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Competition Law and Economics of Big Data: A New Competition Rulebook

Droit et Économie de la Concurrence des Données Massives :
Un Nouveau Livre de Concurrence

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Competition Law and Economics of Big Data:
A New Competition Rulebook

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Avertissement

La Faculté n'entend donner aucune approbation ni improbation aux opinions émises dans cette thèse ; ces opinions doivent être considérées comme propres à leur auteur.

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All remaining mistakes are mine.

Résumé/Abstract

Résumé

1. Le Big Data est un sujet d'actualité en droit de la concurrence dans le monde entier. Les praticiens et les chercheurs en droit et économie essaient de trouver comment le droit de la concurrence peut aborder les enjeux de Big Data dans l'économie numérique. Un nouveau droit de la concurrence est nécessaire pour l'ère du Big Data. La thèse en définit les concepts à l'aide des outils de l'analyse économique du droit.
2. En effet, l'économie axée sur les données est très concentrée dans les mains de quelques entreprises, les fameux GAFAM (Google, Apple, Facebook, Amazon et Microsoft). Elle est caractérisée par des barrières à l'entrée élevées incluant, l'accès aux données, les effets de réseau, des économies d'échelle et de gamme, pour en nommer que quelques-uns. Les plateformes sont multi-faces : Elles fournissent la plupart du temps un service gratuit à la face des utilisateurs en échange de leurs données et de leur attention, et fournissent un service payant aux annonceurs afin de cibler les utilisateurs avec des publicités personnalisées. Les données sont donc essentielles dans leur modèle d'affaire. Sans les données, ils ne peuvent pas exister. Grâce aux données et aux effets de réseau axés sur les données, le marché tend à basculer en faveur du titulaire en place au détriment des concurrents et des consommateurs qui souffrent d'un choix moindre et d'une qualité inférieure notamment en termes de protection de la vie privée.
3. Dans un contexte où les entreprises se font concurrence pour le marché et non pas dans le marché, l'opérateur en place a la capacité et l'incitation à exploiter ses consommateurs et à exclure ses concurrents du marché pour maintenir ou étendre son avantage concurrentiel sur les deux faces du marché, la face des utilisateurs et la face des annonceurs. Ces entreprises font cela soit en abusant de leur position dominante ou en achetant des entreprises à un stade initial, ce qu'on appelle les « *fusions préventives* » (« *preemptive mergers* ») ou les « *fusions prédatrices* » (« *killer acquisitions* »), sans la nécessité de notifier l'opération à une autorité de concurrence car le chiffre d'affaires de l'entreprise acquise (la cible) est inférieur au seuil du contrôle des concentrations, alors que la valeur de la transaction est parfois étonnamment très élevée pour une cible avec peu ou pas de chiffre d'affaires. Même quand l'opération est

notifiée, les autorités de concurrence ne disposent pas des outils analytiques pour évaluer correctement la fusion. La Commission et l'Office of Fair Trading (OFT) ont été très critiquées pour avoir autorisées sans conditions les fusions *Facebook/WhatsApp* et *Facebook/Instagram* respectivement. En conséquence, Facebook détient les quatre applications les plus téléchargées de la décennie (Facebook, Facebook Messenger, WhatsApp et Instagram). Dans les pratiques antitrust et de fusions axées sur les données, les données et la vie privée jouent un important paramètre autre que le prix que les autorités de concurrence doivent attentivement considérer sur les deux faces du marché. Jusqu'à présent, l'affaire Facebook allemande est la seule affaire antitrust liée aux données dans laquelle la protection des données et le droit de la concurrence interagissent. Selon le *Bundeskartellamt*, Facebook a abusé de son pouvoir de marché en imposant des clauses et conditions contractuelles abusives à ses utilisateurs pour collecter un nombre illimité de données à partir des services appartenant à Facebook et des sites web et applications de tiers. La décision est pendante devant la Cour suprême en Allemagne après avoir été suspendue par la Cour régionale de Düsseldorf.

4. Les fusions et les abus de position dominante ne sont pas les seules questions dans l'économie axée sur les données. Les collusions par algorithmes soulèvent de graves problèmes de concurrence. Beaucoup a été écrit par les régulateurs. La peur que les algorithmes puissent s'entendre sans intervention humaine et que l'entente soit viable en raison de la transparence du marché et de la fréquence des interactions sont prises très sérieusement par les experts en concurrence. L'OCDE argumente même que la collusion tacite peut remplacer la collusion explicite.
5. Outre le droit de la concurrence, la régulation est envisagée dans le monde entier. Des deux côtés de l'Atlantique, les rapports commissionnés par les gouvernements encouragent vivement une régulation de l'économie numérique pour promouvoir une concurrence effective. Aux États-Unis dans le cadre des élections présidentielles de 2020, le démantèlement des Big tech est même une promesse de campagne de la part des candidats démocrates Elizabeth Warren et Bernie Sanders. En Europe, la Commission fait face à une grande pression politique de la part de la France, de l'Allemagne, de la Pologne et de l'Italie pour moderniser les règles du droit de la concurrence, et pour rédiger, d'ici la fin du second trimestre 2020, une régulation contre les grandes plateformes numériques. Cependant le droit de la concurrence et la

régulation ne sont pas un substitut mais sont nécessaires et se complètent mutuellement.

6. Cette thèse aborde ces enjeux en trois chapitres. Le chapitre un propose de nouveaux outils économiques pour définir le marché pertinent et le pouvoir de marché dans l'économie axée sur les données. Il soutient la nécessité de réformer le marché pertinent et le pouvoir de marché en considérant de nouveaux outils et un ensemble de facteurs à prendre en compte pour le pouvoir de marché. Le chapitre deux propose de nouvelles analyses économiques et juridiques pour des fusions et pratiques anticoncurrentielles axées sur les données. Il étudie les sujets de premiers plans relatifs à l'intégration de la vie privée dans l'évaluation des fusions et pratiques antitrust, les ententes par algorithmes et les fusions préventives. Il soutient la nécessité d'intégrer la vie privée dans toutes les affaires de fusions et de pratiques anticoncurrentielles liées aux données puisque les données impliquent nécessairement des questions relatives à la vie privée et à la protection des données. Finalement, le chapitre trois propose de réguler l'économie numérique. Il démontre que l'économie est très concentrée et que les marchés ne peuvent pas corriger par eux-mêmes les défaillances du marché. Il analyse les recommandations émanant des rapports commissionnés par les gouvernements (Furman et al, Crémer et al, Schallbruch et al, ACCC report et Stigler report) et il discute et envisage d'autres propositions originales.

Mots-clés : Big Data, économie des données, économie numérique, plateformes en ligne, droit de la concurrence, économie de la concurrence, régulation, antitrust, fusion, entente, entente par algorithmes, GAFAM, économie du gratuit, économie de la vie privée, protection des données

JEL: K21, L1, L4, L5, L86

Abstract

1. Big Data is currently a hot topic in competition law around the world. Both practitioners and academics in law and economics try to figure out how competition law can deal with Big Data issues in the digital economy. A new competition rulebook is necessary for the Big Data world. This thesis defines the concepts by using the tools of the economic analysis of law.
2. Indeed, the data-driven economy is highly concentrated in the hand of just a few firms, the famous GAFAM (Google, Apple, Facebook, Amazon, and Microsoft). It is characterized by high entry barriers, including access to relevant data, network effects, economies of scale and scope, to name a few. Platforms are multi-sided: They mostly provide a free service to the user side in exchange for their data and attention, and provide a paid service to the advertiser side to target users with personalized ads. Data are thus essential in their business model. Without data they cannot exist. Thanks to data and data-driven network effects, the market tends to tip in favor of the incumbent to the detriment of rivals and consumers who suffer from less choice and lower quality notably in terms of privacy protection.
3. In a context where firms compete for the market and not in the market, the incumbent has the ability and incentive to exploit consumers and exclude rivals from the market in order to maintain or expand its competitive advantage on both sides of the market, the user side and the advertiser side. They do this either by abusing their dominant position or by buying potential competitors at a very early stage, the so-called “*pre-emptive mergers*” or “*killer acquisitions*”, without the need to notify the deal before the competition authority because the turnover of the acquired business (the target) falls below the merger control notification thresholds, whereas the value of the transaction is sometimes surprisingly high for a target with no or a very low turnover. Even when notified, competition authorities lack the analytical tools to properly assess the merger. The Commission and the Office of Fair Trading (OFT) have been highly criticized for having cleared without conditions the merger *Facebook/WhatsApp* and *Facebook/Instagram* respectively. As a result, Facebook owns the four most downloaded applications of the decade (Facebook, Facebook Messenger, WhatsApp, and Instagram). In both data-driven antitrust and merger practices, data and privacy play an important non-price parameter of competition that competition authorities

must carefully consider on both sides of the market. So far, the German Facebook case is the only data-driven antitrust case in which data protection and competition law interact. According to the Bundeskartellamt, Facebook has abused its market power by imposing unfair contract terms and conditions to its private users in order to collect an unlimited amount of data from Facebook-owned services and third-party websites and applications without the users' voluntary consent. The decision is still pending before the High Court in Germany after having been suspended by the Regional Court in Düsseldorf.

4. Merger and abuse of dominance are not the only issues in the data-driven economy. Collusions by algorithms raise serious competition concerns. A lot has been written by regulators. The fear that algorithms can collude without human intervention and that the collusion will be sustainable due to market transparency and the frequency of interaction is taken very seriously by competition experts. The OECD even argues that tacit collusion may replace explicit collusion.
5. In addition to competition law, regulation is on the table around the world. On both sides of the Atlantic, reports commissioned by governments urge a regulation in the digital economy to promote effective competition. In the US ahead of the 2020 election, breaking up big tech companies is even a campaign promise from Democratic candidates Elizabeth Warren and Bernie Sanders. In the EU, the Commission is under heavy political pressure from France, Germany, Poland, and Italy to modernize competition rules and to draft, by the end of the second quarter of 2020, a regulation against big digital platforms. However, competition law and regulation are not substitutes but are necessary and complements each other.
6. This thesis addresses these issues in three chapters. Chapter one proposes new economic tools to define the relevant market and the market power in the data-driven economy. It argues the need to reform the relevant market and the market power by considering new tools and a menu of key features relevant to the market power. Chapter two proposes new law and economics analysis for data-driven antitrust and merger practices. It considers debated topics related to the integration of privacy in the assessment of antitrust and merger practices, algorithmic collusion and pre-emptive mergers. It argues the need to integrate privacy in any data-driven antitrust and merger practices as data imply necessarily privacy and data protection issues. Finally, chapter

three proposes to regulate the digital economy. It demonstrates that the economy is highly concentrated and that the markets cannot correct themselves market failures. It analyzes recommendations from the government reports (Furman et al, Crémer et al, Schallbruch et al, ACCC report, and Stigler report) and It proposes and discusses other original proposals.

Keywords: Big Data, data economics, digital economy, online platforms, competition law, competition economics, regulation, antitrust, merger, collusion, algorithmic collusion, GAFAM, economics of free, economics of privacy, data protection

JEL: K21, L1, L4, L5, L86

Abbreviations

ACCC	Australian Competition and Consumer Commission
Adlc	Autorité de la concurrence
AGCM	Autorità Garante della Concorrenza e del Mercato
BKartA	Bundeskartellamt
BWB	Bundeswettbewerbsbehörde
CMA	Competition and Markets Authority
CNMC	Comisión Nacional de los Mercados y la Competencia
DOJ	Department of Justice
EC	European Commission
ECJ	European Court of Justice
EP	European Parliament
EU	European Union
FAS Russia	Federal Antimonopoly Service of the Russian Federation
FTC	Federal Trade Commission
GDPR	General Data Protection Regulation
OECD	Organization for Economic Co-operation and Development
OFT	Office of Fair Trading

PSD2 Directive	Second Payment Services Directive
SSNDPP	Small, but Significant, Non-Transitory Decrease in Privacy Protection
SSNIP	Small, but Significant, Non-transitory Increase in Price
US	United States
WDO	World Digital Organization

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“But if we want to be able to deal with big data issues throughout the EU, then every national authority has to have the tools it needs to enforce the rules.”¹

Margrethe Vestager, EU Competition Commissioner

“Instead, we have to figure out how to make the most of digital technology, while minimising its downsides. And for this, we need the right rules. The days are gone when the digital world was regarded as less in need of regulation than the old analogue world.”²

Margrethe Vestager, EU Competition Commissioner

“But that doesn’t take away from the importance of checking whether our way of enforcing the rules is still right for this new world. The challenges we’re facing, at the start of this new decade, mean that we need to look again at the tools we use to enforce the competition rules.”³

Margrethe Vestager, EU Competition Commissioner

¹ European commission (EC), Speech, Margrethe Vestager, *Big Data and Competition*, EDPS-BEUC Conference on Big Data, Brussels, 29 September 2016. (accessed 2 December 2018).

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

² EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 2 December 2018).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-fairness-digital-society_en

³ EC, Speech, Margrethe Vestager, *Defining markets in a new age*, Chillin’ Competition Conference, Brussels, 9 December 2019 (accessed 20 January 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en

Introduction

1. L'économie axée sur les données est une révolution qui façonne comment vivent les personnes et comment les entreprises font des affaires dans les marchés hors ligne et en ligne. La donnée n'est pas nouvelle. Elle est aussi vieille que le commencement de l'histoire. Les hommes ont toujours collecté des données. Cependant, aujourd'hui avec le développement d'internet, des ordinateurs, de l'intelligence artificielle (IA) et des objets intelligents connectés (« *IoT devices* »), la collection et l'analyse des données sont bien plus faciles qu'avant. En conséquence, en seulement deux ans, 90 % des données dans le monde ont été créées.⁴ Chaque seconde, des milliards de données sont collectées et analysées en temps réel. Depuis des ordinateurs, smartphones, smart Watch, smart TV, et des sites web et applications, chaque action d'un humain est enregistrée, collectée et analysée. « *Big brother is watching you* » et ce n'est plus une fiction mais cela fait partie de notre vie au quotidien.
2. Les données ne sont pas juste des informations. Ce sont des informations avec une valeur très importante. Grâce à la donnée, les entreprises peuvent créer et améliorer de nouveaux produits et services, réduire leurs coûts pour le bénéfice des consommateurs et cibler les personnes avec de la publicité personnalisée. La donnée est donc de l'argent.⁵ Selon The Economist, la donnée serait même le nouveau pétrole.⁶ Ce n'est donc pas surprenant que les entreprises de Big Data font parties des 10 plus importantes entreprises dans le monde par la valeur de marché en 2019 et comprennent Apple (n°1), Microsoft (n°2), Amazon (n°3), Alphabet (n°4) et Facebook (n°6). Les fameux GAFAM (Google, Apple, Facebook, Amazon et Microsoft). Les

⁴ IBM, *10 Key Marketing Trends for 2017*, 2017.

<https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=WRL12345USEN>

⁵ Department of Justice, Discours, Makan Delrahim, "*Blind[ing] Me With Science*" *: *Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, Cambridge, MA, 8 Novembre 2019 (accès 9 Février 2020).

"As a foundational matter, we must acknowledge that data has economic value and some observers have said it is analogous to a new currency."

<https://www.justice.gov/opa/speech/file/1217071/download>

⁶ The Economist, *The world's most valuable resource is no longer oil, but data*, 6 Mai 2018 (accès 7 Février 2020).

<https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data>

confrères chinois sont aussi dans le groupe avec Alibaba (n°7) et Tencent (n°8). Ensemble, leur valeur est de 5 152 milliards de dollars U.S.⁷ Citant Abba, *“Money, money, money Must be funny In the rich [data]'s world Money, money, money Always sunny In the rich [data]'s world”*.

3. Ces sociétés sont des entreprises internet utilisées presque chaque jour par des milliards de personnes dans le monde. Depuis notre réveil à notre coucher. Quand je me lève le matin, je commence ma journée par utiliser mon iPhone (Apple) pour accéder à mon environnement social avec Facebook, WhatsApp (propriété de Facebook)⁸ et Instagram (propriété de Facebook).⁹ Ensuite, je dois travailler sur mon Mac (Apple) et travailler mes recherches sur Google (Alphabet) avec un document Word (Microsoft) et je finis ma journée par utiliser Facebook, WhatsApp, Instagram, Google, LinkedIn (propriété de Microsoft)¹⁰ et Amazon avant d’aller dormir. Je fais ça toute la journée, chaque jour. En d’autres termes, si je veux être connecté dans le monde numérique, je dois utiliser Apple, Google, Facebook, Amazon et Microsoft. Bienvenue dans l’ère des GAFAM.
4. Il n’y a rien de mal à être dans le monde GAFAM. Ce sont les gardiens de l’économie numérique. Google a plus de 90 % de part de marché sur les marchés nationaux des services de recherche générale.¹¹ Facebook a plus de 90 % de part de marché sur au moins le marché Allemand des réseaux sociaux.¹² L’économie est très concentrée dans les mains de quelques entreprises sur des marchés caractérisés par des barrières à

⁷ Statista, *The 100 largest companies in the world by market value in 2019 (in billion U.S. dollars)* (accès 7 Février 2020).

<https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-value/>

⁸ COMP/M.7217-Facebook/WhatsApp, 3 Octobre 2014.

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

⁹ ME/5525/12-Anticipated acquisition by Facebook Inc of Instagram Inc, 14 Août 2012.

<https://assets.publishing.service.gov.uk/media/555de2e5ed915d7ae200003b/facebook.pdf>

¹⁰ M.8124-Microsoft/LinkedIn, 6 Décembre 2016.

https://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

¹¹ AT.39740-Google Search (Shopping), 27 Juin 2017, paras. 273-284.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf

¹² B6-22/16-Facebook, 6 Février 2019, para. 646.

https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5

l'entrée élevées incluant, les données, les effets de réseau, les économies d'échelle et de gamme, les coûts de substitution, les coûts d'entrée et d'investissement, pour en nommer quelques-uns. Les entreprises essaient de faire concurrence pour le marché en innovant mais elles finissent par manquer de l'aptitude et de l'incitation à entrer effectivement dans le marché. Et si elles rentrent, il y a une probabilité très importante qu'elles soient acquises ou copiées à un stade précoce de développement, les fusions préventives ou prédatrices (« *preemptive mergers* » ou « *killer acquisitions* »).

5. Dans cette situation, le gendarme de la concurrence n'est jamais très loin. « *Big brother is watching you* » mais le gendarme les regarde attentivement. Des deux côtés de l'Atlantique, les pratiques des principales plateformes en ligne sont en cours d'investigation.¹³ En Europe, la DG COMP est très active contre les Big Tech. Par exemple, en seulement trois ans entre 2017 et 2019, Google a été sanctionnée trois fois pour un montant total de 8,25 milliards d'euros pour avoir abusé de sa position dominante.¹⁴ Ces pratiques anticoncurrentielles de Google ne sont pas liées aux données en tant que telles mais les données ont été déterminantes pour construire le pouvoir de marché. Pour l'instant, seule l'affaire Facebook en Allemagne, dans laquelle Facebook a abusé de son pouvoir de marché en imposant des clauses et conditions contractuelles abusives à ses utilisateurs pour collecter un nombre illimité de données à partir des services appartenant à Facebook (y compris Instagram et WhatsApp) et des

¹³ Financial Times, *Which antitrust investigations should Big Tech worry about?* 28 Octobre 2019 (accès 3 Janvier 2020). Aux États-Unis, les pratiques de de Google, Facebook, Apple et Amazon sont en cours d'investigation par le département de la justice (DOJ), la Federal Trade Commission (FTC), le Congrès (la Commission des affaires judiciaires) et par 50 procureurs généraux.

<https://www.ft.com/content/abcc5070-f68f-11e9-a79c-bc9acae3b654>

En Europe, la Commission enquête sur les pratiques de Google, Facebook, Amazon et Apple.

¹⁴ Google Search (Shopping): CE, communiqué de presse, *Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service*, 27 Juin 2017 (accès 8 Février 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784

Google Android: CE, communiqué de presse, *Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine*, 18 Juillet 2018 (accès 8 Février 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581

Google AdSense: CE, communiqué de presse, *Antitrust: Commission fines Google €1.49 billion for abusive practices in online advertising*, 20 Mars 2019 (accessed 8 Février 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770

sites web et applications de tiers, peut être considérée comme une pratique anticoncurrentielle liée aux données.¹⁵ Ces affaires sont en attente devant la Cour. Comme l'a évoqué, le chef de la division antitrust du département de la justice américaine, Makan Delrahim, "[b]ig is not bad. Big behaving badly is bad".¹⁶

6. L'antitrust n'est pas la seule réponse, la régulation est aussi en cours dans le monde. Des deux côtés de l'Atlantique, la Commission européenne¹⁷ et la Federal Trade Commission¹⁸ ont cherché des contributions de la part de chercheurs et de participants impliqués ou affectés par la numérisation de l'économie. Pendant ce temps, de nombreux rapports ont été commissionnés dans le monde entier par des gouvernements et des régulateurs.¹⁹ Le résultat est unanime, une régulation est inévitable.²⁰ « *Breaking up* » ou la régulation par le démantèlement des plateformes est

¹⁵ B6-22/16-Facebook, 6 Février 2019.

¹⁶ Competition Policy International, *US: Delrahim says breakup of Big Tech 'on the table'*, 22 Octobre 2019 (accès 9 February 2020).

<https://www.competitionpolicyinternational.com/us-delrahim-says-breakup-of-big-tech-on-the-table/>

¹⁷ Crémer, J. et al, *Competition policy for the digital era*, Avril 2019.

<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

Voir aussi les contributions des chercheurs et des acteurs (accès 3 Février 2020).

https://ec.europa.eu/competition/scp19/media_en.html#Contributions

¹⁸ FTC, *Hearings on Competition and Consumer Protection in the 21st Century* (accès 3 Février 2020). La FTC a organisé une série de quatorze auditions sur "*Competition and Consumer Protection in the 21st Century*".

<https://www.ftc.gov/policy/hearings-competition-consumer-protection>

¹⁹ Furman, J. et al, *Unlocking digital competition Report of the Digital Competition Expert Panel*, Mars 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

Schallbruch, M. et al, *A new competition framework for the digital economy Report by the Commission 'Competition Law 4.0'*, Septembre 2019.

https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3

Morton, F. S. et al, *Stigler Committee on Digital Platforms-Final Report*, Septembre 2019.

<https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E>

ACCC, *Digital platforms inquiry-final report*, Juillet 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

²⁰ Global Competition Review, *Vestager advisor: strong regulation is "unavoidable" for digital platforms*, 29 Octobre 2018 (accès 3 March 2019).

envisagée.²¹ Aux États-Unis dans le cadre des élections présidentielles de 2020, le démantèlement des Big tech est même une promesse de campagne de la part des candidats démocrates Elizabeth Warren et Bernie Sanders.²²

7. Une guerre antitrust se dessine. Mais pour combattre dans l'économie numérique ou dans l'économie axée sur les données, les autorités de concurrence doivent moderniser leurs règles de concurrence puisque l'économie est mondiale et sans frontières caractérisée par des plateformes multi-faces, des effets de réseau axés sur les données, l'absence de prix, la question de la vie privée, l'innovation et est fortement dynamique. Au début de 2016, la Commissaire européenne à la concurrence, Margrethe Vestager, était hésitante à changer les règles du jeu, "[b]ut I hope it makes clear that we don't need a whole new competition rulebook for the big data world."²³ Trois ans plus tard,

<https://globalcompetitionreview.com/article/1176067/vestager-advisor-strong-regulation-is-“unavoidable”-for-digital-platforms>

Professeur Crémer a dit que “*regulation is unavoidable [because] less regulation is just not going to fly*”.

Professeur Tirole a déclaré, dans un keynote sur “*Shaping competition policy in the era of digitization*”, que “*public intervention in the digital economy is unavoidable*” (accès 3 Mars 2019).

<https://webcast.ec.europa.eu/shaping-competition-policy-in-the-era-of-digitisation#>

²¹ Competition Policy International, *US: FTC Chief says breaking up big tech is on the table*, 14 Août 2019 (accès 3 Janvier 2020).

<https://www.competitionpolicyinternational.com/us-ftc-chief-says-breaking-up-big-tech-is-on-the-table/>

Competition Policy International, *US: Delrahim says breakup of Big Tech ‘on the table’*, 22 Octobre 2019 (accès 3 Janvier 2020).

<https://www.competitionpolicyinternational.com/us-delrahim-says-breakup-of-big-tech-on-the-table/>

Parlement européen, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 Janvier 2019, para. 25.

http://www.europarl.europa.eu/doceo/document/TA-8-2019-0062_EN.pdf

²² Business insider, *Regulating big tech has become a hot topic ahead of the 2020 election-here's where the Democratic candidates stand*, 14 Novembre 2019 (accès 14 Janvier 2020).

<https://www.businessinsider.fr/us/elizabeth-warren-bernie-sanders-democrat-candidates-stance-breaking-up-tech-2019-10>

Voir aussi, Medium Business, Elizabeth Warren, *Here's how we can break up Big Tech*, 8 Mars 2019 (accès 14 January 2020).

<https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>

²³ CE, Discours, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 Janvier 2016 (accès 9 Février 2020).

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

en 2019, la Commissionaire a changé d'avis, “[k]eeping the rulebook up to date” est une priorité, “[t]he challenges we’re facing, at the start of this new decade, mean that we need to look again at the tools we use to enforce the competition rules”.²⁴ Dans cette déclaration, elle a annoncé comme première étape, l’actualisation de la Communication de 1997 de la Commission sur la définition du marché en cause. Par ailleurs, dans sa Communication de février 2020 « *Shaping Europe's digital future* », la Commission a annoncé qu’elle allait évaluer et examiner l’adéquation des règles du droit européen de la concurrence à l’ère du numérique d’ici 2023 et lancer une enquête sectorielle en 2020.²⁵ La thèse contribue à temps à cette modernisation en en définissant les concepts dont l’objectif est de protéger le bien-être du consommateur à l’aide des outils de l’analyse économique du droit. C’est donc une thèse conceptuelle d’adaptation du droit de la concurrence à l’économie numérique par l’analyse économique du droit, préalable nécessaire avant le développement des outils analytiques qui en découleront.

8. Elle aborde ainsi les enjeux soulevés par l’économie axée sur les données et concourt à l’intense débat académique dans le monde sur comment moderniser les règles de concurrence et comment réguler l’économie numérique. Durant la rédaction de cette thèse, certaines des idées qu’elle défend comme celles pour réformer les seuils du contrôle des concentrations en introduisant une notification obligatoire pour certaines fusions et acquisitions dans un secteur spécifique ou la notification obligatoire pour les entreprises dominantes²⁶ ont été proposées par l’*Autorité de la concurrence*.²⁷ D’autres

²⁴ CE, Discours, Margrethe Vestager, *Defining markets in a new age*, Chillin’ Competition Conference, Brussels, 9 Décembre 2019 (accès 9 Février 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en

²⁵ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 Février 2020, p. 10.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0067&from=EN>

²⁶ Carugati, C., *Reforming merger control notification thresholds*, *Concurrences Review*, N° 2-2019, Art. N° 89872, Mai 2019.

<https://www.concurrences.com/fr/revue/issues/no-2-2019/pratiques/reforming-merger-control-notification-thresholds>

²⁷ *Global Competition Review*, *France considers mandatory merger notification for digital platforms*, 29 Novembre 2019 (accès 30 Janvier 2020).

<https://globalcompetitionreview.com/article/1211532/france-considers-mandatory-merger-notification-for-digital-platforms>

Voir aussi, Adlc, @*Echelle event with Cédric O*, Novembre 2019.

ont été utilisées dans des affaires de concurrence comme la nécessité d'analyser le volume, la variété, la vitesse et la valeur des données dans l'évaluation concurrentielle²⁸ ou de mesurer les parts de marché sur la base des utilisateurs journaliers ou mensuels actifs.²⁹ Elle est divisée en trois chapitres.

9. Le chapitre un propose de nouveaux outils économiques pour définir le marché pertinent et le pouvoir de marché dans l'économie axée sur les données. Il soutient la nécessité de réformer le marché pertinent et le pouvoir de marché en considérant de nouveaux outils et un ensemble de facteurs à prendre en compte pour le pouvoir de marché.
10. Le chapitre deux propose de nouvelles analyses économiques et juridiques pour des fusions et pratiques anticoncurrentielles axées sur les données. Il s'inscrit dans le débat concernant l'analyse de la vie privée par le droit de la concurrence. Les opposants estiment que l'objectif du droit de la concurrence n'est pas de résoudre les questions de vie privée et que le droit de la concurrence et le droit de la protection des données/vie privée sont complémentaires et non substituables.³⁰ Les défenseurs

<https://www.autoritedelaconcurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

²⁸ M.8788-Apple/Shazam, 6 Septembre 2018, paras. 317-324.

https://ec.europa.eu/competition/mergers/cases/decisions/m8788_1279_3.pdf

²⁹ Ibid, paras. 164-165.

Voir aussi, B6-22/16-Facebook, 6 Février 2019, para. 389. Voir aussi, para. 390.

³⁰ Cooper, J. C., *Privacy And Antitrust: Underpants Gnomes, The First Amendment, And Subjectivity*, George Mason Law Review, Forthcoming, George Mason Law & Economics Research Paper No. 13-39, Juin 2013.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2283390

Gilbert, P. and Pepper, R., *Privacy Considerations in European Merger Control: A Square Peg for a Round Hole*, Competition Policy International Antitrust Chronicle, Mai 2015.

<https://www.competitionpolicyinternational.com/assets/Uploads/PepperGilbertMay-152.pdf>

Tucker, D. S. and Wellford, H. B., *Big Mistakes Regarding Big Data*, the Antitrust Source, Décembre 2014.

https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/dec14_tucker_12_16f.authch_eckdam.pdf

Competition Policy International, *CPI talks... with Thomas Kramler* [DG Comp, head of the EU's Digital Single Market Task Force], 20 Septembre 2018.

<https://www.competitionpolicyinternational.com/wp-content/uploads/2018/09/CPI-Talks-Kramler.pdf>

Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, Février 2015, 2015.

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

promeuvent l'intégration de la vie privée dans les affaires antitrust et de fusions.³¹ Le chapitre défend cette dernière vision puisque les données impliquent nécessairement

³¹ Lynskey, O., *Considering Data Protection in Merger Control Proceedings*, OECD roundtable, Non-price Effects of Mergers, 1^{er} Juin 2018.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)70/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)70/en/pdf)

Stucke, M. E and Grunes, A. P, *Big Data and Competition policy*, Oxford University Press, 2016.

Wolfgang, K., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, April 2016, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, 639-647, 26 Avril 2016.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770479

Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 25 Février 2008.

<https://pdfs.semanticscholar.org/018b/0e2e468aab1a0e899c0e23c5596ef573f9d2.pdf>

European Data Protection Supervisor, *Privacy and competitiveness in the age of big data, The interplay between data protection, competition law and consumer protection in the Digital Economy*, Mars 2014.

https://edps.europa.eu/sites/edp/files/publication/14-03-26_competition_law_big_data_en.pdf

BKartA, communiqué de presse, *Preliminary assessment in Facebook proceeding: Facebook's collection and use of data from third-party sources is abusive*, 19 December 2017. (accès 9 Octobre 2018). Andreas Mundt said "[d]ata protection, consumer protection and the protection of competition interlink where data, as in Facebook's case, are a crucial factor for the economic dominance of a company."

Mlex, *EU privacy rules key to competition analyses, head of France's antitrust watchdog says*, 4 Mai 2018. (accès 21 Novembre 2018). Isabelle De Sivla said "it's interesting to see the importance of privacy rules [in] really shaping the way the market is working, and this needs to be taken into account in our competitive analysis"

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=986723&siteid=190&rdir=1>

Mlex, *Tech and data antitrust challenges are being met by enforcers, French regulator says*, 20 Novembre 2018 (accès 21 Novembre 2018). Isabelle De Sivla stressed that "data protection needs to be addressed, and it is being addressed".

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1042304&siteid=190&rdir=1>

DOJ, Discours, Makan Delrahim, *"Blind[ing] Me With Science"*: Antitrust, Data, and Digital Markets, Challenges to Antitrust in a Changing Economy* Harvard Law School, 8 Novembre 2019 (accès 30 Janvier 2020).

<https://www.justice.gov/opa/speech/file/1217071/download>

"Although privacy fits primarily within the realm of consumer protection law, it would be a grave mistake to believe that privacy concerns can never play a role in antitrust analysis. Indeed, we take note of evidence that some consumers appear to hold revealed preference for privacy."

EC, Discours, Margrethe Vestager, *Privacy and competition in an age of data*, IAPP Europe Data Protection Congress, Brussels, 21 Novembre 2019 (accès 30 Janvier 2020).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/privacy-and-competition-age-data_en

des questions relatives à la vie privée et à la protection des données. Il étudie dès lors l'intégration de la vie privée dans l'évaluation des fusions et pratiques antitrust, à côté des ententes par algorithmes et des fusions préventives.

- 11.** Finalement, le chapitre trois propose de réguler l'économie numérique. La régulation *ex-ante* est en effet un outil complémentaire indispensable à l'antitrust qui est un outil *ex-post* parfois trop lent et qui s'applique au cas par cas dans l'économie numérique. Pour ce faire, Il démontre que l'économie est très concentrée et que les marchés ne peuvent pas corriger par eux-mêmes les défaillances du marché Il analyse ensuite les recommandations émanant des rapports commissionnés par les gouvernements (Furman et al, Crémer et al, Schallbruch et al, ACCC report et Stigler report) et il discute et envisage d'autres propositions originales sous la forme d'un code de conduite pro-concurrentiel applicable à toutes les entreprises dans le contexte d'une organisation internationale.
- 12.** Le plus important, les propositions ont été élaborées pour être mobilisables dans un contexte de contentieux et de régulation et considèrent les contraintes en termes de temps et de ressources des acteurs publics (les régulateurs) et privés (les entreprises faisant l'objet d'enquêtes).
- 13.** L'économie numérique soulève de nombreux enjeux dans le monde. Pour être compréhensive, la thèse ne peut pas tous les adresser. D'un point de vue économique et juridique, elle se concentre sur le droit européen de la concurrence et sur un modèle d'affaire axé sur les données, monétisé par la publicité comme celui de Google ou Facebook, à savoir sur les marchés de non-transaction où la plateforme fournit un produit gratuit à ses utilisateurs et un produit payant à ses annonceurs. Par ailleurs, elle adresse uniquement les problèmes généraux de concurrence et non ceux liés à un secteur spécifique. Par conséquent, la thèse n'est pas une contribution à l'intense débat sur le secteur de la publicité en ligne.³² Dans le chapitre un, les propositions de réformes

"So protecting that data is an absolutely necessity, to build a digital world that works well for humans. And competition policy has an important contribution to make."

³² France : Adlc, Avis n° 10-A-29 du 14 décembre 2010 sur le fonctionnement concurrentiel de la publicité en ligne, 14 Décembre 2010.

<https://www.autoritedelaconcurrence.fr/sites/default/files/commitments//10a29.pdf>

du marché pertinent et du pouvoir de marché sont donc principalement dédiées à une modernisation des règles du droit européen de la concurrence par rapport aux marchés

Voir aussi, Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 Mars 2018.

https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf

Espagne : Comisión Nacional de los Mercados y la Competencia (CNMC), communiqué de presse, *The CNMC launches a public consultation on online advertising in Spain*, 25 Avril 2019 (accès 4 Février 2020).

https://www.cnmc.es/sites/default/files/editor_contenidos/Notas%20de%20prensa/2019/20190425_NP%20Inicio%20Estudio%20Publicidad%20Online_EN.pdf

Allemagne : BKartA, communiqué de presse, *Bundeskartellamt launches sector inquiry into market conditions in online advertising sector*, 1^{er} Février 2018 (accès 4 Février 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2018/01_02_2018_SU_Online_Werbung.html;jsessionid=093716A034306C399E586AEBD2BAC9E7.1_cid362?nn=10321672

Voir aussi, BKartA, *“Competition and Consumer Protection in the Digital Economy “: Online advertising*, 1^{er} Février 2018.

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Schriftenreihe_Digitales_III.pdf?__blob=publicationFile&v=5

Suède : Konkurrensverket, communiqué de presse, *Market study of digital platforms*, 11 Novembre 2019 (accès 4 Février 2020).

<http://www.konkurrensverket.se/en/Competition/--ovrigt--/market-study-of-digital-platforms/>

Royaume-Uni: OFT, *Online Targeting of Advertising and Prices-A market study*, Mai 2010.

https://webarchive.nationalarchives.gov.uk/20140402182803/http://oft.gov.uk/shared_oft/business_leaflets/659703/OFT1231.pdf

CMA, *Online platforms and digital advertising Market study-interim report*, 18 Décembre 2019.

<https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

Voir aussi, CMA, *Online platforms and digital advertising market study* (accès 4 Février 2020).

<https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

États-Unis: FTC, *FTC Hearing 6-Nov. 7 Session 3 - Economics of Online Advertising; Competition and Consumer Protection Issues in Online Advertising*, 7 Novembre 2018 (accès 4 Février 2020).

<https://www.ftc.gov/news-events/audio-video/video/ftc-hearing-6-nov-7-session-3-economics-online-advertising-competition>

Australie: ACCC, *Digital Platforms Inquiry-final report*, 26 Juillet 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

Voir aussi, ACCC, communiqué de presse, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 Décembre 2019 (accès 4 Février 2020).

<https://www.accc.gov.au/media-release/accc-welcomes-comprehensive-response-to-digital-platforms-inquiry>

Europe: Parlement européen, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 Janvier 2019, para. 19.

http://www.europarl.europa.eu/doceo/document/TA-8-2019-0062_EN.pdf

de non-transaction. Il ne s'est pas focalisé sur les marchés de transaction où la plateforme fournit un service payant aux deux faces du marché comme Amazon et MasterCard. Dans le chapitre deux, les pratiques qui ne sont pas liées aux données en tant que telles comme celles de Google ne sont pas analysées. Elle n'a pas étudié les questions de responsabilités comme celles de la responsabilité en cas d'entente par algorithmes ou de procédures comme l'utilisation des mesures conservatoires. Dans le chapitre trois, il propose une régulation générale et non pas une spécifique adaptée à un modèle particulier de l'économie numérique comme les taxis avec Uber ou les hébergements partagés avec Airbnb. Par ailleurs, les questions qui vont au-delà de la concurrence comme les taxes, le travail, les contenus haineux en ligne ou les fake news ne sont pas non plus étudiées dans ce chapitre.

