior and the extent of single- or multi-homing can be obtained from several sources:

- **Membership data** from market participants can be used to measure the extent of overlap of consumers, or businesses, between the different platforms.

- **Transaction data** from market participation can be used to measure the extent of overlap and the volume of transactions involved.

- **A survey** may provide a better understanding of customer behavior on all sides of the market and may provide insights into how they use the platforms to search for products and therefore the true extent of multi-homing. It may also provide insights into out of market constraints, where data may be unavailable.

- **Web server data** might be used to analyze user behavior within a specific domain or how consumers search across platforms. This could help the agency to understand:[10] how many platforms a consumer visits and how often; whether the consumer

of services to businesses (on one side of that platform) due to the single-homing of the consumers (on the other side of that particular platform); or do they have market power in the supply of services to the single-homing consumers? Finally, potential market power due to consumers single-homing on platforms may not arise if some/many consumers use tools to search across platforms – effectively multi-homing without necessarily visiting each platform. For example, metasearch sites used in the online travel industry would appear to support this form of multi-homing (although they appear to account for a rather small proportion of bookings).

10 We would expect platforms to collect an array of data internally to monitor how it is performing against internal targets and against rivals. Therefore, internal documents and management information collected during the normal course of business are likely to provide useful insights.

considers direct sales from businesses, and their websites, and in what order this search occurs; how much time the consumer spends on the search and whether the level of engagement indicates more or less market power.

- **Search engine optimization ("SEO")** For online platforms, a good understanding of the platforms' SEO strategy may help assess market power. This might include the use of keywords and search terms and how they affect activity on the platform. In theory, the greater the overlap in search terms, the more likely the platforms are to target the same customers, and therefore the more likely they are to be competing closely.

D. Conduct

Sometimes the ability to engage in the conduct may be seen as an indicator of market power, particularly for conduct that would be unachievable or unprofitable in the absence of market power.[11]

Clearly an important factor to consider is how the conduct may lead a market to tip when a market is already prone to tipping due to the INE.

E. Barriers to Entry and Expansion, Including Switching Costs as a Source of Market Power

As a final comment on measures of market power, we note that any assessment of market power should include an analysis of barriers to entry and expansion. A firm is unlikely to have market power in the absence of material/substantial barriers to entry, and barriers to large-scale expansion by fringe competitors.

The relevant types and extent of barriers to entry may depend on the context, but these are fairly well established. For example, one may consider the costs of entry and the extent to which these costs are likely to be sunk following entry. One may also consider how the costs of entry compare to the likely benefits of entry and how risky profitable entry would be. Profitable entry may be risky due to exogenous demand and supply shocks and/or due to strategic responses to entry by incumbents. None of these factors are unusual to multi-sided markets, but are likely to be relevant to them.

A consideration in multi-sided markets is the need for platforms to establish and market themselves to all sides of the market. The importance of this will depend on the strength of INE on the different sides of the market. The platform will need to attract all groups of customers and entry costs may differ for each side of the market. For example, it may be relatively easy to get businesses to join a new platform when they only pay usage fees and so are willing to multi-home. However, the platform may need to make significant sunk investments in advertising and content in order to attract consumers to the platform.

Switching costs may also be important in multi-sided markets. Switching costs can create barriers to entry and expansion and, if there is a first-mover-advantage, can establish and strengthen a position of market power.

Switching costs may arise between platforms, or between platforms and direct sales, due to customer habits and convenience. For example, cookies used by the platform may mean that it is likely to show a consumer a selection closer to the consumer's preferences. The platform may hold the consumer's payment card details, meaning that these do not need to be re-entered every time a purchase is made. The platform has the contact details of the consumer and knows other personal information, so that the platform can contact the consumer with targeted promotions. Also, the nature of platforms is to reduce search costs and aid comparability. Therefore, consumers may be expected to prefer this to direct search across businesses' own websites.

11 For example, the use of wide most favored nation clauses ("MFNs") by some platforms might provide some indication of market power. Wide MFNs (also known as wide price parity clauses) state that the business's price in all other sales channels (including other platforms) will never be lower than the price on the platform with which the business is contracting. This contrasts with narrow MFNs which state that the business's price on its own website (or retail outlet) will never be lower than the price quoted on the platform. On the other hand, it may be that the conduct itself impacts upon other measures of market power. For example, a wide MFN reduces the incentive of businesses to pass-through a commission increase into their prices on that platform and, to the extent that it is passed though, it will be matched on other platforms. This means that the initial 'feedback loop', which one might consider in assessing market power, is no longer operational due to the wide MFN.

Technological developments may weaken switching costs as they may lead to periods of intense innovation and businesses responding to technological changes, which can be destabilizing to established market power. On the other hand, technological developments may also enhance market power. For example, consumers may be less willing to shop around through organic browser searches when they have a convenient app on their phone. Moreover, consumers may not be willing to have numerous apps on their phones supporting similar services.

V. ASSESSING THE STRENGTH AND IMPACT OF INE AND FEEDBACK LOOPS

In this final section, we provide practical suggestions for assessing the strength and impact of INE and feedback loops. We have proposed a sequential approach, looking first at the market power on each side of the market separately, and second looking at constraints from the other side via the feedback loops. This second step requires us to assess the strength of feedback loops to examine whether competition from one side of the market constrains the platform in its price setting to the other side of the market. This will help establish whether market power on one side of the market exacerbates market power on another side or whether competition from one side might constrain the other.

This second step is important because, in the presence of strong INE, simple one-sided measures of market power potentially underestimate the market power of the platform. For example, if the conduct in question undermined the ability of other platforms to compete effectively, then the presence of strong INE could lead to rapid concentration of the market and the exclusion of rivals. In this example, if the conduct leads to single-homing customers on one side of the market switching, the INE may simultaneously act to strengthen one competitor rapidly and weaken another rapidly. This could be the case even though static market shares, or other measures, may not indicate a position of significant market power or dominance.

It is also important to recognize that the potential benefits that a platform may gain from additional customers on one (or more) side(s) of the market may not always be large. The incremental value of gaining an additional customer is likely to vary depending on the number of customers already on the platform. Where a platform already has many potential members of the market on board, adding one additional business will not increase the value of the platform to the consumer as much as when the platform had fewer businesses on board. A platform might therefore put less effort into recruiting customers once it is more mature. This implies that the pricing structure on the platform is likely to evolve to reflect the benefit to the platform of additional customers and how this may change with the total number of customers on the platform.[12]

There are two key elements of an assessment of the strength and impact of INE and feedback loops. The first is the elasticity of demand (on all sides), which provides an indication of the sensitivity of that group of customers to a change in the relative price. The stronger the reaction to a change in price, the greater the impact the feedback loop can have. The second element is the responsiveness of demand (on all sides) to participation rates on the other side(s), which provides an indication of how a response from one side of the market to a change in price will affect demand on the other side of the market.

In some circumstances, it may be possible to assess the strength of the INE by simply looking at the rate of growth of the platform and considering how growth in one side of the market appears to give rise to growth in the other side of the market.

In practice, it may be difficult to measure these elements directly. However, the following are three potential sources of evidence that may provide information on the strength and impact of the INE and feedback loops:

- **Customer data.** If it is possible to collect transaction data for market participants, it may be possible to use econometric techniques to examine past customer responses to changes in, for example, platform prices that reveal their preferences. This data would allow for the direct measurement of both the elasticity of demand and the responsiveness of demand to participation rates on the other sides. There are a number challenges with using such evidence, one being that it may be hard to ascertain the extent to which customers respond by choosing an off-platform "outside option."