- 14.** Enfin, comme l'économie numérique évolue rapidement avec des questions spécifiques, plus de recherches seront nécessaires dans le futur entre des chercheurs en droit, économie, en ingénierie (notamment les data scientists et les ingénieurs en IA) et les autorités de concurrence ainsi que les participants sur le marché incluant notamment les principales plateformes en ligne puisqu'elles agissent en tant que régulateur. Une participation antitrust ou une participation à la régulation avec l'ensemble des acteurs précités au lieu d'une régulation imposée par le législateur sans consultations des acteurs est le moyen le plus efficace de moderniser les règles de la concurrence et de réguler l'économie numérique.³³

³³ Quartz, *A Nobel-winning economist's guide to taming tech monopolies*, 27 Juin 2018. (accès 4 Février 2020). Selon le Professeur Tirole, "[f]inally, we must make heavier use of more reactive processes. Drawbacks of classical approaches are well-known: self-regulation tends to be self-serving; competition policy is often too slow; public utility regulation, as we discussed, is mostly infeasible (and it is sometimes captured). We must develop what I would call "participative antitrust," in which the industry or other parties propose possible regulations and the antitrust authorities issue some opinion, creating some legal certainty without casting the rules in stone."

<https://qz.com/1310266/nobel-winning-economist-jean-tirole-on-how-to-regulate-tech-monopolies/>

Introduction

1. The data-driven economy is a revolution that shapes how people are living and how firms are doing business in offline and online markets. Data is not new. Data is as old as the beginning of the history. Humans have always collected data. However, today with the event of the internet, computers, algorithms, artificial intelligence (AI), and connected Internet of Things (IoT) devices, the collection and processing of data are much easier than before. As a result, in only two years, 90 percent of the data in the world has been created.³⁴ Every second, billions of data are collected and analyzed in real time. From computers, smartphones, smart watch, smart TV and websites and applications, every action of a human is now stored, collected and analyzed. Big brother is watching you and it is not anymore a fiction, but part of our daily life.
2. Data are not just information. Data are highly valuable information. Thanks to data, firms can create or improve new products and services, reduce their costs to the benefit of consumers and target people with personalized advertising. Data is thus money.³⁵ According to the Economist, data would even be the new oil.³⁶ It is thus not surprising that Big Data firms are amongst the 10 largest companies in the world by market value in 2019 including Apple (n°1), Microsoft (n°2), Amazon (n°3), Alphabet (n°4) and Facebook (n°6). The famous GAFAM (Google, Apple, Facebook, Amazon and Microsoft). The Chinese counterparts are also in the group with Alibaba (n°7) and Tencent (n°8). Taking together, they value 5 152 billion U.S. dollars.³⁷ Quoting Abba, “*Money, money,*

³⁴ IBM, *10 Key Marketing Trends for 2017*, 2017.

<https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=WRL12345USEN>

³⁵ Department of Justice, Speech, Makan Delrahim, “*Blind[ing] Me With Science*”*: *Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, Cambridge, MA, 8 November 2019 (accessed 9 February 2020).

“*As a foundational matter, we must acknowledge that data has economic value and some observers have said it is analogous to a new currency.*”

<https://www.justice.gov/opa/speech/file/1217071/download>

³⁶ The Economist, *The world’s most valuable resource is no longer oil, but data*, 6 May 2018 (accessed 7 February 2020).

<https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data>

³⁷ Statista, *The 100 largest companies in the world by market value in 2019 (in billion U.S. dollars)* (accessed 7 February 2020).

money Must be funny In the rich [data]'s world Money, money, money Always sunny In the rich [data]'s world".

3. These firms are internet companies used nearly every day by billions of people throughout the world. From the time we wake up to the time we sleep. When I wake up the morning, I start my day by using my iPhone (Apple) to access to my social environment with Facebook, WhatsApp (owned by Facebook),³⁸ and Instagram (owned by Facebook)³⁹. Then I have to work on my Mac (Apple) and start my research on Google (Alphabet) with a word document (Microsoft) and I finish my day by using Facebook, WhatsApp, Instagram, Google, LinkedIn (owned by Microsoft)⁴⁰ and Amazon to shop before sleeping. I am doing this all day, every day. In other words, if I want to be connected to the digital world, I have to use Apple, Google, Facebook, Amazon and Microsoft. Welcome to the GAFAM era.

4. There is nothing wrong to be in a GAFAM world. They are the gatekeepers in the digital economy. Google has more than 90 percent market shares in the national markets for general search services,⁴¹ Facebook has more than 90 percent market shares at least in the German market for social networks.⁴² The economy is highly concentrated in the hand of just a few firms in markets characterized by high entry barriers, including data, network effects, economies of scale and scope, switching costs, entry costs and investment costs, to name a few. Nobody can enter or at least without insurmountable obstacle. Firms try to compete for the market by innovating, but at the end of the day market participants lack the ability and incentive to enter effectively in the market. And

<https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-value/>

³⁸ COMP/M.7217-Facebook/WhatsApp, 3 October 2014.

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

³⁹ ME/5525/12-Anticipated acquisition by Facebook Inc of Instagram Inc, 14 August 2012.

<https://assets.publishing.service.gov.uk/media/555de2e5ed915d7ae200003b/facebook.pdf>

⁴⁰ M.8124-Microsoft/LinkedIn, 6 December 2016.

https://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

⁴¹ AT.39740-Google Search (Shopping), 27 June 2017, paras. 273-284.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf

⁴² B6-22/16-Facebook, 6 February 2019, para. 646.

https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5

if they enter, there is a high probability to be acquired or copied at a very early stage by the incumbent-the so-called “*pre-emptive mergers*” or “*killer acquisitions*”.

5. In that situation, the competition watchdog is never far away. Big brother is watching you, but the watchdog is watching them very closely. On both sides of the Atlantic, the practices of leading online platforms are currently under investigations.⁴³ In the EU, the DG COMP is very active against big tech. For instance, in only three years between 2017 and 2019, Google has been fined three times for a total amount of 8.25 billion euros for having abused its dominant position.⁴⁴ These Google’s anti-competitive practices are not related to data as such, but data were relevant to the market power. So far, only the German Facebook case, in which Facebook abused its market power by imposing unfair terms and conditions to its private users to collect an unlimited amount of data from Facebook-owned services (including Instagram and WhatsApp) and third-party websites and applications, can be considered as an anti-competitive data-driven practice.⁴⁵ These cases are still pending before the Court. As noted by the head of the

⁴³ Financial Times, *Which antitrust investigations should Big Tech worry about?*, 28 October 2019 (accessed 3 January 2020). In the US, the practices of Google, Facebook, Apple and Amazon are under investigations by the Department of Justice (DOJ), the Federal Trade Commission (FTC), the Congress (the House Judiciary Committee), and by 50 state attorneys-general.

<https://www.ft.com/content/abcc5070-f68f-11e9-a79c-bc9acae3b654>

In Europe, the European Commission is currently investigating the practices of Amazon, Google, Facebook and Apple.

⁴⁴ Google Search (Shopping): EC, Press release, *Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service*, 27 June 2017 (accessed 8 February 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784

Google Android: EC, Press release, *Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine*, 18 July 2018 (accessed 8 February 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581

Google AdSense: EC, Press release, *Antitrust: Commission fines Google €1.49 billion for abusive practices in online advertising*, 20 March 2019 (accessed 8 February 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770

⁴⁵ B6-22/16-Facebook, 6 February 2019.

antitrust division of the Justice Department, Makan Delrahim, “[b]ig is not bad. Big behaving badly is bad”.⁴⁶

6. Antitrust is not the only response, regulation is also on the way around the world. On both sides of the Atlantic, the European Commission⁴⁷ and the Federal Trade Commission⁴⁸ have sought contributions from academics and stakeholders involved in or affected by the digitization of the economy. Meanwhile, numerous reports around the world have been commissioned by governments and organizations.⁴⁹ The outcome is unanimous, a regulation is unavoidable.⁵⁰ Breaking up or divestment regulation is on

⁴⁶ Competition Policy International, *US: Delrahim says breakup of Big Tech ‘on the table’*, 22 October 2019 (accessed 9 February 2020).

<https://www.competitionpolicyinternational.com/us-delrahim-says-breakup-of-big-tech-on-the-table/>

⁴⁷ Crémer, J. et al, *Competition policy for the digital era*, April 2019.

<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

See also contributions from academics and stakeholders (accessed 3 February 2020).

https://ec.europa.eu/competition/scp19/media_en.html#Contributions

⁴⁸ FTC, *Hearings on Competition and Consumer Protection in the 21st Century* (accessed 3 February 2020). The FTC organized fourteen hearings on Competition and Consumer Protection in the 21st Century.

<https://www.ftc.gov/policy/hearings-competition-consumer-protection>

⁴⁹ Furman, J. et al, *Unlocking digital competition Report of the Digital Competition Expert Panel*, March 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

Schallbruch, M. et al, *A new competition framework for the digital economy Report by the Commission ‘Competition Law 4.0’*, September 2019.

https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3

Morton, F. S. et al, *Stigler Committee on Digital Platforms-Final Report*, September 2019.

<https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E>

ACCC, *Digital platforms inquiry-final report*, July 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

⁵⁰ Global Competition Review, *Vestager advisor: strong regulation is “unavoidable” for digital platforms*, 29 October 2018 (accessed 3 March 2019).

<https://globalcompetitionreview.com/article/1176067/vestager-advisor-strong-regulation-is-“unavoidable”-for-digital-platforms>

Professor Crémer said that a “regulation is unavoidable [because] less regulation is just not going to fly”.

Professor Tirole stated, at a keynote on “*Shaping competition policy in the era of digitization*”, that “public intervention in the digital economy is unavoidable” (accessed 3 March 2019).

<https://webcast.ec.europa.eu/shaping-competition-policy-in-the-era-of-digitisation#>

the table.⁵¹ In the US ahead of the 2020 election, breaking up big tech companies is even a campaign promise from Democratic candidates Elizabeth Warren and Bernie Sanders.⁵²

7. An antitrust war is ongoing. But to fight in the digital economy or data-driven economy, competition authorities need to modernize their competition rules as the economy is global and borderless characterized by multi-sidedness, data-driven network effects, zero-price, privacy issues and last but not least innovation and dynamic competition. At the beginning of 2016, the EU competition Commissioner, Margrethe Vestager, was reluctant to change the rules of the game, “[b]ut I hope it makes clear that we don't need a whole new competition rulebook for the big data world.”⁵³ Three years later, in 2019, the Commissioner changed her view, “[k]eeping the rulebook up to date” is a priority, “[t]he challenges we’re facing, at the start of this new decade, mean that we need to look again at the tools we use to enforce the competition rules”.⁵⁴ In this

⁵¹ Competition Policy International, *US: FTC Chief says breaking up big tech is on the table*, 14 August 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/us-ftc-chief-says-breaking-up-big-tech-is-on-the-table/>

Competition Policy International, *US: Delrahim says breakup of Big Tech ‘on the table’*, 22 October 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/us-delrahim-says-breakup-of-big-tech-on-the-table/>

European Parliament, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 January 2019, para. 25.

http://www.europarl.europa.eu/doceo/document/TA-8-2019-0062_EN.pdf

⁵² Business insider, *Regulating big tech has become a hot topic ahead of the 2020 election-here's where the Democratic candidates stand*, 14 November 2019 (accessed 14 January 2020).

<https://www.businessinsider.fr/us/elizabeth-warren-bernie-sanders-democrat-candidates-stance-breaking-up-tech-2019-10>

See also, Medium Business, Elizabeth Warren, *Here’s how we can break up Big Tech*, 8 March 2019 (accessed 14 January 2020).

<https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>

⁵³ EC, Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016 (accessed 9 February 2020).

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

⁵⁴ EC, speech, Margrethe Vestager, *Defining markets in a new age*, Chillin’ Competition Conference, Brussels, 9 December 2019 (accessed 9 February 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en

statement, she announced at a first step, the modernization of the 1997 Commission Notice on the definition of relevant market. Moreover, in its February 2020's Communication on "*Shaping Europe's digital future*", the Commission announced the evaluation and review of the fitness of the EU competition rules to the digital economy by 2023 and the launch of a sector inquiry in 2020.⁵⁵ The thesis contributes to this modernization by defining the concepts in which the goal is to protect the consumer welfare by using the tools of the economic analysis of law. It thus a conceptual thesis of the fitness of competition rules to the digital economy by the economic analysis of law, the essential prerequisite before the development of analytical tools that will arise from them.

8. This thesis thus addresses the challenges raised by the data-driven economy and contributes to the intense academic debate around the world on how to modernize competition rules and how to regulate the digital economy. During the course of this thesis, some of the ideas defended such as the one to reform merger control notification thresholds by introducing a mandatory notification of certain mergers and acquisitions in a specific sector or a mandatory notification for dominant companies⁵⁶ has been proposed by the French competition authority.⁵⁷ Others have been used in competition cases such as the need to analyze the volume, variety, velocity and value of data in the competitive assessment⁵⁸ or to measure market shares on the basis of daily or monthly active users.⁵⁹ This thesis is divided in three chapters.

⁵⁵ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 10. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0067&from=EN>

⁵⁶ Carugati, C., *Reforming merger control notification thresholds*, *Concurrences Review*, N° 2-2019, Art. N° 89872, May 2019. <https://www.concurrences.com/fr/revue/issues/no-2-2019/pratiques/reforming-merger-control-notification-thresholds>

⁵⁷ Global Competition Review, *France considers mandatory merger notification for digital platforms*, 29 November 2019 (accessed 30 January 2020). <https://globalcompetitionreview.com/article/1211532/france-considers-mandatory-merger-notification-for-digital-platforms>

See also, Adlc, *@Echelle event with Cédric O*, November 2019.

<https://www.autoritedelaconurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

⁵⁸ M.8788-Apple/Shazam, 6 September 2018, paras. 317-324.

https://ec.europa.eu/competition/mergers/cases/decisions/m8788_1279_3.pdf

⁵⁹ *Ibid*, paras. 164-165.

9. Chapter one proposes new economic tools to define the relevant market and the market power in the data-driven economy. It argues the need to reform the relevant market and the market power by considering new tools and a menu of key features relevant to the market power.
10. Chapter two proposes new law and economics analysis for data-driven antitrust and merger practices. It is part of the debate on the analysis of privacy by competition law. Opponents argue that the purpose of competition law is not to solve privacy issues and that competition law and data protection/privacy laws are complements and not substitutes.⁶⁰ Proponents promote the integration of privacy in antitrust and merger cases.⁶¹ This chapter supports the latter view as data imply necessarily privacy and data

See also, B6-22/16-Facebook, 6 February 2019, para. 389. See also, para. 390.

⁶⁰ Cooper, J. C., *Privacy And Antitrust: Underpants Gnomes, The First Amendment, And Subjectivity*, George Mason Law Review, Forthcoming, George Mason Law & Economics Research Paper No. 13-39, June 2013.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2283390

Gilbert, P. and Pepper, R., *Privacy Considerations in European Merger Control: A Square Peg for a Round Hole*, Competition Policy International Antitrust Chronicle, May 2015.

<https://www.competitionpolicyinternational.com/assets/Uploads/PepperGilbertMay-152.pdf>

Tucker, D. S. and Wellford, H. B., *Big Mistakes Regarding Big Data*, the Antitrust Source, December 2014.

https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/dec14_tucker_12_16f.authcheckdam.pdf

Competition Policy International, *CPI talks... with Thomas Kramler* [DG Comp, head of the EU's Digital Single Market Task Force], 20 September 2018.

<https://www.competitionpolicyinternational.com/wp-content/uploads/2018/09/CPI-Talks-Kramler.pdf>

Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015, 2015.

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

⁶¹ Lynskey, O., *Considering Data Protection in Merger Control Proceedings*, OECD roundtable, Non-price Effects of Mergers, 1st June 2018.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)70/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)70/en/pdf)

Stucke, M. E and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016.

Wolfgang, K., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, April 2016, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, 639-647, 26 April 2016.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770479

Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 25 February 2008.

<https://pdfs.semanticscholar.org/018b/0e2e468aab1a0e899c0e23c5596ef573f9d2.pdf>

protection issues. It then studies the integration of privacy in the assessment of antitrust and merger practices, alongside algorithmic collusion and pre-emptive mergers.

11. Finally, chapter three proposes to regulate the digital economy. It demonstrates that the economy is highly concentrated and that the markets cannot correct themselves market failures. It analyzes recommendations from the government reports (Furman et al, Crémer et al, Schallbruch et al, ACCC report, and Stigler report) and It proposes and discusses other original proposals in the form of a pro-competitive code of conduct applicable to all firms in the context of an international organization.

European Data Protection Supervisor, *Privacy and competitiveness in the age of big data, The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014.

https://edps.europa.eu/sites/edp/files/publication/14-03-26_competition_law_big_data_en.pdf

BKartA, Press release, *Preliminary assessment in Facebook proceeding: Facebook's collection and use of data from third-party sources is abusive*, 19 December 2017. (accessed 9 October 2018). Andreas Mundt said “[d]ata protection, consumer protection and the protection of competition interlink where data, as in Facebook's case, are a crucial factor for the economic dominance of a company.”

Mlex, *EU privacy rules key to competition analyses, head of France's antitrust watchdog says*, 4 May 2018. (accessed 21 November 2018). Isabelle De Sivla said “it's interesting to see the importance of privacy rules [in] really shaping the way the market is working, and this needs to be taken into account in our competitive analysis”

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=986723&siteid=190&rdir=1>

Mlex, *Tech and data antitrust challenges are being met by enforcers, French regulator says*, 20 November 2018 (accessed 21 November 2018). Isabelle De Sivla stressed that “data protection needs to be addressed, and it is being addressed”.

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1042304&siteid=190&rdir=1>

DOJ, Speech, Makan Delrahim, “Blind[ing] Me With Science”*: *Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, 8 November 2019 (accessed 30 January 2020).

<https://www.justice.gov/opa/speech/file/1217071/download>

“Although privacy fits primarily within the realm of consumer protection law, it would be a grave mistake to believe that privacy concerns can never play a role in antitrust analysis. Indeed, we take note of evidence that some consumers appear to hold revealed preference for privacy.”

EC, Speech, Margrethe Vestager, *Privacy and competition in an age of data*, IAPP Europe Data Protection Congress, Brussels, 21 November 2019 (accessed 30 January 2020).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/privacy-and-competition-age-data_en

“So protecting that data is an absolutely necessity, to build a digital world that works well for humans. And competition policy has an important contribution to make.”

- 12.** Most importantly, the proposals have been elaborated to be available in the context of a contentious and a regulation and take into account the constraints in terms of time and resources faced by public (regulators) and private (firms under investigations) parties.
- 13.** The digital economy raises numerous challenges around the world. To be comprehensive, this thesis cannot address all of them. From a law and economics standpoint, It focuses on the EU competition law and on the data-driven business model funded by advertising like the one of Google or Facebook, namely on non-transaction markets in which the platform provides a free service to the user side and a paid service to the advertiser side. Moreover, this thesis focuses on general competition policy issues and not on sectoral-specific issues. Therefore, this thesis is not a contribution to the intense debate on the online advertising sector.⁶² In chapter one, the proposals to

⁶² France: Adlc, *Avis n° 10-A-29 du 14 décembre 2010 sur le fonctionnement concurrentiel de la publicité en ligne*, 14 December 2010.

<https://www.autoritedelaconcurrence.fr/sites/default/files/commitments//10a29.pdf>

See also, Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018.

https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf

Spain: Comisión Nacional de los Mercados y la Competencia (CNMC), Press release, *The CNMC launches a public consultation on online advertising in Spain*, 25 April 2019 (accessed 4 February 2020).

https://www.cnmc.es/sites/default/files/editor_contenidos/Notas%20de%20prensa/2019/20190425_NP%20Inicio%20Estudio%20Publicidad%20Online_EN.pdf

Germany: BKartA, Press release, *Bundeskartellamt launches sector inquiry into market conditions in online advertising sector*, 1st February 2018 (accessed 4 February 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2018/01_02_2018_SU_Online_Werbung.html;jsessionid=093716A034306C399E586AEBD2BAC9E7.1_cid362?nn=10321672

See also, BKartA, *“Competition and Consumer Protection in the Digital Economy “: Online advertising*, 1st February 2018.

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Schriftenreihe_Digitales_III.pdf?__blob=publicationFile&v=5

Sweden: Konkursverket, Press release, *Market study of digital platforms*, 11 November 2019 (accessed 4 February 2020).

<http://www.konkurrensverket.se/en/Competition/--ovrigt--/market-study-of-digital-platforms/>

The UK: OFT, *Online Targeting of Advertising and Prices-A market study*, May 2010.

https://webarchive.nationalarchives.gov.uk/20140402182803/http://oft.gov.uk/shared_oft/business_leaflets/659703/OFT1231.pdf

CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019.

reform the relevant market and the market power are thus primarily dedicated to reform the EU competition rules with regard to non-transaction markets. It did not focus on transaction markets in which the platform provides a paid service to both sides of the market like Amazon and MasterCard. In chapter two, practices not related to data as such like the previous Google's anti-competitive practices are not analyzed. Nor It focused on liability such as liability in case of algorithmic collusion and procedural issues like the use of interim measures. In chapter three, It only proposes a general regulation and not a specific one adapted to a particular model of the digital economy such as taxi with Uber or accommodation-sharing with Airbnb. Moreover, issues beyond competition like tax, labor, harmful online content or fake news do not fall within the scope of this chapter.

14. Finally, as the digital economy is evolving quickly with specific issues, more research will be needed in the future between academics in law, economics and engineering (in particular data scientists and AI engineers) and competition authorities as well as stakeholders including the leading digital platforms as they act as a regulator. A participative antitrust or participative regulation with all the above stakeholders instead of a regulation imposed by the legislator without consulting the market participants is

<https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

See also, CMA, *Online platforms and digital advertising market study* (accessed 4 February 2020).

<https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

The US: FTC, *FTC Hearing 6-Nov. 7 Session 3 - Economics of Online Advertising; Competition and Consumer Protection Issues in Online Advertising*, 7 November 2018 (accessed 4 February 2020).

<https://www.ftc.gov/news-events/audio-video/video/ftc-hearing-6-nov-7-session-3-economics-online-advertising-competition>

Australia: ACCC, *Digital Platforms Inquiry-final report*, 26 July 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

See also, ACCC, Press release, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 December 2019 (accessed 4 February 2020).

<https://www.accc.gov.au/media-release/accc-welcomes-comprehensive-response-to-digital-platforms-inquiry>

EU: European Parliament, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 January 2019, para. 19.

http://www.europarl.europa.eu/doceo/document/TA-8-2019-0062_EN.pdf

the most efficient way to modernize competition rules and to regulate the digital economy.⁶³

⁶³ Quartz, *A Nobel-winning economist's guide to taming tech monopolies*, 27 June 2018. (accessed 4 February 2020). According to Professor Tirole, “[f]inally, we must make heavier use of more reactive processes. Drawbacks of classical approaches are well-known: self-regulation tends to be self-serving; competition policy is often too slow; public utility regulation, as we discussed, is mostly infeasible (and it is sometimes captured). We must develop what I would call “participative antitrust,” in which the industry or other parties propose possible regulations and the antitrust authorities issue some opinion, creating some legal certainty without casting the rules in stone.”

<https://qz.com/1310266/nobel-winning-economist-jean-tirole-on-how-to-regulate-tech-monopolies/>

Chapter 1: Law and Economics of Market Definition and Market Power in the Data-Driven Economy

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1 Introduction

1. Big Data and competition law is a current hot topic around the world. Indeed, according to a recent study, *“90 percent of the data in the world today has been created in the last two years alone – and with new devices, sensors and technologies emerging, the data growth rate will likely accelerate even more”*.⁶⁴ Therefore, the number of competition cases related to Big Data is expected to grow in the future. That is the reason of the flourish literature about the subject by competition authorities and academics. Since 2016, a lot has been written but there are more questions than answers and each paper has its own opinion. But, Big Data is at the heart of the digital economy and we need urgently a unanimous position. That is the goal of this thesis.
2. In this chapter one, the aim is to find the right economic tools for multi-sided markets and free goods in this data-driven economy in a practical point of view for practitioners and competition authorities by taking into account not only the characteristics of the market but also-and this is the most important contribution of this thesis-the constraints faced by competition authorities such as time constraints, human resources or lack of proper data to analyze a competition case related to multi-sided markets and free goods in the data-driven economy.
3. One can ask, why can we not apply the current economic tools to those markets? First, we have to understand well the current economic tools, then we have to understand all the features of the market and then we have to explain why we need new economic tools. Let’s start the demonstration.
4. A competition case starts by defining the relevant market, namely the product and geographic area of market competition.⁶⁵ After that, competition authorities assess the market power on this relevant market, namely the ability of the firm *“to profitability increase prices, reduce output, choice or quality of goods and services, diminish*

⁶⁴ IBM, *10 Key Marketing Trends for 2017*, 2017.

<https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=WRL12345USEN>

⁶⁵ EC, *commission notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)*, 9 December 1997, para. 2.

[http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997Y1209\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997Y1209(01)&from=EN)

innovation, or otherwise negatively influence parameters of competition”.⁶⁶ To define the relevant market, economists use traditionally two tools-the famous SSNIP test-the Small but Significant Non-transitory Increase in Price- and the CLA analysis-the Critical Loss Analysis. The first one-the SSNIP test-is used to define the boundaries of competition in the market. The analyst simulates, in the European version of the test, a given price increase-generally by 5% or 10%-above the current competition level by a hypothetical monopolist which own only one product. If this small increase in price is profitable for the firm, then the market is defined by this product. If this small increase in price is not profitable for the firm, then the market has to incorporate another substitute product until this small increase in price is profitable for the firm. Now, the analyst has to define what is profitable for the firm. To do so, the analyst uses the second tool-the CLA analysis. The CLA analysis proceeds in three steps. First, the analyst defines the critical loss in sales due to the small increase in price, namely the maximum loss in sales due to the increase in price which would not make the small increase in price unprofitable. Then, the analyst defines the actual loss in sales due to the small price increase. Finally, the analyst compares the critical loss and the actual loss. If the actual loss is higher than the critical loss, then the small price increase is unprofitable. If the actual loss is smaller than the critical loss, then the small price increase is profitable.⁶⁷ To assess the market power, economists use generally two tools-the Lerner Index and the Herfindahl Index. The former assesses the market power of a firm by relating the price to the marginal cost or by using the elasticity of demand.⁶⁸ The latter assesses the market power by squaring the market share of each firm in the market and then summing them.⁶⁹

5. The current economic tools are therefore price-centric, based on a static analysis and are adapted for a single-sided market. However, the data-driven economy is characterized by: (i) multi-sided markets with free goods such as Facebook, WhatsApp,

⁶⁶ EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008, para. 10.

[http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1018\(03\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1018(03)&from=EN)

⁶⁷ For a more complete definition of the SSNIP and the Critical Loss Analysis, see Filistrucchi, L., *A SSNIP Test for Two-Sided Markets: The Case of Media*, NET Institute Working Paper No. 08-34, October 2008.

<https://ssrn.com/abstract=1287442>

⁶⁸ The formula of the Lerner Index is the following: $L = \frac{P-MC}{P} = \frac{1}{|\varepsilon_p|}$

⁶⁹ The formula of the Herfindahl Index is the following: $HHI = \sum_{i=1}^n (MS_i)^2$

Instagram, Snapchat or Google; (ii) dynamic competition; and (iii) non-price parameters of competition like privacy. Hence, the current economic tools are not applicable in the digital economy.

6. As a consequence, competition authorities need urgently new economic tools. In a nutshell, these new tools must be non-price centric, based on a dynamic analysis and have to be tailored for multi-sided markets.
7. The chapter is structured as follows. Section 2 summarizes the literature on multi-sided markets and network effects in the data-driven economy. Indeed, it is important to understand well the most important features of the market. We will explain the business model and the role of network effects. Section 3 designs the tools to define the relevant market-the product and geographic market-based on the challenges in defining the relevant market in multi-sided markets with free goods. Section 4 designs the tools to assess the market power based on the challenges in assessing market power and the key features of market power in the data-driven economy. Section 5 concludes.

2 General considerations on multi-sided markets and network effects in the data-driven economy

8. The data-driven economy is characterized by multi-sided markets and network effects. This section summarizes the literature on (i) multi-sided markets and (ii) network effects in a theoretical and in a practical point view.

2.1 Multi-sided markets in the data-driven economy

9. In the digital economy, online platforms such as Google or Facebook are multi-sided with a particular business model. It is thus necessary to define (i) multi-sided markets and (ii) the business model.

2.1.1 Definition of multi-sided markets

10. The 2000s boom is the date of birth of the theory of multi-sided markets. Two French economists, the 2014 Nobel Prize, Jean Tirole, and Jean-Charles Rochet, wrote in 2003

the famous paper “*Platform Competition in Two-Sided Markets*”.⁷⁰ This paper marked the beginning of the research in this field. They defined a two-sided market based on the price structure as follows:

*“A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and platforms must design it so as to bring both sides on board”*⁷¹

- 11.** This definition shows three key features of multi-sided markets: (i) the need of at least two sides. For instance, a consumer side and an advertiser side; (ii) bargaining between the sides is impossible, an intermediary, the platform is required. This is a fundamental element. Indeed, If the end users can directly exchange together, the role of an intermediary is unless and therefore the market would be one-sided. For instance, if the consumer buys an apple directly from the producer, the market is one-sided. However, if the consumer buys an apple from the producer through a supermarket, the market is two-sided since both the consumer and the producer need the supermarket (the platform) to exchange; and (iii) the demands of each side are interdependent. The demand of one side depends on the demand from the other side; and (iv) the price structure-the allocation of the price between the sides-matters to attract consumers on each side. Indeed, the platform can attract more consumers by lowering the price on one side and charging more the other side. Note that the price structure is non-neutral, namely a complete pass-through of the cost by the side that pays more to the other side is not possible, otherwise the market would be a single-sided market.⁷²

⁷⁰ Rochet, J. C. and Tirole, J., *Platform Competition in Two-Sided Markets*, Journal of the European Economic Association, vol. 1, n. 4, June 2003, pp. 990–1029.

<http://idei.fr/sites/default/files/medias/doc/wp/2002/platform.pdf>

⁷¹ Rochet, J-C. and Tirole, J., *Two-Sided Markets: A Progress Report*, The RAND Journal of Economics, vol. 35, n° 3, 2006, p. 35.

https://www.tse-fr.eu/sites/default/files/medias/doc/by/rochet/rochet_tirole.pdf

⁷² Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 8.

<https://ssrn.com/abstract=2240850>

12. Another definition based on the role of the platform is given by Evans and Schmalensee.

“A multi-sided platform (which they call an economic catalyst), “has (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 to facilitate value-creating interactions between them.”⁷³

13. In this definition, the authors recalled the need of at least two groups of customers and the need of an intermediary to exchange. The demand of one side affects indirectly the demand of the other side. This is an externality, also called indirect network effects. An externality occurs when the action on one side has a consequence on the other side. As we will see in the next sub-section, more Facebook users attract more advertisers. Here, the user uses Facebook without taking into account that by using Facebook he or she will make Facebook more attractive to advertisers. In other words, the user side does not capture the value from its mutual attraction with the advertiser side. This is the role of the platform to capture these externalities and therefore to internalize them to “bring both sides on board”. Therefore, the internalization occurs when one side fully captures these externalities. The absence of internalization by end users distinguishes a two-sided platform from a single firm selling at least two complementary goods.⁷⁴ Indeed, in the latter, the consumer needs to buy at least two complementary goods such as a phone and a phone charger. The demand (and the price) of one good depends on the demand (and the price) of the other good. Therefore, before buying one good, the consumer will take into account the demand (and the price) of the other good. In other words, the consumer will internalize the demands of each good. Moreover, a

⁷³ Evans, D. S. and Schmalensee, R., *The Antitrust Analysis of Multi-Sided Platform Businesses*, Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Olin Research Paper No. 623, 30 January 2013, p. 7.

<https://ssrn.com/abstract=2185373>

⁷⁴ Filistrucchi, L. et al, *Identifying Two-Sided Markets*, TILEC Discussion Paper No. 2012-008, 21 February 2012, p. 5.

<https://ssrn.com/abstract=2008661>

platform creates interactions between both sides. For instance, Facebook offers social contents to users and advertising spaces to advertisers. When a Facebook user uses Facebook, he or she can see ads from advertisers, therefore the platform creates an interaction between the user and the advertiser.

14. Finally, Rysman defined a two-sided market based on the externalities between each side.

“A two-sided market is one in which 1) two sets of agents interact through an intermediary or platform, and 2) the decisions of each set of agents affects the outcomes of the other set of agents, typically through an externality.”⁷⁵

15. Hence, the economics literature does not give a unanimous definition of a multi-sided market. However, one can list the elements of a two-sided market based on these previous definitions. Proposition 1 lists them.

Proposition 1:

A market is multi-sided if:

- At least two products or services are sold to at least two groups of consumers who interact through an intermediary, the platform.
- The demands of each side are interdependent.
- The platform internalizes the externalities between the sides.
- Bargaining between the sides is impossible.
- A complete pass-through of the cost by the side that pays more to the other side is impossible, otherwise the market would be a one-side market.

16. Moreover, Filistrucchi et al distinguished two different types of two-sided markets: (i) transaction; and (ii) non-transaction markets.⁷⁶

⁷⁵ Rysman, M. *The Economics of Two-Sided Markets*, Journal of Economic Perspectives, 23(3), 2009, p. 125.
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.23.3.125>

⁷⁶ Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 6.

- 17.** Two-sided non-transaction markets are characterized “*by the absence of a transaction between the two sides of the market*”.⁷⁷ This is typically the case of media or social networking platforms. In these markets, the groups of users join the platform for different purposes.⁷⁸ For instance, in social networking services such as Facebook, Facebook users are interested by the content and advertisers by Facebook users’ attention. Hence two important implications arise. First, generally speaking, only one positive indirect network effects occurs. Indeed, the value to advertisers to use Facebook increases as the number of Facebook users increases but the value to Facebook users to use Facebook might increase, decrease or might be unchanged as the number of advertisers increases. In other words, a unidirectional positive network effect occurs. Second, since the groups of users join the platform for different purposes, it is not necessary to bring both sides on board.⁷⁹ Therefore, non-transaction markets result from strategic business decision.⁸⁰
- 18.** Two-sided transaction markets are characterized by the “*presence and observability of a transaction between the two groups of platform users*”.⁸¹ This is the case of payment cards. In these markets, the groups of users join the platform to exchange between the sides. One group of users joins the platform only if the other group is on the platform and *vice versa*.⁸² Therefore, multidirectional positive network effects occur and the transaction market is seen as an expression of the market structure.
- 19.** Finally, the German competition authority, the *Bundeskartellamt*, distinguished matching platforms and audience providing/advertising platforms.
- 20.** Matching platforms enable interactions between the market’s sides either in the form of economic transactions (e.g. buying a product from Amazon) or non-economic

⁷⁷ Ibid.

⁷⁸ Bundeskartellamt (BKartA), *Working Paper Market Power of Platforms and Networks*, June 2016, pp. 18-19. https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Langfassung.pdf;jsessionid=38CBDBEE8478BEA8CE271ACCA7E45651.2_cid371?_blob=publicationFile&v=2

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 6.

⁸² BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, p. 18.

transactions (e.g. real meeting in person after a match on an online dating application).⁸³

21. Audience providing/advertising platforms enable one group of users to attract the attention of another group of users allowing a potential transaction between advertisers and users (e.g. when a user clicks on an ad).⁸⁴ Therefore, according to the *Bundeskartellamt*, “the term audience providing or advertising platform is a better description of the platform’s service than “non-transaction platform”.⁸⁵

22. As we will see in section 3, these distinctions are important for the market definition.

2.1.2 *The business model: a typical free side-and-paid side relationship*

23. This thesis only studies platforms with free goods such as Facebook or Google. These markets are characterized by a typical free side-and-paid side relationship and by a potential transaction between the market’s sides. In other words, we will study only two-sided non-transaction markets.

24. In these markets, the platform provides a free service to one side of the market (the user side) and provides a paid service to the other side of the market (the advertiser side). The free services to users are monetized through targeted advertising from the advertiser side based on the data collected from the user side. This has two important implications in competition economics.

25. Firstly, on the user side, the price is zero. Therefore, the price is below the marginal cost. Moreover, to use the service, the user must share his/her personal data with the platform. The data are monetized through target ads. In other words, the user pays with his personal and his attention instead of with a monetary price.⁸⁶

⁸³ Ibid, p. 21.

⁸⁴ Ibid, p. 22.

⁸⁵ Ibid.

⁸⁶ EC, Speech, Johannes Laitenberger, *Le numérique et la concurrence dans une économie et une société en transformation*, Colloque de l’Autorité de la concurrence, Paris, 24 November 2017

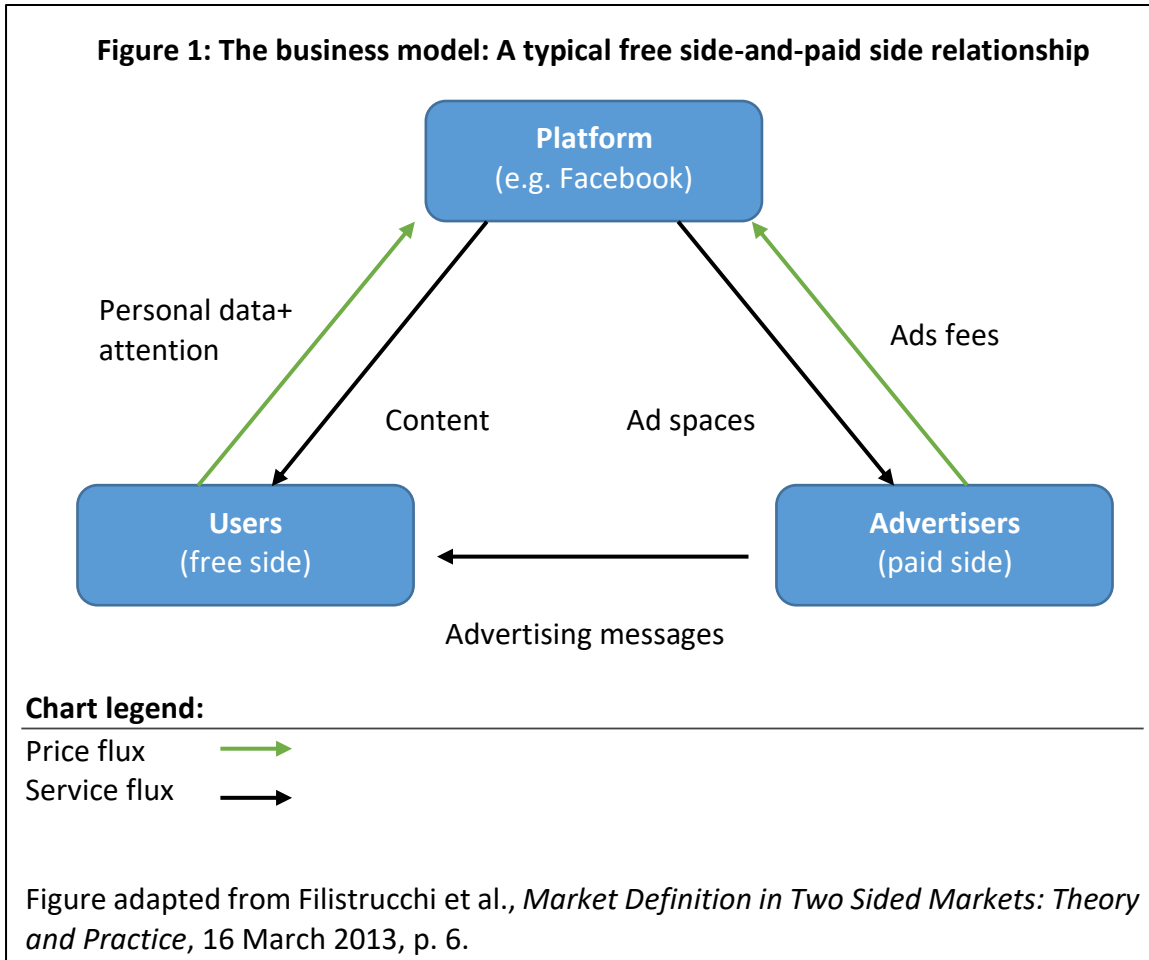
http://ec.europa.eu/competition/speeches/text/sp2017_22_fr.pdf

26. Secondly, on the advertiser side, the price can be above the marginal cost.
27. Hence, in order to bring enough users on the user side, the platform sets a price below the marginal cost and recoups its costs by setting a price above the marginal cost on the advertiser side. This business model can be confused with a predatory pricing strategy. In contrary, this practice can be profitable since platforms exhibit indirect network effects (see section 2.2). The more users join the platform, the more the platform is valuable to advertisers, thus the profit increases. As a consequence, a competition authority must carefully understand this business model in order not to apply the theory of predatory pricing for single-sided markets to two-sided markets without meticulous considerations.⁸⁷ Moreover, as noted by the OECD, *“prices above marginal cost on any side do not necessarily indicate market power, since account has to be taken of both sides of the market”*.⁸⁸ Figure 1 shows this free side-and-paid side relationship.

⁸⁷ For more information about predatory pricing in two-sided markets, see Evans, D. S. and Schmalensee, R., *The Antitrust Analysis of Multi-Sided Platform Businesses*, Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Olin Research Paper No. 623, 30 January 30, 2013, pp. 32-33.

⁸⁸ OECD, *Market Definition*, 2012, p. 55.

<http://www.oecd.org/daf/competition/Marketdefinition2012.pdf>



2.2 Network effects in the data-driven economy

28. In multi-sided markets, platforms exhibit network effects. Indeed, they are essential to bring both sides on board. They refer “to the effect that one user of a good or service has on the value of that product to other users”.⁸⁹ This effect can be positive “when increasing the number of users increases the value or utility of the network to other users”⁹⁰ or negative when increasing the number of users decreases the value or utility of the network to other users.⁹¹ In the data-driven economy, two kinds of network

⁸⁹ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 24.

<https://publications.parliament.uk/pa/ld201516/ldselect/ldcom/129/129.pdf>

⁹⁰ Ibid.

⁹¹ Ibid.

effects occur: (i) traditional network effects; and (ii) the specific data-driven network effects.

2.2.1 *Traditional network effects*

29. Traditional network effects are not specific to the data-driven economy. One can discern two types of effects: (i) direct; and (ii) indirect network effects.

30. Direct network effects occur when a change (either positive or negative) in the number of users on one side of the market modifies the value or the utility of the product or service to the users on the same side of the platform.⁹² For instance, the more friends use Facebook, the more the value or the utility of Facebook increases, therefore the more friends will use Facebook.⁹³

31. Indirect network effects occur when a change (either positive or negative) in the number of users on one side of the market modifies the value or the utility of a product or service to the users on the other side of the platform “*which in turn results in indirect benefits for the original user of the product*”.⁹⁴ For instance, the more users use Facebook, the more the value or the utility of Facebook increases, therefore the more advertisers will use Facebook, the more advertisers use Facebook, the more the value of Facebook users of using Facebook increases, decreases or is unchanged (depending on whether Facebook users like, dislike or are neutral to ads on Facebook), and so on, resulting in positive or negative feedback loops. Hence, as underlined by Filistrucchi et al, it is crucial to ask “*whether such indirect network effect exist, whether they are one or two, whether they are both positive, or one is positive and one negative and, finally, how significant they are*”.⁹⁵ Note that, one indirect network effect is enough for the existence of a two-sided market.⁹⁶ Figure 2 shows these indirect network effects.

⁹² Ibid.

⁹³ B6-22/16-Facebook, 6 February 2019, para. 273.

⁹⁴ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 24.

See also, OECD, *The digital economy*, February 2013, p. 8.

<http://www.oecd.org/daf/competition/The-Digital-Economy-2012.pdf>

⁹⁵ Filistrucchi, L. et al, *Identifying Two-Sided Markets*, TILEC Discussion Paper No. 2012-008, 21 February 2012, p. 9.

⁹⁶ Ibid, p. 5.

Figure 2: Indirect network effects

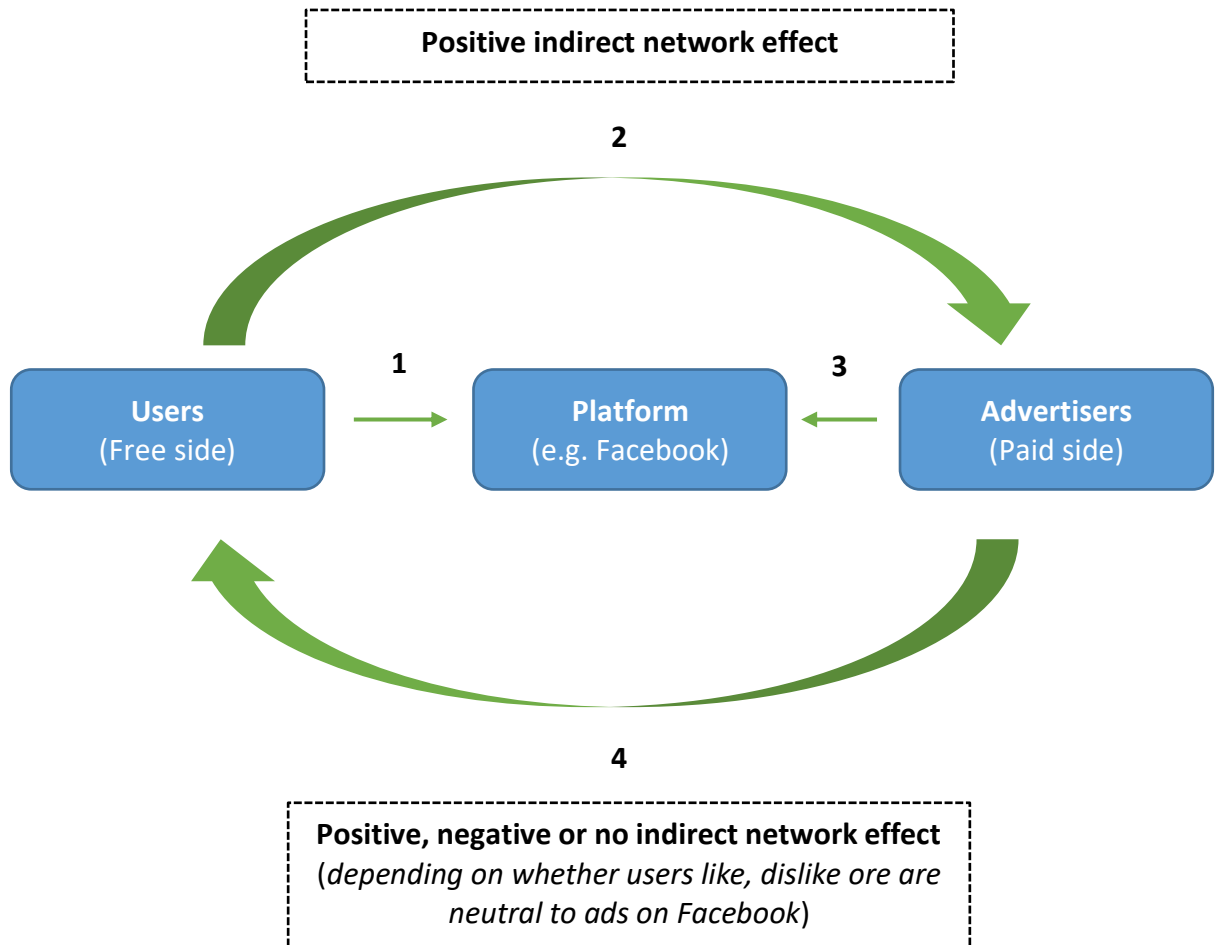


Chart legend:

Flux n°1: The more users use Facebook

Flux n°2: The more Facebook users increase the utility of Facebook to advertisers (*positive indirect network effect*)

Flux n°3: The more advertisers use Facebook

Flux n°4: The more advertisers increase (*positive indirect network effect*), decrease (*negative indirect network effect*) or do not affect the utility of Facebook to Facebook users

32. Hence, as we will see in section 4.2, since the success of a platform in the digital economy such as Facebook or Google is based on the consumer base, traditional network effects can inhibit competition in the market and “*have to be assessed on a case-by case basis*”.⁹⁷ Therefore, competition authorities must carefully understand the role of network effects, the sign (positive or negative) and the strength (strong or weak) of these effects.

2.2.2 Data-driven network effects

33. In the data-driven economy, additional network effects arise. Regulators must consider these effects for an accurate analysis. Stucke and Grunes distinguish three types of data-driven network effects: (i) trial-and-error, (ii) scope of data and (iii) spillover effects.

34. The trial and error effect is linked to the accumulation-or volume-of data. Like a child learning how doing a task by repeating and collecting information about it, the more the service is used by users, the more the firm can improve the quality of its service thanks to its algorithms. Hence, the service is more attractive to other users. The firm can collect more data, thus it can improve its service and attract more users.⁹⁸ Google search engine is a good example. The more Google users use the search engine, the more Google can learn about their preferences and thus it can display more relevant results. As the results are relevant, Google attracts more users and thus it can learn even more about its users.⁹⁹

35. The scope of data effect is linked to the variety of data. The more the user uses other services of the firm, the more the latter can collect information about a particular user, the more it can target the user with relevant results.¹⁰⁰ Again, Google search engine is a good example. By using Google Maps, Google can collect the data from this service¹⁰¹

⁹⁷ COMP/M.7217-*facebook/WhatsApp*, 3 October 2014, para. 130.

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

⁹⁸ Stucke, M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, p. 170.

⁹⁹ COMP/M.5727-*Microsoft/Yahoo! Search business*, 10 February 2010, para. 101.

http://ec.europa.eu/competition/mergers/cases/decisions/M5727_20100218_20310_261202_EN.pdf

¹⁰⁰ Stucke, M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, p. 186.

¹⁰¹ Google, *Privacy & Terms, Information we collect* (accessed 15 April 2017).

and thus it can know more about an individual user. Therefore, Google can personalize a result for an individual user based on the information collected on Google Maps. Hence, the scope of data allows a platform to improve its service which attracts even more users and so on.

- 36.** The spillover effect is linked to both the volume and variety of data. Basically, in multi-sided markets, the free side spills over the paid side. The more users use a particular platform such a Google, the more the platform can collect data about its users (*volume of data*) and especially about an individual user (*variety of data*), the more advertisers will use the platform. The more the ads are relevant to an individual user, the higher the likelihood that the user will click on it. Thus, the profit of the platform will increase. Therefore, the firm can develop more free goods like Gmail that users will use and thus it can collect more data which attracts even more users and advertisers.¹⁰²
- 37.** Hence, as we will see in more details in section 4.2, data-driven network effects can prevent a rival to enter into the market in the absence of volume, namely consumer base, and variety of data about the user, since users will stick to the product with the best quality attracting more users and advertisers. Therefore, in the digital economy, the “*winner takes all*”.¹⁰³ Figure 3 summarizes them.

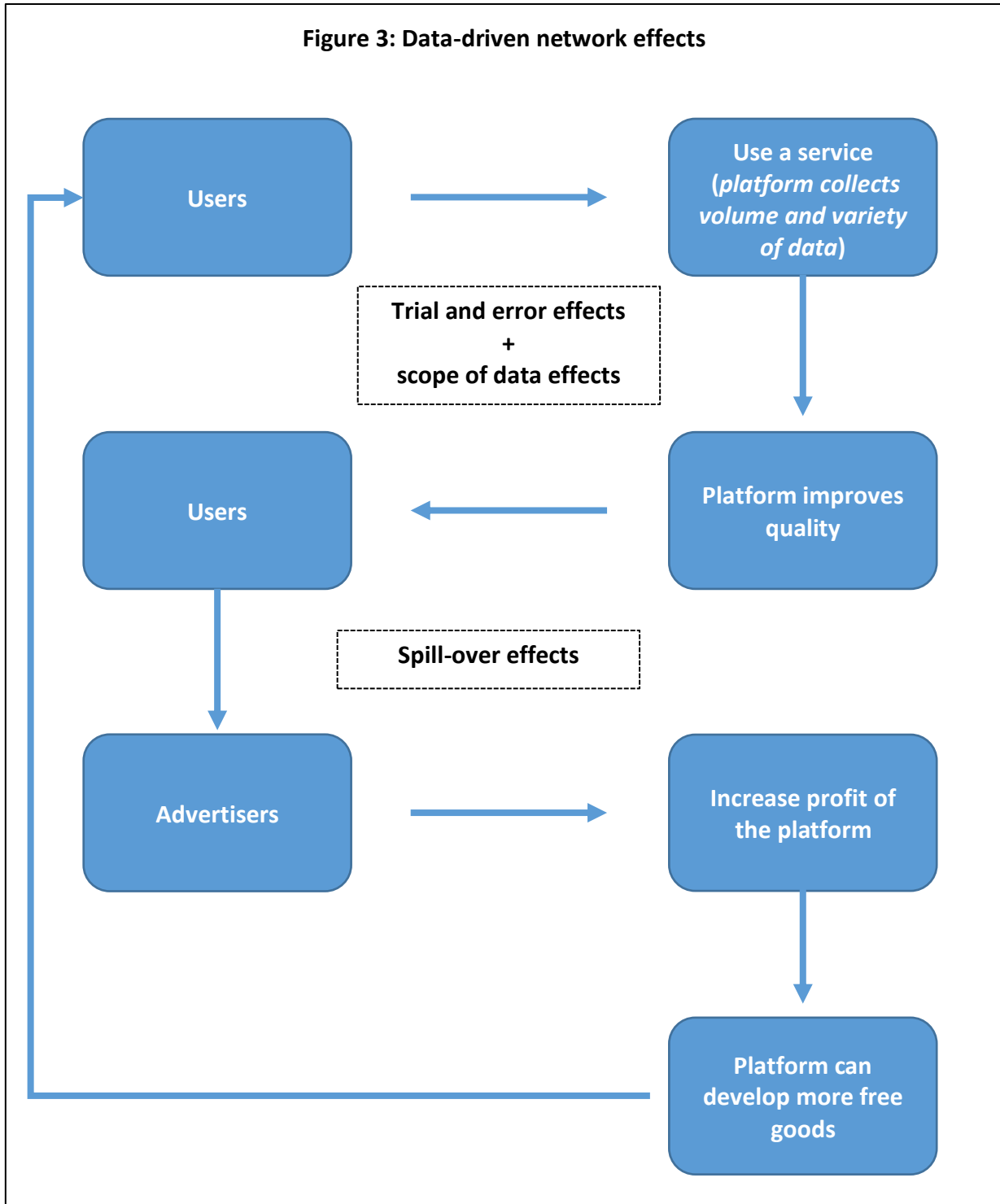
<https://www.google.com/intl/en/policies/privacy/#infocollect>

¹⁰² Ezrachi, A. and Stucke, M. E., *Written evidence (OPL0043)*.

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

¹⁰³ OECD, *The digital economy*, February 2013, p. 5.

Figure 3: Data-driven network effects



3 Tools to define the relevant market

- 38.** Market definition is the first step of a competitive analysis in merger and antitrust. It is “one of the most important analytical tools to examine and evaluate the competitive constraints that a firm faces and the impact of its behaviour on competition”.¹⁰⁴ In many countries, market definition is thus a mandatory step for competition authorities.¹⁰⁵ It is used for multiple purposes: (i) identification and definition of the boundaries of competition between firms (in terms of product and geographic dimension based on the analysis of the demand and supply-side substitutability but does not take into account the issue of potential competition)¹⁰⁶; (ii) assessment of market power; (iii) assessment of the effects of the firm’s behavior at stake; (iv) evaluation of the risk of coordinated effects in merger; (v) calculation of fines; and (vi) estimation of the effects on trade between EU member states.¹⁰⁷
- 39.** However, market definition is also one of the most difficult tasks that lawyers, economists and competition authorities face during an investigation due to the analytical complexity and sometimes the lack of proper data to define an accurate market. In the data-driven economy, four main problems arise.
- 40.** First, market definition is a challenging task in multi-sided markets. Indeed, one has to consider the interdependencies between all sides of the market, the proper role of network effects as well as the role of multi/single-homing.
- 41.** Second, when free goods are involved, one can wonder if an antitrust market can exist. Besides that, the traditional economic tools such as the SSNIP test are unworkable when one side of the market is free.

¹⁰⁴ OECD, *Market Definition*, 2012, p. 11.

¹⁰⁵ For more information about market definition in a particular country, see, OECD, *Market Definition*, 2012.

¹⁰⁶ EC, *Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)*, 9 December 1997, paras. 7-24.

¹⁰⁷ OECD, *Market Definition*, 2012, p. 11.

42. Third, in the digital economy, the sector is highly dynamic with rapid innovation cycles. Hence, as noted by the OECD, *“the boundaries of any defined market can be unstable and market shares may therefore change rapidly over time”*.¹⁰⁸
43. Finally, in the data-driven economy, an acquirer often buys a firm (the target) for its data. For instance, in 2014, Google acquired Nest Labs for 3.2 billion dollars, a manufacturer of smoke alarms and learning thermostats which collects users’ information. Therefore, one can wonder if the definition of the relevant market in terms of substitutable product is still appropriate in this economy.
44. Hence, some practitioners and competition authorities like the Canadian *Competition Bureau* call *“to rely on alternative methods to assess market definition or to forgo market definition as an initial step and focus on direct evidence of competitive effects”* for certain cases involving Big Data or platforms in the digital economy.¹⁰⁹ In other words, there is an ongoing discussion on whether competition authorities must analyze directly the competitive effects at the expense of market definition like in the UK¹¹⁰ and the US¹¹¹ guidelines. Moreover, in the EU, the Commission has recently announced the modernization of the Commission notice on the definition of relevant market to

¹⁰⁸ Ibid.

¹⁰⁹ Competition Bureau, *Big data and Innovation: Implications for competition policy in Canada*, November 2017, p. 14.

<http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04304.html>

¹¹⁰ OECD, *Market Definition*, 2012, pp. 313-320.

¹¹¹ Ibid, pp. 321-331.

See also, *U.S. Horizontal Merger Guidelines*, 19 August 2010, p.7.

<https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>

“The Agencies’ analysis need not start with market definition. Some of the analytical tools used by the Agencies to assess competitive effects do not rely on market definition, although evaluation of competitive alternatives available to customers is always necessary at some point in the analysis.”

consider the challenges of the digital economy.¹¹² The review will take into account digital business models with free services.¹¹³

45. In this section, (i) we will detail the challenges in defining the relevant market in the data-driven economy, (ii) then we will design new approaches and tools for the relevant product market, and (iii) the relevant geographic market.

3.1 Challenges in defining the relevant market in the data-driven economy

46. In line with the goal of this chapter, we will focus on practical challenges when regulators and practitioners must deal with market definition in the data-driven economy. This sub-section is a compulsory step to understand why we need new approaches and tools to define the relevant product and geographic market in an accurate way as a matter of law and economics.

3.1.1 Challenges in defining the relevant market in multi-sided markets

47. Multi-sided markets involve at least two groups of users and exhibit indirect network effects. Moreover, the demands of each side are interdependent. Hence, in multi-sided markets, market definition must take into account each side of the market,¹¹⁴ the demand interdependencies, especially indirect network effects and feedback effects (a decrease in demand on one side will reduce the demand on the other side which will

¹¹² EC, Speech, Margrethe Vestager, *Defining markets in a new age*, Chillin' Competition Conference, Brussels, 9 December 2019 (accessed 20 January 2020).

This was recommended (recommendation n°1) by the report submitted by Schallbruch et al, *A new competition framework for the digital economy*, Report by the Commission 'Competition Law 4.0', September 2019, p. 6.

https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=2

¹¹³ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 8.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0067&from=EN>

¹¹⁴ Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 4.

reduce the demand on the first side and so on) and the competitive pressures on each side.¹¹⁵

48. Besides that, the question whether (i) one single market encompassing all sides or (ii) separate markets for each side should be defined depends on the type of platform under investigation.
49. In multi-sided transaction markets, only one market should be defined since one group of users joins the platform only if the other side is on the platform and *vice versa*.¹¹⁶ Indeed, if one side is missing, there is no market at all.
50. In multi-sided non-transaction markets, multi (interrelated) markets need to be defined since the groups of users join the platform for different purposes.¹¹⁷ Indeed, it is not necessary to bring both sides on board. Therefore, the platform can exist without one of the groups and one service can be considered as substitute to one side but not to the other side.
51. In matching platforms, only one market should be defined since an interaction occurs either in the form of economic transactions or non-economic transactions.¹¹⁸
52. In audience providing/advertising platforms, multi (interrelated) markets should be defined since the platform only enables a potential interaction between each side of the market.¹¹⁹
53. In any case, competition authorities must be cautious in the definition of one single market encompassing all sides or separate markets for each side. Indeed, in both cases,

¹¹⁵ OECD, *Market definition in multi-sided markets - Note by Sebastian Wismer & Arno Rasek*, Hearing on Rethinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 5.

[https://one.oecd.org/document/DAF/COMP/WD\(2017\)33/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)33/FINAL/en/pdf)

¹¹⁶ Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 10.

¹¹⁷ Ibid.

¹¹⁸ OECD, *Market definition in multi-sided markets-Note by Sebastian Wismer & Arno Rasek*, Hearing on Rethinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 6.

¹¹⁹ Ibid.

See also, B6-22/16-*Facebook*, 6 February 2019, para. 235.

they can miss the interdependencies between each side. Table 1 summarizes the two different approaches to define the relevant market.

Table 1: Approaches to define the relevant market

One single market	Multi (interrelated) markets
Multi-sided transaction markets (e.g. payment cards)	Multi-sided non-transaction markets (e.g. newspapers)
Matching platforms (e.g. dating apps)	Audience providing/advertising platforms (e.g. social networking platforms, search engines)

54. Finally, regulators have to take into account whether consumers of each side multi-home or single-home to determine “*whether two platforms belong to the same product market(s) or not*”.¹²⁰ Single-homing occurs when consumers use only a single platform¹²¹ (e.g. consumers use only Facebook). Multi-homing occurs when consumers use more than one platform simultaneously to get the same kind of service¹²² (e.g. consumers use WhatsApp, Facebook Messenger and Snapchat simultaneously). They multi-home for three main reasons: (i) the platforms are different in terms of services/functionalities (e.g. WhatsApp and Snapchat do not offer the same functionalities); (ii) the consumers’ usages differ (e.g. users do not use Facebook and LinkedIn for the same purpose)¹²³; and (iii) the composition of the consumer group differs (e.g. Tinder and Meetic are not used by the same group of users).¹²⁴ Although the role of single or multi-homing is merely a source of market power (see section 4.2), multi-homing may indicate that two platforms are not direct competitors. In case of multi-homing, Wismer and Rasek recommend that “*agencies should try to investigate the customers’ multi-homing rationales and consider further splitting of the market,*

¹²⁰ Ibid, p. 9.

¹²¹ Ibid.

¹²² Ibid.

¹²³ M.8124- *Microsoft/LinkedIn*, 6 December 2016, para. 115.

https://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

¹²⁴ OECD, *Market definition in multi-sided markets-Note by Sebastian Wismer & Arno Rasek*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 10.

thus segregating platforms that are used for different purposes and, hence, are not direct competitors".¹²⁵ To sum up, our second proposition is:

Proposition 2:

In multi-sided markets, market definition must take into account:

- Each side of the market
- The demand interdependencies (indirect network effects and feedback effects)
- The competitive pressures on each side of the market
- The type of market (transaction/non-transaction markets; matching/audience providing platforms)
- The role of single or multi-homing

3.1.2 Challenges in defining the relevant market when free goods are involved

55. In the data-driven economy, platforms provide generally a zero-price service to users and provide a paid service to advertisers. This is typically the case of consumer communication services (e.g. Skype)¹²⁶, social networking services (e.g. Facebook)¹²⁷, professional social networking services (e.g. LinkedIn)¹²⁸, and general search services (e.g. Google).¹²⁹

¹²⁵ Ibid.

¹²⁶ COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 10 et sub.

http://ec.europa.eu/competition/mergers/cases/decisions/m6281_924_2.pdf

¹²⁷ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, paras. 45 et sub.

See also, B6-22/16-*Facebook*, 6 February 2019, para. 239.

¹²⁸ M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 87 et sub.

¹²⁹ AT.39740-*Google Search (Shopping)*, 27 June 2017, paras. 145 et sub.

http://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf

See also, AT.40099-*Google Android*, 18 July 2018, paras. 326 et sub.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf

56. In antitrust, some scholars and courts¹³⁰ argue that “*without prices, the argument runs, there can be no markets. And without markets, there is no need for antitrust scrutiny*”.¹³¹
57. However, this argument is wrong in two-sided markets for two main reasons. First, this business model results from a strategic business decision of the platform to maximize its profit.¹³² Indeed, to bring enough users on the user side, the platform sets a price below the marginal cost and recoups its costs by setting a price above the marginal cost on the advertiser side. Second, the behavior of the free side has an impact on the paid side due to indirect network effects. Therefore, a market for free product must be defined. This is in line with the practice of the European Commission¹³³ and the recent legislation in Germany.¹³⁴
58. To define the relevant market, agencies cannot apply the traditional economic tools such as the SSNIP test or CLA analysis since one side of the market is free. Indeed, an increase in price by 5 per cent of a zero price is zero.¹³⁵ However, the free side still pays with a non-monetary price (his data and his personal attention)¹³⁶ instead of with a monetary price. In other words, agencies have to focus on non-price parameters of competition such as quality (including privacy)¹³⁷, choice and innovation instead of

¹³⁰ United States District Court Northern District of California, *Kinderstart.com, LLC v. Google, Inc.*, 16 March 2007, para. 54.

<http://www.internetlibrary.com/pdf/Kinderstart-Google-ND-Ca.pdf>

OLG Düsseldorf, *Case VI-Kart 1/14 (V)*, 9 January 2015, paras. 42-43.

<https://openjur.de/u/759111.html>

¹³¹ Newman, J. M., *Antitrust in Zero-Price Markets: Foundations*, July 2014, p. 151.

http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=9504&context=penn_law_review

¹³² Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 9.

¹³³ See above EC cases.

¹³⁴ Act against Restraints of Competition (Competition Act – GWB), para. 18(2a) (accessed 21 January 2020).

http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0024

¹³⁵ Evans, D. S., *Antitrust Economics of Free*, April 2011, p. 2.

<https://ssrn.com/abstract=1813193>

¹³⁶ AT.40099-*Google Android*, 18 July 2018, para. 326.

“*First, even though users do not pay a monetary consideration for the use of general search services, they contribute to the monetisation of the service by providing data with each query.*”

¹³⁷ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 87.

price parameters in data-driven markets.¹³⁸ Therefore, the tools must be designed based on these non-price parameters. To sum up, our third proposition is:

Proposition 3:

In multi-sided markets when one side is free, agencies have to:

- Define a market for free product
- Focus on non-price parameters of competition such as quality (including privacy), choice and innovation instead of price parameters

3.1.3 Challenges in defining the relevant market in a dynamic economy with rapid innovation cycles

59. The data-driven economy is highly dynamic with rapid innovation cycles. In this economy, firms compete not in the market but for the market leading to “*winner takes all*” outcomes with a firm such as Google that serves the entire market or at least a large proportion of the market.¹³⁹ In other words, the market is monopolized by just a few firms.

60. One can think that a monopolized market leads to low innovations and low investments in Research and Development (R&D). In the data-driven economy, this assumption does not hold at all. New products are developed all the time by new market entries and incumbents. For instance, in 2011, Snapchat has successfully entered into the

See also, OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018, p. 3.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)135/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)135/en/pdf)

“In this context, some consumers may experience data collection and data protection as elements of the quality of a zero-price service.”

¹³⁸ EC, Speech, Johannes Laitenberger, *Le numérique et la concurrence dans une économie et une société en transformation*, Colloque de l'Autorité de la concurrence, Paris, 24 November 2017 (accessed 21 January 2020).

See also, OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018, p. 2.

“In the digital sector, when there is no price expressed in money, and output does not play a decisive role (since marginal costs are often very low), there is a strong case for competition law to focus on the other three parameters of competition: quality, choice and innovation.”

¹³⁹ *Ibid*, p. 17.

consumer communication market thanks to the possibility to send ephemeral media contents (such as texts, pictures or videos) and to share “Snapchat” stories (temporary media contents that can be visualized for a limited period of time). In the US, Snapchat has more users aged between 12 and 24-year-old than either Facebook or Instagram.¹⁴⁰ In other words, Snapchat is a disruptive competitor to Facebook. What was the reaction of Facebook? First, the introduction of ephemeral messages in Facebook Messenger and then the introduction of the “stories” functionality in all its applications, Instagram, Facebook and WhatsApp.¹⁴¹ Nowadays, “Instagram stories” has more than 300 million daily active users, nearly twice the number of daily active users on Snapchat.¹⁴² In antitrust terms, Snapchat has dramatically increased the competitive pressure on Facebook and has forced it to innovate quickly to keep its dominant position on the market by introducing not only a new functionality on its applications but more importantly the way of how users communicate with each other, from permanent to temporary messages.

- 61.** As a consequence, in dynamic markets, one can list three main consequences in the competition assessment. First, the position of firms can change very quickly.¹⁴³ Second, quality and innovation are the main competition parameters.¹⁴⁴ Finally, market definition in terms of product substitutability is not adapted in such dynamic markets since new services can be considered as substitutes in a very short period of time. This phenomenon is exacerbated by the possibility to introduce similar functionalities like “Instagram Stories” through just an automatic update via the App store. Moreover, an innovation can reduce production costs of services that were considered too expensive to be a substitute.¹⁴⁵ Hence, market definition based on product substitutability might

¹⁴⁰ The New York Times, *Snapchat’s New Test: Grow Like Facebook, Without the Baggage*, 15 November 2017 (accessed 2 December 2018).

<https://www.nytimes.com/2017/11/15/business/snapchats-new-test-grow-like-facebook-without-the-baggage.html>

¹⁴¹ The Verge, *Facebook launches stories to complete its all-out assault on Snapchat*, 28 March 2017 (accessed 2 December 2018).

<https://www.theverge.com/2017/3/28/15081398/facebook-stories-snapchat-camera-direct>

¹⁴² The New York Times, *Snapchat’s New Test: Grow Like Facebook, Without the Baggage*, 15 November 2017 (accessed 2 December 2018).

¹⁴³ OECD, *Market Definition*, 2012, p. 57.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid, p. 58.

lead to the definition of a too narrow market because new substitutes (due to a new product, a new functionality or a reduction in production costs) are not taken into account at the time of the analysis.¹⁴⁶

62. As a consequence, market definition should not be viewed in terms of product substitutability but rather in terms of innovation-driven competitive pressure. In other words, agencies have to consider to what extent an innovation in terms of a new product, a new functionality or a reduction in production costs is likely to disturb the boundaries of the market. To do so, agencies have to undertake a more predictive approach based on the analysis of investments in R&D in the market, the tendencies in the market by looking after capital raising for a new entry and the applications available on an App store. By doing so, agencies can find evidences of a potential (and future) competitor in the market and also evidences of competitive pressure on incumbent firms. Therefore, market definition in terms of innovation-driven competitive pressure can take into account the market dynamic. This approach considers the constraints faced by agencies. They need just few human resources to do a “market watch”, some data about R&D in the statements of income of market participants and can be realized in due time. For instance, assume a potential merger between Snapchat and Instagram (before the introduction of Instagram Stories). If an agency uses the traditional market definition in view of product substitutability, it will conclude that Snapchat and Instagram are not competitors because Snapchat enables to send ephemeral messages and Instagram enables to send only permanent messages. Therefore, they are not in the same market. However, if it uses the market definition in view of innovation-driven competitive pressure, the agency would conclude that Snapchat and Instagram are potential competitors because Instagram (Facebook) invests a lot in R&D and the use of ephemeral messages is the current tendency in the market. Therefore, Instagram will likely introduce a similar functionality in its service. Hence, Snapchat and Instagram would be in the same market.

63. At the time of the thesis, the Commission has already assessed the impact of mergers on innovation,¹⁴⁷ but it has not yet defined a market in view of innovation-driven

¹⁴⁶ Ibid.

¹⁴⁷ See for instance, M.7932-Dow/DuPont, 23 March 2017.

https://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf

competitive pressure to the best of our knowledge. To sum up, our fourth proposition is:

Proposition 4:

Market definition should be viewed in terms of innovation-driven competitive pressure.

3.1.4 Challenges in defining the relevant market when the underlying data is the product at stake

64. The current competition law only relies on the relevant end product or service at stake. For instance, if a firm buys a manufacturer of smoke alarm, the agency will scrutinize only whether the acquirer and the target belong to the same market. If both firms are not in the same market, the merger would not raise any particular issues and the agency would probably clear the merger (under the assumption that the non-horizontal pro-competitive effects outweigh the non-horizontal anti-competitive effects).¹⁴⁸

65. However, in the data-driven economy, some acquisitions are mainly motivated by the underlying dataset of the target and not by the end product. This concern was raised after the merger *Google/Nest Labs*. In 2014, Google acquired Nest Labs for 3.2 billion dollars, a manufacturer of smoke alarms and learning thermostats which collects user's information such as users' habits over time to adjust the temperature. These devices "*can profile human behavior and anticipate the user's needs even before they know it*".¹⁴⁹ The Federal Trade Commission (FTC) granted the merger in early termination, namely without merger review.¹⁵⁰ Indeed, the FTC had no reasons to block the merger

¹⁴⁸ Non-horizontal effects occur when the undertakings concerned are not in the same markets. For instance, efficiency gains (such as reduction in production costs to produce the good) are non-horizontal pro-competitive effects and non-coordinated effects (such as foreclosure) are non-horizontal anti-competitive effects. For more information, see also EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008.

¹⁴⁹ Forbes, *Google's Strategy Behind The \$3.2 Billion Acquisition Of Nest Labs*, 17 January 2014 (accessed 2 December 2018).

<https://www.forbes.com/sites/greatspeculations/2014/01/17/googles-strategy-behind-the-3-2-billion-acquisition-of-nest-labs/#1ded30e21d45>

¹⁵⁰ *Google Inc.; Nest Labs, Inc*, FTC, early termination notice 20140457, 4 February 2014 (accessed 2 December 2018).

<https://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices/20140457>

under the traditional tools and analysis since Google was not a competitor of Nest in the thermostat product market as Google did not sell any thermostats at the time of the merger, and Google was not a potential entrant in the market. By acquiring the underlying dataset, Google can combine its own dataset and the target dataset in one dataset. Therefore, Google can improve its search engine (in terms of relevant results and target ads) thanks to the scope of data effects. Google can develop new Internet of Things (IoT) products based on the combined dataset and technical prowess and manpower of the target.¹⁵¹ According to Forbes about the merger, *“by expediting the development process, Google can have first mover advantage and leapfrog competition in the IoT market. A platform for Internet-connected home devices powered by Google will help both companies capture a bigger share of the \$600 billion IoT market”*.¹⁵² That was done in 2016 when Google developed Google Home, a smart speaker and voice assistant powered by the Google Assistant to command, among other things, our music, our home such as Nest thermostats and our curiosity by its ability to answer questions.¹⁵³

- 66.** In antitrust terms, the acquisition of the target dataset allows Google to enhance its dominant position in the search engine market (better relevant results to users and target ads to advertisers) and to enter in another market (IoT market with internet-connected home devices).
- 67.** Now, the question is how an agency can challenge this kind of merger in the future? This is a very tricky question. The current European competition law allows two possibilities. The merger is either a horizontal merger or a non-horizontal merger. The horizontal merger guidelines apply *“when the undertakings concerned are actual or potential competitors on the same relevant market”*¹⁵⁴. The non-horizontal guidelines

¹⁵¹ Forbes, *Google's Strategy Behind The \$3.2 Billion Acquisition Of Nest Labs*, 17 January 2014.

¹⁵² Ibid.

¹⁵³ The Guardian, *Google Home review: the smart speaker that answers almost any question*, 10 May 2017 (accessed 2 December 2018).

<https://www.theguardian.com/technology/2017/may/10/google-home-smart-speaker-review-voice-controlled>

¹⁵⁴ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 5.

[http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52004XC0205\(02\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52004XC0205(02)&from=EN)

apply “*where the undertakings concerned are active on different relevant markets*”¹⁵⁵. One can distinguish two types of non-horizontal mergers: vertical mergers and conglomerate mergers.¹⁵⁶ Vertical mergers “*involve companies operating at different level of the supply chains*”¹⁵⁷ (e.g. a merger between a manufacturer and its distributor). Conglomerate mergers “*are mergers between firms that are in relationship which is neither horizontal (as competitors in the same relevant market) nor vertical (as suppliers or customers)*”.¹⁵⁸ The guidelines focus here on “*mergers between companies that are active in closely related markets*”¹⁵⁹ (e.g. a merger between suppliers of complementary products).