12 In other words, at the margin, the strength of the INE is unlikely to remain constant.

- **Econometric techniques.** A combination of evidence on revealed and stated preference could be used to model choice or estimate demand econometrically. It may also be possible to measure INE directly using econometric techniques.[13] At present, the theoretical models we are aware of appear to make several simplifying assumptions and we do not know of any attempts by any competition authorities to do this.[14]

- **Survey evidence.** Surveys provide a promising source of information on the strength and impact of feedback loops. Although surveys suffer from the drawback of using stated preferences, they may have the benefit of not only providing useful insights into both elasticity of demand and responsiveness of demand to participation rates, they may also allow for the assessment of preferences for off-platform options. A survey of businesses, or customers on the paid side of the market, would allow an authority to gather information on a range of questions, including: the extent to which the businesses would pass through increases in the cost of transacting on the platform in the form of higher prices to consumers on the platform; the value to businesses of consumer participation and willingness to pay for different rates of participation; the availability of alternatives and the existence of any switching costs. This could be complemented with a survey of customers on the other side(s) of the market (i.e. consumers), which could include questions on how they would react to changes in the relative price of transactions on the platform, the value to these consumers of business participation and how different business participation rates would affect their willingness to use the platform.

These sources of information are unlikely to provide all the evidence required to assess the strength and impact of INE and feedback loops. The authority will need to make an assessment in the round and using multiple sources of evidence, including internal business documents.

VI. CONCLUSION

The advent of the digital economy and the prominence of online platforms makes understanding the nature of competition in multi-sided markets crucial. This article has sought to give pragmatic suggestions for practitioners seeking to measure market power in multi-sided markets.

As a first step, it is necessary to assess the importance of INE. Where these are strong, the multi-sided nature of the market will be relevant to the conduct under investigation. As a second step, the pragmatic approach of assessing market power in each side of the market and then taking into account feedback loops will capture the multi-sided nature of the market and its relevance to the conduct under investigation.

We have suggested several practical ways of measuring market power in the different sides of the market, taking account of the added complexity and potential biases that arise in using these measures in multi-sided markets. We have also suggested ways of directly measuring the indirect feedback loops. We recognize that it will not always be possible to measure the feedback loops directly. Where this is not possible, thinking through how these loops are likely to work in practice will provide a good qualitative way of capturing the impact INE will have on market power.

13 Through simultaneous demand estimation it may be possible to model demand on all sides of the market and back out the cross elasticities in order to measure the INE.

14 See, for example, Song, 2015, "Estimating platform market power in two-sided markets with an application to magazine advertising." Working Paper.

PRIVACY FIXING AND PREDATORY PRIVACY: THE INTERSECTION OF BIG DATA, PRIVACY POLICIES AND ANTITRUST

BY BENJAMIN R. DRYDEN & SHANKAR (SEAN) IYER [1]

I. INTRODUCTION

Imagine that two leading, competing online dating websites announce sweeping reforms to their privacy practices. The two companies — let's call them "Charmed" and "Doctor Love" — jointly agree to bring the commercialization of their subscribers' data to an end. Press releases from both companies declare that members will no longer need to fear information about their sexual orientation or dating history falling into the hands of advertisers. The agreement sets a new best practice for the entire online dating industry.

The media, consumer advocates and the FTC unite in praising the move. And indeed, from a consumer protection standpoint, Charmed and Doctor Love's agreement to adopt best privacy practices for the online dating industry is laudable. An online dating service might have a great deal of highly sensitive data about its members and, all else equal, it is safe to assume that most consumers would rather keep some of this sensitive information out of advertisers' hands.

From a competition standpoint, however, the agreement between Charmed and Doctor Love raises a number of questions. Obviously, if Charmed and Doctor Love were to announce an agreement that they would each start charging subscribers the same rate of $29.95 per month, this would be a *per se* illegal price-fixing agreement; the two companies would likely face criminal investigations and treble-damages lawsuits within days. Likewise, if the two companies agreed with each other not to offer customer satisfaction guarantees, or if they agreed not to poach one another's customers, they would likely find themselves on the wrong end of antitrust law. So, one might reasonably ask, is the adoption of best privacy practices any different — from either a theoretical or legal perspective — than price fixing? And if so, why?

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This article will address these questions. It will proceed in four parts. First, we will discuss the competitive implications of corporate privacy policies. As we will explain, privacy is an area where society's goals of protecting consumers can potentially conflict with its goals of promoting free competition. Second, we will propose a legal framework for evaluating whether a company's privacy practices might harm competition — situations that we will call "privacy fixing" and "predatory privacy." Third, we will consider what it might take to prove (or disprove) a claim of privacy fixing or predatory privacy. And fourth, we will conclude with some remarks on what the concepts of privacy fixing and predatory privacy might mean for businesses, standard-setting organizations and law enforcement agencies like the FTC.

II. BIG DATA AND THE COMPETITIVE IMPLICATIONS OF PRIVACY

Before we discuss the legal aspects of privacy fixing, it is important to explain why the issue matters. Protecting privacy may seem so obvious a social good that any comparison with price fixing looks silly. As we will explain, however, under the right circumstances — such as "big data" industries where privacy practices may be an important element of non-price competition or may pose barriers to entry — privacy policies can have meaningful competitive consequences.

To return to our example, suppose that Charmed and Doctor Love were the two first movers in the online dating space. They both have millions of active members. All of Charmed's revenue, and the great majority of Doctor Love's revenue, comes from the monthly fees that their members gladly pay. Recently, however, Doctor Love has developed an ancillary line of revenue from the sale of advertisements on Doctor Love's mobile app. Doctor Love harvests its users' ages, dating histories, sexual orientations and mobile GPS coordinates to sell highly targeted, behavioral advertisements for the app. Over time, consumer watchdogs take notice of Doctor Love's practices and start to complain on privacy grounds.

In this world, an agreement between Charmed and Doctor Love to set an industry best practice against the sale of member data could actually have significant competitive consequences. One can think of the best practice as setting a new norm for member privacy. Under these facts, the agreement lessens a dimension of non-price, head-to-head competition between Charmed and Doctor Love, in that Charmed and Doctor Love will now offer an equal level of privacy protection to their members. Under the right conditions, this coordination could spill over into facilitating collusion on things like terms of use or even on monthly subscription prices. For instance, if Doctor Love uses its advertising revenue to subsidize its monthly subscription prices to undersell Charmed, then the elimination of this subsidy following the suspension of targeted advertisements could result in Doctor Love increasing its prices to be more in line with Charmed's prices. In this respect, the agreement on privacy practices would look like a classic, horizontal restraint of trade governed by Section 1 of the Sherman Act.[2]

The agreement between Charmed and Doctor Love could also raise monopolization issues under Section 2 of the Sherman Act.[3] To illustrate, let's introduce a couple more firms to the online dating marketplace — we can call them "Florida Daters" and "Can't Buy Me Love." Both are relatively recent entrants that have their own innovative way of making love connections, and they gradually chip away at the incumbents' networks. But since none has the membership sizes (and resulting network effects) that the incumbents do, they try new models to generate revenue. Florida Daters targets a specific geographical niche, and it adopts a model with two subscription tiers: a free, "basic" service, and a paid, "premium" service; it sells advertisements on both. Can't Buy Me Love eschews the subscription model altogether, and instead is a free service that is wholly supported by advertising. Both firms rely heavily on the sale of highly targeted advertisements based on sensitive member data.