- 68.** A merger like *Google/Nest Labs* is not a horizontal merger because the undertakings are not actual or potential competitors in the same relevant market. The merger is not a vertical merger because the undertakings do not operate at different level of the supply chains and the merger cannot be considered as conglomerate because they are not active in closely related markets. Therefore, the current European competition law will unlikely review this kind of merger where the undertakings are active in very different markets.
- 69.** Nonetheless, If the agency decides to review the merger under the frame of conglomerate mergers (despite that the firms are not in closely related markets), there are two ways in which data can play a role in the competition assessment of mergers: (i) Data as a competitive advantage; and (ii) data in the context of privacy as a non-price parameter of competition in the market.¹⁶⁰

Data as a competitive advantage: Data is a valuable asset as it enables a firm to understand users’ behavior and thus to offer them better services. Moreover, data are

¹⁵⁵ EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008, para. 2.

¹⁵⁶ *Ibid*, para. 3.

¹⁵⁷ *Ibid*, para. 4.

¹⁵⁸ *Ibid*, para. 5.

¹⁵⁹ *Ibid*, para. 5.

¹⁶⁰ Ocello. E. et al, *What’s Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015 – Article 1, February 2015, p. 5.

http://ec.europa.eu/competition/publications/cmb/2015/cmb2015_001_en.pdf

essential to the advancement of artificial intelligence. As noted by the EU Competition Commissioner, Margrethe Vestager, “*the more data, the more intelligent the algorithms grow.*”¹⁶¹ Therefore, the questions will be:

- Whether the merged entity could use the target dataset as additional source of user data to enhance its services post-merger (in terms of better relevant results and target ads) and thus to strengthen its dominant position in the market.¹⁶²
- Whether the merged entity (or the dominant undertaking) could access to commercially sensitive information on its rivals to put them at a competitive disadvantage¹⁶³
- Whether the merged entity (or the dominant undertaking) could increase the price of its ads thanks to its possibility to better target its users.
- Whether the merged entity (or the dominant undertaking) could increase the price at which it sells its data post-merger.¹⁶⁴
- Whether the merged entity (or the dominant undertaking) could refuse to supply the data to a third-party (as data analytics providers or competing providers).¹⁶⁵
- Whether the merged entity (or the dominant undertaking) could use the target dataset to leverage its position from one market into another market.

¹⁶¹ EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 2 December 2018).

¹⁶² M.8788-Apple/Shazam, 6 September 2018, paras. 313-329.

https://ec.europa.eu/competition/mergers/cases/decisions/m8788_1279_3.pdf

¹⁶³ For an example in merger, see M.8788-Apple/Shazam, 6 September 2018, paras. 194-259.

For an example in antitrust, see EC, Press release, *Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon*, 17 July 2019 (accessed 21 January 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291

See also, EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 2 December 2018).

“*In such cases the question arises whether platforms gain access to competitively sensitive information about competitors' products which could be used to boost their own retail activities to the detriment of competitors on the platform.*”

¹⁶⁴ Ocello, E. et al, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015 – Article 1, February 2015, p. 6.

¹⁶⁵ Ibid.

- Whether the merged entity (or the dominant undertaking) controls essential data that makes it more difficult to access the market.¹⁶⁶

To sum up, our fifth proposition is:

Proposition 5:

In merger cases, agencies must analyze potential data concentration to the extent that is likely to strengthen the merged entity's market position in all sides of the market, and analyze potential data concentration to the extent that is likely to leverage the merged entity's market position from one market into another market.

In antitrust cases, agencies must analyze data to the extent that is likely to impede rivals to compete and enter into the market.

Privacy as a non-price parameter of competition: Pursuant the merger guidelines, the Commission will assess the ability of the acquirer *“to profitability increase prices, reduce output, choice or quality of goods and services, diminish innovation, or otherwise negatively influence parameters of competition”*.¹⁶⁷ In the data-driven economy, users use a service free of charge by paying with their personal data and attention instead of with a monetary price. Personal data are thus the *“price”* in data-driven markets. Personal data are a *“dimension of product quality”*.¹⁶⁸ Therefore, an increase in personal data, namely the acquirer uses the underlying dataset of the target as additional source of user data to better target its users, can be viewed as an increase in price or as a decrease in product quality (including privacy)^{169,170} The Commission will assess privacy as a non-price parameter of competition if two conditions are fulfilled: (i) privacy is a significant factor of quality; and (ii) the merging parties compete

¹⁶⁶ EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 2 December 2018).

“However, if only a few companies control essential data, other competitors may find it impossible to access the market. And when there is no competition, consumers get a worse deal.”

¹⁶⁷ EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008, para. 10.

¹⁶⁸ Ocello, E. et al, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015 – Article 1, February 2015, p. 6.

¹⁶⁹ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 87; M.8124-Microsoft/LinkedIn, 6 December 2016, para. 350 and footnote 330.

¹⁷⁰ Ocello, E. et al, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015 – Article 1, February 2015, p. 6

with each other on this factor.¹⁷¹ Moreover, the merger may reduce consumer choice on this important factor of competition in case of tipping (see section 4.2.4). To sum up, our sixth proposition:

Proposition 6:

Agencies must review the effect of the potential data concentration to the extent that it is likely to decrease the quality of the product (including privacy) and the consumer choice.

70. In conclusion, when the acquisition is mainly motivated by the underlying dataset of the target and not by the end product, agencies must always define a market for the end product and carefully assess the potential anti-competitive data effects resulting from the acquisition of the underlying target dataset. The Commission investigated the merger *Apple/Shazam* is that way.¹⁷² In its decision, the regulator considered (but finally left open) for the first time a market for the licensing of music data.¹⁷³ Conversely, the notifying party stressed that music data charts and similar music data analytics “*does not correspond to a specific activity belonging to a relevant product market, but is instead an ancillary feature of the core business of music streaming or voice recognition*”.¹⁷⁴ Therefore, it is still unclear whether a market for data must be defined.

3.2 The relevant product market

71. The first step of a competition assessment is to define the relevant product market. The Commission defines the relevant product market in terms of demand and supply side substitutability as follows:

¹⁷¹ EC, Press release, *Mergers: Commission approves acquisition of LinkedIn by Microsoft, subject to conditions*, 6 December 2016 (accessed 20 February 2018).

http://europa.eu/rapid/press-release_IP-16-4284_en.htm

¹⁷² M.8788-*Apple/Shazam*, 6 September 2018.

¹⁷³ *Ibid*, paras. 119-124.

¹⁷⁴ *Ibid*, para. 120. Nonetheless, the party discussed the possibility of a market “*for the collection of data on individuals’ music tastes and the analytics of such data*”. According to the notifying party, if such market should be defined, the market “*should cover all data compiled relating to music preferences, including data gathered by undertakings active in the wider field of online social networks, such as LinkedIn, Facebook, WhatsApp or Google which collect the same type of data on their users, and even additional and more valuable information*”

“A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use”¹⁷⁵

- 72.** In the digital economy, the market definition based on price, product substitutability and static analysis is not adopted, as demonstrated in the previous section.
- 73.** Therefore, the analysis as well as the tools to define the relevant product market are not adapted to the digital economy and thus must be redesigned. This is the goal of this section, to design new tools and analysis for the relevant product market. To do so, (i) we will first summarize the discussions on the subject; and (ii) then we will design new tools in a theoretical point of view.

3.2.1 Status of discussion

- 74.** Both academics and practitioners agree that the definition of the relevant product market is a hard task in the data-driven economy. The discussion relies on the application of quantitative methods such as the SSNIP test and its adaptation to these markets and the application of qualitative methods like a consumer survey given the difficulties to apply a test that accounts for all the challenges of the market and the constraints faced by agencies such as data requirements, time constraints, human resources as well as the problems resulting from the complexity of the quantitative test (application, interpretation and communication of the results).
- 75.** Competition authorities use both quantitative and qualitative methods. Therefore, we will design quantitative (tool n°1) and qualitative methods (tool n°2).

3.2.2 Tool n°1: quantitative method

- 76.** In practice, agencies use the SSNIP test to define the relevant market. This test is designed for single-sided markets and relies on price.

¹⁷⁵ EC, Commission notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), 9 December 1997, para. 7.

- 77.** In the data-driven economy, the sector is characterized by multi-sided markets and one side of the market is free of charge. Therefore, the current SSNIP test is not applicable in this economy. Hence, an adapted version of the SSNIP test must be designed for multi-sided markets and must rely on non-price mechanisms such as quality (including privacy). Besides that, in multi-sided markets, an economic test must be multi-sided, objective and quantifiable.
- 78.** The antitrust literature proposes two possible solutions: (i) a modified version of the SSNIP test;¹⁷⁶ and (ii) a Small but Significant non-transitory Decrease in Quality (SSNDQ).¹⁷⁷ The former relies on price. The latter relies on non-price such as quality as recently done in the Google Android case.¹⁷⁸ From proposition 3, agencies have to focus on non-price parameters of competition such as quality. Therefore, we will design a test based on the literature on the SSNDQ test.
- 79.** From proposition 2, the test must take into account each side of the market and the demand interdependencies. From proposition 6, a decrease in product quality can be viewed as an increase in price. Therefore, a decrease in quality on the free side A will reduce the demand for that side, which will reduce the demand on the other side B (paid side B) due to less consumers on side A which will change positively, negatively or will not change the demand on side A (depending on whether side A likes, dislikes or is neutral to ads). Therefore, it is crucial to collect data about the sign (positive or negative) and the strength (strong or weak) of network effects. The data requirements

¹⁷⁶ Filistrucchi, L., *A SSNIP Test for Two-Sided Markets: The Case of Media*, NET Institute Working Paper No. 08-34, October 2008.

<https://ssrn.com/abstract=1287442>

¹⁷⁷ OECD, *Big data: Bringing competition policy to the digital era-Background paper by the Secretariat*, 27 October 2016, p. 15.

See also, OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018, p. 6.

¹⁷⁸ AT.40099-*Google Android*, 18 July 2018. The Commission has analyzed a small but significant, non-transitory quality degradation of the licensable smart mobile OS (para. 267), of the Android app Store (paras. 286-290) and of a non OS-specific mobile web browser (paras. 390-391) to define the relevant product market.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf

as well as the formulaic approach¹⁷⁹ would be so complex in practice that no competition authorities would like to apply a test that accounts for multi-sidedness.¹⁸⁰

- 80.** All econometric methods would be theoretically possible but not applicable in practice. As noted by Wismer and Rasek, *“In many cases, authorities refrain from applying complex econometric methods, in particular due to time constraints, lack of proper data or methodical complexity which often come along with limited robustness and difficulties in interpreting and communicating results”*.¹⁸¹ Given these problems, a less formulaic approach should be based on a descriptive method. This is less complex than an econometric one and requires less data especially in multi-sided markets.
- 81.** The method ought to be based on a non-price parameter of competition such as quality. Quality refers *“to the flow of service, or the level of value, that consumers derive from a product”*.¹⁸² First, quality is multidimensional.¹⁸³ Second, certain aspects of quality are objective and observable, other aspects are subjective, non-observable and depend upon the perceptions of consumers.¹⁸⁴ Generally speaking, economists distinguish vertical and horizontal differentiation. The former refers *“to those product characteristics that all consumers would agree are valuable”*.¹⁸⁵ The latter refers *“to those product characteristics that are considered desirable only by some but not all*

¹⁷⁹ For an example of the formula for a modified version of the SSNIP test for two-sided markets, see, Filistrucchi, L., *A SSNIP Test for Two-Sided Markets: The Case of Media*, NET Institute Working Paper No. 08-34, October 2008.

¹⁸⁰ OECD, *Market definition in multi-sided markets-Note by Sebastian Wismer & Arno Rasek*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 12.

See also Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 42.

“All in all, none of the competition authorities appear to have applied a specific two-sided market formula to perform the SSNIP test. This may be due to the slight disagreement in the literature with regard to the right two-sided formulas, but it is due more likely to the higher data requirements and the relatively higher complexity of two-sided formulas”.

¹⁸¹ OECD, *Market definition in multi-sided markets-Note by Sebastian Wismer & Arno Rasek*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 14.

¹⁸² OECD, *The Role and Measurement of Quality in Competition Analysis*, 2013, p. 5.

<http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>

¹⁸³ *Ibid*, p. 5

¹⁸⁴ *Ibid*, p. 6.

¹⁸⁵ *Ibid*, p. 6.

consumers".¹⁸⁶ Moreover, three important considerations have to be taken into account: (i) imperfect information,¹⁸⁷ consumers are not perfectly informed about the quality of a product; (ii) quality appreciation,¹⁸⁸ the quality of one product is defined with respect to the quality of other products; and (iii) consumer preferences about a quality aspect.¹⁸⁹

82. Although, quality is acknowledged as an important parameter of competition in many countries as in the EU¹⁹⁰ and the US¹⁹¹ guidelines, the role and measurement of quality in competition analysis is a challenging task for competition authorities for the above reasons and notably when an agency has to quantify a metric of quality that is not easily measurable.

83. The Commission will assess privacy as a non-price parameter of competition if two conditions are fulfilled: (i) privacy is a significant factor of quality; and (ii) the merging parties compete with each other on this factor.

84. One can therefore design a test based on privacy protection: The Small, but Significant, Non-Transitory Decrease in Privacy Protection (SSNDPP). To be applicable in practice, the test ought to consider all the potential problems that an agency will probably encounter. They are the followings:

- ***Imperfect information:*** A user should spend "244 hours per year to read privacy policy".¹⁹²

¹⁸⁶ Ibid, p. 6.

¹⁸⁷ Ibid, p. 159.

¹⁸⁸ Ibid, p. 160.

¹⁸⁹ Ibid, p. 160.

¹⁹⁰ EC, *Commission notice on the definition of relevant market for the purposes of Community competition law* (97/C 372/03), 9 December 1997, para. 22.

¹⁹¹ *U.S. Horizontal Merger Guidelines*, 19 August 2010.

¹⁹² McDonald, A. M. and Cranor, L. F, *The Cost of Reading Privacy Policies*, 2008, p. 17.

<http://lorrie.cranor.org/pubs/readingPolicyCost-authorDraft.pdf>

- **Quality (privacy) appreciation:** One has to compare different types of services (implying search costs and assessment costs to find and use different alternative services)
- **Consumer preferences about privacy:** Some people care about privacy, other do not care at all (as shown by the different degrees of privacy offered in the market)
- **Detection of reduction in privacy:** Consumers ought to detect easily the reduction in privacy to eventually switch to rivals. This can be a hard task to detect a privacy degradation in the privacy policy¹⁹³ and switch to other services. However, clear alternatives may exist (e.g. Telegram, DuckDuckGo).
- **Status quo bias (inertia and power of default):** Software pre-installation¹⁹⁴ and default search engine¹⁹⁵ can make switching to another service more difficult. However, users are more likely to switch to other services when they have to actively download the application under scrutiny and in case of preference for multi-homing.¹⁹⁶
- **Network effects:** Users tend to stick to the service that offers the best quality (due to data-driven network effects despite the potential decrease in privacy protection to collect more data).¹⁹⁷ Switching costs may be very costly. For instance, in the social networking services such as Facebook, if one user wants

¹⁹³ Stucke, M. E. and Grunes, A. P., Big Data and Competition policy, *Oxford University Press*, 2016, p. 121.

¹⁹⁴ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 111. See also, M.8124-Microsoft/LinkedIn, 6 December 2016, para. 309.

¹⁹⁵ Stucke, M. E. and Grunes, A.P., Big Data and Competition policy, *Oxford University Press*, 2016, p. 121

¹⁹⁶ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 111.

¹⁹⁷ BKartA, Press release, *Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*, 2 March 2016.

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html

"Dominant companies are subject to special obligations. These include the use of adequate terms of service as far as these are relevant to the market. For advertising-financed internet services such as Facebook, user data are hugely important. For this reason, it is essential to also examine under the aspect of abuse of market power whether the consumers are sufficiently informed about the type and extent of data collected."

to switch to another service, he or she has to convince all his or her friends to switch, otherwise, the competing platform will not be valuable for him or her, and he or she will finally stick with the incumbent platform even though he or she wants to switch.

85. As a consequence, in order to use a SSNDPP test, agencies must use a benchmark of privacy that is salient, objective and quantifiable. One can use five main metrics:

- Whether the service collects personal data.
- Whether the service uses personal data for the purposes of its advertising activities.¹⁹⁸
- Whether the service requires more personal data to use the service.
- Whether the service supplies user data to third-parties.
- Conformity with the General Data Protection Regulation (GDPR) and e-Privacy Directive as data protection and privacy standard.

86. All of the above benchmarks are easily observable by users since firms on the market compete over privacy on these metrics. For instance, DuckDuckGo competes with Google by not collecting personal data. These benchmarks are objective since there are no subjective elements in these conditions. Finally, they are quantifiable in the sense that there are observable through consumers' behavior. In other words, the agency can observe if users switch to another service after the introduction of new terms to use it.

87. Proof that it is observable, in *Facebook/WhatsApp*, as regards the incentive of the merged entity to introduce advertising on WhatsApp, the Commission noted that “[p]rivacy concerns also seem to have prompted a high number of German users to switch from WhatsApp to Threema in the 24 hours following the announcement of Facebook's acquisition of WhatsApp”.¹⁹⁹

¹⁹⁸ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 102.

“privacy policy (contrary to WhatsApp, Facebook Messenger enables Facebook to collect data regarding its users that it uses for the purposes of its advertising activities)”

¹⁹⁹ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 174 and footnote 79.

“Also, after the announcement of WhatsApp's acquisition by Facebook and because of privacy concerns, thousands of users downloaded different messaging platforms, in particular Telegram which offers increased

- 88.** In other words, privacy concerns are a key element to users in the decision to switch to an alternative. Thus, the test should be designed based on this incentive of users to switch from one service to another after the introduction (or potential introduction) of new terms. Hence, the idea of the test is: if users switch from one service to another after the introduction of new terms, the agency should conclude that both services are on the same relevant product market.
- 89.** Now, if the SSNDPP is similar to the SSNIP test, the question is whether it would be profitable for the firm to decrease the privacy protection, taking into account the loss of profit (from the advertiser side) resulting from users' switching to another service. Agencies ought to assess the profit derived from privacy degradation (such as the loss of profit resulting from the loss of advertisers due to less users on the platform). However, in practice this can be a very challenging task, if not an impossible task, because agencies have to take into account the indirect network effects and keep in mind that the profitability of a privacy degradation also depends on whether the price to the other side can be adjusted.²⁰⁰ In other words, the firm can adjust its prices on the advertiser side B to keep them on the platform in spite of the loss of some users, and therefore staying profitable.
- 90.** Hence, the SSNDPP test should rely on less economic evidences. The evidence of a shift from one service to another due to the introduction (or potential introduction) of new terms should be enough to conclude that two services are on the same relevant market. Obviously, the percentage of shift ought to be significant. A shift between 25% and 50% of the number of daily (or monthly) active users appears significant. Moreover, since it is a fast-moving market with rapid innovation cycles, the measurement of a shift in a short period of time, one month, is appropriate. To sum up, our seventh proposition is:

privacy protection". The Commission also noted that the merged entity can introduce targeted advertising on WhatsApp by changing its privacy policy (para. 173).

²⁰⁰ Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013, p. 37.

Proposition 7: The SSNDPP test is defined as:

A small, but significant, non-transitory decrease in privacy protection due to the introduction of new terms that are salient and objective for both sides of the market that reduces significantly, between 25% and 50%, the number of daily (or monthly) active users of both sides for another similar product in a short period of time (one month).

3.2.3 *Tool n°2: qualitative method*

91. Qualitative evidences are used by competition authorities in complement to quantitative ones to define the relevant market by reference to a product/service's characteristics or intended use. The evidences are: evidences of substitution in the recent past, market studies and consumer surveys, consumers' and competitors' views, barriers and switching costs, different categories of consumers, and internal business documents.²⁰¹ In particular, agencies can use survey and experimental methods. It is worth noting that to address the challenges of the digital economy, it was proposed at the OECD that *"competition authorities may need to rely increasingly on qualitative documents, such as firms' internal documents and the observations of industry experts when quantitative analysis is not practicable"*.²⁰²

92. Survey methods are commonly used by agencies to identify whether the products are substitutable. In multi-sided markets, a survey may be relevant but subject to stated preferences bias. Indeed, to be accurate, stated preferences must reflect network effects. To do so, customers have to take into account that a change (either positive or negative) in the number of users on one side of the market changes the value or the utility of the product or service to the users on the same side of the platform (direct network effects) and on the other side of the platform (indirect network effects). Generally speaking, respondents will answer without taking into account these effects

²⁰¹ OECD, *Market definition in multi-sided markets - Note by Sebastian Wismer & Arno Rasek*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, pp. 13-14.

²⁰² OECD, *Conference on Competition and the Digital Economy*, Co-chairs' summary, 3 June 2019, p.4.

<http://www.oecd.org/daf/competition/Co-chairs'%20Summary%20-%20Conference%20on%20Competition%20and%20the%20Digital%20Economy.pdf>

and thus stated preferences and real actions might differ.²⁰³ Hence, surveys must be designed by clearly explaining the role of network effects and accordingly by asking whether they value them and how much they value them²⁰⁴ and then the reaction after the introduction of an innovation.

- 93.** Experimental methods can be performed to identify the users' rationale. In the digital economy, the customers' behavior is shaped by businesses' strategies including nudges,²⁰⁵ new functionalities or the way of how a service is displayed and placed like in the Google Shopping case.²⁰⁶ Therefore, it appears obvious to study the customers' behavior through experiments in a lab. Indeed, experiments are useful to understand how an innovation is likely to change the customers' behavior when implemented. Obviously, the experimental environment ought to be as much as possible similar to the real environment and subjects of the experiment must be assigned randomly. A possible experiment would be the following: The purpose of the experiment is to understand whether the introduction of an innovation is likely to change the users' behavior such as whether the innovation is likely to trigger a switching from one platform to another one. To do so, subjects will be assigned randomly to two different groups: group A and group B. In the group A, subjects will behave according to the real market situation, namely without the introduction of the innovation. In the group B, the subject will behave according to the hypothetical market situation, namely with the introduction of the innovation. If the group B behaves like the group A in spite of the innovation, that means that the innovation has no impact on the customers' behavior, thus there is no pressure resulting from the introduction of the innovation. To sum up, our eight proposition is:

²⁰³ OECD, *Market definition in multi-sided markets - Note by Sebastian Wismer & Arno Rasek*, Hearing on Rethinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017, p. 13-14.

²⁰⁴ Nudges are actions designed to influence people's judgment, choice and behavior in a predictable way.

²⁰⁵ Filistrucchi, L. et al, *Identifying Two-Sided Markets*, TILEC Discussion Paper No. 2012-008, 21 February 2012, p. 15.

²⁰⁶ EC, Press release, *Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service*, 27 June 2017.

https://ec.europa.eu/commission/presscorner/detail/en/MEMO_17_1785

Proposition 8:

Competition authorities must rely more on qualitative methods (surveys and experiments) especially when quantitative methods are not practicable.

3.3 The relevant geographic market

94. The second step of a competition assessment is to define the relevant geographic market. The Commission defines the relevant geographic market in terms of demand and supply-side substitutability as follows:

“The relevant geographic market comprises the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those area”²⁰⁷

95. The goal of the relevant geographic market is to identify *“the area from which companies faced competitive constraints which may limit their ability to exercise market power”*.²⁰⁸ Generally speaking, the geographic market is either local, national, regional, a group of countries, EEA or global in scope.

96. The Commission identifies the area based on a SSNIP test²⁰⁹ as well as a wide range of evidences such as current geographic patterns, demand characteristics (national preferences, languages), trade flows (including transport and regulatory barriers), price, diversion of orders to other areas and customers’ and competitors’ views.²¹⁰ To sum up, the Commission identifies the geographic market based on the same kind of

²⁰⁷ EC, *Commission notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)*, 9 December 1997, para. 8.

²⁰⁸ Azevedo, J., *Geographic market definition in EC merger control*, p. 3.

http://www.concorrenca.pt/vPT/Noticias_Eventos/Documents/Market%20definition%20AdC_04_17.pdf

²⁰⁹ EC, *Commission notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)*, 9 December 1997, para. 29.

²¹⁰ Azevedo, J., *Geographic market definition in EC merger control*, p. 13.

evidences than the product market including quantitative as well as qualitative evidences. The market is defined on a case-by-case basis.²¹¹

97. The digital economy is characterized by the absence of boundaries. Indeed, consumers with unrestricted access to internet are free to use any services and applications such as Google, Facebook or WhatsApp irrespective of their geographic location anywhere in the world.²¹²

3.3.1 Status of discussion

98. In their competition assessments, agencies still define in the digital world a geographic market according to a geographic area due to barriers such as languages, technologies or legislations. For instance, in *Google Search (Shopping)*, the Commission defined the market for general search services as national in scope for two main reasons: (i) the main general search services offer localized sites in different countries and in a variety of language versions such as Google FR in French, Google UK in English and so on; and (ii) there are barriers to extension of search technology beyond national and linguistic borders notably in terms of costs. It is costly to cover sites in other countries and in different languages.²¹³
99. The role of the geographic market is to define a geographic area in which competition takes place. This can lead a competition authority to clear a merger based on the evidences that the target is not a strong competitor in the geographic area defined by the regulator. In the data-driven economy, the target can be at the same time a small competitor in the defined geographic area and a strong competitor if we take into account the global customer base. Therefore, despite the fact that the target is not a strong competitor in the defined geographic area, the merger can have an impact worldwide since the customer base and thus users are worldwide.

²¹¹ EC, Competition policy brief, *Market Definition in a Globalized World*, issue 2015-12, March 2015, p. 1.

http://ec.europa.eu/competition/publications/cpb/2015/002_en.pdf

²¹² COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 37.

²¹³ AT.39740-Google Search (Shopping), 27 June 2017, paras. 252-255.

See also, AT.40099-Google Android, 18 July 2018, paras. 422-424.

100. Hence, the current definition of the geographic market is not appropriate in the digital economy. The merger *Google/Waze*²¹⁴ is a good example. In 2013, Google acquired Waze. The latter provides a free map application for mobile devices. Waze is based on 44 million users²¹⁵ in order to provide an update map in a timely fashion. The acquisition allows Google to gather more data from the user. According to Google, the goal of the merger is to “*enhanc[e] Google Maps with some of the traffic update features provided by Waze and enhanc[e] Waze with Google’s search capabilities*”.²¹⁶ Only the UK *Office of Fair Trading* (OFT) reviewed the merger. The geographic market was national in scope (although it did not reach a conclusion on the exact scope).²¹⁷ In the UK, the number of Waze users was insufficient to be a significant competitor in the country on Google Maps.²¹⁸ Therefore, The OFT authorized the merger. The acquisition could be detrimental for both consumers and competition.²¹⁹ Among other things, the merger could harm competition by increasing the barriers to entry thanks to network effects and data-driven network effects and thus helping Google to maintain its dominant position to the detriment of other rivals. Here, as underlined by the US Consumer Watchdog, the merger “*would remove the most viable competitor to Google Maps in the mobile space*” and “*will allow Google access to even more data about online activity in a way that will increase its dominant position on the internet*”.²²⁰ Moreover, the merger could harm users since it allows Google to access to more data and thus to increase the power of Google to better target them for advertising purposes.

²¹⁴ ME/6167/13-Completed acquisition by Motorola Mobility Holding (Google, Inc.) of Waze Mobile Limited, 17 December 2013.

http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/mergers_ea_02/2013/motorola.pdf

²¹⁵ Allthingsd, *Maps Are for Mobile What Search Is for the Web, Says Waze CEO Noam Bardin*, 26 April 2013.

<http://allthingsd.com/20130426/maps-are-for-mobile-what-search-is-for-the-web-says-waze-ceo-noam-bardin/>

²¹⁶ Google Official Blog, *Google Maps and Waze, outsmarting traffic together*, 11 June 2013.

<https://googleblog.blogspot.fr/2013/06/google-maps-and-waze-outsmarting.html>

²¹⁷ ME/6167/13-Completed acquisition by Motorola Mobility Holding (Google, Inc.) of Waze Mobile Limited, 17 December 2013, para. 25.

²¹⁸ *Ibid*, para. 49, para. 52 and para. 74.

²¹⁹ Stucke M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, p. 93-99.

²²⁰ Consumer Watchdog, *letter to Antitrust Division, Department of Justice, oppose Google’s acquisition of Waze*, 12 June 2013.

<http://www.consumerwatchdog.org/resources/cltrdojwaze061213.pdf>

101. Hence, due to the potential harms for both users and competition at the global level, in the digital economy, it may be appropriate to forgo the geographic market and rather to focus directly on the competitive effects at the global level on consumers and competition.

3.3.2 *Tools n°3: quantitative and qualitative methods*

102. In practice, competition authorities use the same quantitative and qualitative tools for the relevant product and geographic market. Therefore, one can use the above tools to define the relevant geographic market.

103. It is worth noting that qualitative evidences such as demand characteristics, consumers' and competitors' views or barriers (legal and regulatory) can suggest a narrower market like at least EEA in scope or even national in scope. However, in any case, agencies should focus directly on the competitive effects at the global level on consumers and competition to determine whether the merger would remove a viable competitor at the global level. To sum up, our ninth proposition is:

Proposition 9:

Competition authorities must forgo the geographic market and instead focus directly on the competitive effects at the global level on consumers and competition

4 Tools to assess the market power

104. The assessment of market power is one of the most challenging tasks in antitrust and merger cases. It is commonly defined as *“the ability of a firm (or group of firms) to raise and maintain price above the level that would prevail under competition”*.²²¹ The price is the price that would prevail under perfect competition. Under perfect competition, the price is equal to marginal cost. A high market power can prevent an

²²¹ OECD, *Glossary of Industrial Organisation Economics and Competition Law*, 1993, para. 128.

<http://www.oecd.org/regreform/sectors/2376087.pdf>

effective competition and it is a signal of a dominant position.²²² Hence, competition authorities ought to assess carefully the market power.

105. In one-sided markets, the assessment of market power is not straightforward. In multi-sided markets, the task is even harder since (i) authorities must take into account additional challenges and (ii) key features relevant to market power in data-driven markets. The current tools to assess the market power are not adapted for those markets due to the demand interdependencies, the absence of price and dynamic competition. Therefore, new tools must be designed. Before (v) designing these tools, one has to analyze (iii) the countervailing buyer power; and (iv) a clear guideline that competition authorities have to follow before any assessment of market power in data-driven markets due to the complexity of the task and the risk of errors.

4.1 Challenges in assessing market power in data-driven markets

106. The assessment of market power in data-driven markets is more complex than in traditional one-sided markets. Indeed, one has to consider (i) the demand interdependencies; (ii) the absence of price on one side; and (iii) dynamic competition.

4.1.1 Challenges in assessing market power with demand interdependencies

107. One of the key features of multi-sided markets is the existence of demand interdependencies as a result of indirect network effects. The demand of side A depends (or is linked) to the demand of side B and *vice versa*. This generates positive or negative feedback loops between them.²²³ For instance, an increase in price or a decrease in quality on side A reduces the demand on that side. As a result of fewer

²²² EC, *Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings*, 24 February 2009, para. 17.

[http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0224\(01\)&from=FR](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0224(01)&from=FR)

²²³ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 2.

[https://one.oecd.org/document/DAF/COMP/WD\(2017\)35/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)35/FINAL/en/pdf)

users on side A, the demand on side B is reduced. As a result of fewer users on side B, the demand on Side A may be reduced and so on.

- 108.** Therefore, agencies have to consider the demand interdependencies and all sides. The demands cannot be analyzed in isolation.²²⁴ Hence, agencies can either (i) analyze the platform as a whole or (ii) side A and then side B by carefully considering the inter-linkages between them.²²⁵
- 109.** The task is not straightforward as a matter of economics. Indeed, a change in demand on one side can have a positive or negative impact and a weak or strong impact on the other side. Therefore, agencies have to collect data about the demands of all sides, the sign, the strength as well as the impact of indirect network effects and feedback loops. Collyer et al suggest in a recent paper a sequential approach by “*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*”.²²⁶
- 110.** To do so, five potential sources of evidences can be used: (i) deductive approach; (ii) descriptive quantitative techniques; (iii) customer data; (iv) econometric techniques; (v) surveys; and (vi) other qualitative sources.²²⁷

Deductive approach. The deductive approach is a good start to understand the business model under investigation. In a typical free-and-paid side relationship such as the Facebook’s business model, it might appear obvious that users value positively the consumer base and “*the possibility to find the persons they want to be in contact with on it*” (identify-based network effects).²²⁸ Moreover, one might conclude that

²²⁴ Evans, D. S., *Multisided Platforms, Dynamic Competition and the Assessment of Market Power for Internet-Based Firms*, 10 March 2016, p. 90.

<https://www.competitionpolicyinternational.com/wp-content/uploads/2016/05/INTERNET-COMPETITION-LIBRO.pdf>

²²⁵ Ibid.

²²⁶ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, pp. 10-11.

²²⁷ Ibid, pp. 11-12. Evidence (1) is mine.

²²⁸ Bundeskartellamt, *Background information on the Facebook proceeding*, 19 December 2017.

the strength of the direct network effects on the user side is strong, namely an additional user increases the value of the platform to the user side, and thus more users increase the lock-in effect to that side. However, it is not clear whether users value positively, negatively or are neutral to ads on Facebook. So, the deductive approach says something about the sign and the strength of the direct network effects but nothing about the sign and the strength of the indirect network effects to the user side. Moreover, it might appear obvious that advertisers value positively the user side. However, the strength of the indirect network effects is not clear since the value of gaining or losing an additional user depends on the number of users already on the platform.²²⁹ So, the deductive approach says something about the sign but nothing about the strength of the indirect network effects to the advertiser side.

Descriptive quantitative techniques. One can collect the users' lists of the user side and the advertiser side. Thus, one can look 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”*.²³⁰ For instance, one can prove that the advertiser side grows the more the number of users on the platform.

Customer data. Customer data are required to measure the elasticity of demand, namely how users react to a change in the relative price (or quality), and the cross elasticity of demand, namely the responsiveness of demand on one side when a change in demand on the other side takes place as a result of a change in the relative price (or quality). It might be hard to gather such evidence when users react as a result of a change in quality. The quality is mainly subjective, multidimensional and not always salient. Therefore, it is not easy to collect data about how users react after a small relative change in quality.

Econometric techniques. Revealed and stated preferences can be used to estimate the elasticities of demand and the cross elasticities econometrically and thus to

http://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Diskussions_Hintergrundpapiere/2017/Hintergrundpapier_Facebook.html

²²⁹ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 11.

²³⁰ Ibid.

measure the indirect network effects. However, stated preferences are subject to bias since generally respondents will not consider the network effects and thus stated preferences and real actions might differ. Moreover, revealed preferences require lots of market and consumer level data. Competition authorities might not use this method due to its complexity, the time constraints and the approximate outcome.²³¹

Surveys. Surveys are commonly used by competition authorities. One can use a survey of advertisers and a survey of users to collect data about the sign and the strength of the indirect network effects as well as the resulting feedback loops. To avoid the stated preference bias, surveys must be designed by clearly explaining the role of network effects and accordingly by asking whether they value them and how much they value them. A survey of advertisers might ask the value to advertisers of user participation, how the growth of the user side affects the willingness for the advertiser side to use the platform, the availability of alternatives and the existence of switching costs. A survey of consumers might ask the same kind of questions, namely the value to users of advertiser participation, how the growth of the advertiser side affects the willingness for the user side to use the platform, the availability of alternatives and the existence of switching costs.²³²

Other qualitative sources. Agencies can use the common array of qualitative evidences such as market studies, consumers' and competitors' views and documentary evidences (e.g. internal business documents). To sum up, our tenth proposition is:

Proposition 10:

In multi-sided markets, market power must consider:

- Each side of the market
- The demand interdependencies (indirect network effects and feedback effects)

²³¹ Ibid, p. 12.

²³² Ibid.

4.1.2 Challenges in assessing market power when one-sided of the market is free

- 111.** In the data-driven economy, the platform is characterized by a typical free-and-paid side relationship. The platform provides a zero-price service to one side of the market (the user side) and provides a paid service to the other side of the market (the advertiser side). The advertiser side subsidizes the consumer side.²³³ This has two important implications in the assessment of market power.
- 112.** Firstly, the traditional definition of market power cannot be applied since one side of the market, the user side, is free of charge. Thus, the market power cannot be viewed as *“the ability of a firm (or group of firms) to raise and maintain price above the level that would prevail under competition.”*²³⁴ Moreover, in practice, competition authorities rely on concentration levels and market shares and in particular on market shares by value to conclude that a firm holds a dominant position.²³⁵ However, when on side of the market is free, it is not possible to compute a value-based market share.²³⁶ Therefore, agencies have to use another kind of market shares such as market shares by volume.²³⁷

²³³ AT.40099-*Google Android*, 18 July 2018, para. 328.

“Second, offering a service free of charge is an advantageous commercial strategy for two-sided platforms such as general search platforms that connect distinct but interdependent demands. General search services and online search advertising constitute the two sides of a general search platform. Monetisation only occurs on the online search advertising side of the platform, therefore advertisers indirectly fund the general search services offered to users.”

²³⁴ OECD, *Glossary of Industrial Organisation Economics and Competition Law*, 1993, para. 128.

<http://www.oecd.org/regreform/sectors/2376087.pdf>

²³⁵ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 14. See also, EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008, para. 24.

²³⁶ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 257. See also, COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 80.

See also, OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018, p. 6.

“Finally, since market shares in zero-price markets cannot be calculated in terms of turnover, they are typically calculated as shares of volume of transactions or shares of users.”

²³⁷ *Ibid.*

113. Secondly, the degree of market power may be wrongfully over- or underestimated by agencies. According to the current competition assessment, a low or a zero-price may not indicate market power. Conversely, a high price may indicate market power. However, this interpretation is wrong in multi-sided markets when on one side of the market is free. Indeed, the price structure, free-and-paid side relationship, may be a profit maximizing strategy.²³⁸ The platform provides a zero-price service to users to attract them and their data on the platform. The platform provides a paid service to advertisers to subsidize the free side and to maximize its profit by setting a profit maximizing price. The platform may exert market power over the free side the larger the consumer base is, and the platform may exert market power over the paid side by selling services such as target ads thanks to the large user base and their data. Thus, a zero-price service may present a competition problem. Therefore, price is not a reliable indicator of market power. In data-driven markets with a free service to the user side, the platform maximizes its profit thanks to data. Hence, as underlined by the OECD, “*market power is better measured by shares of control over data than shares of sales or any other traditional measures*”.²³⁹ To sum up, our eleven proposition is:

Proposition 11:

In the data-driven economy, price is not a reliable indicator of market power. Market power should be computed by shares of control over data.

4.1.3 Challenges in assessing market power in dynamic competition

114. In the data-driven economy, the market is characterized by high levels of concentration and strong innovation dynamics.²⁴⁰ Innovations are frequent and disruptive. Indeed, in the absence of price on one side of the market, the only way to attract or to keep users on both sides is to innovate or to offer a better quality. An entry has to innovate to attract users. An incumbent has to innovate to not be

²³⁸ OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 16.