In this world, the decision by Charmed and Doctor Love to jointly forgo revenue from the sale of data could create a barrier to entry that inhibits the growth of the new entrants. In an industry where privacy norms set by large incumbents dictate that user data will not be sold to advertisers, it can become very hard for smaller entrant firms that offer free content supported by advertising to compete with entrenched firms that have critical masses of paid subscribers. In this light, the agreement between Charmed and Doctor Love may protect the existing duopoly between them by creating an entry barrier to block new competition from gaining a

2 15 U.S.C. § 1.

3 15 U.S.C. § 2.

sustainable foothold in online dating. If Charmed and Doctor Love succeed in convincing consumers not to do business with firms that sell user data to advertisers, they could kill the innovative business models that Florida Daters and Can't Buy Me Love have both developed. This conduct could potentially constitute not only a restraint of trade in violation of Section 1, but also could constitute actual or attempted monopolization, or conspiracy to monopolize, in breach of Section 2 of the Sherman Act.[4]

Thus, under either the Section 1 or Section 2 lens, two firms' coordinated adoption of a policy that is good for privacy can come at a genuine cost to competition. The question, then, is how antitrust law should approach these issues?

III. LEGAL FRAMEWORK FOR REVIEWING PRIVACY FIXING OR PREDATORY PRIVACY

A. Privacy Fixing as a Horizontal Restraint of Trade

In any case involving a horizontal "privacy-fixing" agreement between competitors, there are two key questions that a court or regulator would need to consider. First, do the antitrust laws even reach such non-price aspects of competition as companies' privacy policies? And second, if the antitrust laws do apply, would privacy fixing be deemed *per se* illegal, like price fixing, or instead would it be reviewed under a more flexible standard like the "rule of reason"?

The first question can be answered easily: yes, the antitrust laws apply to non-price elements of competition like privacy policies. The Supreme Court has made clear that "for antitrust purposes, there is no meaningful distinction between price and non-price components of a transaction."[5] In other words, because consumers presumably put some value on the privacy of their information, an agreement between competitors on privacy practices arguably could be viewed as effectively similar to an agreement between competitors on price. Moreover, an agreement between competitors on a non-price element of competition can spill over, one way or another, into affecting price elements of competition.

For these reasons, the antitrust laws have been applied to such horizontal agreements as agreements between competing car dealerships not to open on Saturdays,[6] agreements between competing airlines on the size of permissible carry-on luggage[7] and even public safety rules by private standards-setting organizations.[8] By the same token, an agreement between competitors to adopt a certain set of privacy practices would at least be subject to review under the antitrust laws.

The next question, then, is what level of review would the antitrust laws apply? There are two basic standards for reviewing joint conduct under the antitrust laws: the *per se* rule, and the rule of reason. Collusion between competitors is "the supreme evil of antitrust,"[9] and accordingly antitrust law treats classic collusive activity like price fixing, bid rigging or customer allocations as illegal *per se. Per se* illegality means that these kinds of collusive activities have "such predictable and pernicious anticompetitive effect, and such limited potential for procompetitive benefit," that they are irrebbutably presumed to violate the law.[10] Accordingly, a prosecutor or plaintiff need only prove that a *per se* illegal activity took place in order to establish that the agreement violated the antitrust laws.

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4 See generally Commissioner J. Thomas Rosch, *Do Not Track: Privacy In an Internet Age* (remarks at Loyola Chicago Antitrust Institute Forum, Oct. 14, 2011) (describing efforts by "well-entrenched firms . . . [that] may favor barriers to consumer tracking in order to create or raise entry barriers to rivals instead of solely to protect consumers against behavioral tracking. . . . Those firms may be tempted to sail under the consumer protection banner when their predominant interest is instead to disadvantage rivals that are more heavily dependent on advertising . . . .").

5 *Pacific Bell Tel. Co. v. Linkline Communications, Inc.*, 555 U.S. 438, 450 (2009). See generally also U.S Dep't of Justice & Federal Trade Comm'n, *Horizontal Merger Guidelines* (2010) § 1 ("When the Agencies investigate whether a merger may lead to a substantial lessening of non-price competition, they employ an approach analogous to that used to evaluate price competition.").

6 See *Detroit Auto Dealers Association v. FTC*, 955 F.2d 457 (6th Cir. 1992).

7 See *Continental Airlines, Inc. v. United Airlines, Inc.*, 277 F.3d 499 (4th Cir. 2002).

8 See *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988).

9 *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

10 See generally *State Oil Co. v. Khan*, 522 U.S. 3, 10 (1997).

By contrast, most other types of joint activities are reviewed under the more flexible rule of reason, which requires proving that the conduct in question actually harmed competition in light of industry and competitive conditions.[11] Because rule of reason claims often require detailed factual and economic evidence, they may be more difficult to prove than claims involving classic, *per se* illegal conduct. Rule-of-reason claims also can be defeated with evidence that the activity in question produced benefits to consumers or to competition that outweighed any harms. Here, the key question is whether a horizontal agreement between competitors not to compete on certain dimensions of privacy would be deemed illegal *per se*, under the theory that it resembles price fixing, or instead whether the more flexible rule of reason would apply.

One possible distinction to draw is that price fixing effectively sets a *floor* on what companies can get out of consumers, whereas an agreement adopting best privacy practices effectively sets a *ceiling* on what companies can get out of consumers. Thus, the argument would go, an agreement adopting a best privacy practice should be reviewed, if at all, under the rule of reason. However, there are two problems with this argument. For one, it has long been settled law that an agreement between competitors that sets *maximum* prices is just as illegal as an agreement that sets *minimum* prices.[12] Therefore, the mere fact that an agreement between competitors might, on its face, be good for consumers does not on its own necessarily salvage that agreement from *per se* illegality. Second, the argument assumes that all varieties of privacy fixing will be good for consumers. This assumption is not necessarily sound. For instance, if Charmed and Doctor Love entered into an agreement that set a *low* bar for user privacy, the law needs to be able to review that agreement under the same legal framework as an agreement that sets a *high* bar for user privacy. The results might be different — that is, an agreement setting a low bar for user privacy might have a more pernicious effect on competition than an agreement setting a high bar — but the overarching legal framework that reviews the agreements needs to be the same.

Given these considerations, we would argue that the *per se* rule should not apply to claims of horizontal privacy fixing, for the simple reason that it is a new form of competitive restraint that courts and regulators do not yet have substantial experience with. As the Supreme Court has made clear, "[t]he *per se* rule is a presumption of unreasonableness based on business certainty and litigation efficiency,"[13] and "it is only after considerable experience with certain business relationships that courts classify them as *per se* violations."[14] Therefore, a rule of *per se* illegality should only be adopted "once experience with a particular kind of restraint enables the Court to predict with confidence that the rule of reason will condemn it."[15] For these same reasons, each of the other novel forms of agreements described above — the agreement between car dealerships not to open on Saturdays, the agreement between airlines on carry-on sizes, and the standards-setting organization's safety rule — were each reviewed under some form of a rule of reason.[16] And by the same token, we would argue that an agreement between competitors that sets either a high bar or a low bar for user privacy should receive the same rule-of-reason review.