²³⁹ Ibid, p. 17.

²⁴⁰ BKartA, *Market Power of Platforms and Networks-Results and Recommendations*, June 2016, p. 2.

https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Think-Tank-Bericht-Kurzzusammenfassung_Englisch.pdf?__blob=publicationFile&v=2

displaced by an innovation from an entry. The “innovation war” between Facebook and Snapchat is a good illustration (see section 3.1.3). The innovation has not only an impact on the side where it takes place but also on the other side of the market.²⁴¹ Indeed, in multi-sided markets, a change (either positive or negative) in the number of users on one side of the market changes the value or the utility of the product or service to the users on the same side (direct network effects) and on the other side (indirect network effects) of the platform. Thus, an innovation from an entry that changes negatively the number of users on one side, for instance the user side, reduces the number of users on that side but also on the other side, the advertiser side. For instance, Facebook users are less attracted to be on Facebook if there are less users, and advertisers are less attracted to be on Facebook if there are less users to target. Moreover, in the digital economy, the pace of innovation is extremely rapid and easy to promote through an update.

- 115.** Therefore, in the digital economy, the sector is fast-growing with frequent market entry and short innovation cycles in which large market shares may turn out to be ephemeral. Thus, high market shares are not necessarily indicative of market power and, therefore, of lasting damage to competition.²⁴² However, as recently noted by the Commission in *Google Search (Shopping)* “*this fact cannot preclude application of the competition rules, in particular Article 102 of the Treaty, especially if a fast-growing market does not show signs of marked instability during the period at issue and, on the contrary, a rather stable hierarchy is established*”.²⁴³

²⁴¹ Evans, D. S., *Multisided Platforms, Dynamic Competition and the Assessment of Market Power for Internet-Based Firms*, 10 March 2016, p. 78.

²⁴² AT.40099-*Google Android*, 18 July 2018, para. 435.

M.8788-*Apple/Shazam*, 6 September 2018, para. 162.

AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 267.

COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 99.

Case T-79/12-*Cisco systems and Messagenet v. Commission*, ECLI:EU:T:2013:635, 11 December 2013, para. 69.

<http://curia.europa.eu/juris/document/document.jsf?jsessionid=9ea7d0f130d56c1495c05c57444fb5b8977bd2a1160e.e34KaxiLc3eQc40LaxqMbN4PaNuKe0?text=&docid=145461&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=660663>

COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 78.

²⁴³ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 267.

AT.40099-*Google Android*, 18 July 2018, para. 435.

116. Hence, the market position of the actors in the market is not stable and thus the market share is not the most relevant factor in the digital sector.²⁴⁴ Agencies have to take into account, on a case-by-case basis, a list of key features relevant to market power in data-driven markets To sum up, our twelfth proposition is:

Proposition 12:

In the digital economy, high market shares may turn out to be ephemeral and thus are not necessarily indicative of market power. Therefore, the market share is not the most relevant factor. Hence, agencies have to take into account, on a case-by-case basis, a list of key features relevant to market power in data-driven markets.

4.2 Key features relevant to market power in data-driven markets

117. In the digital economy, the assessment of market power is subject to a case-by-case analysis.²⁴⁵ Moreover, a list of key features has to be considered. As recently entered into force in Germany,²⁴⁶ competition authorities shall take into account the following features in assessing the market power: (i) network effects and data-driven network effects; (ii) access to competitively relevant data; (iii) data-aggregation; (iv) shares of control over data; (v) single-homing and multi-homing; (vi) switching costs; (vii) entry costs and investment costs; (viii) economies of scale; (ix) economies of scope; (x) the role of velocity; (xi) the role of innovation and dynamic competition; and (xii) legal barriers. It is worth noting that some competition experts recommend the publication of a separate Notice on market definition and the definition of market power with respect to digital platforms.²⁴⁷

²⁴⁴ BKartA, *Market Power of Platforms and Networks-Results and Recommendations*, June 2016, p. 2.

²⁴⁵ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 23.

²⁴⁶ German Act against Restraints of Competition, para. 18(3a).

http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0024

²⁴⁷ Schallbruch et al, *A new competition framework for the digital economy*, Report by the Commission 'Competition Law 4.0', September 2019, p. 6.

4.2.1 Network effects and data-driven network effects

- 118.** In the data-driven economy, network effects and data-driven network effects are the main driving forces (see section 2.2). The extent of these effects has to be assessed on a case-by-case basis.²⁴⁸
- 119.** In a joint report the German *Bundeskartellamt* (BKartA) and the French *Autorité de la concurrence* (Adlc) noted that “network effects can have both positive and negative impacts on competition”.²⁴⁹ Indeed, network effects can either foreclose the market and thus leading to “winner takes all” outcomes (see section 2.2) or stimulate competition in the market by promoting new market participants.
- 120.** In the first scenario, network effects and data-driven network effects are barriers to entry and expansion that limit competition and favor market concentration. The main role of these effects is to attract a high number of users and their data in the market and thus to gather a large customer base. The size of the user base is a very important parameter of competition in the digital sector and in particular for social networking services (including professional social networking services such as LinkedIn)²⁵⁰ and consumer communications services.²⁵¹ Besides this parameter, the “identify-based network effects”, namely “the possibility to find the persons they want to be in contact with on it” are also an important element of competition for the above social networking services.²⁵² In a nutshell, the value of the product or service increases when the number of other users using the service increases (positive direct network effects, identify-based network effects). This increases the value of the product or service on the advertiser side (positive indirect network effects). The more users use

²⁴⁸ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 342.

COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 130.

²⁴⁹ Bundeskartellamt (BKartA) and Autorité de la concurrence (Adlc), *Competition Law and Data*, 10 May 2016, p. 28.

<http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf>

²⁵⁰ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 341.

²⁵¹ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 129.

²⁵² BKartA, *Background information on the Facebook proceeding*, 19 December 2017.

http://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Diskussions_Hintergrundpapiere/2017/Hintergrundpapier_Facebook.html

See also, B6-22/16-*Facebook*, 6 February 2019, para. 218.

the platform, the more the platform can improve its services (learning by doing effects). The more users use other services, the more the platform can target the user with relevant results (scope of data effects). The more the platform can collect data about its users, the more the platform can generate revenue through target ads (spillover effects). Therefore, the platform can improve its services and develop more free services. This attracts even more users on the platform. This trend may continue up to the point where the market would tip in favor of the platform's network and thus the dominant firm would become entrenched (see section 4.2.4).²⁵³

121. In the second scenario, network effects and data-driven network effects stimulate competition in the market by promoting new market participants. The entry may attract very quickly a high number of users as a result of a better quality or an innovation thereby attracting future users on the platform thanks to network effects.²⁵⁴ For instance, this is the case of WhatsApp²⁵⁵ and Snapchat²⁵⁶ on the consumer communications services. Therefore, network effects enable an entry to gather rapidly a consumer base and thus to compete and disrupt the market.

122. In any case, from proposition 10, competition authorities have to assess the sign, the strength as well as the impact of indirect network effects and feedback loops (see section 4.1.1) to determine whether network effects are significant barriers to entry.

4.2.2 *Access to competitively relevant data*

123. The access to competitively relevant data is the most important and the most controversial factor when assessing market power in data-driven markets. Indeed, data is the core asset in the digital economy. Digital firms such as Google, Facebook or Snapchat need users and their underlying data to compete effectively for the

²⁵³ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 343.

²⁵⁴ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, p. 28.

²⁵⁵ Statista, *Number of monthly active WhatsApp users worldwide from April 2013 to July 2017 (in millions)* (accessed 11 January 2018).

<https://www.statista.com/statistics/260819/number-of-monthly-active-whatsapp-users/>

²⁵⁶ Statista, *Number of daily active Snapchat users from 1st quarter 2014 to 3rd quarter 2017 (in millions)* (accessed 11 January 2018).

<https://www.statista.com/statistics/545967/snapchat-app-dau/>

market rather than in the market.²⁵⁷ A firm without users and data cannot attract future users and cannot generate revenue through target ads.²⁵⁸ That is why some firms like Google or Facebook generate billions of dollars of revenue²⁵⁹ and are willing to pay billions of dollars to acquire a target with a large customer base.²⁶⁰ Data are therefore indispensable to acquire a dominant position. Nonetheless, the risk on competition depends on the features of the dataset under investigation (kind of data and intended use) and its relevance for competition.

- 124.** Data are commonly characterized as: (i) non-rivalrous, access to data by one firm does not preclude other firms to access to data; (ii) ubiquitous, a large amount of data is available offline, online and through connected devices; and (iii) tradable, data can be traded by third-parties such as data-brokers.²⁶¹
- 125.** On one hand, these features do not mean that data are readily available for all competitors and new market participants. Indeed, the access to data may be very costly. The costs include: (i) investment costs to collect, store and analyze data. This high level of fixed costs (see section 4.2.7) may prevent small competitors and new participants to collect, store and analyze the same volume and variety of data as

²⁵⁷ OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 17.

²⁵⁸ Competition and Markets Authority (CMA), Press release, *CMA lifts the lid on digital giants*, 19 December 2019 (accessed 22 January 2020).

“Personal data collection also plays an important role in driving Google and Facebook’s powerful market position by allowing them to target their advertisements more effectively than others.”

<https://www.gov.uk/government/news/cma-lifts-the-lid-on-digital-giants>

See also, CMA, *Online platforms and digital advertising market study- Appendix E: The role of data*, 18 December 2019, p. 2.

“Google and Facebook have a competitive advantage because they collect a large amount and variety of data types from their widely used consumer-facing services and their broad coverage of third-party sites and apps.”

<https://assets.publishing.service.gov.uk/media/5df9ecc040f0b609402e2838/Appendix E The role of data .pdf>

²⁵⁹ Statista, Google’s and Facebook’s global revenue as of 3rd quarter 2019: \$40.344 billion and \$17.652 billion respectively (accessed 22 January 2020).

<https://www.statista.com/statistics/267606/quarterly-revenue-of-google/>

<https://www.statista.com/statistics/422035/facebooks-quarterly-global-revenue/>

²⁶⁰ E.g. Merger *Google/Waze*: \$1.3 billion; Merger *Facebook/WhatsApp*: \$19 billion.

²⁶¹ Adic and BKartA, *Competition Law and Data*, 10 May 2016, p. 36.

incumbents;²⁶² (ii) research and development costs to develop a similar or better platform as incumbents to gather a large user base and similar data. These costs increase as the consumer's lock-in effect increases due to high network effects (see section 4.2.1) and high switching costs (see section 4.2.6);²⁶³ (iii) technical costs to develop efficient algorithms that collect, process and analyze data in a timely fashion;²⁶⁴ (iv) security costs to secure the data (IT) infrastructures against cyber-attacks; and (vi) legal costs faced by third-parties to collect data when it is prohibited by legal and contractual restrictions such as the limitation of the provision of data to third-parties for commercial purposes by privacy laws²⁶⁵ in addition to the general legal costs to enforce data protection and privacy rules effectively faced by all firms.

- 126.** On the other hand, data brokers which collect, store and analyze data enable new market participants to collect data from third-parties and thus lowering costs of collecting, storing and analyzing data by itself (“in-house data collection”). However, these data may not be a perfect substitute to in-house data. Indeed, the scope of data provided might be lower and special technical costs are required and might especially be very challenging for frequent or real-time data (if available). Moreover, legal and contractual restrictions as well as the insufficient incentive to share data with a rival are barriers to “third-party data collection”.²⁶⁶
- 127.** Nonetheless, even if smaller competitors or new entrants may acquire the same volume and variety of data as incumbents through itself or by third-parties, raw data are not valuable in itself. What matters actually are data processing and data analytics, namely the information that a firm can extract from raw data and the analysis of those information respectively. This requires human (in expertise) and technical costs (in hardware and software) to develop efficient data ecosystem and data analytics as well as algorithms. The cost can be prohibitively costly even for large incumbents.²⁶⁷

²⁶² Ibid, p. 38.

²⁶³ Ibid.

²⁶⁴ Ibid, p. 40.

²⁶⁵ Ibid, p41.

²⁶⁶ Ibid, pp. 39-42.

²⁶⁷ Boutin, X. and Clemens, G., *Big But Not Insurmountable? How The Definition Of ‘Big Data’ Can Help In The Assessment Of Entry*, Expert Opinion, Compass Lexecon, January 2018, para. 5.3 and para. 5.4.

- 128.** Besides that, the quality of the data under investigation is an important element of competition. Indeed, data from registered environment are richer due to the possibility to collect a vast amount of sociodemographic and behavioral data about an individual user than data from cookies or pixels.²⁶⁸ In the German *Facebook* case, Facebook has a unique treasure trove of data (especially data about the users' interests) relevant for advertising that competitors of online advertising cannot deliver.²⁶⁹
- 129.** Therefore, data are barriers to entry when competitors or new market participants are unable or likely unable to collect the same volume and variety of data by themselves or by third-parties and/or when they are unable or likely unable to process and analyze the data collected as incumbents.²⁷⁰ That is the reason of the US Department of Justice (DoJ)'s legal remedy to Bazaarvoice to divest the assets it acquired from PowerReviews after the merger.²⁷¹ In 2012, Bazaarvoice, a leading company of ratings and reviews, acquired its main competitor, PowerReviews. The merger would significantly increase the barriers to entry due the concentration of data in the hand of Bazaarvoice that “[the acquisition] will extend the reach of Bazaarvoice’s network and deprive its remaining competitors of the scale that is necessary to compete effectively”.²⁷²
- 130.** Hence, the German *Bundeskartellamt* and the French *Autorité de la concurrence* identified “the scarcity of data (or ease of replicability) and whether the scale/scope

http://compass-lexecon.s3.amazonaws.com/prod/cms-documents/e738fd1e699ae85a/CL_Expert_Opinion_1.22.18.pdf

²⁶⁸ Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018, p. 7.

https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf

²⁶⁹ B6-22/16-*Facebook*, 6 February 2019, para. 499.

²⁷⁰ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, p. 11.

²⁷¹ The United Department of Justice, Press release, *Justice Department and Bazaarvoice Inc. Agree on Remedy to Address Bazaarvoice’s Illegal Acquisition of PowerReviews*, 24 April 2014 (accessed 2 December 2018).

<https://www.justice.gov/opa/pr/justice-department-and-bazaarvoice-inc-agree-remedy-address-bazaarvoice-s-illegal-acquisition>

²⁷² United States District Court Northern District of California, *United States of America v. Bazaarvoice, Inc.*, Case n°13-cv-00133-WHO, 8 January 2014, para. 247.

<https://www.justice.gov/atr/case-document/file/488846/download>

*of data collection matters to competitive performance*²⁷³ as two relevant factors to determine whether data can contribute to market power. Velocity and value, namely the possibility to analyze data in a timely fashion (see section 4.2.10) and the economic relevance of data respectively, are also important factors of competition in data-driven markets. It is worth noting that in *Apple/Shazam*, the Commission investigated for the first time data issues in that way by focusing its analysis on “four Vs” of Big Data namely volume, variety, velocity and value.²⁷⁴ In the German *Facebook* case, the BKartA considered that Facebook has superior access to competitively relevant data due its large volume (thanks to its user base) and variety (thanks to its ability to pool data from different sources) of data that competitors cannot duplicate.²⁷⁵

4.2.3 Data aggregation

- 131.** Data aggregation issues arise when the two datasets of the merged entity combine in one dataset. The merging of the two datasets post-merger enables the merged entity to offer better services to both sides of the market for which data are a valuable input. For instance, better personalized services to users and better target ads to advertisers.
- 132.** Under the condition that such combination is allowed by the applicable data protection legislation, in *Microsoft/LinkedIn*, the Commission identified two scenarios in which the merging may give rise to competition concerns.²⁷⁶
- 133.** In the first scenario, the combination may increase the merged entity’s market power. The Commission only analyzed such concern to the extent that the increase will occur

²⁷³ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, p. 35.

²⁷⁴ M.8788-*Apple/Shazam*, 6 September 2018, paras. 317-324.

“In this respect the Commission has compared the Shazam User Data to other dataset available on users of digital music services using four relevant metrics: that is the variety of data composing the dataset; the speed at which the data are collected (velocity); the size of the data set (volume); and the economic relevance (value). These metrics, the so-called “Four Vs”, comprise the four key parameters that are increasingly used to assess the commercial and thus competitive relevance of large datasets.” (para. 317).

²⁷⁵ B6-22/16-*Facebook*, 6 February 2019, paras. 481-498.

²⁷⁶ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 179.

“in a hypothetical market for the supply of this data”.²⁷⁷ It concluded that *“Microsoft and LinkedIn do not make available their data to third parties for advertising purposes, with very limited exceptions”* and therefore the transaction does not give rise to this type of concerns in relation to online advertising.²⁷⁸ However, the Commission did not analyze such concern to the extent that data may not be replicable and that scale, scope, velocity and value of data matter for the supply of the merged entity’s services (see section 4.2.2). Thus, the Commission should have analyzed such concern to the extent that the increase will occur in a market for the supply of the merged entity’s services.

- 134.** In the second scenario, the combination may increase barriers to entry and expansion in the market for actual or potential competitors. The Commission only analyzed those concerns to the extent that competitors need data to compete effectively with the merged entity than absent the merger.²⁷⁹ It concluded that a *“large amount of internet user data that are valuable for advertising purposes and that are not within Microsoft’s exclusive control”* will continue to be available to competitors.²⁸⁰ The Commission drew the same conclusion in *Facebook/WhatsApp* regarding the potential use by the merged entity of WhatsApp user data to improve target ads on Facebook’s social network.²⁸¹ However, in both cases, the Commission did not analyze whether the combination of two datasets in the hand of one merged entity may increase switching costs and thus the lock-in effect to the part of users and advertisers (see section 4.2.6) since the new entity may offer them better services.
- 135.** In *Apple/Shazam*, the Commission assessed data combination as regards volume, variety, velocity and value of data.²⁸² The Commission concluded that the target’s data are not unique (other providers collect similar type of data),²⁸³ are more limited compared to data collected by other players (variety),²⁸⁴ are collected at a lower

²⁷⁷ Ibid, para. 179.

²⁷⁸ Ibid, para. 180.

²⁷⁹ Ibid, para. 179.

²⁸⁰ Ibid, para. 181.

²⁸¹ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, paras. 180-189.

²⁸² M.8788-*Apple/ Shazam*, 6 September 2018, paras. 317-329.

²⁸³ Ibid, para. 318.

²⁸⁴ Ibid, para. 321.

speed compared to providers of music streaming apps (velocity),²⁸⁵ the amount of data is lower than Apple Music's competitors (volume),²⁸⁶ and the value of data does not appear a key asset and is not unique (value).²⁸⁷ Moreover, "*Shazam user data has no relevance for digital music streaming apps*".²⁸⁸ Therefore, "*the addition of the Shazam User Data would not allow Apple to materially improve its services by offering even more targeted music suggestions to users*".²⁸⁹ Thus, the data combination will not raise barriers to entry. Furthermore, if the merged entity were to foreclose Apple Music's competitors by denying access to such data, the ability to compete of those competitors "*would likely be negligible*".²⁹⁰

4.2.4 Shares of control over data

- 136.** In data-driven markets, data is an important non-price parameter of competition (see section 4.2.2). From proposition 11, the market power should be computed by shares of control over data.
- 137.** Indeed, data become a competition problem only if competitors or new market participants are unable or likely unable to collect the same volume and variety of data by themselves or by third-parties and/or when they are unable or likely unable to process and analyze the data collected as incumbents. In other words, only if the incumbent controls a large amount of data that a competitor is unable or likely unable to match. This happens when the incumbent achieves a critical mass of users and tips the market.
- 138.** The critical mass of users can be defined as the minimum number of users that a firm has to attract to grow and compete effectively. A firm without users and data cannot attract future users and cannot generate revenue through target ads. The critical

²⁸⁵ Ibid, para. 322.

²⁸⁶ Ibid, para. 323.

²⁸⁷ Ibid, para. 324.

²⁸⁸ Ibid, para. 326.

²⁸⁹ Ibid, para. 327.

²⁹⁰ Ibid, para. 328.

mass is therefore a necessary requirement in data-driven markets.²⁹¹ This is achieved when the user base starts to grow constantly. Positive direct network effects and data-driven network effects play an essential role to attract users (see section 4.2.1).

- 139.** The critical mass of users is likely to have a negative impact on competition if it achieves the tipping point. The latter occurs when competitors would be unable to compete effectively and new market participants would lack the ability or incentive to enter into the market.²⁹² When the incumbent tips the market, competitors are likely to become less attractive to users since the incumbent generates most of the activity of the market. Hence, the competitor would face a slowing down in the growth of its user base and a decline in the activity of its members who would become instead active on the incumbent.²⁹³ In sum, when tipping occurs, the market is served by only one firm and the other firms leave the market.
- 140.** Similar to the market share thresholds for the assessment of a dominant position in Europe, one can draw the “user-based market share” thresholds for the assessment of tipping. It measures the relative size of a firm in an industry or market in terms of the proportion of users it accounts for (see section 4.4). A firm with a user-based market share of 50% is in a dominant position and likely to tip.²⁹⁴ A firm with a market share of 70% to 80% is a clear indication of the existence of a dominant position and the firm is very likely to tip.²⁹⁵
- 141.** However, tipping is less likely to occur in case of multi-homing and new market participants.²⁹⁶

²⁹¹ Evans, D. S. and Schmalensee, R., *The Antitrust Analysis of Multi-Sided Platform Businesses*, Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Olin Research Paper No. 623, 30 January 2013, pp. 29-30.

²⁹² M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 339.

²⁹³ *Ibid*, para. 343.

See also, B6-22/16-*Facebook*, 6 February 2019, para. 424 and para. 432.

²⁹⁴ Case C-62/86-*Akzo v Commission*, EU:C:1991:286, 3 July 1991, para. 60.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:61986CJ0062&from=EN>

²⁹⁵ Case T-336/07-*Telefónica SA v Commission*, EU:T:2012:172, 29 March 2012, para. 150.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:62007TJ0336&from=FR>

²⁹⁶ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 344.

- 142.** Multi-homing occurs when consumers use more than one platform simultaneously to get the same kind of service. Thus, if users are active on more than one platform, this mitigates the risk of tipping. However, as we will see in the next section, multi-homing may require significant time and effort on the part of users on a competing platform. In that case, multi-homing may not have a significant impact on the incumbent position or even may not occur.
- 143.** New market participants may prevent the incumbent from tipping by offering a competing product or service to users. This is likely to happen in case of differentiated products.²⁹⁷ They are products with “*physical differences or attributes which may be real or perceived by buyers so that the product is preferred over that of a rival firm*”.²⁹⁸ Thus, a competitor or a new entrant may successfully enter into the market by offering different functionalities to users. However, achieving a sizeable user base may constitute an insurmountable barrier to entry.²⁹⁹
- 144.** Finally, when the incumbent reaches the tipping point, not only competition may be harmed but also consumers. In the merger *Microsoft/LinkedIn*, the Commission noted that tipping would reduce the consumer choice since “*LinkedIn's platform would remain the only PSN service provider available to users in the EEA, with no or limited prospects of entry by new PSN service providers*”,³⁰⁰ and that “*these foreclosure effects would lead to the marginalisation of an existing competitor which offers a greater degree of privacy protection to users than LinkedIn (or make the entry of any such competitor more difficult), the Transaction would also restrict consumer choice in relation to this important parameter of competition when choosing a PSN*”.³⁰¹ Thus, tipping is likely to have a negative impact on consumer choice and privacy protection.

See also, B6-22/16-*Facebook*, 6 February 2019, para. 454.

See also, OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 4.

²⁹⁷ BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, pp. 64-65.

²⁹⁸ OECD, *Glossary of Industrial Organisation Economics and Competition Law*, 1993, para. 162.

²⁹⁹ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 346.

³⁰⁰ *Ibid*, para. 349.

³⁰¹ *Ibid*, para. 350.

4.2.5 *Single-homing and multi-homing*

- 145.** In the digital economy, users may single-home or multi-home. Single-homing occurs when consumers only use a single platform (e.g. consumers only use Facebook). Multi-homing occurs when consumers use more than one platform simultaneously to get the same kind of service (e.g. consumers use WhatsApp, Facebook Messenger and Snapchat simultaneously). Moreover, as noted by Collyer et al, the extent to which users on one side single or multi-home affects the single or multi-homing choice of the other side.³⁰²
- 146.** Single-homing may increase the market power of the incumbent. Conversely, multi-homing may decrease the market power of the incumbent. Moreover, multi-homing increases competition in the market by offering better quality to attract consumers on the platform. Thus, multi-homing increases the incentive to innovate.³⁰³
- 147.** In *Facebook/WhatsApp*, the Commission noted that multi-homing is likely to decrease market power. Indeed, according to the Commission, “[m]any of them [consumer communications app customers] use more than one consumer communications app simultaneously depending on their specific needs (so-called “multi-homing”)”.³⁰⁴ The Commission justified that consumers multi-home by the ease of switching to another platform (see section 4.2.6).³⁰⁵
- 148.** In *Microsoft/LinkedIn*, the Commission noted that multi-homing is not likely to mitigate the impact of network effects for two reasons. Firstly, multi-homing requires significant time and effort on the part of users to create and update their profiles as well as to interact with users on the platform. Thus, multi-homing may not be incentive. Secondly, although consumers multi-home with another PSN platform according to the data submitted by the notifying party, the market investigation by

³⁰² OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 8.

³⁰³ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 87.

³⁰⁴ *Ibid.* See also para. 105.

³⁰⁵ *Ibid.*, paras. 108-115.

the Commission showed that many users have accounts on two PSNs but they only actively use one of them or view one of them are their “main network”.³⁰⁶

- 149.** Hence, multi-homing on one side depends on (i) the ease of switching to another platform; (ii) the time and effort required to multi-home; and (iii) the extent to which users on the other side single or multi home.
- 150.** Moreover, multi-homing is relevant to market power if and only if multi-homing users use actively or frequently more than one platform (for instance on a daily basis).³⁰⁷ Thus, one has to prove not only that a meaningful share of users multi-homes but also that a meaningful share of users uses actively more than one platform. In other words, even if consumers multi-home, if they only use actively one platform, multi-homing is not likely to reduce market power.³⁰⁸
- 151.** To sum up, multi-homing is likely to mitigate the impact of network effects if three conditions are fulfilled: multi-homing is (i) significant, a meaningful share of users multi-homes; (ii) effective, a meaningful share of users uses actively more than one platform; and (iii) long-lasting, multi-homing must occur on a relative long period of time (several months).

4.2.6 *Switching costs*

- 152.** Switching costs are all costs incur by a user to switch from one platform to another one. A high switching cost can prevent a user to use another platform, thus this can increase the cost of multi-homing and therefore increase market power. The costs include, among other things, the costs to find and use another platform and the

³⁰⁶ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 345.

³⁰⁷ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, p. 29.

³⁰⁸ OECD, *Quality considerations in the zero-price economy – Note by Germany*, 23 November 2018, p. 4.

“While the potential for multi-homing and, more generally, low switching costs, may decrease the market power of established undertakings this potential multi-homing is not necessarily a countervailing factor. When considering data as a relevant factor for market power, the degree of usage might have an impact on the relevance of multi-homing. Indeed, user-based data may only make a difference if end-users multi-home and use rival providers sufficiently frequently – a rather tall order when network and experience effects are at stake.”

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)130/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)130/en/pdf)

strength of the firm brand.³⁰⁹ Switching costs play on users' behavior. Therefore, it is important to study the effect of a particular practice by a platform on users' behavior to know whether such practice is likely to foreclose the user on the platform.

- 153.** The merger *Facebook/WhatsApp* gives some indications about the kind of switching costs in the consumer communications services. The Commission found no significant costs for five main reasons: (i) zero-price or very low price to use the applications; (ii) the ease of downloading the application and the possibility to coexist on the same handset without taking much capacity; (iii) the ease of using multi applications in no-time (users do not have to log-in each time and messages are pushed onto a user's device); (iv) low learning costs to switch to a new application thanks to simple user interfaces; and (v) information about new applications are easy available through the reviews of users on app stores.³¹⁰
- 154.** Besides that, data portability, namely the right to transfer data from one service to competing services,³¹¹ makes switching costs easier since users can easily port their data to another service and thus they can use it without losing significant time and effort to recreate their data and contact list.³¹² The article 20 of the new General Data Protection Regulation ("GDPR") enables data portability.³¹³
- 155.** However, software pre-installation and default option make switching more difficult, since they increase users' inertia leading to status quo bias,³¹⁴ and may thus foreclose

³⁰⁹ AT.40099-*Google Android*, 18 July 2018, para. 712.

³¹⁰ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 109. See also, para. 113.

³¹¹ European Data Protection Supervisor (EDPS), *Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014, p. 15.

https://edps.europa.eu/sites/edp/files/publication/14-03-26_competition_law_big_data_en.pdf

³¹² COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 113.

³¹³ Regulation (EU) 2016/679 of the European parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), 4 May 2016, art. 20.

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=FR>

³¹⁴ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 111.

M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 309.

competing platforms.³¹⁵ In other words, users would tend to stick to the pre-installed software,³¹⁶ the default search engine³¹⁷ or default web browser.³¹⁸ Furthermore, switching costs may be prohibitively high if users are locked-in “to any particular physical network, hardware solution or anything else that needs to be replaced in order to use competing products”.³¹⁹ This is the case when a user ought to change his or her smartphone to use a competing software (e.g. Apple iOS is only available on Apple devices).³²⁰ Conversely, in the absence of pre-installation, users have to actively download the application, thus reducing the risk of inertia. Therefore, it will be easier to switch to another application.³²¹

- 156.** Finally, data aggregation and network effects may increase switching costs. Indeed, the more the firm can collect data in terms of volume (trial and errors effects) and variety (scope of data effects), the more the firm can learn about its users and thus the more the firm can offer tailored services to a particular user.³²² Thus, the platform can offer a better and a more personalized service to each of its users thanks to data-driven network effects, increasing the foreclosing effect of competing platforms. Moreover, strong direct network effects lead to a “lock-in effect” of users. For instance, in the social networking services such as Facebook, if one user wants to switch to another platform, he or she has to convince all his or her friends to switch otherwise, the competing platform will not be valuable for him or her, and he or she

See also, OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 17.

³¹⁵ M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 308-321.

³¹⁶ *Ibid.*

³¹⁷ OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 17.

See also, CMA, Press release, *CMA lifts the lid on digital giants*, 19 December 2019 (accessed 22 January 2020). “The CMA has also found that the default settings people are faced with online have a profound effect on choice and the shape of competition. Last year in the UK, Google was willing to pay around £1 billion – 16% of all its search revenues – where it was the default search engine on mobile devices such as Apple phones.”

³¹⁸ COMP/C-3/39.530-*Microsoft (tying)*, 16 December 2009, para. 63.

http://ec.europa.eu/competition/antitrust/cases/dec_docs/39530/39530_2671_3.pdf

³¹⁹ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 34.

³²⁰ AT.40099-*Google Android*, 18 July 2018, paras. 522-532.

³²¹ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 111.

³²² Adic and BKartA, *Competition Law and Data*, 10 May 2016, p. 28.

will finally stick with the incumbent platform.³²³ In the same way, strong indirect network effects lead to a “lock-in effect” of advertisers. Indeed, if the incumbent is an indispensable partner to access single-homing users (e.g. Google users), advertisers would have no choice but to use the platform even though they would like to use a competing platform.³²⁴

4.2.7 *Entry costs and investment costs*

- 157.** Entry costs refer to all costs incur by a new market participant to enter into the market. Data-driven markets are characterized by high sunk costs and low marginal costs.³²⁵
- 158.** Indeed, the Big Data infrastructure requires to collect, store and process a large volume and variety of data in a timely fashion. Thus, sunk costs include: (i) costly data centers and servers to collect and store data; (ii) data analytics software to process data; and (iii) Information technology (IT) security to protect the infrastructure against cyber-attacks or natural disasters. Moreover, variable costs may be high including expensive human resources such as data scientists, research scientists or machine learning engineers to analyze data and to innovate.³²⁶
- 159.** Moreover, firms have to invest a lot to maintain or expand their dominant position. In *Google Search (Shopping)*, the Commission recognized “*large capital investments that competitors would have to match*” as barriers to entry.³²⁷ The expenses include, among other things, research and development (R&D) to improve and develop new products and services, marketing expenses to make the service known by its potential users and to reach the critical mass of users necessary to compete effectively³²⁸ and expenses to develop a database, algorithms and artificial intelligence. The Incumbent

³²³ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 27.

See also, B6-22/16-*Facebook*, 6 February 2019, para. 276, para. 448 and para. 462.

³²⁴ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, pp. 28-29.

³²⁵ OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 11.

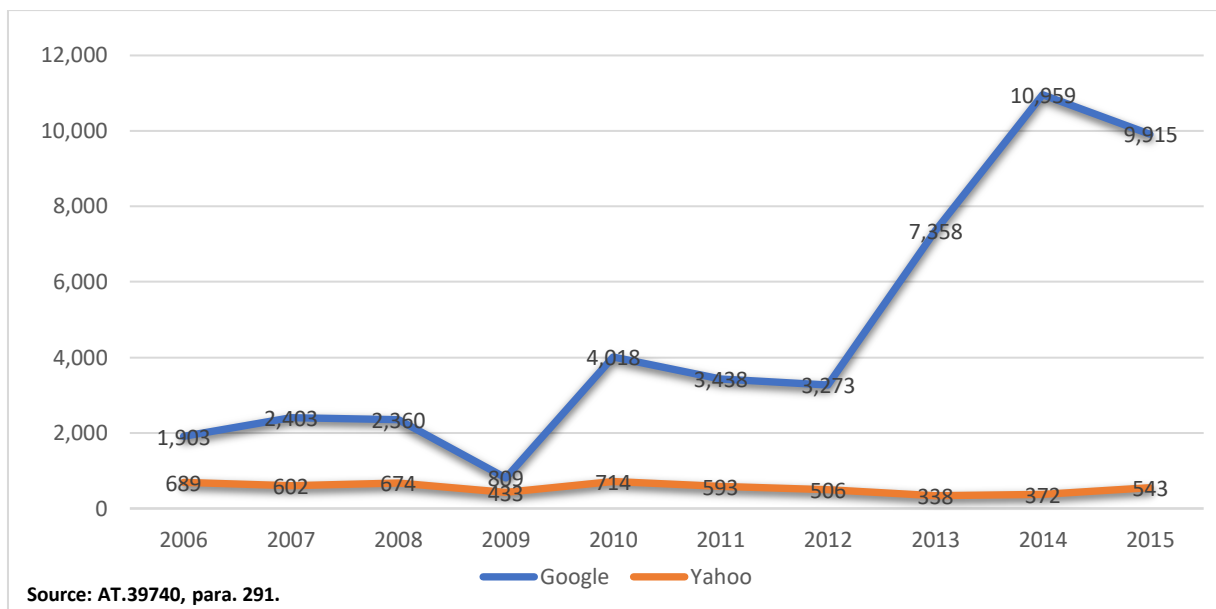
³²⁶ *Ibid.*

³²⁷ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 270. See also, para. 286.

³²⁸ Adic and BKartA, *Competition Law and Data*, 10 May 2016, p. 30.

(in that case, Google), as depicted by the following graph (figure 4) concerning Google's and Yahoo's worldwide capital investments (in millions of USD) in their general search services between 2006 and 2015, has invested significantly despite its monopoly position. Besides that, viral marketing as well as the reputation effect of the incumbent³²⁹ play an important role in the dissemination of a product and the attempt to enter into the market for potential entrants.

Figure 4: Google's and Yahoo's worldwide capital investments (in millions of USD) in their general search services between 2006 and 2015



160. Efficient Big Data infrastructure, services and algorithms as done by Google enable thus the firm to collect, store and analyze data in a timely fashion. After that, the cost of one additional data is low due to high economies of scale and scope (see section 4.2.8 and 4.2.9) thus allowing it to improve algorithms at a low cost.³³⁰

³²⁹ EC, Speech, Johannes Laitenberger, *Accuracy and administrability go hand in hand*, CRA Conference, Brussels, 12 December 2017.

http://ec.europa.eu/competition/speeches/text/sp2017_24_en.pdf

³³⁰ OECD, *Big data: Bringing competition policy to the digital era-Background paper by the Secretariat*, 27 October 2016, p. 11.

161. However, new market participants that cannot afford such high sunk costs can rely on IT infrastructure providers such as IBM, Oracle or Amazon Web Services. They provide cloud computing, storage and data analytics software.³³¹ Thus, new entrants may enter into the market without significant sunk costs but they will still face significant investments.

4.2.8 Economies of scale

162. Economies of scale “refers to the phenomenon where the average costs per unit of output decrease with the increase in the scale of magnitude of the output being produced by a firm”.³³²

163. In data-driven markets, the value of one additional unit of data decreases with the increase in the volume (scale) of data. The assessment of scale is subject to a case-by-case basis. The relevant of scale depends on the utility of data to the service and algorithms under investigation.

164. In the literature, the discussion focuses on search engines such as Google search. Google uses search data to refine and update the relevance of its general search results pages. Therefore, Google needs a certain volume of data in order to be relevant. As underlined by the Commission in *Google Search (Shopping)*, “The greater the number of queries a general search service receives, the quicker it is able to detect a change in user behaviour patterns and update and improve its relevance”.³³³ Thus, as the volume of data increases, the algorithms learn (trial and errors effects) to be more relevant. Two types of queries exist, “head” queries and “tail queries”. The latter are uncommon queries and the former are common queries. For “tail queries” in particular only a large volume of data enables the search engine to give a relevant answer to users.³³⁴ If a search engine provider receives only two queries about an

³³¹ Ibid, p. 14.

³³² OECD, *Glossary of Industrial Organisation Economics and Competition Law*, 1993, para. 72.

³³³ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 287.

³³⁴ Ibid, para. 288.

See also, AT.40099-*Google Android*, 18 July 2018, para. 689.

“A general search service also needs to receive a certain volume of queries in order to improve the relevance of its results for uncommon (“tail”) queries. Tail queries are important because users evaluate the relevance

uncommon query as the result of its low number of users, the relevance will not be the same as if the search engine provider would receive 100 queries for the same request as a result of its large number of users. Scale and new user search data are thus two important factors for the relevance of search results. This has been recently proven by the CMA in its interim report on online platforms and digital advertising.

*“Data gives platforms a competitive advantage in the provision of both consumer-facing and digital advertising services. In the provision of search services to consumers, having access to a greater volume of users and click-and-query data enables search engines to deliver more relevant results. This is particularly important for uncommon or new queries. For this reason, the greater scale of English-language queries seen by Google is likely to support its ability to deliver more relevant search results compared to its competitors, especially in relation to uncommon and fresh queries”.*³³⁵

165. However, some authors such as Lerner³³⁶ argue that significant scale is not necessary for search engines to provide relevant search results since there are diminishing returns to scale in relevance once the volume of queries exceeds a certain volume.³³⁷ Nevertheless, diminishing returns to scale means that the value of one additional data increases but at a decreasing rate, namely the algorithms still learn but less with an additional data. Figure 5 depicts this phenomenon.

of a general search service on a holistic basis and expect to obtain relevant results for both common ("head") and uncommon tail queries.739 The greater the volume of data a general search service possesses for rare tail queries, the more users will perceive it as providing more relevant results for all types of queries.”

³³⁵ CMA, *Online platforms and digital advertising market study-Appendix E: The role of data*, 18 December 2019, p. 1.

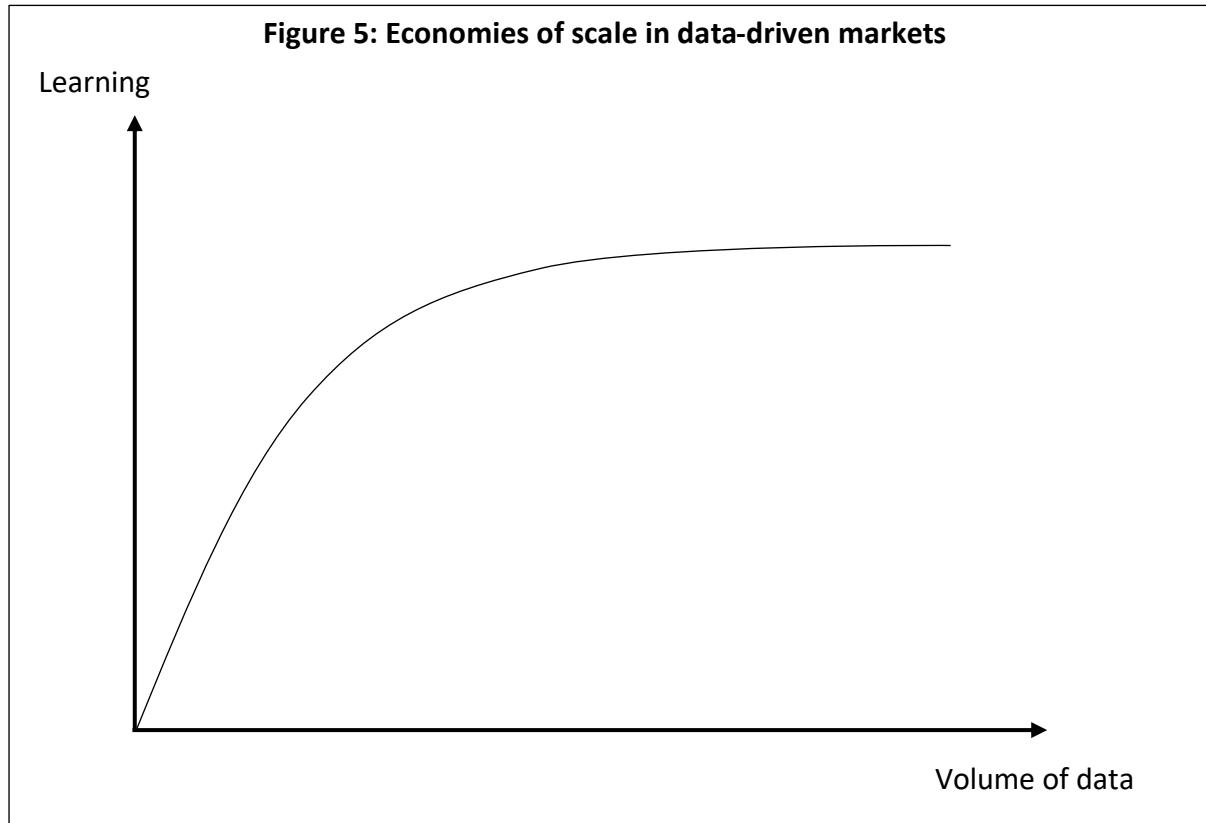
See also, CMA, Press release, *CMA lifts the lid on digital giants*, 19 December 2019 (accessed 22 January 2020). *“Each year, about 15% of queries on Google have never been searched for before. Other search engines like Bing will not have the same access to these queries, putting Google in a powerful position of being able to better train its algorithms and provide more accurate search results than its rivals.”*

³³⁶ Lerner, A. V., *The Role of 'Big Data' in Online Platform Competition*, 26 August 2014, p. 37.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2482780

³³⁷ AT.39740-Google Search (Shopping), 27 June 2017, para. 289.

See also, AT.40099-Google Android, 18 July 2018, para. 690.



166. Furthermore, in any event, the Commission noted that *“a general search service has to receive at least a certain minimum volume of queries in order to compete viably”*.³³⁸ The Commission noted also in *Microsoft/Yahoo* that *“scale is an important element to be an effective competitor”* in search advertising.³³⁹ Therefore, scale is an important factor of competition.

167. Finally, notwithstanding whether scale is subject to diminishing returns to scale, in many cases, the quality of a platform and thus its attractiveness to users depends on the number of users and the data collected (trial and errors effects). The more users use the platform, the better the platform becomes, and the more likely the platform attracts additional users. For instance, the more Facebook users use Facebook, the

³³⁸ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 289.

See also, AT.40099-*Google Android*, 18 July 2018, para. 690.

³³⁹ COMP/M.5727, *Microsoft/Yahoo! Search business*, 10 February 2010, para. 153; para. 157; para. 173.

better Facebook becomes due to its large customer base (identity-based network effects) and the data collected, the more likely Facebook attracts additional users. Stucke and Grunes identify this phenomenon as a “*chicken-or-egg dilemma*”.³⁴⁰

4.2.9 Economies of scope

168. Economies of scope derive directly from the variety of data. This enables the firm to draw the most accurate picture of each individual user from a variety of information from their own services and third-party websites and applications, thanks to data combination of first party data and third-party data, in order to target them with personalized services and ads.³⁴¹ This has been recently proven by the CMA in its interim report on online platforms and digital advertising.

“Overall, Google and Facebook collect many types of high-quality data from across the web and other sources at scale, combine all this data together and use it to compile accurate user profiles, on which basis they provide precise targeting capabilities to advertisers Compared with Google and Facebook, we consider that other platforms’ data and targeting capabilities are relatively limited to user data from their own services, and are extremely limited in their ability to collect data about consumers on third-parties’ websites and apps and combine it with their own first-party data.”³⁴²

169. Indeed, as noted above (see section 2.2.2) the more the user uses other services of the firm, the more the firm can collect information about a particular user, the more the firm can target the user with relevant results.

170. Therefore, the scope of data is an important factor of competition. This is confirmed by the Commission in *Google/DoubleClick*, “*Competition based on the quality of collected data thus is not only decided by virtue of the sheer size of the respective*

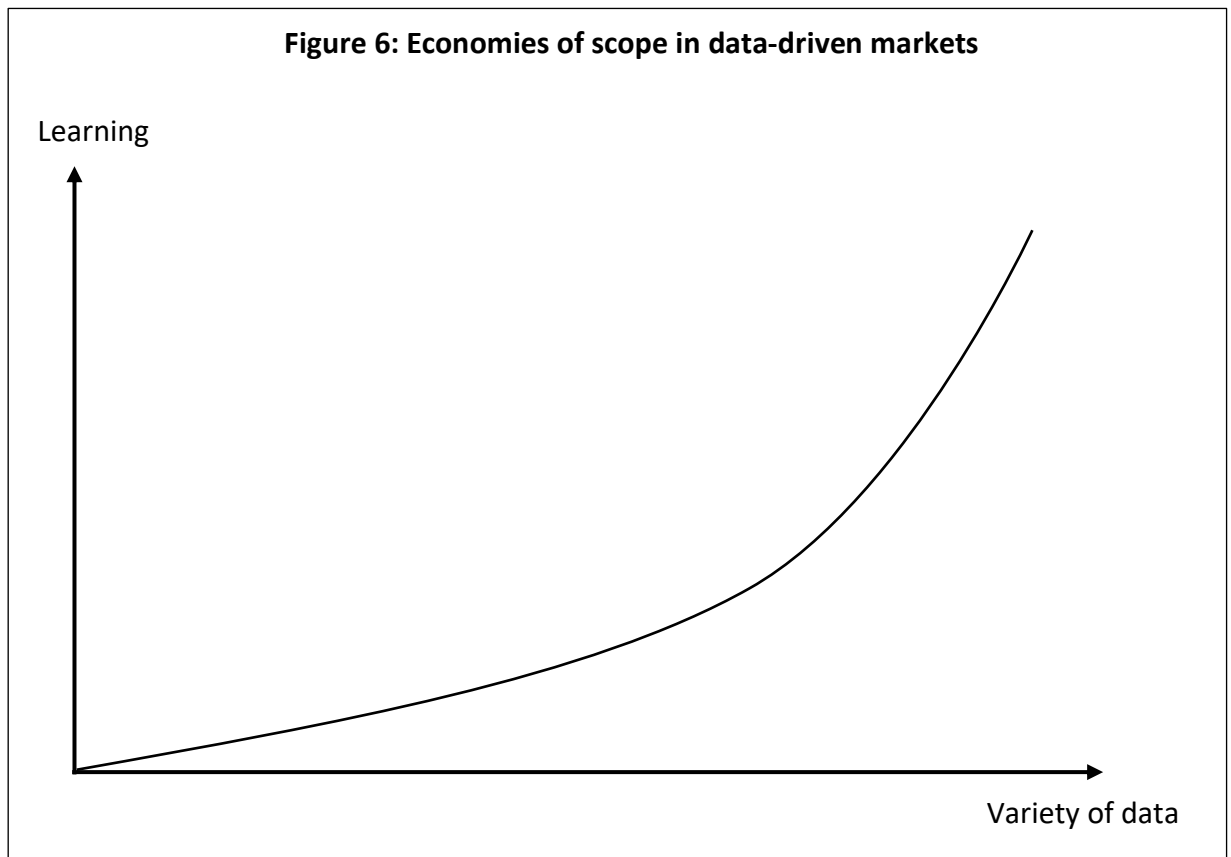
³⁴⁰ Stucke, M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, p. 95.

³⁴¹ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, pp. 51-52..

³⁴² CMA, *Online platforms and digital advertising market study- Appendix E: The role of data*, 18 December 2019, pp. 15-16. See also, figure E.2 and figure E.3, p. 17.

*databases, but also determined by the different types of data the competitors have access to and the question which type eventually will prove to be the most useful for internet advertising purposes”.*³⁴³

- 171.** Economies of scope is thus subject to increasing returns to scope, where having more variety of data brings new knowledges about a particular user.³⁴⁴ Figure 6 depicts this phenomenon.



³⁴³ COMP/M.4731-Google/DoubleClick, 11 March 2008, para. 273.

³⁴⁴ Adic and BKartA, *Competition Law and Data*, 10 May 2016, p. 40.

4.2.10 *The role of velocity*

- 172.** Velocity of data is one of the four features of Big Data with volume, variety and value. It refers to the ability of a firm to collect, process and analyze data in a timely manner. Velocity is thus the dynamic component of Big Data.
- 173.** Generally speaking, competition authorities focus on volume and variety but not on velocity. However, velocity can give rise to a significant competitive advantage notably if the firm is able to collect, process and analyze data in real time. This is very important for search engines like Google and navigation services such as Waze where data might lose its value quickly and where users want the latest information about a particular news such as the death of a public personality or the traffic jam in Paris. If the firm is able to quickly process and analyze data in real time, it can suggest to its users the best traffic option.
- 174.** This is the underlying reason of the merger *Google/Waze*. At the time of the merger, Waze was able to collect, process and analyze real-time data. Waze “*is a dynamic mapping product that enables drivers to build and use live maps, real-time traffic updates and turn-by-turn navigation*”³⁴⁵ which obtains its map data “*through crowd-sourcing*”,³⁴⁶ namely Waze users report, in real-time, traffic information such as traffic jams or accidents allowing Waze to suggest real-time information to its community. Google Maps is “*an online map*”³⁴⁷ which obtains its map data “*through traditional means of using specialized vehicles*”.³⁴⁸ The difference between Google Maps and Waze is thus real-time data and the ability to quickly update maps. As noted by the OFT, “*The up-to-dateness or ‘freshness’ of the map is considered important by users, both in terms of the accuracy of the directions and also the real-time information regarding incidents on the route such as traffic congestion and alternative routing*”.³⁴⁹ “Freshness” or velocity is therefore a key element of competition.

³⁴⁵ ME/6167/13-Completed acquisition by Motorola Mobility Holding (Google, Inc.) of Waze Mobile Limited, 17 December 2013, para. 3.

³⁴⁶ Ibid, para. 15.

³⁴⁷ Ibid, para. 3.

³⁴⁸ Ibid, para. 15.

³⁴⁹ Ibid, para. 17.

- 175.** The OFT cleared the merger since Waze was not able, at the time of the merger, to achieve “*sufficient scale in building a user community in the UK such that it would benefit from significant and insuperable network effects and accelerated expansion, in particular given Waze’s relatively small presence in the UK*”.³⁵⁰ The OFT thus based its analysis on volume or scale of data but not on velocity whereas it was a key competitive advantage since Waze users use Waze for the “freshness” of the map.
- 176.** As noted by Boutin and Clemens, “*In its assessment the OFT did not consider Waze’s ability to analyse large volumes and variety of data in a timely fashion. Had it considered this wider definition of big data the OFT may have reached a different conclusion, i.e. that Waze would have had the potential to emerge as a competitor for Google’s map services*”.³⁵¹
- 177.** Hence, competition authorities have to carefully consider the role of velocity in the competitive assessment.

4.2.11 The role of innovation and dynamic competition

- 178.** The role of innovation is without contest one of the most challenging issues to the assessment of market power in data-driven markets. As noted above, the market is characterized by high levels of concentration in the hand of just a few firms such as Google and Facebook and strong innovation dynamics where both incumbents and new market participants innovate to attract or maintain users on their platforms. This competition for the market shows all the features of a competitive environment. Even a monopoly firm has to innovate to not be displaced by distributive and frequent innovations. Market shares are transient and not necessarily indicative of market power excepted if the market shows a stable hierarchy rather than signs of market instability. In this context, competition authorities may face a hard time to decide whether they should intervene or not in the market.

³⁵⁰ Ibid, para. 88 and para. 49.

³⁵¹ Boutin, X. and Clemens, G., *Big But Not Insurmountable? How The Definition Of ‘Big Data’ Can Help In The Assessment Of Entry*, Expert Opinion, Compass Lexecon, January 2018, para. 3.3.

- 179.** In the literature, some authors agree that competition authorities ought to be vigilant regarding the activities of the most powerful online platforms.³⁵² More broadly, agencies have to keep a close eye to the digital sector in general since disruptive innovations can completely change the market structure and impede competitors and potential competitors to grow effectively in the market or in contrary allow “*new entrants to overthrow established incumbents*”.³⁵³ Indeed, innovations may either secure or curb the market power of incumbents.
- 180.** The first scenario arises, for instance, when a firm promotes its own innovation to expand its dominance or leverage it into separate markets. This is the Google Shopping case story. Google promotes its own comparison shopping service in the market for general search services at the top and the right-hand side of the search results without being subject to Google’s generic search algorithms and demotions. Competitors are subject to the previous algorithms and are demoted by them. According to the Commission, the most highly ranked rival appears only on page four of Google’s search results. Thus, by introducing its own innovation, Google comparison shopping, on its general search results, Google maintains its dominance in the market for general search services since users receive better search results to a product-related query (Google comparison shopping results are displayed in a rich and attractive format) and leverages its dominance into the market for comparison shopping services. Competitors cannot effectively compete since they are subject to other algorithms and appear only from page four. This can also happen when an incumbent acquires preventively a potential innovative firm such as Instagram or WhatsApp before that the latter becomes a dangerous competitor in the market. For instance, according to several third-parties, one of the potential underlying reasons of the WhatsApp’s acquisition by Facebook in 2014, was to prevent WhatsApp of becoming a provider of social networking services in competition with Facebook.³⁵⁴ However, the Commission noted in its decision that “*[n]o indication was found of WhatsApp’s plans to become a social network which would compete with Facebook absent the merger. Indeed, the focus of WhatsApp has traditionally been on offering*

³⁵² House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 31.

³⁵³ OECD, *Big data: Bringing competition policy to the digital era- Background paper by the Secretariat*, 27 October 2016, p. 17.

³⁵⁴ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 144.

a light and simple communications service on smartphones only".³⁵⁵ Finally, this can also occur as a result of an innovation that has no anti-competitive aspects such as Instagram Stories.

- 181.** The second scenario arises by the introduction of an innovation by a competitor or a new entrant that disrupts the market structure (e.g. mobile dating application/web-based dating business)³⁵⁶ or the incumbent position (e.g. Google/Yahoo or Facebook/Myspace).
- 182.** Hence, one has to analyze the indicators when an innovation may become anti-competitive or in contrary pro-competitive. Again, the analysis ought to be done on a case-by-case basis.
- 183.** The innovation war may be either actual (current innovation competition) or future (potential competition by innovative businesses). Besides that, the innovation competitive pressure may come from the relevant market and outside markets. Innovation from outside markets can thus impact the relevant market.³⁵⁷ For instance, Snapchat (consumer communication services) and its ephemeral messages led to the introduction of Facebook Stories on Facebook (social networking services). In the same way, innovative mobile dating applications such as Tinder disturb web-based dating applications.³⁵⁸
- 184.** Generally speaking, competition authorities recognize the sector as fast-growing with frequent market entry and short innovation cycles in which large market shares may turn out to be ephemeral (see section 4.1.3). However, the features of the market do not prove anything. One has to prove not only that an innovation is likely to occur but also effectively possible to take place in a forecast horizon of 2 years.³⁵⁹ To do so, agencies have to look to the above entry barriers. In addition, internal documents such as prospective development plans of a merged entity in the market and the

³⁵⁵ Ibid, para. 145.

³⁵⁶ BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, pp. 79-80.

³⁵⁷ Ibid, p. 76.

³⁵⁸ Ibid, p. 80.

³⁵⁹ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 74.

market tendency like the trend for ephemeral messages may help to prove whether an innovation is likely to occur.

- 185.** Moreover, the effectiveness of an innovation occurs when there is a significant effect in the market as the result of the innovation whatever that the innovative firms do not offer yet monetized services (and revenue) or that the aim of the entrant is to be taken over by incumbents.³⁶⁰
- 186.** Insofar the analysis would conclude to a loss of potential competition as a result of a merger or abuse of dominance, remedies are more than useful to keep the incentive for competitors and new entrants to innovate. In case of pre-emptive mergers at a very early stage, competition authorities must carefully examine whether the target is likely to become an effective competitor on the basis of the innovation potential thanks to the service offered, the number of users and network effects.³⁶¹ Indeed, a pre-emptive merger may undermine innovation and reduce choice.

4.2.12 Legal barriers

- 187.** The data-driven economy presents some legal barriers related to consumer protection, data protection, privacy as well as intellectual property rules and trade secrets.³⁶² Those rules may render more difficult the entry of a new market participant in the market due to legal and cost constraints. The barriers have to be assessed on a case-by-case basis.

4.3 Countervailing buyer power in data-driven markets

- 188.** The competition assessment has to take into the countervailing buyer power, namely whether competitive constraints may be exerted by customers resulting from *“the customers’ size or their commercial significance for the dominant undertaking, and*

³⁶⁰ Ibid, p. 78.

³⁶¹ Ibid, p. 79.

³⁶² Bourreau, M. et al, *Big Data and Competition Policy: Market power, personalised pricing and advertising*, Cerre Project Report, 16 February 2017, pp. 15-28.

http://cerre.eu/sites/cerre/files/170216_CERRE_CompData_FinalReport.pdf

*their ability to switch quickly to competing suppliers, to promote new entry or to vertically integrate, and to credibly threaten to do so”.*³⁶³

- 189.** In multi-sided markets, agencies have to analyze the constraints exerted by the user and the advertiser on the platform.
- 190.** The user may not exert a significant countervailing buyer power since he or she represents only one user over the total number of users. He or she cannot negotiate the terms of service, it is a “take it-or-leave It” offer. Moreover, switching costs may be very costly (see section 4.2.6).
- 191.** The advertiser may not as well exert a significant countervailing buyer power. Indeed, it is very difficult, if not impossible, to negotiate with large incumbents such as Google or Facebook. Furthermore, each advertiser represents only a small proportion of the demand for the purchase of ad space.³⁶⁴

4.4 Guidelines that competition authorities must follow before any assessment of market power

- 192.** The assessment of market power in the data-driven economy is a challenging task. Therefore, agencies have to follow a clear guideline, in 5 steps, before any assessment in order to avoid fallacies.

4.4.1 Step n°1: understand the competitive environment under consideration

- 193.** The competitive environment is case specific and related to the market, the business model and the nature of competition under consideration.
- 194.** Firstly, in the digital economy, boundaries between markets may be blurred as it is the case between social networking services and consumer communications

³⁶³ EC, *Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings*, 24 February 2009, para. 18.

³⁶⁴ Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018, paras. 242-244.

services.³⁶⁵ Therefore, the market investigation should carefully review the functionalities of the services.

- 195.** Secondly, the success of a firm depends on its business model. Generally speaking, in the digital economy the platform bases its business model on Big Data by providing a free service to users in exchange of their data and attention and a paid service to advertisers based on the data collected, processed and analyzed for target ads. Agencies have to identify each side and the network effects as well as to understand the role of data and its relevance to the market.
- 196.** Thirdly, as noted by Collyer et al, the *“competitive constraints on market power may come directly or indirectly from any and all sides of a competing platform”*.³⁶⁶ For example, a rival on the consumer side may directly constrain the consumer side of the incumbent (by attracting users) and indirectly the advertiser side due to the indirect network effects (advertisers are likely to leave the platform if there are less users). Moreover, the constraints may come from an adjacent market. For instance, Snapchat and its stories (in the market for consumer communications services)³⁶⁷ forced Facebook (in the market for social networking services) to innovate.

4.4.2 Step n°2: identify the conduct under consideration

- 197.** The market power depends on several factors, including the conduct under investigation.³⁶⁸ It should not be *“considered in isolation from the conduct and the theory of harm”*.³⁶⁹ For instance, in the German Facebook’ s case, the data protection breaches gives an unfair competitive advantage over rivals by helping the company to maintain its market power. By breaching data protection rules, the firm collects

³⁶⁵ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 52.

³⁶⁶ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 5.

³⁶⁷ COMP/M.7217-facebook/WhatsApp, 3 October 2014, para. 96.

³⁶⁸ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 5.

³⁶⁹ Ibid.

more data about its users. Therefore, thanks to network effects (traditional and data-driven network effects), the firm can improve its services and increase the lock-in effect “*to the detriment of other providers of social networks*”.³⁷⁰

4.4.3 Step n°3: identify the challenges of market power

198. Agencies ought to carefully consider the above challenges concerning multi-sidedness, free services and dynamic competition.

4.4.4 Step n°4: identify the key features relevant to market power and the countervailing buyer power

199. Once the competitive environment, the conduct and the challenges are well-understood, agencies must identify all the above key features relevant to market power and the countervailing buyer power.

4.4.5 Step n°5: assessment and interpretation of market power

200. Finally, the last step of this sequential approach is to assess and interpret market power. Collyer et al recommended to use “*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 judgment*”.³⁷¹ This approach is convenient in practice. Indeed, the identification of each side may be straightforward and market power is easily quantifiable by using new tools adapted to data-driven markets (see section 4.5). However, the assessment of network effects may be a challenging task (see section 4.1.1), thus the use of an array of evidence and judgement enables to take into account the role of network effects in the assessment of market power without significant difficulties.

³⁷⁰ BKartA, Press release, *Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*, 2 March 2016 (accessed 2 December 2018).

³⁷¹ OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017, p. 6.

4.5 Economic tools

4.5.1 Tool n°4: user-based market shares

- 201.** The key features relevant to market power are reliable insights to determine whether the firm under investigation is in a dominant position in the market and whether competitors or new entrants can enter and flourish in the market, especially when the market share is not the most relevant factor in fast-growing sector with frequent market entry and short innovation cycles in which large market shares may turn out to be ephemeral (see section 4.1.3).
- 202.** However, it still is useful to quantify the firm's market power in the market. In antitrust and merger cases, market shares are always used to describe the market structure and the market position of firms.
- 203.** In fast-growing sector, market shares are relevant if two conditions are fulfilled: (i) the market shows signs of an established stable hierarchy instead of signs of marked instability during the period at issue;³⁷² and (ii) a reliable indicator is able to reflect a business' market position in line with market conditions.³⁷³
- 204.** The first condition is fulfilled if an agency assesses market shares over time during the period at issue or at least during a relative long period of time (e.g. more than 5 years). If market share over time are stable, they can thus be relevant. This was done in *Google Search (Shopping)* by using data from StatCounter.³⁷⁴
- 205.** The second condition ought to be examined on a case-by-case basis.³⁷⁵ Generally speaking, agencies use market shares by value namely by looking at the share of turnover (taxes excluded) of the firm over the turnover (taxes excluded) of the market under investigation. In the digital sector, market shares by value may not be useful. Indeed, the service is often provided free of charge to the user side and "*a purely value-based analysis would ignore competition between free services and ad-funded*

³⁷² AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 267.

³⁷³ BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, p. 70.

³⁷⁴ AT.39740-*Google Search (Shopping)*, 27 June 2017, paras. 273-284.

³⁷⁵ BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, p. 70.

services".³⁷⁶ Therefore, agencies have to use non-value-based market shares. The indicator should reflect why users and businesses use the platform. In *Google Search (Shopping)*, the Commission used market shares by volume by looking at the number of queries, users, page views or per number of sessions.³⁷⁷ In particular, users are a reliable indicator in the digital economy. Indeed, both users and advertisers look at the number of active users before using actively the platform. Moreover, as the success of a platform depends on the number of users and platforms compete to attract users, user-based market shares is thus a reliable indicator of the market success and competitive significance. In *Microsoft/Skype*, market shares by volume by looking at unique users was used. A unique user is defined as "*an individual that has actively used a given service*" for a specified period of time such as a month.³⁷⁸ Therefore, user-based market shares can be computed on the basis of monthly (MAU)/daily (DAU) active users on the platform over the total number of monthly/daily active users in the market under investigation. In *Apple/Shazam*, the Commission computed the market share in that way.³⁷⁹ In the German *Facebook* case, the BKartA even considered that "*the share of daily active users of social networks is the most significant metric in the assessment of the market position*",³⁸⁰ because it reflects the typical requirements of the users and their typical behavior (e. g. daily exchange of experiences) as well as the frequency of usage (user engagement).³⁸¹ For the computation, the Commission suggests to distinguish single-homing users from

³⁷⁶ Ibid, p. 69.

³⁷⁷ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 76 and footnote 271.

See also, AT.40099-*Google Android*, 18 July 2018, para. 678.

³⁷⁸ COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 79.

³⁷⁹ M.8788-*Apple/Shazam*, 6 September 2018, paras. 164-165.

"the Commission therefore conducted a market reconstruction collecting confidential data on daily and monthly active users of providers of music recognition apps for smart mobile devices worldwide and in the EEA for the year 2017".

³⁸⁰ B6-22/16-*Facebook*, 6 February 2019, para. 389. See also, para. 390. The BKartA computed market shares on the basis of daily active users, monthly active users and the number of registered users of the services.

"Daily active users" refers to the *"users who use the network at least once a day."* (para. 393)

"Monthly active users" refers to *"users who used the respective service at least once a month within a set timeframe."* (para. 396)

"Registered users" refers to *"users who have registered for a service by creating an account"* (para. 399)

³⁸¹ Ibid, paras. 407-410.

multi-homing users, and active users from dormant users.³⁸² As shown in section 4.1.3, high user-based market shares may be an indication of tipping. This indicator allows to approximate the impact of indirect network effects since high market shares on the user side may indicate a dominant market position on the advertiser side due to positive indirect network effects and the willingness to reach the user side.³⁸³ Users can also be used to determine to what extent both sides single or multi-home.³⁸⁴ Moreover, in multi-sided markets where the platform provides a zero-price service to users and a paid service to advertisers, it may be useful to do a double check as done by the *Bundeskartellamt* in an online dating case. In that case, the BKartA calculated market shares based on the number of registered members and the number of monthly individual visitors for the user side and market shares based on the revenue generated for the advertiser side.³⁸⁵ The latter is also a good criterion since, as noted in the *Google Android* decision, the level of advertising revenue is related to the number of users.³⁸⁶ Both indicators show that the platform is indispensable for both users and advertisers.

206. However, since market shares are relevant in fast-growing sector only to a certain extent, one has to design another test applicable in all circumstances.

4.5.2 Tool n°5: the control over data competition (CODC) test

207. In data-driven markets, data is a key factor to enhance or maintain its dominant position (see section 4.2.2). As already noticed, firms like Google, Facebook or Microsoft are willing to pay billions of dollars to acquire a target with a large customer base and valuable data. Therefore, the question is to what extent the valuable dataset

³⁸² OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018, p.7

“Finally, since market shares in zero-price markets cannot be calculated in terms of turnover, they are typically calculated as shares of volume of transactions or shares of users. When user shares are more appropriate than shares of volume, it may be necessary to distinguish “single-homing” users from “multi-homing” users, and to distinguish between active users and dormant users”.

³⁸³ BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016, p. 69.

³⁸⁴ *Ibid.*

³⁸⁵ *Ibid.*, p. 71.

³⁸⁶ AT.40099-*Google Android*, 18 July 2018, para. 328.

of the firm or the acquisition of valuable data confers a significant market power or is likely to increase the market power of the firm.

- 208.** To deal with this challenging question, one can use the proposition 11 to design a so-called “*Control over Data Competition*” (CODC) test. As for market shares, the test enables to describe the market structure and the market position of competitors relative to each other based on the datasets owned by firms in the market under investigation.
- 209.** The share of control is computed by the scale and scope of data owned by the firm under investigation over the total scale and scope of data in the market.

5 Conclusion

- 210.** The data-driven economy changes in many aspects the work of businesses and the way people are living.
- 211.** In this economy, the sector is characterized by high levels of concentration in the hand of just a few firms such as Google and Facebook and strong innovation dynamics where both incumbents and new market participants innovate to attract or maintain users on their platforms. This competition for the market shows all the features of a competitive environment. Even a monopoly firm has to innovate in order to not be displaced by distributive and frequent innovations. Besides that, the business model is mainly based on a free-and-paid side relationship where the platform provides a zero-price service to users and a paid service to businesses.
- 212.** In this context, competition plays an essential role to ensure that platforms offer quality, innovation and consumer choice.
- 213.** Section 2 adapts the economic literature on multi-sided markets to the data-driven economy by explaining the business model and the network effects that occur in those markets.
- 214.** Section 3 provides new tools and analysis to define the relevant market. Indeed, the current competition assessment toolkit is mainly based on a price assessment with

price-centric tools developed for one-sided markets such as the SSNIP test, and a static view of the relevant product market in terms of product substitutability. However, the data-driven economy requires a non-price assessment with non-price tools developed for multi-sided markets such as the Small, but Significant, Non-Transitory Decrease in Privacy Protection (SSNDPP) test, and a dynamic view of the relevant product market in terms of innovation-driven competitive pressure. The SSNDPP test enables to define the relevant market when privacy is an important non-price parameter of competition. The section also stressed out the need to use qualitative tools such as surveys and experimental methods. Moreover, competition authorities should forgo the geographic market and rather should focus directly on the competitive effects at the global level on consumers and competition since the digital economy is characterized by the absence of boundaries where consumers with unrestricted access to internet are free to use services and applications irrespective of their geographic location anywhere in the world. The merger will have thus a global impact.

- 215.** Section 4 provides new conceptual tools to assess the market power, the essential prerequisite before the development of analytical tools that will arise from them. It highlights all the key features relevant to market power in data-driven markets: (i) network effects and data-driven network effects; (ii) access to competitively relevant data; (iii) data aggregation, (iv) shares of control over data; (v) single-homing and multi-homing; (vi) switching costs; (vii) entry costs and investment costs; (viii) economies of scale; (ix) economies of scope; (x) the role of velocity; (xi) the role of innovation and dynamic competition; and (xii) legal barriers. Besides that, it formulates a clear guideline in five steps that competition authorities must follow before any assessment of market power. Finally, two economic tools are designed: The user-based market share and the Control Over Data Competition (CODC) test. The former enables to compute market shares when the market shows signs of an established market hierarchy and a reliable indicator is able to reflect a business' market position in line with market conditions. In the digital economy, both users and advertisers look at the number of active users before using actively the platform. The latter enables to compute market power based on the proportion of scale and scope of data owned by a firm.

216. In conclusion, this chapter gives the necessary economic toolbox for the assessment of a practice in the data-driven economy. The next one will focus on the law and economics of antitrust and merger practices.

Chapter 2: Law and Economics of Antitrust and Merger Practices in the Data-Driven Economy

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1. Introduction

1. The data-driven economy is without contest a fast-growing sector at the heart of the digital economy. In only two years, 90% of the world's information has been generated.³⁸⁷ In the traditional economy as well as in the digital economy, information or data about consumers are essential to offer targeted services or products to its customer base. Nowadays, Big Data enables to gather lots of personal data on each consumer. Big Data is thus the new golden asset that firms need to compete. They have to build the largest dataset in terms of volume, variety, velocity and value about their users to become dominant in the digital economy. Combined with algorithms and artificial intelligence, the power of Big Data is unlimited.
2. In the best scenario, firms compete fiercely to offer better and tailored services to their users. Competition and consumers are better off. In the worst scenario, powerful firms dominate the market and misuse their power, firms collude tacitly thanks to algorithms and artificial intelligence, and firms acquire another company just for its colossal amount of data and to eliminate a potential competitor. Competition and consumers are worse off. The market competition does not work and thus competition authorities must intervene to restore a level-playing field.³⁸⁸
3. Generally speaking, competition authorities are well-equipped to deal with Big Data issues. However, except the German abuse of dominance *Facebook* case,³⁸⁹ the Big Data cases such as the *Facebook/WhatsApp*³⁹⁰ merger show that authorities do not take enough into account privacy issues whereas personal data imply necessarily data

³⁸⁷ Australian Competition and Consumer Commission (ACCC), Speech, *The ACCC's approach to colluding robots*, 16 November 2017 (accessed 18 April 2018).

<https://www.accc.gov.au/speech/the-accc's-approach-to-colluding-robots>

³⁸⁸ European Commission (EC), Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016 (accessed 18 April 2018).

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

³⁸⁹ B6-22/16-*Facebook*, 6 February 2019.

<https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?blob=publicationFile&v=5>

³⁹⁰ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014.

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

protection and privacy concerns. Therefore, it appears obvious to review data protection and privacy issues in any data-driven antitrust and merger cases.³⁹¹ Moreover, a coordination of actions between two or more firms without any explicit agreements-so-called “tacit collusion”-is currently not illegal *per se* under the current competition laws. Algorithms and artificial intelligence enable firms to collude without any explicit agreements. Firms do not need anymore to coordinate explicitly their actions to collude. Therefore, the ability and the incentive to collude tacitly is greater today than before. The collusion is more sustainable while minimizing the risk of detection and deviation. Thus, as the OECD noted, “*finding ways to prevent collusion between self-learning algorithms might be one of the biggest challenges that competition law enforcers have ever faced, and whose solution may involve artificially making market conditions more unstable and less prone to tacit collusion*”.³⁹²

4. The goal of this chapter 2 is to expose a law and economics analysis of antitrust and merger practices in the data-driven economy to deal with these challenging issues. Section 2 summarizes the literature on privacy and antitrust. It crosses the line between both enforcements since competition and data protection intertwine when an authority has to deal with a data-driven company where personal data are a key input that imply inevitably privacy and data protection concerns.³⁹³ Section 3 develops new theories of harm in abuse of dominance. We cannot explore all the data-driven practices. Therefore, we only focus on three debated practices: unfair terms and conditions; the use of sensitive data to exclude rivals; and personalized pricing. Section 4 is about algorithmic tacit collusion. We develop the use of algorithms in the digital economy and for collusive outcome as well as some solutions to tackle algorithmic tacit collusion under competition laws. Section 5 is about data-driven mergers. The notification mechanisms have to be urgently reformed. Data-driven issues such as pre-emptive mergers, data aggregation and privacy should be fully understood in order to avoid an

³⁹¹ Carugati, C., *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, European Competition and Regulatory Law Review Volume 2, Issue 1 (2018) pp. 4 – 10.

<https://core.lexxion.eu/article/CORE/2018/1/4>

³⁹² OECD, *Big data: bringing competition policy to the digital era-background note by the secretariat*, 27 October 2016, p. 24.

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

³⁹³ Carugati, C., *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, European Competition and Regulatory Law Review Volume 2, Issue 1 (2018) pp. 4 – 10.

under-enforcement (type II error) or an over-enforcement (type I error). Moreover, we develop data-driven efficiency gains and remedies. Section 6 concludes.

2. General considerations on privacy, consumer protection and competition law

5. The Law and Economics literature on privacy and antitrust is widely developed with two different views: Some authors argue that privacy and consumer laws should be included in antitrust laws and others the contrary, privacy and consumer laws should not be included in antitrust laws. The goal of this section is not to summarize the arguments of each view but to demonstrate why privacy is relevant in antitrust and merger analysis for three reasons: (i) privacy, consumer protection and competition law share the same goal; (ii) the integration of privacy can lead to better competition and efficiencies in the market; and (iii) the integration of privacy may enhance consumer welfare.

2.1. Privacy, consumer protection and competition law share the same goal

6. The purpose of privacy, consumer protection and competition law is to protect consumers against harmful behaviors that make consumer welfare worse off.³⁹⁴ In competition law, consumer welfare refers to “*the individual benefits derived from the consumption of goods and services*”.³⁹⁵ The individual welfare depends on his/her own

³⁹⁴ Pasquale, F. A., *Privacy, Antitrust, and Power*, *George Mason Law Review*, Vol. 20, No. 4, pp. 1009-1024, 2013, p. 1011.

<https://ssrn.com/abstract=2309965>.

“*The primary purpose of privacy law (as applied to corporations) and antitrust law is to deter and punish unfair, deceptive, or harmful behavior*”.