Today, at least, courts and regulators are not yet in a position to apply *per se* treatment to privacy fixing: they have not yet considered cases of privacy fixing in enough detail to determine whether such agreements tend to unreasonably harm competition or not.[17] Accordingly, no matter how egregious a case of privacy fixing may be — i.e. even if Charmed and Doctor Love had agreed

11 Id.

12 *Kiefer-Stewart Co. v. Joseph E. Seagram & Sons, Inc.*, 340 U.S. 211, 213 (1951) ("The Court of Appeals erred in holding that an agreement among competitors to fix maximum resale prices of their products does not violate the Sherman Act. For such agreements, no less than those to fix minimum prices, cripple the freedom of traders and thereby restrain their ability to sell in accordance with their own judgment."); see also *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 223 (1940) ("Under the Sherman Act, a combination formed for the purpose and with the effect of raising, depressing, fixing, pegging, or stabilizing the price of a commodity in interstate or foreign commerce is illegal *per se*.").

13 *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 348-49 (1990) (italics added and quotation omitted).

14 *Broadcast Music, Inc. v. CBS*, 441 U.S. 1, 9-10 (1979).

15 *Arizona v. Maricopa County Medical Society*, 457 U.S. 332, 344 (1982).

16 *Detroit Auto Dealers Association v. FTC*, 955 F.2d 457, 469 (6th Cir. 1992); *Continental Airlines, Inc. v. United Airlines, Inc.*, 277 F.3d 499, 517 (4th Cir. 2002); *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 501 (1988).

17 See generally *International Healthcare Mgmt. v. Hawaii Coalition for Health*, 332 F.3d 600, 603 (9th Cir. 2003) ("Per se categories are not to be expanded indiscriminately to new factual situations.").

to *maximize* the commercialization of their members' data, no holds barred — we would suggest that a court or regulator review such an agreement under a flexible rule of reason, to allow it to at least consider what corporate efficiencies and consumer benefits might result from such an agreement.[18]

B. "Predatory Privacy" as Monopolization

Privacy fixing can raise competitive concerns not only by lessening competition between the agreeing firms, but also by creating entry barriers to lessen competition by third-party new entrants. This theory is less akin to price fixing under a Section 1 lens and, instead, is more akin to predatory conduct under a Section 2 lens. In this respect, it is not necessary for there to be a multiplicity of actors to sustain a claim for "predatory privacy," because unlike claims for unlawful restraints of trade, claims for monopolization can apply to the unilateral conduct of a single, powerful firm, as well as to conduct by multiple oligopolists.[19]

To simplify, let us make a small change to the online dating story above. Instead of Charmed and Doctor Love coming to an agreement not to commercialize member data, suppose that Doctor Love unilaterally decided to match Charmed's policy against commercializing member data. In this respect, Doctor Love's decision would fall outside the scope of Section 1 of the Sherman Act, because it was merely a unilateral business decision to follow a competitor's practice rather than a bilateral decision between competing firms.[20] Still, however, Doctor's Love's unilateral adoption of a no-commercialization policy would potentially remain subject to review under Section 2 of the Sherman Act. In that respect, a regulator or an aggrieved competitor might be concerned that Doctor Love's decision to forgo a profitable line of revenue could be motivated by a predatory, monopolistic desire to injure its smaller rivals, rather than a *bona fide* decision to honor its users' privacy.

An analogue can be drawn to the Supreme Court's decision in *Aspen Skiing*.[21] As its name suggests, that case involved competition for skiing in Aspen. There are four mountains in Aspen that support skiing. Three of these mountains were owned by "Ski Co.," while the fourth was owned by "Highlands." For years, Ski Co. and Highlands teamed up to offer a six-day, all-inclusive pass that allows skiers to visit all four mountains. The product was very popular and profitable for both companies. In 1978, however, Ski Co. ended this product, and instead began to push a six-day pass that only allowed skiers to visit the three mountains owned by Ski Co.

Highlands sued Ski Co. for monopolization. From Highland's perspective, Ski Co.'s decision to terminate the popular, profitable four-mountain pass served no legitimate purpose, but rather was merely an effort by a monopolist to disadvantage its smaller rival. Following a trial, a jury agreed with Highlands and, on appeal, the Supreme Court affirmed the jury's decision. The Supreme Court explained that Ski Co.'s decision to abandon the four-mountain ticket was "a decision by a monopolist to make an important change in the character of the market."[22] In a subsequent decision, the Court elaborated that Ski Co.'s "unilateral termination of a voluntary (and thus presumably profitable) course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end."[23]

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18 See *Paladin Associates, Inc. v. Montana Power Co.*, 328 F.3d 1145, 1155 (9th Cir. 2003) ("When a defendant advances plausible arguments that a practice enhances overall efficiency and makes markets more competitive, per se treatment is inappropriate, and the rule of reason applies.").

19 Section 2 of the Sherman Act, 15 U.S.C. § 2, is often thought of as applying exclusively to single-firm conduct. But this is not technically correct: rather, Section 2 applies not only to single-firm conduct but also to "person[s] who . . . combine or conspire with any other person or persons, to monopolize" a relevant market. Therefore, while such cases are not particularly common, agreements between competitors to create or entrench monopolies can be illegal under Section 2. See, e.g. *United States v. American Airlines, Inc.*, 743 F.2d 1114 (5th Cir. 1984) (holding that a solicitation to engage in price fixing constituted an attempt to monopolize under Section 2).

20 See generally *Theatre Enterprises, Inc. v. Paramount Film Distributing Corp.*, 346 U.S. 537, 541 (1954) ("The crucial question is whether respondents' conduct toward petitioner stemmed from independent decision or from an agreement, tacit or express.").

21 *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985).

22 Id. at 604.

23 *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) (emphasis removed). Note, however, that the *Trinko* Court described *Aspen Skiing* as being "at or near the outer boundary of § 2 liability." Id.

Here, by analogy, a decision by Doctor Love to forego a voluntarily, profitable source of revenue might, under the right circumstances, be seen as a similar attempt by an entrenched monopolist to disadvantage its smaller rivals. As *Aspen Skiing* teaches, when a firm "attempt[s] to exclude rivals on some basis other than efficiency, it is fair to characterize its behavior as predatory."[24] Therefore, if Doctor Love's decision to forgo the commercialization of its users' data has the purpose or the effect of making it unprofitable for smaller firms to commercialize their users' data, then Doctor Love's actions could be construed as the predatory actions of a monopolist, in violation of Section 2 of the Sherman Act. (However, this unilateral conduct may well need to be packaged with other purportedly anticompetitive conduct in order to support a Section 2 claim, and would further require that Doctor Love have monopoly power or a dangerous probability of acquiring it.)

To be clear, Doctor Love might have some good arguments in its defense. For one, Doctor Love would surely argue that its decision to adopt a no-commercialization privacy policy was made out of a *bona fide*, procompetitive desire to better serve its customers, rather than out of an anticompetitive desire to disadvantage its rivals. There is certainly support for this defense in theory,[25] but in practice the defense would likely turn on the facts of each particular case.

A more interesting defense that Doctor Love might raise is that its own privacy policy does not actually set an entry barrier for competitors. As long as there are at least some consumers who would rather sacrifice privacy for free content, then there might not be any barrier for competitors to profitably continue targeting those customers. Again, however, this is an empirical question that would likely require some form of evidence to confirm or rebut.

Another spin on this defense is that Doctor Love's adoption of a no-commercialization privacy policy does not actually force its competitors to follow suit. This defense might raise some interesting factual questions, but it would also raise a number of legal issues as well. One can imagine a range of ways that a new entrant might be impacted by a monopolist's privacy policy, and many of these ways pose a range of intricate legal issues. On one extreme, Doctor Love could hire lawyers and lobbyists to convince a government agency to crack down on its competitors for exploiting sensitive member data, or even to adopt a new regulation that prohibits the practice outright. This might be a very effective tactic for creating a barrier to new entry. But it's also one that is immune to antitrust challenge, because legal representation and lobbying are constitutionally protected rights, subject to limited exceptions.[26]

On the other extreme, Doctor Love might simply advertise to consumers the fact that while it does not seek to profit off of its members' data (anymore), its competitors do. One could imagine these ads being very powerful. Therefore, this too could be a very effective tactic for creating a barrier to new entry. But it is also one that reflects *bona fide* competition between firms, rather than anything anticompetitive. So this tactic should not create any antitrust liability for Doctor Love, because truthful, informative advertising is the essence of competition.[27]

In between these two extremes are more difficult cases. For instance, suppose that Doctor Love uses its clout to pressure an influential industry trade association to adopt no-commercialization as a rule of "online dating ethics" (whatever that means). In that case, there could potentially be antitrust liability, not only for Doctor Love but also for the trade association, if the trade association did not exert adequate controls over the rulemaking process[28] if the rule of ethics was just a subterfuge for protecting an incumbent firm.[29] Likewise, if Doctor Love paid actors to pretend to be consumers outraged at a rival firm's privacy practices in an effort to gin up a faux media controversy, this too might be sufficiently predatory conduct to support an antitrust claim.[30]

24 *Aspen Skiing*, 472 U.S. at 605 (quotation omitted).

25 See id. at 608 (emphasizing "Ski. Co's failure to offer any efficiency justification whatever for its pattern of conduct").

26 See, e.g. *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *California Motor Transport Co. v. Trucking Unlimited*, 404 U.S. 508 (1972).

27 See, e.g. *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 287-88 (2d Cir. 1979) ("Advertising that emphasizes a product's strengths and minimizes its weaknesses does not, at least unless it amounts to deception, constitute anticompetitive conduct violative of § 2.").

28 See, e.g. *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988); *American Society of Mechanical Engineers, Inc. v. Hydrolevel Corp.*, 456 U.S. 556 (1982).

29 See, e.g. *In the Matter of Professional Skaters Association*, FTC Dkt. No. C-4509, 2015 FTC LEXIS 46 (FTC Feb. 13, 2015).

30 See, e.g. *In re Warfarin Sodium Antitrust Litigation*, MDL 98-1232, 1998 U.S. Dist. LEXIS 19555, at *35 (D. Del. Dec. 7, 1998), rev'd on other grounds by

Therefore, if predatory privacy is rare, it would be rarer still for predatory privacy to actually be actionable under the antitrust laws. But still, one can imagine a few select sets of circumstances where a company adopted a consumer-friendly privacy policy in an unlawfully monopolistic manner. In these few circumstances, a claim for predatory privacy could conceivably be viable.

As an aside, it is worth pausing to distinguish "predatory privacy" as just described from a more classic "predatory pricing" theory. Formally, "predatory pricing" is an exceptionally rare[31] strategy that proceeds in two phases. In phase one, a deep-pocketed firm lowers its prices to below its actual costs, in order to take away business from a smaller rival. Eventually, the smaller rival goes out of business, leaving the deep-pocketed firm with a monopoly.[32] Then, in phase two, the monopolist raises its prices to a supracompetitive level in order to recoup the losses it incurred during phase one.[33] In this light, "predatory privacy" is fundamentally different from traditional "predatory pricing," among other reasons, because customer data is essentially costless for a firm to acquire (at least on a marginal basis), such that the idea of selling customer data below cost is difficult to imagine. There would also be serious obstacles to recoupment, because the FTC takes the position that a failure to keep a promise made to consumers about privacy constitutes a deceptive practice prohibited by under the FTC Act.[34] Therefore, when describing "predatory privacy," we refer primarily to an *Aspen Skiing* type of predation, rather than making a true analogy to predatory pricing.

IV. PROVING THAT A PRIVACY PRACTICE IS ANTICOMPETITIVE

Given that antitrust law could, under the right circumstances, recognize a claim for either privacy fixing or predatory privacy, it is worth considering how such a case might unfold.

As a starting point, even though a niche competitor like Florida Daters might have every incentive to challenge the privacy practices agreement between Charmed and Doctor Love's, we doubt that such a claim could be successful. As a competitor to Charmed and Doctor Love, Florida Daters would arguably lack standing to challenge a horizontal agreement between its competitors.[35] Alternatively, customers of Charmed or Doctor Love might have standing to challenge the restraint — on the theory that they paid a higher membership fee than they would have paid if the firms had sold their data to advertisers — but we doubt that a customer would have much incentive to bring such a case, at least on an individual basis. Even on a class-action basis, consumer claims would seem like a high-risk, low-reward proposition.

An aggrieved advertiser, however, might have both the legal standing and the most practical motivation to bring an antitrust lawsuit. To prove its case, an advertiser would need to show that the agreement between Charmed and Doctor Love not to sell their members' data caused more harm to competition than good. Such a case would likely resemble a classic battle of experts.

As a starting point, the case would require much of the same types of economic evidence about market definition and market power that are needed in all other types of Section 1 or Section 2 cases. In other words, a plaintiff or regulator would likely employ standard economic tools to determine reasonable interchangeability, market share and market concentration to find the contours of the relevant markets and to determine whether the alleged privacy fixer or predator has sufficient market power to be able to plausibly harm competition through its privacy practices. For instance, an economist might be needed to opine as to whether an

214 F.3d 395 (3d Cir. 2000) (denying motion to dismiss § 2 claim based, in part, on allegations "that defendant's extensive publicity campaign contained false misrepresentations . . . to induce potential customers to avoid purchasing" a competing product).

31 See *Matsushita Electrical Industrial Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 589 (1986) ("[T]here is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful.").

32 It is conceivable that a predatory pricing scheme might be attempted by several oligopolists, rather than by a single monopolist, but for a number of reasons "[s]uch a conspiracy is incalculably more difficult to execute than an analogous plan undertaken by a single predator." Id. at 590.

33 See generally *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

34 See Letter from Jessica Rich, Director, Bureau of Consumer Protection, to Facebook, Inc. and WhatsApp, Inc., April 10, 2014, available at: https://www.ftc.gov/system/files/documents/public_statements/297701/140410facebookwhatappltr.pdf, at 2-3.

35 See, e.g. *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 583 (1986).

online dating service with a geographical niche like Florida Daters, or a free dating service like Can't Buy Me Love, is reasonably interchangeable with the services of nationwide, subscription-based dating services like Charmed and Doctor Love. Or, indeed, if "offline," traditional dating services are in the same market as online dating services.

In this respect, an interesting question will be the extent to which the two-sided nature of data markets matter. For instance, imagine that Charmed and Doctor Love had teamed up with, say, a ridesharing application ("Mister Motor") to adopt joint policies against commercializing users' data. It is clear that Charmed and Doctor Love operate in a different primary market (online dating) than Mister Motor (ridesharing), but it is also clear that each firm also operates in a common secondary market for the sale of data to advertisers. In such a situation, absent some truly exceptional circumstances, we doubt that any agreement between the online dating services and Mister Motor on privacy practices could even begin to harm competition in the secondary market.