See also, Graef, I., *Blurring Boundaries of Consumer Welfare: How to Create Synergies between Competition, Consumer and Data Protection Law in Digital Markets*, Forthcoming by Springer as proceedings of the Max Planck Institute Post-Doc conference on 'Personal Data in Competition, Consumer Protection and IP Law: Towards a Holistic Approach?', held on 21 October 2016 in Munich, December 2016, p. 3.

<https://ssrn.com/abstract=2881969>.

“*These three legal fields aim to protect the general public (either consumers more generally under competition law or individual consumers and data subjects under consumer and data protection law, respectively) and to contribute to the functioning of the internal market.*”

³⁹⁵ OECD, *Glossary Of Industrial Organisation Economics And Competition Law*, 16 July 1993, para. 43.

<http://www.oecd.org/regreform/sectors/2376087.pdf>

satisfaction given price parameter and non-price parameters such as quality (including privacy)³⁹⁶.

7. However, one may argue that the goal of antitrust is to promote only economic efficiency that enhances consumer welfare.³⁹⁷ Indeed, competition between firms should ensure that scarce economic resources are being put to their highest possible uses³⁹⁸ that result in the form of lower price, better quality, greater choice and greater innovation to consumers. Efficiency also refers to Pareto efficiency where the allocation of goods is allocated amongst consumers in such a way that no one can be made better off without making another worse off.³⁹⁹
8. In the data-driven economy, personal data are the input to use a service online. Personal data imply necessarily data protection and privacy concerns. Therefore, if personal data are misused by a firm, the economic efficiency is not reached and consumer welfare is not maximized as a result of a lower quality in terms of privacy protection. In the context of an abuse of dominant position or a merger, a firm may breach data protection law (data protection violation) to collect even more data about its users without their consent (consumer violation). By collecting more data, the firm may lock-in its users to the detriment of other rivals that impede them to compete effectively (competition law violation).⁴⁰⁰ Since firms cannot compete, the resources are not being put to their highest possible uses and the market is thus not efficient. Therefore, “[d]ata protection norms can exercise an ‘internal’ constraint when the substantive assessments undertaken pursuant to competition law integrate data protection considerations and thus, for instance, data protection considerations

³⁹⁶ COMP/M.7217-Facebook/WhatsApp, 3 October 2014 para. 87.

³⁹⁷ Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015, p. 151.

<https://ssrn.com/abstract=2561563>

Graef, I., *Blurring Boundaries of Consumer Welfare: How to Create Synergies between Competition, Consumer and Data Protection Law in Digital Markets*, Forthcoming by Springer as proceedings of the Max Planck Institute Post-Doc conference on 'Personal Data in Competition, Consumer Protection and IP Law: Towards a Holistic Approach?', held on 21 October 2016 in Munich, December 2016, p. 4.

³⁹⁸ OECD, *Glossary Of Industrial Organisation Economics And Competition Law*, 16 July 1993, para. 74.

³⁹⁹ Ibid.

⁴⁰⁰ B6-22/16-Facebook, 6 February 2019, para. 888.

determine whether competition is harmed in markets for, or dependent upon, personal data.”⁴⁰¹

2.2. The integration of privacy can lead to better competition and efficiency in the market

9. The data-driven economy is characterized by high levels of concentration in the hand of just a few firms such as Google and Facebook and strong innovation dynamics where both incumbents and new market participants innovate to attract or maintain users on their platforms. This competition for the market shows all the features of a competitive environment. Even a monopolist or a quasi-monopolist has to innovate to not be displaced by distributive and frequent innovations.
10. According to Professor Lande, “[w]hen a market is competitive, any information-heavy firm that does not respect consumers’ privacy rights will pay a penalty”.⁴⁰² Indeed, consumers would probably switch to another provider and the firm could go out of business.
11. In contrary, in a non-competitive market, dominant firms have no incentive to improve their privacy practices when users are unlikely to defect.⁴⁰³ Again, by breaching data protection rules, a dominant firm such as Facebook can collect even more data about its users without any risks of losing its consumers due to the absence of alternatives.

⁴⁰¹ Costa-Cabral, F. and Lynskey, O., *The internal and external constraints of data protection on competition law in the EU*, LSE Law, Society and Economy Working Papers, 2015, pp. 3-4.

[http://eprints.lse.ac.uk/64887/1/Lynskey_Internal%20and%20External%20Constraints%20of%20Data%20Protection%20Author 2015.pdf](http://eprints.lse.ac.uk/64887/1/Lynskey_Internal%20and%20External%20Constraints%20of%20Data%20Protection%20Author%202015.pdf)

⁴⁰² Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 2008, p. 2.

<https://ssrn.com/abstract=1121934>

⁴⁰³ Pasquale, F. A., *Privacy, Antitrust, and Power*, *George Mason Law Review*, Vol. 20, No. 4, pp. 1009-1024, 2013, p. 1022.

This might explain why despite the Cambridge Analytica scandal,⁴⁰⁴ most Facebook users still use Facebook and the number of users still increases.⁴⁰⁵

12. However, some authors argue that using antitrust law might render the market less efficient. Cooper argues that *“limit[ing] the collection and use of consumer data would decrease the amount of marketplace information available to consumers, rendering markets less efficient”*.⁴⁰⁶ Ohlhausen and Okuliar argue *“that consolidation of data across business platforms often creates significant efficiencies and gains in consumer welfare.”*⁴⁰⁷ The privacy integration in antitrust may even *“reduc[e] competition and innovation from new products that the combined data may enable, making all consumers worse off, even those who do not share the same privacy preferences or are willing to trade some diminution in privacy for increased quality or new offerings.”*⁴⁰⁸
13. Although, their arguments may be relevant in some specific situations as long as data protection/privacy laws are not violated, in general the degradation of quality in terms of privacy protection and the absence of consumer choice to alternative providers as a result of the foreclosure effect (due to the collection/combination of data)⁴⁰⁹ may render the market less efficient and consumer welfare worse off. Thus, the integration of privacy in any antitrust and merger cases may promote competition in the market while enhancing economic efficiency.

⁴⁰⁴ The New York Times, *Facebook and Cambridge Analytica: What You Need to Know as Fallout Widens*, 19 March 2018 (accessed 27 January 2020).

⁴⁰⁵ Statista, *Number of monthly active Facebook users worldwide as of 3rd quarter 2019 (in millions)*, 19 November 2019 (accessed 27 January 2020).

<https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>

⁴⁰⁶ Cooper, J. C., *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, George Mason Law Review, Forthcoming; George Mason Law & Economics Research Paper No. 13-39, June 2013, p. 16,

<https://ssrn.com/abstract=2283390>

⁴⁰⁷ Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015, p. 152.

⁴⁰⁸ Ibid.

⁴⁰⁹ See chapter 1, *“Share of Control Over Data”*.

2.3. The integration of privacy may enhance consumer welfare

14. The purpose of competition between firms is to enhance economic efficiency and consumer welfare. In a competitive environment, consumers want competitive prices, an optimal level of quality, innovation, choice and other optimal level of non-price competition such as privacy protection,⁴¹⁰ as proved by the intense competition on privacy protection in many markets. For example, in the market for consumer communication services, Signal, Silent, Telegram, Threema, WhatsApp, Wickr Me, and Viber offer chat encrypted whereas Facebook Messenger, Line and We Chat collect and use personal data. In the market for search engine services, Google tracks users whereas DuckDuckGo proposes anonymous search. In the market for professional social networking services, XING offers a greater degree of privacy protection than LinkedIn.⁴¹¹
15. Moreover, the Commission recognized privacy as a non-price parameter of competition in *Facebook/WhatsApp*⁴¹² and *Microsoft/LinkedIn*.⁴¹³ Therefore, the Commission should analyze, as an increase in price, the effect of a decrease in privacy on consumer welfare. If consumer welfare is worse off as a result of a practice or an agreement that reduces consumer choice as to the privacy policy or deteriorates the quality of a product due to a change of the privacy policy, competition authorities should intervene.⁴¹⁴
16. However, as argued by Cooper “[...] consumers derive some benefits from the data they reveal, benefits that must be weighed against any privacy harms”⁴¹⁵ and “[...] the

⁴¹⁰ Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 2008, p. 2.

⁴¹¹ M.8124-*Microsoft/LinkedIn*, 6 December 2016 para. 350.

https://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

⁴¹² COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 87, para. 102 and footnote 79.

⁴¹³ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 350 and footnote 330.

⁴¹⁴ Kuner et al, *When two worlds collide: the interface between competition law and data protection*, International Data Privacy Law, Vol. 4, No. 4, 2014.

<https://academic.oup.com/idpl/article/4/4/247/2569065>

⁴¹⁵ Cooper, J. C., *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, George Mason Law Review, Forthcoming; George Mason Law & Economics Research Paper No. 13-39, June 2013, pp. 8-9.

decision to collect more consumer data comes with both benefits and costs".⁴¹⁶ Indeed, by collecting more data about its users, a firm can offer more personalized services and ads to its users. Therefore, consumers may be better off from the collection of additional data. However, consumers may also be worse off if they have no choice but to accept the new terms and conditions. In such case, consumers are worse off if the cost in terms of loss of privacy is greater than the benefits derived from the additional collection and use of user data. The Commission should thus not only examine the benefits but also the costs especially if consumers value privacy as an important non-price parameter of competition.

- 17.** In such context, opponents of the integration of privacy in antitrust analysis underline the difficulties to balance the costs and benefits of a practice or an agreement when privacy is involved due to the subjective nature of privacy.⁴¹⁷ This can lead to a subjective antitrust analysis and less certainty over legal standards.⁴¹⁸ However, this subjectivity may be overcome if competition authorities use data protection/privacy law or consumer protection law as a benchmark to assess whether consumers may be harmed from a loss of privacy (quality).⁴¹⁹ Moreover, as argued by Ohlhausen and Okuliar "*a blended approach to antitrust that encompasses normative privacy concerns also would provide cover for the injection of other noncompetition factors into the analysis [...] The introduction of these factors could shift anti-trust law's focus away*

⁴¹⁶ Ibid, p. 10.

⁴¹⁷ Ibid, p. 10.

See also, Kerber, W., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, April 2016, p. 7.

<https://ssrn.com/abstract=2770479>

⁴¹⁸ Cooper, J. C., *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, George Mason Law Review, Forthcoming; George Mason Law & Economics Research Paper No. 13-39, June 2013, p. 16.

⁴¹⁹ Costa-Cabral, F. and Lynskey, O., *The internal and external constraints of data protection on competition law in the EU*, LSE Law, Society and Economy Working Papers, 2015, p. 16.

See also, Graef, I., *Blurring Boundaries of Consumer Welfare: How to Create Synergies between Competition, Consumer and Data Protection Law in Digital Markets*, Forthcoming by Springer as proceedings of the Max Planck Institute Post-Doc conference on 'Personal Data in Competition, Consumer Protection and IP Law: Towards a Holistic Approach?', held on 21 October 2016 in Munich, December 2016, p. 17. The author proposes the use of "*principles from data protection or consumer protection law as benchmarks for analysing whether abuse of dominance under competition law exists.*"

from efficiency and alter its relatively predictable and transparent application".⁴²⁰ In other words, according to the authors, the integration of privacy would enable the integration of other non-competition factors such as environmental concerns. Therefore, in order to keep a predictable and transparent application of competition law, the integration should be only limited to price and non-price competition factors and authorities should be able to assess objectively the harm derived from the practice or the agreement by using a relevant regime as a benchmark.

3. Abuse of dominance

18. The Law and Economics of abuse of dominance related to data-driven practices is currently a hot topic around the world with important cases such as the *Facebook* case by the German Federal Cartel Office or the current investigation against Amazon by the Commission. In this section, we will review the three main categories of abuse: (i) exploitative abuse; (ii) exclusionary abuse; and (iii) discriminatory abuse by analyzing only one practice in each sub-section.

3.1. Data-driven exploitative abuse: unfair terms and conditions

3.1.1. *The legal principle*

19. The EU competition Law prohibits under article 102(a) TFEU:

*“Any abuse by one or more undertakings of a dominant position [...] in particular, consist in: (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;”*⁴²¹

⁴²⁰ Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015, p. 153.

⁴²¹ Article 102(a) TFEU.

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT>

20. The cases of exploitative abuse are rarely investigated by competition authorities and courts. Moreover, contrary to abusive exclusionary conduct,⁴²² the Commission has not provided a guidance relating to abusive exploitative conduct by dominant undertakings. The notion of fairness is the core notion of these types of abuse. As explained by Kalimo and Majcher, “*the EU Courts and the Commission have constructed fairness through the concepts of transparency, absolute necessity, one-sidedness, equality, proportionality, balance of interests of contracting parties, oppressiveness, objectivity and certainty.*”⁴²³ In the following sub-sections, we will design a legal and economic test based on the German *Facebook* case.

3.1.2. *The German Facebook case*

21. On 2 March 2016, the *Bundeskartellamt* (BKartA) opened an investigation “*against Facebook on suspicion on having abused its market power by infringing data protection rules*”.⁴²⁴ The German Federal Cartel Office (FCO) examined “*under the aspect of abuse of market power whether the consumers are sufficiently informed about the type and extent of data collected*”.⁴²⁵

22. On 19 December 2017, it released its first preliminary assessment.⁴²⁶ According to the FCO, “*Facebook’s collection and use of data from third-party source is abusive*”. Facebook is dominant in the German market for social networks with more than 90%

⁴²² EC, *Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings* (2009/C 45/02), 24 February 2009.

[http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0224\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0224(01)&from=EN)

⁴²³ Kalimo, H. and Majcher, K., *The Concept of Fairness: Linking EU Competition and Data Protection Law in the Digital Marketplace*, *European Law Review*, Vol. 42, No. 2, 42, 04.2017, April 2017. p. 226.

http://awards.concurrences.com/IMG/pdf/km_2017_42_elrev_issue_2.pdf

⁴²⁴ Bundeskartellamt (BKartA), Press release, *Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*, 2 March 2016 (accessed 27 January 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html

⁴²⁵ *Ibid.*

⁴²⁶ BKartA, Press release, *Preliminary assessment in Facebook proceeding: Facebook’s collection and use of data from third-party sources is abusive*, 19 December 2017 (accessed 27 January 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2017/19_12_2017_Facebook.html

of user-based market shares.⁴²⁷ The investigation only focused “*on the collection and use of user data from third party sources*”⁴²⁸ including services owned by Facebook like Instagram or WhatsApp and third-party websites and applications with embedded Facebook APIs. The social network abused its dominant position by harnessing user data through unfair terms and conditions.

- 23.** When a Facebook user visits a third-party website with Facebook APIs, the data are directly shared with Facebook whether or not the user clicks on a Facebook product such as the “like button”. Then, the data are merged into the user’s Facebook account. A user has no choice but to accept in full the terms and conditions to use the service. It is a “take-it-or leave it” offer, either the user accepts the terms or the user leaves the service.⁴²⁹ According to the FCO, “*Facebook’s terms and conditions in this regard are neither justified under data protection principles nor are they appropriate under competition law standard*”.⁴³⁰
- 24.** On 7 February 2019, after a three-year investigation, the FCO released its final assessment and “*prohibit[ed] Facebook from combining user data from different sources*”.⁴³¹ The collection, use and combining of data from Facebook-owned services and third-party websites and applications are still allowed but only subject to the users’ voluntary consent. If the user does not consent, Facebook cannot exclude him from its services and cannot collect and merge data. According to Andreas Mundt, the President of the BKartA, the remedy is a kind of “*internal divestiture of Facebook’s data*”.⁴³² The case was based on German competition law (article 19(1) of the German Competition Act (GWB), the equivalent of article 102 TFEU) and the domestic case-law of the Federal

⁴²⁷ BKartA, *Background information on the Facebook proceeding*, 19 December 2017.

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Diskussions_Hintergrundpapiere/2017/Hintergrundpapier_Facebook.html?nn=3600108

⁴²⁸ Ibid.

⁴²⁹ Ibid.

⁴³⁰ Ibid.

⁴³¹ BKartA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019 (accessed 27 January 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html

⁴³² Ibid.

Court of Justice⁴³³ but not under article 102(a) TFEU,⁴³⁴ whereas, according to Wouter Wils, the FCO had the obligation to apply the EU competition law, and thus by not applying it the FCO infringed article 3(1) of the EU Regulation 1/2003.⁴³⁵ In Germany, any legal principle that aims to protect a contract party can be applied to determine whether the terms are exploitative, namely whether the terms are unbalanced conditions between the parties.⁴³⁶ In that case, the FCO applied data protection principles. Indeed, data protection rules safeguard consumers from exploitative terms by ensuring that users freely decide of the use of their personal data.⁴³⁷

- 25.** In sum, the reasoning of the FCO is the following: (i) user data are essential for the economic dominance of Facebook;⁴³⁸ (ii) Facebook users cannot negotiate the terms and conditions and have no choice but to accept the terms to use the service (data protection violation) due to the lock-in effect as the result of network effects;⁴³⁹ (iii) thus the terms are unfair according to data protection law; (iv) hence, since the breach enables Facebook to gather even more data in terms of volume and variety and thus to enhance its dominant position thanks to data-driven network effects, the practice is unfair according to competition law as well. Indeed, the practice harms both users, since their privacy are violated (loss of control over their data and right to informational

⁴³³ B6-22/16-Facebook, 6 February 2019, paras. 526 and 527.

⁴³⁴ Ibid, para. 914.

⁴³⁵ Wils, W., *The obligation for the competition authorities of the EU Member States to apply EU antitrust law and the Facebook decision of the Bundeskartellamt*, *Concurrences Review* N° 3-2019, Art. N° 91034, September 2019, pp. 58-66.

<https://www.concurrences.com/en/review/issues/no-3-2019/articles/the-obligation-for-the-competition-authorities-of-the-eu-member-states-to-apply-91034-en>

See also, EC, *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*, 4 January 2003.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003R0001&from=FR>

Pursuant to article 3(1), second sentence, “[w]here the competition authorities of the Member States or national courts apply national competition law to any abuse prohibited by Article 82 [102 TFEU] of the Treaty, they shall also apply Article 82 [102 TFEU] of the Treaty.”

⁴³⁶ B6-22/16-Facebook, 6 February 2019, paras. 526-527.

⁴³⁷ Ibid, para. 530.

⁴³⁸ Ibid, para. 888.

⁴³⁹ Ibid, para. 448 and para. 462.

self-determination), and competitors, since the breach gives an unfair competitive advantage over rivals due to the increased entry barriers.⁴⁴⁰

- 26.** On 26 August 2019, the Higher Regional Court (“OLG”) of Düsseldorf suspended the decision.⁴⁴¹ Facebook is no longer obliged to apply the FCO’s remedies. According to the Court, the FCO failed to demonstrate the exploitative as well as the exclusionary abuse of dominance.⁴⁴² The BKartA appealed the judgment before the Federal Supreme Court.⁴⁴³ It is worth noting that both the EU⁴⁴⁴ and the US⁴⁴⁵ are currently investigating the data practice of Facebook.
- 27.** In the next sub-section, the test will be based on article 102 TFEU and the relevant European case-law and not on the legal basis of the Facebook case. Indeed, according to, Thomas Von Danwitz, a senior judge at the European Court of Justice (ECJ), the case could also be based on article 102 TFEU.⁴⁴⁶

⁴⁴⁰ Ibid, paras. 876-888.

⁴⁴¹ OLG Düsseldorf, *Case VI-Kart 1/19 (V)*, 26 August 2019 (the official version is only available in German) https://www.olg-duesseldorf.nrw.de/behoerde/presse/Presse_aktuell/20190826_PM_Facebook/20190826-Beschluss-VI-Kart-1-19- V .pdf

⁴⁴² Colangelo G., *Facebook and the Bundeskartellamt’s Winter of Discontent*, Competition Policy international, 23 September 2019 (accessed 27 January 2020).

⁴⁴³ Competition policy international, *Germany: Facebook succeeds in blocking German ban on data collection*, 26 August 2019 (accessed 27 January 2020). <https://www.competitionpolicyinternational.com/germany-cartel-office-to-take-facebook-case-to-high-court/>

⁴⁴⁴ Competition policy international, *EU: Facebook tells regulators ‘data is complicated’*, 2 December 2019 (accessed 27 January 2020). <https://www.competitionpolicyinternational.com/eu-facebook-tells-regulators-data-is-complicated/>

⁴⁴⁵ Financial times, *Which antitrust investigations should Big Tech worry about?*, 28 October 2019 (accessed 27 January 2020). <https://www.ft.com/content/abcc5070-f68f-11e9-a79c-bc9acae3b654>

⁴⁴⁶ Höppner, T. and Westerhoff, P., *Abrupt End to “Hipster Antitrust”?* *Tackling Facebook’s Expansion Following the First Court Ruling in Germany*, Hausfeld, 20 November 2019 (accessed 27 January 2020). <https://www.hausfeld.com/news-press/abrupt-end-to-hipster-antitrust-tackling-facebook-expansion-following-the-first-court-ruling-in-germany>

“A statement of a senior judge at the Court of Justice of the European Union further backed up calls for a broader understanding of antitrust law. In March 2019, the German judge at this court, Thomas von Danwitz contended that “systematic infringements” of data protection or privacy rules could be sanctioned as an “abuse” under Article 102 TFEU. In his view, a “too-narrow conception of competition law that blanks out

3.1.3. *The legal and economic test*

- 28.** The concept of fairness is based on the notion of “*competition on the merits*”,⁴⁴⁷ namely a dominant undertaking must compete by using normal ways of competition.⁴⁴⁸ The dominant firm has a special responsibility, namely its conduct cannot impair genuine undistorted competition on the common market.⁴⁴⁹ Therefore, a data-driven company should not misuse its power by breaching data protection/privacy rules to collect and use a large volume and variety of data in order to foreclose its rivals, raise entry barriers and to exploit its customers to enhance or maintain its market dominance.
- 29.** The application of article 102(a) TFEU requires four conditions: (i) the undertaking is dominant in the relevant market; (ii) trading conditions between the undertaking and its customers exist; (iii) the trading conditions are unfair; and (iv) the dominant undertaking imposes directly or indirectly these trading conditions to its customers.
- 30.** Firstly, as an initial step, a competition authority has to define the relevant product and geographic market. Then, it must examine the dominance of the undertaking under investigation as regards (i) its market shares, (ii) the barriers to entry and expansion; and (iii) its countervailing buyer power (see chapter 1). According to the FCO, Facebook is dominant in the German market for social networks.⁴⁵⁰ Facebook has more than 90

privacy concerns” should be avoided because of the “similar and complementary objectives” pursued by both fields of law.”

⁴⁴⁷ EC, Speech, Johannes Laitenberger, *EU competition law in innovation and digital markets: fairness and the consumer welfare perspective*, MLex / Hogan Lovells event, Brussels, 10 October 2017 (accessed 20 January 2020).

http://ec.europa.eu/competition/speeches/text/sp2017_15_en.pdf

“Today, fairness is firmly anchored in the notion of “competition on the merits”, which is so central to the case-law on abuse of dominance.”

⁴⁴⁸ Case 85/76-*Hoffmann-La Roche & Co. AG v Commission of the European Communities*, ECLI:EU:C:1979:36, 13 February 1979, para. 91.

⁴⁴⁹ Case 322/81-*NV Nederlandsche Banden Industrie Michelin v Commission of the European Communities*, ECLI:EU:C:1983:313, 9 November 1983, para. 57.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61981CJ0322&from=EN>

⁴⁵⁰ B6-22/16-*Facebook*, 6 February 2019, para. 212.

percent of user-based market shares.⁴⁵¹ Moreover, entry barriers are high including access to competitively relevant data, network effects and high switching costs.⁴⁵²

31. Secondly, the agency has to establish a trading condition between the undertaking and its customers. In the data-driven economy, users use a service for free in exchange of their personal data instead of paying with a monetary price. Indeed, as noted by the Commission in *Google Search (Shopping)*, users contribute to the monetization of the service by providing personal data.⁴⁵³ The FCO considers that the service is a market activity despite the absence of price.⁴⁵⁴ Therefore, personal data are the asset which can be considered as a counter-performance to a contract between the undertaking and its customers.⁴⁵⁵
32. Thirdly, the trading conditions have to be considered as unfair. In the Facebook case, the FCO considered that the use of illegal terms and conditions as regards data protection law constituted an abuse of dominance under competition law. Indeed, unfair terms and conditions may affect competition in the market and harms users, competitors and advertisers.⁴⁵⁶ In this regard, as noted by the French *Autorité de la concurrence* (Adlc) and the German *Bundeskartellamt* (BKartA) in their joint report on Big Data:

“decisions taken by an undertaking regarding the collection and use of personal data can have, in parallel, implications on economic and competition dimensions. Therefore, privacy policies could be considered

⁴⁵¹ Ibid, para. 413.

⁴⁵² Ibid, paras. 422-521.

⁴⁵³ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 320.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf

See also, AT.40099-*Google Android*, 18 July 2018, para. 326.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf

⁴⁵⁴ B6-22/16-*Facebook*, 6 February 2019, para. 239.

⁴⁵⁵ Zingales, N., *Between a Rock and Two Hard Places: WhatsApp at the Crossroad of Competition, Data Protection and Consumer Law*, Computer Law and Security Review (2017), 22 June 2017, p. 8.

<https://ssrn.com/abstract=2990939>

⁴⁵⁶ Carugati, C. *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, European Competition and Regulatory Law Review Volume 2, Issue 1 (2018) pp. 4 – 10.

from a competition standpoint whenever these policies are liable to affect competition, notably when they are implemented by a dominant undertaking for which data serves as a main input of its products or services. In those cases, there may be a close link between the dominance of the company, its data collection processes and competition on the relevant markets, which could justify the consideration of privacy policies and regulations in competition proceedings.”⁴⁵⁷

33. Accordingly, the agency has to demonstrate that the dominant company has abused its market power by imposing unfair terms and conditions to its users. In the Facebook decision, the FCO proved a causality between the market power and the abuse.⁴⁵⁸ However, in *AstraZeneca v Commission*, the Tribunal considered that “no causal link is required between the dominant position and the abuse of that position”.⁴⁵⁹ Therefore, it is not necessary to prove a causal link between the market dominance and the imposition of unfair terms and conditions. The competition authority must only prove that the terms are unfair. To do so, the agency can use data protection law as a relevant benchmark since the alleged practice concerns the collection, use, and merging of data. It must thus prove that the terms are unfair according to data protection law. Pursuant to article 6(1)(a) and 7(1) GDPR, the data subject must consent to the processing of his or her personal data. Consent must be freely given (art. 7(4) GDPR), namely the data subject has a genuine or free choice or is able to refuse or withdraw consent without detriment (recital 42 GDPR). It must be taken into account whether the performance of a contract, including the provision of a service, is conditional on consent to the

⁴⁵⁷ Adlc and BKartA, *Competition Law and Data*, 10 May 2016, pp. 23-24.

<http://www.autoritedelaconurrence.fr/doc/reportcompetitionlawanddatafinal.pdf>

⁴⁵⁸ B6-22/16-*Facebook*, 6 February 2019, paras. 871-888.

⁴⁵⁹ Case T-321/05-*AstraZeneca v Commission*, ECLI:EU:T:2010:266 [2010], 1st July 2010, para. 267.

<http://curia.europa.eu/juris/document/document.jsf?text=&docid=82135&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=722291>

See also, Case 6/72-*Europemballage and Continental Can v Commission*, ECLI:EU:C:1973:22, 21 February 1973, para. 27.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:61972CJ0006&from=FR>

See also, Case 85/76-*Hoffmann-La Roche & Co. AG v Commission of the European Communities*, ECLI:EU:C:1979:36, 13 February 1979, para. 91.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:61976CJ0085&from=FR>

processing of personal data that is not necessary for the performance of that contract (art. 7(4) GDPR), in accordance with the principle of data minimization, namely personal data shall be *“adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed”* (article 5(1)(c) GDPR). Moreover, *“[c]onsent is presumed not to be freely given [...] if the performance of a contract, including the provision of a service, is dependent on the consent despite such consent not being necessary for such performance”* (recital 43 GDPR).

- 34.** In the Facebook case, the provision of Facebook’s service is conditional to the collection, use and merging of unlimited data from third-party sources without the possibility to negotiate the terms. If the collection and use of data from Facebook is necessary for the provision of the service, the collection, use and merging of data from third-party services cannot be seen as necessary for the performance of Facebook. Moreover, users must either accept the terms or not use the service. Users cannot switch to other providers due to strong direct network effects and the lock-in effect. Therefore, Facebook users have no genuine or free choice but to accept the terms if they want to be connected with their social environment. They cannot refuse or withdraw consent without detriment since they will lose the access to their friends. Accordingly, consent is not freely given according to data protection law. The terms are thus unfair. There is therefore an abuse of a dominant position.
- 35.** The abuse harms both users, since their privacy are violated (loss of control over their data, loss of informational self-determination, degradation of quality), and competitors, since they are at a competitive disadvantage vis-à-vis Facebook. Hence, by breaching data protection rules, both users and competitors are worse off than had competitive levels prevailed, namely when the firm comply with data protection law (the counterfactual situation).⁴⁶⁰

⁴⁶⁰ Costa-Cabral, F. and Lynskey, O., *The internal and external constraints of data protection on competition law in the EU*, LSE Law, Society and Economy Working Papers, 2015, p. 21.

“First, a data protection infringement would set a clear normative marker of inferior quality. If a dominant undertaking exploitatively reduces the quality of its data use policy, consumers will be worse off than had competitive levels prevailed – which, when there is competition on data use policy, must normatively be set at compliance with data protection law.”

- 36.** Finally, agencies must demonstrate that the undertaking imposes directly or indirectly these trading conditions to its users. In the Facebook case, users have no choice but to accept the terms and conditions and they cannot negotiate them. Thus, Facebook imposes directly these trading conditions to its users.
- 37.** However, this approach should be limited in order to avoid a distortion of the purpose of article 102 TFEU since otherwise, as noted by Costa-Cabral and Lynskey, “*any rule with the aim to protect consumers could potentially be applied as an exploitative abuse*”.⁴⁶¹
- 38.** Therefore, the approach should be used only and only if the practice affects a parameter of competition. It follows that any legal principle that aims to protect a competitive parameter can be applied to determine whether the practice infringes competition law as well. In the Facebook case, privacy is an important non-price parameter of competition as recognized in *Facebook/WhatsApp* and *Microsoft/LinkedIn*. The terms affect the data protection of data subjects (or consumers). Data protection law aims to protect personal data. Accordingly, data protection law can be applied to determine whether the terms and conditions are exploitative. If the terms infringe data protection law, they constitute an abuse under competition law.

3.2. Exclusionary abuse: the use of sensitive data

3.2.1. The legal principle

- 39.** The EU competition law prohibits under article 102(b) TFEU, any abuse that consists in “*limiting production, markets or technical development to the prejudice of consumers*”. In other words, any anti-competitive conduct that forecloses competitors is prohibited.
- 40.** The cases of exclusionary abuse are investigated frequently by competition authorities and courts. As noted above, the Commission has provided a guidance relating to abusive exclusionary conduct by dominant undertakings. In data-driven markets, exclusionary and predatory behavior refer to cases of refusal access to data, exclusive

⁴⁶¹ Ibid, p. 22.

contracts to prevent rivals from accessing data and leveraging its data-advantage to another market (also refers as tied sales and cross-usage of datasets).⁴⁶² The literature about these issues is not new, therefore we will not develop these practices.

41. In the following sub-section, we will design a legal and economic test for a case of use of sensitive data that are not accessible to rivals in order to foreclose them or to raise entry barriers.

3.2.2. *The use of sensitive data as an exclusionary abuse*

42. The use of sensitive data is currently at the heart of the Commission's investigation against Amazon. According to the Press release, Amazon uses sensitive data from independent retailers who sell on its marketplace. The Commission investigates the alleged conduct under article 101 TFEU (collusion) and 102 TFEU (abuse of a dominant position).⁴⁶³ At this stage, it is thus not clear whether the conduct constitutes an exclusionary abuse. However, this cannot be excluded if Amazon uses these data to promote its own products on its marketplace at the expense of the other retailers.
43. Moreover, the Facebook case also constitutes an exclusionary abuse to the extent that the breach of data protection increases entry barriers for current and potential competitors in the market for social networks.⁴⁶⁴ Indeed, access to data is a key feature of market power in data-driven markets. The more the data a firm has in terms of volume, variety, velocity and value, the more the firm can offer personalized services to both its users and advertisers. Therefore, the platform can attract more users and advertisers and strengthen its position due to network effects and data-driven network effects up to the tipping point. By collecting, using and merging data from third-party sources, Facebook can obtain even more data. Competitors are thus at a competitive disadvantage vis-à-vis Facebook since they cannot access to those data. By breaching

⁴⁶² Adic and BKartA, *Competition Law and Data*, 10 May 2016, pp. 17-20.

See also, Stucke, M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, pp. 288-299.

⁴⁶³ EC, Press release, *Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon*, 17 July 2019 (accessed 28 January 2020).

https://ec.europa.eu/commission/presscorner/detail/en/ip_19_4291

⁴⁶⁴ B6-22/16-Facebook, 6 February 2019, para. 888.

data protection law, competitors cannot compete and can even be excluded from the market once the tipping point is reached. It occurs when competitors would be unable to compete effectively and new market participants would lack the ability or incentive to enter into the market. As noted in chapter 1, when the incumbent tips the market, competitors are likely to become less attractive to users since the incumbent generates most of the activity of the market. Hence, the competitor would face a slowing down in the growth of its user base and a decline in the activity of its members who would become instead active on the incumbent. In sum, the Facebook's practice raises entry barriers and forecloses its rivals at the expense of consumers.

- 44.** In both cases, data is used to exclude rivals from the market and competitors cannot access to similar data. They cannot compete on the same level playing field and thus the Commission has to restore it.⁴⁶⁵

3.2.3. *The legal and economic test*

- 45.** To the extent that the abuse is the result of a breach of data protection law as in the Facebook case, the law and economic test developed for unfair terms and conditions can also be applied in this situation of exclusionary abuse. Data protection law is used as a benchmark. If the terms and conditions infringe data protection law, the practice can constitute and exclusionary abuse.
- 46.** A test similar to the efficient competitor analysis (the “as efficient competitor test”) can also be used. The test is applied in price-based exclusionary conduct to determine whether a hypothetical competitor as efficient as the dominant undertaking would be likely to be foreclosed by the conduct based on cost data from the dominant undertaking or from competitors.⁴⁶⁶ The conduct is abusive if the dominant undertaking is engaging in below-cost pricing. In the absence of price, the practice can be classified as a non-price-based exclusionary conduct. Instead of using cost data, data

⁴⁶⁵ EC, Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016 (accessed 18 April 2018).

“If a company’s use of data is so bad for competition that it outweighs the benefits, we may have to step in to restore a level playing field.”

⁴⁶⁶ EC, *Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings* (2009/C 45/02), 24 February 2009, paras. 25-27.

protection law can be used as the relevant benchmark. The conduct is abusive if the dominant undertaking infringes data protection law. Failure to comply with data protection law shows that the dominant undertaking is collecting data illegally and that an equally efficient competitor cannot collect and use data without breaching the law. In that case, the practice is thus likely to foreclose equally efficient competitors.

47. In the Facebook case, if the authority shows that Facebook cannot collect, use and merge data from third-party sources without breaching data protection law, this indicates that an equally efficient competitor cannot do the same conduct without breaching data protection law as well.
48. In its guidance on exclusionary conduct, “[t]he Commission does not consider that is necessary to show that competitors have exited the market in order to show that there has been anti-competitive foreclosure”.⁴⁶⁷ Therefore, the authority does not have to prove the exclusion of rivals but only that the conduct reduces or is likely to reduce competition in the market.⁴⁶⁸ Hence, the Commission must only show that tipping occurs or is likely to occur as the result of the conduct.

3.3. Discriminatory abuse: personalized pricing to consumers

3.3.1. The legal principle

49. Big Data enables firms to offer personalized pricing to consumers by using the same technology and information as personalized ads.⁴⁶⁹ It is technically possible to set a price equals to the willingness to pay (WTP) of an individual consumer.⁴⁷⁰ The willingness to pay is defined as the maximum price that an individual is ready to pay to

⁴⁶⁷ Ibid, para. 69.

⁴⁶⁸ Ibid, para. 68.

⁴⁶⁹ Office of Fair Trading (OFT), *Personalised Pricing Increasing Transparency To Improve Trust*, May 2013, p. 14. In this report, personalized pricing refers to “the practice where businesses may use information that is observed, volunteered, inferred, or collected about individuals’ conduct or characteristics, to set different prices to different consumers (whether on an individual or group basis), based on what the business thinks they are willing to pay.” (p. 2)

https://webarchive.nationalarchives.gov.uk/20140402165101/http://oft.gov.uk/shared_oft/markets-work/personalised-pricing/oft1489.pdf

⁴⁷⁰ Ibid, p. 7.

acquire a good or service. In economics, the practice is called first price discrimination or perfect price discrimination. By setting a price p equals to the WTP ($p=WTP$) of each individual consumer, the firm absorbs all the consumer surplus (CS), namely the difference between the willingness to pay of an individual consumer and the actual price, and maximizes its producer surplus (PS). The consumer welfare in aggregate may be worse off compared to a situation of uniform price.

50. In the past, this kind of discrimination was purely theoretical due to the cost of implementation,⁴⁷¹ the data requirement and the perceive unfairness of such practice. Even today, firms have no desires to identify the WTP of individual consumers due to the potential adverse consumer reaction to the invasion of their privacy in order to target them with a personalized price even though the price might be lower than they would otherwise be with an uniform price p_u (in the situation where $WTP < p_u$).⁴⁷² Therefore, perfect price discrimination is not well widespread in practice but may become an issue in the future.⁴⁷³ It is worth noting that more acceptable practices similar to personalized pricing may occur with personalized discounts, which consist to set a uniform price but consumers receive personalized discounts and therefore they pay different and personalized prices, and with search discrimination or steering, which consist to display different products according to the willingness to pay of consumers.⁴⁷⁴ Personalized discounts and search discrimination fall outside the scope of this section.

⁴⁷¹ Ibid, p. 7.

⁴⁷² Ibid, p. 9. Note that the price may be higher than they would otherwise be with a uniform price p_u (in the situation where $WTP > p_u$)

⁴⁷³ Adlc and BKartA, *Competition Law and Data*, May 2016, p. 10.

see also OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018, pp. 14-17.