Data markets are immense. Competitors for the sale of data not only include services like Charmed, Doctor Love and Mister Motor, but also search engines, social media sites and, increasingly, data aggregators that purchase data on a wholesale basis and lease or sell it to advertisers or other firms. From a practical perspective, vendors increasingly offer predictive modeling services, such that proxies for data fields that fall under the umbrella of the privacy agreements may be readily available for purchase. For example, machine learning techniques can predict sexual orientation from (say) membership information, donations to charitable causes and so on. Accordingly, barring some truly unique circumstances, we doubt that data markets can be harmed by agreements between firms in different primary markets.

Thus, in addition to proving market definition and market power, a regulator or plaintiff will also be required to prove, one way or another, that the defendant's privacy practices have actually harmed (or were intended to harm, or otherwise pose some danger to) competition. Plainly, if a defendant were to turn over some smoking gun — such as a strategy presentation to the board of directors explaining how adopting a no-commercialization privacy policy will create a barrier to new entry — then this evidence may assist in proving an antitrust claim. But absent this sort of "hot" document, it might require some innovative forms of economic evidence to prove that a privacy practice has harmed competition.

In this respect, a key issue at any trial would be whether the agreement foreclosed the advertiser from obtaining the data it wanted from other sources, such as from competing online dating sites like Florida Daters, from non-competing services like Mister Motor, from search engines or social media sites, or from third-party data aggregators. In this respect, the defendants' expert would likely be able to opine that advertisers have a wide array of options for obtaining consumer data. However, the advertiser's expert might be able to opine that online data sites are irreplaceable sources of data about things like dating histories and sexual orientations, and that these sorts of highly sensitive data are uniquely valuable to advertisers. The trier of fact would have to weigh these arguments to determine whether the agreement harmed competition.

Ultimately, if the advertiser proved its case, it would also need to show damages to collect any money. A damages estimate might take the form of calculating the advertiser's lost income from being deprived of the ability to run advertisements based on users' dating histories and sexual orientations, offset in part by the advertiser's ability to run advertisements based on information that was available from other sources, such as users' ages and locations. In the age of big data and machine learning, such estimates will have to be benchmarked against the cost of buying probabilistic data for ad targeting. One can imagine a counterfactual world where the aggrieved plaintiff may reasonably be able to buy data generated from predictive modeling software that uses proxies for fields such as sexual orientation to achieve a near-equivalent level of ad targeting.

V. CONCLUSION

It remains to be seen whether privacy fixing or predatory privacy will take off as a new area of antitrust litigation or enforcement. That said, as big data gets bigger and bigger, it stands to reason that these issues will only increase in importance. In the meantime, we would close with four observations.

First, absent truly extraordinary circumstances, we suggest that Section 1 "privacy fixing" liability should only attach for agreements between companies that compete horizontally in non-data markets. It is very difficult to imagine a scenario where an agreement between an online dating site and a ridesharing application to adopt the same privacy policies could unreasonably harm competition. Even though both firms might each have vast amounts of sensitive data about their respective members, the markets for data are so large and unconcentrated, and have such low entry barriers, that it is exceedingly unlikely that any restraint between the two firms would lessen competition in any way.

Second, we expect that any private lawsuits over privacy fixing or predatory privacy would likely come from aggrieved advertisers. Competing firms are unlikely to have antitrust standing to challenge their rivals' privacy practices. And as long as companies tend to adopt high bars for their privacy practices, consumers are unlikely to file lawsuits complaining that these bars are harming rivals or creating barriers for new entrants. Advertisers, however, could have both the standing and the motivation to file a lawsuit for privacy fixing or for predatory privacy.

Third, because it is relatively uncommon for companies to adopt privacy policies in direct collaboration with their competitors, the most likely target for a privacy fixing or predatory privacy claim might well be a standards-setting organization or trade association that tries to adopt a best privacy practice or a rule of ethics for an entire industry. Therefore, when such organizations wade into discussing privacy topics, they should recognize the competitive concerns and potential antitrust risks. Whenever possible, such standards-setting organizations and trade associations should make sure to apply procedures and safeguards to prevent their decisions from becoming hijacked by private interests.[36] For instance, such organizations might consider requiring supermajority votes before any policies are adopted, basing decisions on outside expert judgments rather than industry interests, and describing any best practices as "recommendations" rather than as strict requirements.

Finally, companies should take heart that any good-faith attempts to advocate to the government for new laws or for better law enforcement are constitutionally protected and usually will not create antitrust liability. Therefore, companies with strict privacy policies should not be discouraged from lobbying for similar standards across the industry. That said, the competitive implications of privacy practices raise some tricky questions for law enforcement agencies like the FTC, which is simultaneously charged with promoting competition and with protecting consumers. It is for the policymakers at the FTC to decide how to balance these two important societal values. But the first step in striking the right balance is to recognize that competition and privacy can conflict, and that what's best for consumers' privacy may not be best for consumers' wallets.

36 See generally *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 505 (1988).

THE ITALIAN BIG DATA INQUIRY: A QUESTION OF METHOD

BY RENATO NAZZINI [1]

I. INTRODUCTION

On May 30, 2017, the Italian Competition Authority ("ICA"), together with the Telecoms Authority ("AGCOM") and the Data Protection Authority ("DPR") (together, the "Authorities") launched an inquiry into "big data." This is the first time an inquiry has been carried out by the three Authorities and, while this clearly presents some challenges, it is also a significant opportunity to bring clarity in this field.

In 2016, the French Competition Authority and the German Competition Authority issued a joint paper on "Competition Law and Data." This was a useful attempt at understanding the problem but was rather abstract and focused on perceived problems associated with data without much factual evidence. A much more significant contribution to the debate was the 2015 UK Competition and Markets Authority's ("CMA") report on its findings in a call for information on the commercial use of consumer data. This was a much broader fact-finding exercise in which the CMA concluded that the commercial use of consumer data has significant benefits to consumers and businesses and that competition concerns would have to be assessed on a case-by-case basis using existing enforcement tools. The CMA attempted a general categorization of the circumstances in which competition concerns may be more likely to arise. It also identified areas of concern beyond competition law, particularly around consumers' lack of awareness and understanding of how and why their data is collected and concerns about sharing data. In addition to these, and several other initiatives by competition authorities,[2] there is now a vast literature on big data even if some of it is superficial and often points to problems or issues without a sound evidential basis or, conversely, quite apodictically states that there are no competition concerns associated with the commercial use of consumer data.

The Authorities have a real opportunity to do something different – to understand how data is actually used in industry (across sectors and by companies large and small) and provide a useful framework for the

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2 For example, the Report of the Study Group on Data and Competition Policy by the Japan Fair Trade Commission of June 6, 2017.

understanding of the benefits of data usage as well as the potential problems that may arise. The report to be issued by the Authorities has the potential to become a reference point and a source of balanced thought leadership not only in the European Union but also globally.

In order to achieve such an ambitious objective, I would suggest that the Authorities should seek to clarify three methodological issues which, among others, deserve particular attention: the benefits of data usage, data usage and multi-sided markets and data usage and algorithms. In this short article, after setting out the background of the inquiry in Italy, I discuss these issues in turn.

II. BACKGROUND OF THE ITALIAN INQUIRY

There is little case law and enforcement experience in Italy on commercial data usage and competition or other regulatory concerns. The authority that appears to have done most work in this area is AGCOM. It carried out a sector inquiry on internet services and online advertising, which was concluded in 2014.[3] The inquiry also dealt with big data, highlighting that the economic power of internet firms is linked to the quantity of data and information that they have rather than the number of users[4] and that data are "strategic assets," "barriers to entry," and "competitive levers that are difficult to replicate."[5] Online advertising is more and more dependent on user profiling. Competition on these markets will be more and more conditioned by the availability of data.[6]

AGCOM is also conducting an inquiry on the development of online platforms and electronic communication services, launched in 2015.[7] In 2016, AGCOM published a report on consumer communication services or social communication apps: In that report, AGCOM acknowledges that regulation may slow down innovation in this sector but then goes on to recommend that consideration should be given to broadening the definition of electronic communication services ("ECS") so as to include some or all social communication apps within the regulatory framework applicable to ECS and level the playing field among market players.[8] The remainder of the inquiry is ongoing.

There is a third AGCOM inquiry on digital platforms and media, which was launched in 2016 and is ongoing.[9] From the limited published material, it appears that this inquiry includes consideration of the role of data in the economic relationships among publishers, internet platforms, and end-users. AGCOM might be taking the view that data is a factor relevant to market power which can affect media pluralism. AGCOM also appears to be studying the app market and the correlation between the number of privacy permissions with user demand for apps. There is some indication that AGCOM believes there may be a market failure because users are not aware, or fully aware, that they are providing valuable data to platforms and developers and that there is a market for such data.

The DPR has recently highlighted potential problems associated with big data. In a number of speeches and interviews, the president of the authority stated, for example, that there is lack of transparency on the collection and use of big data, that there is asymmetry between the user and those who exploit the data, that there is a risk of discrimination through the use of big data and that a small number of firms have enormous power through the availability of big data.[10] However, it does not appear that the DPR has ever adopted any substantial decision or issued any substantial opinion on big data. The inquiry may well be the first opportunity for the DPR to come to an informed view on the issues that it has previously raised.

3 Decision no. 19/14/CONS, Annex A.

4 Id. para 206.

5 Id. para 632.

6 Id. para 633.

7 Decision no. 357/15/CONS.

8 Decision no. 165/16/CONS, Annex A.

9 It was launched by Decision no. 309/16/CONS.

10 See, e.g. speech by the president of the DPR Antonello Soro on January 30, 2017.

The ICA has only marginally dealt with the issue of big data in its cases. In the *WhatsApp* case, for example, the ICA decided that WhatsApp had breached consumer protection legislation by inducing users to consent to the sharing of their data with Facebook. The ICA took the view that data are a form of economic consideration, paid by users, for services such as those provided by WhatsApp.[11] Over the past few years, the ICA has organized events on data and digital platforms but there does not appear to be a clear policy steer as yet on the approach that the ICA is likely to take.

III. THE BENEFITS OF DATA USAGE

It is by now well understood that data mining and analytics are unlocking enormous growth potential for the economy to the benefit of consumers. The analysis of these innovation opportunities and consumer benefits must logically precede any assessment of potential harms. To do otherwise would be a bit like studying the monopoly problem in railways before having understood how the steam engine worked and what its pro-competitive uses were. Much of the literature on big data, especially in the antitrust field, and certain recent political rhetoric does suffer from this methodological error.

Thus, the inquiry should focus on the benefits that data usage brings – in terms of competitiveness, profitability, promptness and increase in decision making effectiveness, as well as on the opportunities for growth that are still unexploited. The value of data usage for business depends on the benefits carried both internally, in terms – for instance – of process optimization, and externally, by improving business' relationships, ultimately to the benefit of consumers.

This approach is particularly important in Italy, a country with great industrial potential and entrepreneurship but still struggling to achieve reasonable, let alone optimal, levels of productivity and innovation. Data usage and analytics represent a significant opportunity for Italian companies and it is important that the regulatory environment does not become hostile to data mining, analytics and usage, thus stifling innovation and productivity growth.

IV. DATA USAGE BEYOND MULTI-SIDED MARKETS

Some of the literature, especially in the field of antitrust economics and policy, focuses on big data in multi-sided markets, or, even more narrowly, on multi-sided online platforms. This approach could, of course, simply reflect the focus that particular authors have chosen to give their research but is not, in my view, well-founded in policy or in law. Therefore, it would be a mistake to limit a study of data usage to industries involving multi-sided markets.

The only conceivable reason why a study of big data should be limited to multi-sided markets could be that multi-sided markets exhibit indirect network effects and, somehow – the argument would go – conceivable problems relating to big data can only ever arise when there are indirect network effects. I do not consider this argument convincing.

First of all, experience has shown that competition issues related to big data have not been limited to industries involving multi-sided markets or indirect network effects.

For example, in *Thomson Corporation/Reuters Group*, the European Commission ("Commission") accepted the divestiture of financial databases and other assets to resolve its concern about the combination of the two parties' financial data. According to the Commission, the merger was, among other things, likely to have a negative impact on providers of desktop products that obtained and integrated the content provided by Thomson and Reuters into their own competing offerings to customers. The merged entity would have had the ability and the incentive to foreclose such competitors, thereby adversely affecting competition. In order to address these concerns, the merging parties committed to divesting copies of their databases to a third party so that a credible competitive force would remain in the marketplace post-merger. Nothing in the decision had anything to do with multi-sided markets or direct or indirect network effects.

11 PS10601 - *WhatsApp - Trasferimento di dati a Facebook*, decision no. 26597 of May 11, 2017, paras 54-56.

This approach is confirmed by the practice of agencies around the world. The U.S. Federal Trade Commission ("FTC") has required remedies in numerous "big data mergers" that did not involve concerns about multi-sided markets or network effects. For example, in the *CoreLogic/DataQuick*[12] transaction, which like the *Thomson/Reuters* case discussed above, involved companies that collected and sold databases to outside parties, the FTC required licensing of housing data to a new entrant, even though there was no allegation the service at issue involves network effects.

Secondly, many industries that use data extensively do not involve multi-sided markets or network effects:

- Artificial intelligence ("AI") - AI often uses extensive data to look for patterns or other insights. There is a wide range of applications for AI, some of which involve network effects (e.g. enhancing functionality of social networks), some of which do not (e.g. identifying fraudulent transactions);

- Retail - Retail industries use data extensively to help with promotions, product selection and pricing. Retailers, including online retailers, generally do not operate in a multi-sided market and usually are not characterized by network effects. An exception would apply if the retailer acted as a platform for other merchants, in which case there would be indirect network effects. But there is no logical reason, and no evidence, that big data used by a non-platform retailer can never be a problem and should not be considered by competition authorities whereas big data used by retail platforms somehow deserve a different treatment;

- Insurance - Insurance companies have used big data extensively for decades to assess risk, detect fraud, enhance marketing and offer personalized product recommendations. Insurance is not a multi-sided market and is not characterized by network effects;

- Financial services - The financial services industry makes significant use of big data to enhance fraud detection, recognize abnormal trading patterns, develop personalized marketing and enhance risk management. The extent of network effects varies significantly within the financial services industry, depending on the particular service (e.g. more significant network effects for charge cards but limited, or no, effects for brokerage services or loans).

Thirdly, network effects in general, and indirect network effects in particular, are by no means synonymous with competition concerns. They are a normal market phenomenon observable in many sectors which, as any other market characteristic, should be taken into consideration by firms when setting their business strategy. This has been recognized by the Commission. Thus, in *Facebook/Whatsapp*, the Commission stated that:

> [t]he existence of network effects as such does not a priori indicate a competition problem in the market affected by a merger. Such effects may however raise competition concerns in particular if they allow the merged entity to foreclose competitors and make more difficult for competing providers to expand their customer base. Network effects have to be assessed on a case-by-case basis.[13]

In addition, the Commission considered that network effects are not problematic in fast moving sectors, where barriers to entry are low, consumers use multi-home and the parties do not control any essential element of the network.

12 https://www.ftc.gov/enforcement/cases-proceedings/131-0199/corelogic-inc-matter.

13 M.7217 – *Facebook/Whatsapp*, OJ C417 of 21.11.2014, p. 4, para 130.

V. BIG DATA AND ALGORITHMS

A final methodological question is whether an inquiry into the commercial use of consumer data should also consider the use of algorithms and the competitive concerns arising therefrom. While use of data and use of algorithms are sometimes discussed together, in my view an inquiry into the use of big data should keep the competition concerns potentially arising from data usage distinct from issues relating to the use of algorithms.

In the debate to date, algorithms and big data have been associated with distinct competition concerns. Big data competition concerns typically relate to the possibility that data possessed by incumbents may give them a competitive advantage against new entrants. In contrast, competition concerns related to algorithms typically relate to whether their use may enhance the potential for coordination on pricing or, in exceptional circumstances, whether a dominant firm may use algorithms to engage in abusive conduct, for example to exclude rivals or price discriminate so that downstream undertakings are placed at a competitive disadvantage. In both cases, the problems associated with big data and those associated with algorithms are conceptually different (although they may be linked, of course).

Data are, essentially, information and, often, an input into a process. Not having access to certain data may act as a barrier to entry or, even more exceptionally, but, essentially, as a more intense manifestation of the same problem, access to certain data may be an "essential facility." But, generally speaking, information as such is not market conduct but an enabler of conduct. A study of big data should focus on whether data truly is "essential" (taking into account that the commercial value derived from data may be more due to skill and expertise than the data itself) and how firms' conduct may be influenced by the possession of data or lack thereof. It would be particularly interesting to test the hypothesis that a certain amount of data is necessary or essential to enter certain markets or to compete effectively in them, given that often firms enter markets without having first obtained any significant amount of data and then, when they succeed thanks to their innovative products or business model, acquire data that allows them to grow further by improving their commercial offer or reducing their costs, which is a fairly normal occurrence in many markets. Algorithms, on the other hand, are a set of rules. They are relevant only insofar as they are reflected in market conduct *vis-à-vis* other market players or consumers. Their analysis is no different to the analysis of any form of market conduct that is relevant for antitrust purposes: whether it be collusive or unilateral. Furthermore , many algorithms can be used to make business decisions without any historical data. An algorithm could determine pricing based on the seller's costs, inventory levels and competitors' current pricing. Uber's surge pricing, for example, is based on real-time supply and demand.[14]

In policy terms, issues relating to data and algorithms have often been kept separate. For example, the OECD issued separate reports on big data[15] and algorithms.[16] The EU Commissioner for competition Margrethe Vestager has spoken separately about big data[17] and algorithms.[18] Acting FTC Chair Maureen K. Ohlhausen has commented separately about big data[19] and algorithms.[20]

This approach appears to be consistent with the (so far still limited) experience in merger control, where the Commission has analyzed potential competition concerns relating to big data independently of any analysis or consideration of algorithms.

For example, in *Facebook/WhatsApp*, the merged entity could collect data from WhatsApp in order to improve targeting of advertising on Facebook. However, incentives were mixed (WhatsApp users could have switched to other consumer communications apps) and the amount of data available to competitors remained considerable. The analysis focuses on data as such without any consideration of their potential use through algorithms.[21]

14 https://www.uber.com/info/how-surge-works/.

15 https://one.oecd.org/document/DAF/COMP(2016)14/en/pdf.

16 https://one.oecd.org/document/DAF/COMP(2017)4/en/pdf.

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

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

19 https://www.ftc.gov/system/files/documents/public_statements/686541/ohlhausenokuliaralj.pdf.

20 https://www.ftc.gov/system/files/documents/public_statements/1220893/ohlhausen_-_concurrences_5-23-17.pdf.

21 M.7217 – *Facebook/Whatsapp*, OJ C417 of 21.11.2014, p. 4 – paras 164 – 190.

In *Publicis/Omnicom*, the Commission concluded that the combination of the merging parties' data would not provide them with a unique, non-replicable advantage, because competitors would be able to obtain large amounts of data or data analytics services in other ways, for instance, from data brokers or data analytics services providers, or by collecting and analyzing data themselves. Again, there is no analysis of algorithms.[22]

In *Telefónica/Vodafone/EverythingEverywhere/JV*, the Commission analyzed whether the collection of personal data through mobile wallet services offered by the three leading wireless operators in the UK would have raised competition concerns. During the review, concerns were raised that the JV would come to possess essential personal data generated by users of the mobile payment services and that this could be used to exclude rivals. The Commission assessed whether the JV would foreclose competing providers of data analytics or advertising services (by combining personal information, location data, response data, social behavior data and browsing data) and by creating a unique database that would become an essential input for targeted mobile advertising that no competing provider of mobile data analytics services or advertising customer would be able to replicate. The Commission concluded that the JV would indeed be able to collect a broad range of consumer information, which would be very valuable for its (mobile) data analytics services and advertising services. However, many other strong and established players are also able to offer comparable solutions to the JV. Therefore, other providers of advertising services competing with the JV would not be foreclosed from an essential input and the creation of the JV would not have a negative effect on competition on the market for (mobile) data analytics, as well as for market research services or marketing information services. The competition analysis was carried out without any reference to algorithms.[23]

V. CONCLUSION

The Italian big data inquiry has the potential to clarify a number of complex issues relating to the commercial use of data and provide an analytical framework for identifying potential concerns. In order to achieve this objective, it is suggested that three methodological issues are, among others, of fundamental importance:

- The analysis should start from a thorough understanding of how data are collected and used across sectors and the benefits of data usage. It is not possible to identify and adequately assess potential competition concerns if the benefits of data usage for businesses and consumers, and, ultimately, for the economy as a whole, are not properly understood first.

- The analysis of data usage should not be limited to multi-sided markets or online platforms. While data usage is important in these settings, it is equally important in markets that are not multi-sided or in "traditional" markets. Healthcare, insurance and retailing are obvious examples. Limiting the analysis to multi-sided markets or online platforms only would capture only part of the picture. Even if one were to accept, as a hypothesis to be tested, that concerns associated with data usage are more acute or more likely in multi-sided markets or online platforms, surely the only robust way of testing this hypothesis is to compare such sectors with one-sided or "traditional" markets.

- An inquiry into the commercial use of consumer data should keep the competition concerns potentially arising from data usage distinct from issues relating to the use of algorithms. Big data competition concerns typically relate to the possibility that data possessed by incumbents may give them a competitive advantage against new entrants. In contrast, competition concerns related to algorithms typically relate to whether their use may enhance the potential for coordination on pricing or, in exceptional circumstances, whether a dominant firm may use algorithms to engage in abusive conduct, for example to exclude rivals or price discriminate so that downstream undertakings are placed at a competitive disadvantage. In both cases, the problems associated with big data and those associated with algorithms are conceptually different.

22 M.7023 – *Publicis/Omnicom*, OJ C84 of 22.3.2014, p. 1 -para 617-630.

23 M.6314 – *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, OJ C66 of 7.3.2013, p. 5–23, para 538-558.


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