[https://one.oecd.org/document/DAF/COMP\(2018\)13/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)13/en/pdf)

See also, OECD, *Personalised Pricing in the Digital Era-Note by the European Union*, 23 November 2018, pp. 7-9.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)128/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)128/en/pdf)

⁴⁷⁴ OECD, *The regulation of personalised pricing in the digital era-Note by Marc Bourreau and Alexandre de Stree*, 21 November 2018, p. 3.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)150/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)150/en/pdf)

- 51.** In competition law and economics, the issue is particularly tricky and there is no easy answer to the question: Should perfect price discrimination fall within the scope of European competition law?
- 52.** Under the current European competition law standard, article 102(c) TFEU prohibits a dominant undertaking to “*appl[y] dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage*”. According to a strict interpretation of the text law, the practice is unlawful if four conditions are met: (i) the dominant undertaking applies dissimilar conditions such as a different price; (ii) the existence of equivalent transactions notably in terms of costs, (iii) a business-to-business relationship, namely a relationship between the dominant upstream firm and its downstream’s customers (secondary line injury);⁴⁷⁵ and (iv) the downstream’s customers are placing at a competitive disadvantage.⁴⁷⁶
- 53.** The latter condition has recently been clarified by the ECJ in *MEO-Serviços de Comunicações e Multimédia SA v Autoridade da Concorrência*.⁴⁷⁷ According to the Court:

“the concept of ‘competitive disadvantage’ [of article 102(c) TFEU] must be interpreted to the effect that, where a dominant undertaking applies discriminatory prices to trade partners on the downstream market, it

⁴⁷⁵ Akman, P., *To Abuse, or not to Abuse: Discrimination between Consumers*, CCP Working Paper No. 06-18; CCP Working Paper No. 06-18, 1st November 2006, p. 11. As opposed to primary line injury which harms the dominant undertaking’s competitors.

<https://ssrn.com/abstract=947573>

⁴⁷⁶ It is worth noting that, according to some authors, the practice can also be qualified as a form of excessive pricing since some consumers are charged higher price not based on costs. However, this may not be the right approach since some consumers are also charged lower price and the higher price may not be considered excessive according to the case-law on excessive pricing.

OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018, p. 28.

⁴⁷⁷ Case C-525/16-*MEO-Serviços de Comunicações e Multimédia SA v Autoridade da Concorrência*, ECLI:EU:C:2018:270, 19 April 2018.

<http://curia.europa.eu/juris/document/document.jsf?jsessionid=F2F1EB81BDCB36B5A5224CF24E36BFF1?text=&docid=201264&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=3173586>

*covers a situation in which that behaviour is capable of distorting competition between those trade partners.*⁴⁷⁸

- 54.** Thus, one needs only to prove the existence of a distortion of competition between those business partners, namely the practice prevents the competitive position of some dominant undertaking's customers in relation to the others⁴⁷⁹ on the downstream market due to the practice by the dominant upstream firm. This can be proven by *"all the circumstances of the case leading to the conclusion that that behaviour has an effect on the costs, profits or any other relevant interest of one or more of those partners, so that that conduct as to affect that situation"*.⁴⁸⁰ The circumstances to be taken into account by a court or an authority may include: (i) the undertaking's dominant position, (ii) the negotiating power as regards the tariffs, (iii) the conditions and arrangements for charging those tariffs, (iv) their duration and their amount, and (v) the possible existence of a strategy aiming to exclude from the downstream market one of its trade partners which is at least as efficient as its competitors.⁴⁸¹ The proof of actual quantifiable deterioration in the competitive environment is not required.⁴⁸²
- 55.** In the context of personalized pricing to final consumers, article 102(c) TFEU should not be applicable since the article only concerns the business partners on the downstream market of the dominant undertaking (secondary line injury). However, in practice, the Court broadens the article to competitors on the upstream market of the dominant undertaking (primary line injury)⁴⁸³ and even in the absence of competitive

⁴⁷⁸ Ibid, para. 37.

⁴⁷⁹ Ibid, para. 25.

⁴⁸⁰ Ibid, para. 37.

⁴⁸¹ Ibid, para. 31.

⁴⁸² Ibid, para. 37.

⁴⁸³ Ibid, para. 24. *"In accordance with the case-law of the Court, the specific prohibition of discrimination under subparagraph (c) of the second paragraph of Article 102 TFEU is intended to ensure that competition is not distorted in the internal market. The commercial behaviour of the undertaking in a dominant position may not distort competition on an upstream or a downstream market, in other words, between suppliers or customers of that undertaking."*

See for example, Case 85/76-*Hoffmann-La Roche & Co. AG v Commission of the European Communities*, ECLI:EU:C:1979:36, 13 February 1979. The dominant undertaking granted fidelity rebates to its customers in

disadvantage.⁴⁸⁴ Thus, as noted by Graef, “*there is no convincing reason at the outset to exclude its applicability to price discrimination between consumers*”.⁴⁸⁵ Moreover, the Commission notes about the article that the “*list of examples in Article 102 is merely indicative, not limitative, so one may take a broader view of the definition of an “abuse” than the strict drafting of those examples.*”⁴⁸⁶ Nonetheless, in the absence of a clear guidance by the Commission on non-exclusionary abuse by dominant undertakings and Court decisions, it remains unclear whether article 102(c) TFEU should protect final consumers⁴⁸⁷ and if it should, whether and how a competitive disadvantage between

order to motivate them to buy all or most of their requirements from the firm that hindered competitors on the upstream market.

⁴⁸⁴ Case C-27/76-*United Brands v Commission*, ECLI:EU:C:1978:22, 14 February 1978, paras. 233-234.

<http://curia.europa.eu/juris/showPdf.jsf?text=&docid=89300&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=3177830>

In that case, the dominant undertaking UBC charged different prices according to the Member State where its customers are established in the supply of bananas to ripeners/distributors. Competitors from various countries did not compete with each other, thus they cannot be at a competitive disadvantage.

Graef, I., *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, Columbia Journal of European Law, Vol. 24, No. 3, 2018, 19 December 2017, p. 8.

<https://ssrn.com/abstract=3090360>

According to some authors, the Court motivated its reasoning based on market partitioning concerns.

Case C-18/93-*Corsica Ferries Italia Srl contre Corpo dei piloti del porto di Genova*, ECLI:EU:C:1994:195, 17 May 1994, para. 45.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:61993CJ0018&from=EN>

In that case, the dominant undertaking applied different tariffs to maritime transport undertakings depending on whether they operate transport services between Member States or between national ports. The undertakings did not compete with each other, thus they cannot be at a competitive disadvantage.

⁴⁸⁵ Graef, I., *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, Columbia Journal of European Law, Vol. 24, No. 3, 2018, 19 December 2017, p. 8.

COMP/C-1/36.915-*Deutsche Post AG*, 25 July 2001, para. 133.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32001D0892&from=EN>

Note that in *Deutsche Post AG*, the Commission stated that “*this provision [article 102 TFEU] may be also be applied in situations where a dominant undertakings behaviour causes damage directly to consumers.*”

Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, p. 36.

<https://ssrn.com/abstract=3048688>

As argued by Townley et al, “*this would allow Art 102(c) to incorporate ACPD [Algorithmic Consumer Price Discrimination]*”

⁴⁸⁶ OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018, p. 9.

⁴⁸⁷ OECD, *Price discrimination-Background note by the Secretariat*, 13 October 2016, p. 16.

them has to be proven. A legal and economic test will be developed based on this complex issue.

3.3.2. *A case of personalized pricing to consumers*

- 56.** Price discrimination is a well-known economic situation “*which consists in charging different prices for similar products, for reasons not related to costs*”.⁴⁸⁸ Personalized pricing is a kind of price discrimination which can be defined as “*any practice of price discriminating final consumers based on their personal characteristics and conduct, resulting in prices being set as an increasing function of consumers’ willingness to pay*”.⁴⁸⁹ The economic literature is widely developed by both academics and organizations.⁴⁹⁰ In a nutshell, instead of charging a uniform price p_u , the firm charges a different price p to a group of consumers or even an individual user in order to maximize its profit. Four conditions are required to discriminate: (i) a downward sloping curve, (ii) barriers for arbitrage, namely the consumer who pays the lower price cannot resell the good to the consumer who has to pay the higher price (e.g. A student card may be required); (iii) the firm needs a way to estimate or identify a consumer’s valuation such as customer data given by the data subject or collected by using cookies, and (iv) some degree of market power.⁴⁹¹
- 57.** In economics, price discrimination can be classified in three degrees. The first one (also called perfect price discrimination) occurs when the firm knows all the information about an individual consumer and sets different prices equal to the willingness to pay of each consumer. In that particular situation, the firm absorbs all the consumer surplus and thus maximizes its profit.⁴⁹² The second one occurs when the firm knows the

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

⁴⁸⁸ OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018, p. 8.

⁴⁸⁹ Ibid, p. 9.

⁴⁹⁰ Pigou, A. C., *The Economics of Welfare*, 1920, chapter 17.

See also, Armstrong, M., *Price Discrimination*, October 2006.

https://mpr.aub.uni-muenchen.de/4693/1/MPRA_paper_4693.pdf

See also, OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018.

⁴⁹¹ OECD, *Price discrimination-Background note by the Secretariat*, 13 October 2016, p. 32. For more details about the mechanisms behind personalized pricing, see OECD, *Personalised Pricing in the Digital Era-Background Note by the Secretariat*, 20 November 2018, pp. 10-14.

⁴⁹² OECD, *Price discrimination-Background note by the Secretariat*, 13 October 2016, p. 7.

different willingness to pay on the population but cannot identify an individual consumer in particular. In that case, the firm sets a menu of prices for different versions of the product and the consumer will choose the version according to his or her preferences.⁴⁹³ This kind of discrimination may also involve a pricing scheme based on two-part tariffs—a fixed fee and a variable fee—which thus depends on the quantity bought. Finally, the third one occurs when the firm is able to identify a group of consumers on the population such as students and sets different prices for each group.⁴⁹⁴ In sum, data about an individual consumer is crucial for the firm to maximize its profit. The more it can collect information about its consumers, the more it can refine its prices near perfect price discrimination and thus maximize its profit by absorbing all the consumer surplus. This section focuses on perfect price discrimination.

- 58.** Even though, economists often consider perfect price discrimination as a pure theoretical scenario, nowadays, the technology to perfectly discriminate exists and thus the question whether perfect price discrimination might be harmful towards competition and consumer welfare should be raised.
- 59.** The effect of perfect price discrimination on consumer welfare is mainly negative.⁴⁹⁵ From a static standpoint, on one hand, the practice enables consumers with a willingness to pay lower than the uniform price to pay a lower price and thus they will be able to acquire the good. Moreover, since more consumers can buy the good, the number of transactions on the market increases compared to a situation of uniform price. Therefore, the total welfare (TW), the sum of the consumer surplus (CS) and producer surplus (PS), increases. On the other hand, consumers with a willingness to pay higher than the uniform price will pay a higher price. Furthermore, by setting a price p equals to the willingness to pay of each consumer, the firm absorbs all the consumer surplus. Thus, the consumer surplus is equal to zero and the firm maximizes its profit. Figure 7 shows the consumer surplus (CS) before and after perfect price discrimination in a monopoly situation.

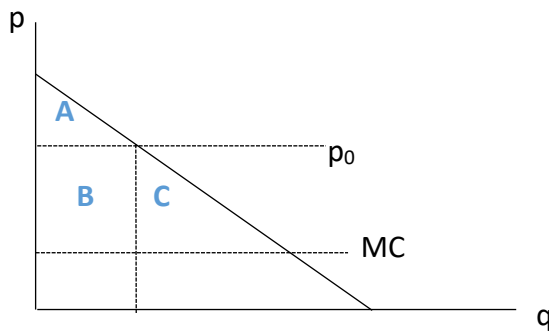
⁴⁹³ Ibid.

⁴⁹⁴ Ibid.

⁴⁹⁵ OECD, *Personalised Pricing in the Digital Era-Note by the European Union*, 23 November 2018, p. 5.

Figure 7: Consumer surplus (CS) before and after perfect price discrimination in a monopoly situation

CS before perfect price discrimination



CS after perfect price discrimination

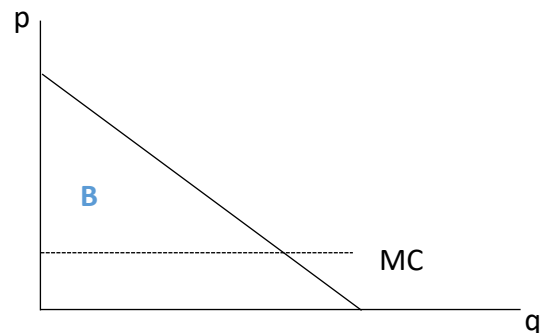


Chart legend

A: Consumer surplus **B:** Producer surplus **C:** Deadweight loss **MC:** Marginal cost

60. The overall effect depends on the competitive setting at issue.⁴⁹⁶ In a monopoly situation, there is only one firm that serves the entire market. In such a context, perfect price discrimination maximizes the TW. However, TW equals PS since CS is entirely absorbed by the monopolist. In a competitive situation, the effect on competition is ambiguous. On one hand, price discrimination may lead to more competition which benefits consumers since firms will have the incentive to discriminate among consumers in order to poach rival's consumers by setting a lower price to them.⁴⁹⁷ On the other hand, price discrimination may have a discouraging effect on entry by setting different prices in order to prevent a rival to enter in the downstream market.⁴⁹⁸ In any event, the price difference between firms will be probably lower in perfect price

⁴⁹⁶ Armstrong, M., *Price Discrimination*, October 2006.

⁴⁹⁷ Ibid.

⁴⁹⁸ Ibid. Margin squeeze is a well-known antitrust practice.

discrimination than any other kind of price discrimination or uniform price since firms are able to set a price equals (or at least near) to the willingness of each consumer.⁴⁹⁹

- 61.** From a dynamic standpoint, perfect price discrimination encourages firms to innovate and promotes rent-seeking activities since they can capture more profit.⁵⁰⁰ As regards the incentive to innovate, an innovator will only invest if it can capture enough profit to cover the costs of the investment. In a uniform price, the firm cannot capture the full value of the innovation. The firm can only recoup its costs from consumers with a willingness to pay higher than the uniform price. If the increased profit stemming from the innovation is not enough, the firm will not invest. In a personalized pricing scenario, the firm can capture the full or at least a greater value of the innovation. It can recover its costs from consumers with a willingness to pay lower than the uniform price and set a higher price to consumers with a high willingness to pay. Therefore, the firm can capture more profit to cover its costs. However, instead of investing in innovation, the firm can invest in rent-seeking activities to protect its position.
- 62.** Again the overall effect depends on the competitive setting at issue. In a monopoly situation, the monopolist captures the full value of the innovation. However, the increased profit can also be used in spending in lobbying. In a competitive situation, the firm will invest as long as the profit outweighs its costs. Rent-seeking activities are less likely if firms do not hold a certain degree of market power.⁵⁰¹ In both cases, personalized pricing thus increases the incentive to invest in innovation as the firm generates more profit.
- 63.** Finally, one of the most complex issue is whether the fairness issue should be incorporated into the theory of harm. After all, consumers generally dislike price discrimination due to fairness concerns.⁵⁰² Moreover, as argued by Townley et al,

⁴⁹⁹ Autoritat Catalana de la Competència (ACCO), *The Data-Driven Economy. Challenges For Competition*, November 2016, p. 30.

http://acco.gencat.cat/web/.content/80_acco/documents/arxiu/actuacions/Eco-Dades-i-Competencia-ACCO-angles.pdf

⁵⁰⁰ OECD, *Price discrimination-Background note by the Secretariat*, 13 October 2016, pp. 21-22.

⁵⁰¹ *Ibid.*

⁵⁰² Zuiderveen Borgesius, F. and Poort, J., *Online Price Discrimination and EU Data Privacy Law*, Zuiderveen Borgesius, F.J. & Poort, J. J Consum Policy (2017), July 2017, pp. 355-356.

fairness is a substantive goal of EU competition law as proved for instance by the wording of article 102(a) TFEU which prohibits “*unfair purchase or selling prices or other unfair trading conditions*” imposed directly or indirectly by a dominant undertaking.⁵⁰³ Therefore, fairness concerns will be included in the following legal and economic test.

3.3.3. *The legal and economic test*

- 64.** The practice can be implemented by both dominant and non-dominant undertakings.⁵⁰⁴ However, the concept of abuse of dominance only applies to dominant undertakings. Thus, the first condition of the test is that the undertaking under scrutiny must hold a substantial degree of market power (the dominant position condition).⁵⁰⁵
- 65.** The second condition of anti-competitive conduct (the abuse of dominance condition) is trickier and challenging for competition authorities to assess. As we have shown, perfect price discrimination enables firms to set a price p equals to the willingness to pay of each consumer. The consumer with a willingness to pay lower than the uniform price will pay a lower price and will be able to acquire the good. The consumer with a willingness to pay higher than the uniform price will pay a higher price. The firm will absorb all the consumer surplus. The TS will be maximized but the CS will be equal to zero. The goal of EU competition law is to protect competition from any practices that

<https://ssrn.com/abstract=3009188>.

See also, Graef, I., *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, Columbia Journal of European Law, Vol. 24, No. 3, 2018, 19 December 2017, pp. 17-18.

See also OECD, *Personalised Pricing in the Digital Era Background Note by the Secretariat*, 20 November 2018, pp. 23-26.

⁵⁰³ Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, pp. 39-44.

See also, EC, Speech, Margrethe Vestager *Competition and fairness in a digital society*, 22 November 2018.

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-fairness-digital-society_en

“I'd like to reassure you on this point - the concept of “fairness” in EU competition rules is as old as the competition rules themselves.”

⁵⁰⁴ Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, p. 13.

⁵⁰⁵ OECD, *Personalised Pricing in the Digital Era Background Note by the Secretariat*, 20 November 2018, p. 7.

can harm consumer welfare.⁵⁰⁶ Thus, it is the effect on consumer welfare as a whole and not total welfare that must be taken into account, in addition to the effect on competition.⁵⁰⁷ Hence, notwithstanding whether the practice benefits more to consumers with a willingness to pay lower than the uniform price, the fact that the consumer surplus (and thus the consumer welfare) will be equal to zero is enough to prove that the consumer welfare will be worse off than in a situation with a uniform price and thus the practice may be considered as anti-competitive.⁵⁰⁸ The effect on competition depends on the competitive setting at issue. In a monopoly situation, perfect price discrimination should always be banned since the consumer welfare is totally captured by the dominant undertaking. In a competitive situation, the dominant undertaking may engage in perfect price discrimination in order to prevent a rival to enter the market by setting a price below or equal to the marginal cost of the rival in order to poach the rival's consumers, namely those consumers with a willingness to pay lower than the uniform price of the dominant undertaking. This may also intensify competition between firms by setting different prices to consumers of the rivals in order to poach them.

- 66.** In complement, the test should also be based on non-economic grounds to prove the existence of competitive disadvantage as required by article 102(c) TFEU. This can be proven by *“all the circumstances of the case leading to the conclusion that that behaviour has an effect on the costs, profits or any other relevant interest of one or more of those partners, so that that conduct as to affect that situation”*.⁵⁰⁹ As such, the concept of fairness may be a relevant interest. Indeed, if discrimination between consumers is based on unfair conditions, consumers may be regarded as in a competitive disadvantage in relation to the others. However, a fairness assessment is a complex issue and may *“make it more difficult for undertakings to know whether their*

⁵⁰⁶ OECD, *Personalised Pricing in the Digital Era – Note by the European Union*, 23 November 2018, p. 5.

“But EU competition law is concerned with consumer welfare, not total welfare.”

⁵⁰⁷ Adic and BKartA, *Competition Law and Data*, May 2016, p. 22.

⁵⁰⁸ Townley, C. et al, K., *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, pp. 21-22.

⁵⁰⁹ Case C-525/16-MEO-Serviços de Comunicações e Multimédia SA v Autoridade da Concorrência, ECLI:EU:C:2018:270, 19 April 2018, para. 37.

conduct complies with competition rules".⁵¹⁰ To overcome this issue, one may use non-price parameters of competition as a benchmark. Privacy is a non-price parameter of competition and plays an important role in personalized pricing, which depends on the collection and processing of user data. Thus, data protection/privacy law is again a useful benchmark.⁵¹¹ If the practice breaches data protection/privacy law (and especially the rules relating to profiling and consent) to discriminate among consumers, the practice may be considered as anti-competitive. Moreover, perfect price discrimination may be based on criteria protected by non-discrimination law such as sex or nationality and consumers may be at a competitive disadvantage in relation to the others as regards those criteria. For instance, a consumer from a rich country may be regarded as having a higher willingness to pay than a consumer from a poor country. Thus, if the practice breaches non-discrimination law, the practice may also be considered as anti-competitive.⁵¹² Some authors even argue the risk of a lack of transparency if firms discriminate without informing consumers about the practice and the criteria used to discriminate since this may undermine trust in online markets and thus consumers may become more reluctant to make purchases.⁵¹³ As such, Townley et al consider that this lack of transparency should be treated as *prima facie* abusive that reduces consumer welfare and undermines fairness.⁵¹⁴ It is worth noting that

⁵¹⁰ Copenhagen Economics, *Digital Competition And Price Differentiation, Summary*, A conference hosted by the Danish Competition and Consumer Authority and Copenhagen Economics, 19 June 2017.

<https://www.copenhageneconomics.com/dyn/resources/Filelibrary/file/1/71/1499068255/summary-19-june.pdf>

⁵¹¹ Zuiderveen Borgesius, F. and Poort, J., *Online Price Discrimination and EU Data Privacy Law*, Zuiderveen Borgesius, F.J. & Poort, J. *J Consum Policy* (2017), July 2017, p. 358.

"Hence, EU data protection law applies to most if not all types of personalized pricing, because most personalized pricing entails the processing of personal data. The fact that data protection law applies does not imply that processing personal data is prohibited. But, if a company processes personal data, it must comply with the data protection rules. For instance, the company may only process personal data fairly, lawfully, and transparently."

⁵¹² Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, p.49.

⁵¹³ OFT, *Personalised Pricing Increasing Transparency To Improve Trust*, May 2013, p. 20.

See also, Graef, I., *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, *Columbia Journal of European Law*, Vol. 24, No. 3, 2018, 19 December 2017, p. 18.

⁵¹⁴ Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017, p. 50.

personalized pricing can also be addressed solely by consumer protection and data protection laws.

67. In sum, personalized pricing must be assessed on a case-by-case basis since the effects of personalizing pricing are ambiguous (depends on the level of personalization and the competitive environment at issue),⁵¹⁵ and be addressed by competition, consumer protection, data protection and anti-discrimination laws, which requires an active cooperation among competition, consumer and data protection agencies.⁵¹⁶

4. Collusion

68. “*Algorithms and collusion*” is a hot topic in the antitrust sphere among academics, practitioners and competition agencies. Algorithms can facilitate collusion between firms in the market either as a mean to implement and monitor the anti-competitive outcome (explicit collusion) or as a tool to tacitly collude without human intervention (tacit collusion). To the best of our knowledge, there is currently evidence of explicit collusion⁵¹⁷ but not of tacit collusion. The current legal framework is able to catch the

⁵¹⁵ OECD, *Personalised Pricing in the Digital Era Background Note by the Secretariat*, 20 November 2018, p. 28.

⁵¹⁶ Ibid, p. 7.

⁵¹⁷ National Commission on Markets and Competition (CNMC), Press release, *The CNMC is investigating potential anti-competitive practices in the real estate brokerage market*, 21 November 2019 (accessed 29 January 2020)

https://www.cnmc.es/sites/default/files/editor_contenidos/Press%20Release.pdf

EC, Press release, *Antitrust: Commission fines four consumer electronics manufacturers for fixing online resale prices*, 24 July 2018 (accessed 29 November 2018).

http://europa.eu/rapid/press-release_IP-18-4601_en.htm

CMA, Press release, *Online seller admits breaking competition law*, 21 July 2016 (accessed 29 November 2018).

<https://www.gov.uk/government/news/online-seller-admits-breaking-competition-law>

CMA, Press release, *CMA issues final decision in online cartel case*, 12 August 2016 (accessed 29 November 2018).

<https://www.gov.uk/government/news/cma-issues-final-decision-in-online-cartel-case>

The U.S. Department of Justice, Press release, *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution*, 6 April 2015 (accessed 29 November 2019).

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

former since the algorithm is just a mean to implement the collusive outcome defined by humans but it is ill-suited to capture the latter. Thus, in the absence of new antitrust challenges for explicit collusion, this section only focuses on tacit collusion. From an economic, legal and informatics standpoint, the topic is highly complex, so we will study it on a step by step basis by identifying first (i) the use of algorithms in the digital economy, then (ii) the use of algorithms for collusive outcome, and finally (iii) the adaptation of competition law to algorithmic tacit collusion.

4.1. The use of algorithms in the digital economy

69. The use of algorithms plays a substantial role in the digital economy. An algorithm is defined as “any well-defined computational procedure that takes some value, or set of values, as input and produces some value, or set of values, as output.”⁵¹⁸ The data is the essential input to feed the algorithm.⁵¹⁹ In the world of artificial intelligence, where the algorithm self-learn to produce or improve its output, the more data it receives, the more intelligent it grows.⁵²⁰ Big Data and algorithms are thus closely linked.
70. In the data-driven economy, algorithms offer pro-competitive effects on the supply side (e. g. improve services, develop new services) and demand side (e.g. classify existing information, provide new information).⁵²¹ However, algorithms may have anti-competitive effects by reaching a collusive outcome more easily and more sustainable than a classical one with human intervention. In particular, the development in artificial

⁵¹⁸ Cormen et al, *Introduction to Algorithms (Second Edition)*, MIT Press, 2001, p. 10.

<http://web.ist.utl.pt/~fabio.ferreira/material/asa/clrs.pdf>

⁵¹⁹ CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, 8 October 2018, p. 15.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746353/Algorithms_econ_report.pdf

⁵²⁰ European Commission, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 29 November 2018).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-fairness-digital-society_en

⁵²¹ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp. 14-15.

<http://www.oecd.org/daf/competition/Algorithms-and-collusion-competition-policy-in-the-digital-age.pdf>

intelligence (AI), machine learning (ML) and deep learning (DL)⁵²² may pose some tricky issues to competition enforcers due to the ability of algorithms to learn by themselves and thus to execute a task without human orders and bias. The programmer will only design the algorithm to reach a particular outcome such as maximizing the profit of the firm. Then, the algorithm will self-learn how to do so without being explicitly programmed to follow a particular way like tacitly colluding with competitors.

71. The increasing use of algorithms in the digital economy has been identified in numerous studies. In its 2017 final report on the E-commerce inquiry, the European Commission underlined that:

“Third, increased price transparency allows companies to monitor more easily their prices. A majority of retailers track the online prices of competitors. Two thirds of them use automatic software programmes that adjust their own prices based on the observed prices of competitors. With pricing software, detecting deviations from ‘recommended’ retail prices takes a matter of seconds and manufacturers are increasingly able to monitor and influence retailers’ price setting. The availability of real-time pricing information may also trigger automatised price coordination. The wide-scale use of such software may in some situations, depending on the market conditions, raise competition concerns.”⁵²³

⁵²² Ibid, pp. 8-11. Artificial intelligence (AI) refers to the field of computer science that studies and designs intelligent machines. Machine learning (ML) is a subfield of AI that designs intelligent machines to self-learn from data and experience, especially through trial and error. Deep learning (DL) is a subfield of ML that enables intelligent machines to learn faster and more accurately by replicating the activity of human neurons through an artificial neural network.

⁵²³ EC, *report from the commission to the council and the european parliament, Final report on the E-commerce Sector Inquiry {SWD(2017) 154 final}*, 10 May 2017, para. 13. See also, para. 33.

http://ec.europa.eu/competition/antitrust/sector_inquiry_preliminary_report_en.pdf

“Both manufacturers and retailers frequently monitor online retail prices, often by means of pricing software. As a result, it is now easier to detect deviations from manufacturers’ pricing recommendations. This could allow manufacturers to retaliate against retailers that deviate from the desired price level. It may even limit the incentives for retailers to deviate from such pricing recommendations in the first place. Increased online price transparency may also facilitate or strengthen collusion between retailers by making it easier to detect

72. In a 2018 economic paper on the use of algorithms, the Competition and Markets Authority (CMA) identified that:

“We have found evidence of widespread use of algorithms to set prices particularly on online platforms. For example, many sellers on Amazon use pricing algorithms. As well as simple pricing rules provided by the platforms themselves, some third-party firms sell more sophisticated pricing algorithms to retailers or directly take on the role of pricing using computer models on behalf of their clients.”⁵²⁴

73. These studies show that pricing algorithms are able to automatically monitor and adjust their prices to the online prices of competitors. In other words, algorithms are able to tacitly collude. However, despite the extensive economic literature based on experiments on whether algorithms can reach and sustain a collusive outcome, there is currently no consensus about this issue.⁵²⁵ Given the already broad studies and the development in AI, a new simulation to support evidences of sustainable tacit collusion is beyond the scope of this paper. Instead, we present some solutions to tackle algorithmic tacit collusion under the scope of competition law.

4.2. The use of algorithms for collusive outcome

74. The use of algorithms in the digital economy raises competition issues that are mainly not new to online markets. Algorithmic tacit collusion poses classical challenges of definition, factors and theories of harm of collusion. These topics are already well-

deviations from the collusive agreement. This, in turn, could reduce the incentives for retailers to deviate from the collusive price by limiting the expected gains from such deviation.”

⁵²⁴ CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, 8 October 2018, p. 3.

⁵²⁵ *Ibid*, pp. 32-35.

See also, Calvano, E. et al, *Algorithmic Pricing: What Implications for Competition Policy?*, 7 July 2018.

<https://ssrn.com/abstract=3209781>

See also, Calvano, E. et al, *Artificial Intelligence, Algorithmic Pricing and Collusion*, 1st April 2019.

<https://ssrn.com/abstract=3304991>

See also, Adlc and BKartA, *Algorithms and Competition*, November 2019.

<https://www.autoritedelaconurrence.fr/sites/default/files/algorithms-and-competition.pdf>

established in the law and economic literature in different jurisdictions. As a basis of comprehension for further developments, this section reminds the definition of collusion, with a particular focus on European competition law, the factors of collusion notably in relation to online markets, and theories of harm of algorithmic tacit collusion.

4.2.1. *Definition of collusion*

- 75.** A collusion can be defined as a coordination among competitors which can be achieved with or without the need of an explicit agreement by different means (e.g. fixing price, output, market shares, or the level of innovation on the market) in order to raise a profit higher than the non-cooperative outcome to the detriment of consumers. In the literature, three conditions have to be present to reach and sustain a collusive outcome: (i) a common policy; (ii) a mean to monitor the adherence to this common policy; and (iii) a punishment mechanism, namely a retaliation, in case of deviation to the common policy by one participant.⁵²⁶ So, as a general matter, there is a distinction between explicit collusion and tacit collusion.
- 76.** Explicit collusion- or cartel- refers to an anti-competitive oral or written agreement between competitors to reach the collusive outcome. Firms interact directly between them to implement, monitor and to punish a deviation. In most jurisdictions, explicit collusion is prohibited *per se*. In EU competition law, article 101(1) TFEU prohibits such agreements.
- 77.** Tacit collusion-or conscious parallelism- refers to an anti-competitive coordination between competitors without an explicit agreement. Firms do not interact directly but they recognize their mutual interdependence to achieve the collusive outcome. Tacit collusion is not prohibited *per se* since market participants are free to adapt intelligently their strategic decisions to the existing or anticipated conduct of their competitors.⁵²⁷

⁵²⁶ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 19.

See also, OECD, *Glossary Of Industrial Organisation Economics And Competition Law*, 1993, p. 20.

⁵²⁷ Case C-8/08-T-Mobile Netherlands BV and Others v Raad van bestuur van de Nederlandse Mededingingsautoriteit, ECLI:EU:C:2009:343, 4 June 2009, para. 33.

<http://curia.europa.eu/juris/document/document.jsf?text=&docid=74817&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=605599>

In EU competition law, article 101(1) TFEU prohibits tacit collusion under the concept of concerted practice if certain conditions are met. The European Court of Justice requires three conditions: (i) participants are concerting with each other; (ii) a subsequent conduct on the market following this concertation; and (iii) a relationship of cause and effect between the two elements⁵²⁸ proven by “*a number of coincidences and indicia which, taken together, may, in the absence of another plausible explanation, constitute evidence of an infringement of the competition rules*”.⁵²⁹ The coincidences are called “plus factors” such as communications or information exchanges.⁵³⁰

78. In sum, a collusion is prohibited if firms do not act independently on the market by direct (explicit) or indirect (tacit) contact. It is worth noting that in some jurisdictions, collusion may be exempted from an infringement if the coordination between competitors benefits consumers such as a research and development program allowing participants to develop a new product to the benefit of consumers. In EU competition law, article 101(3) TFEU provides such exemption.

4.2.2. Factors of collusion

79. Regardless of whether firms coordinate explicitly or tacitly, collusion is likely to be sustainable if certain factors are present. Factors of collusion has been studied

“While it is correct to say that this requirement of independence does not deprive economic operators of the right to adapt themselves intelligently to the existing or anticipated conduct of their competitors, it does, none the less, strictly preclude any direct or indirect contact between such operators by which an undertaking may influence the conduct on the market of its actual or potential competitors or disclose to them its decisions or intentions concerning its own conduct on the market where the object or effect of such contact is to create conditions of competition which do not correspond to the normal conditions of the market in question, regard being had to the nature of the products or services offered, the size and number of the undertakings involved and the volume of that market”.

⁵²⁸ Case C-74/14-“*Eturas*” UAB and Others v Lietuvos Respublikos konkurencijos taryba, ECLI:EU:C:2016:42, 21 January 2016, para. 42.

<http://curia.europa.eu/juris/document/document.jsf?text=&docid=173680&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=1938288>

See also, Case C-8/08-*T-Mobile Netherlands BV and Others v Raad van bestuur van de Nederlandse Mededingingsautoriteit*, ECLI:EU:C:2009:343, 4 June 2009, para. 51.

⁵²⁹ Case C-74/14-“*Eturas*” UAB and Others v Lietuvos Respublikos konkurencijos taryba, ECLI:EU:C:2016:42, 21 January 2016, para. 36.

⁵³⁰ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 20.

extensively in the economic literature in offline and online markets.⁵³¹ Giving a full summary of each factor of collusion is beyond the scope of this paper given the large number of factors. Instead, from our review of this literature, we will focus on some factors which are particularly relevant to cases of algorithmic tacit collusion.

80. In the digital economy, a simple consumer can observe that the market is transparent (e.g. prices are readily available) and that interactions are frequent (e.g. prices can change in real time in a matter of seconds). These characteristics-market transparency and frequency of interaction-are due to two elements. First, the “Big Data” phenomenon, namely the availability on the market of a colossal amount (volume) of data on a wide range of features (variety) at a very high speed (velocity) which are highly valuable (value) to market participants. Second, the development of algorithms, not necessarily complex, that collect real-time data to adjust automatically and immediately at a low cost its prices to the online prices of its rivals, and to observe demand and supply side characteristics and to react rapidly to any market changes. All the data are not only freely available to consumers but also to market participants. Given that it is technically possible to automatically monitor the price of its competitors without human intervention by using a simple algorithm, firms have the incentive to do so in order to reach a supra-competitive outcome. As noted by the OECD, as soon as some participants invest in pricing algorithms, the remaining players have the incentive to do the same in order to not be at a competitive disadvantage. As a result, “[...] *all market participants constantly collect and observe in real-time rivals’ actions, consumers’ choices and changes in the market environment, creating thus a transparent environment that is prone to collusion.*”⁵³²

81. Transparency is a well-known structural factor of collusion. A collusion is more sustainable in a transparent market since participants can monitor more easily the

⁵³¹ Ivaldi, M. et al, Final Report for DG Competition, European Commission, *The Economics of Tacit Collusion*, March 2013.

http://ec.europa.eu/competition/mergers/studies_reports/the_economics_of_tacit_collusion_en.pdf

See also, OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp. 20-24.

See also, CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, pp. 28-30 and pp. 47-49.

See also, Adlc and BKartA, *Algorithms and Competition*, November 2019, pp. 15-26.

⁵³² OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 22.

adherence to the common policy and detect and punish any deviation from the agreement or concerted practice. In the digital economy, thanks to Big Data and pricing algorithms, the market tends to be perfectly transparent and thus collusion is more likely to be sustainable than in traditional markets.⁵³³

82. The frequency of interaction is also an important factor of collusion. Regular and frequent exchanges enable participants to detect and timely punish any deviation from the agreement. In the digital economy, firms can observe in real-time rivals' actions and therefore to react immediately to a deviation by imposing a retaliation. The OECD even argues that ML algorithms are able "*to accurately predict rivals' actions and to anticipate any deviations before they actually take place*".⁵³⁴ Moreover, pricing algorithms are able to learn whether a deviation from the common policy is due to a change in market conditions (e.g. shocks in demand) or whether the deviation is due to cheating from the agreement in order to make a higher profit. Contrary to humans, pricing algorithms are thus able to avoid unnecessary punishments in case of changes in the market environment.⁵³⁵ The frequency of interaction not only reduce the incentive to deviate due to the risk of immediate retaliation but also because rivals can match almost instantaneously the competitors' price reducing to nearly zero the short-term benefit from a lower price.⁵³⁶ In the extreme case of immediate response, there is no benefit to deviation from the collusive outcome and thus the collusion is sustainable.

83. In sum, in a perfectly transparent market with frequent interaction and immediate response to any competitors' actions and in which pricing algorithms are not only able to monitor and analyze the market but also to predict the rivals' responses, collusion will always be sustainable notwithstanding other factors of collusion since firms can agree more easily on a common policy thanks to market analysis and prediction and cannot deviate from this outcome due to immediate retaliation. This result has been proven mathematically by the OECD by using a simple model.

⁵³³ Ibid, pp. 21-22.

⁵³⁴ Ibid, p. 22.

⁵³⁵ Ibid, p. 22.

⁵³⁶ CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, pp. 47-48.

“The consequence from this model is the following: if markets are sufficiently transparent and firms can adjust their decisions very fast, for instance by changing prices in real time, collusion is always sustainable, regardless of the potential counter-balancing effect of other factors, such as the number of firms in the industry or the risk that innovations will disrupt the market in the future. The intuition for this result is straightforward, as the combination of perfect market transparency with very frequent interaction entirely eliminates the profitability of deviations, which can be easily identified and immediately retaliated.”⁵³⁷

- 84.** In traditional markets, structural characteristics (number of firms, entry barriers), demand factors (demand elasticity, demand shocks, buyer power, shopping around) and supply factors (product homogeneity, asymmetry, innovation) may have significant positive or negative effects on collusion. In the digital economy, the impact on these factors is either ambiguous, neutral, positive or negative.⁵³⁸
- 85.** Structural characteristics play generally a substantial role on the ease to sustain a collusive outcome. It is well-argued in the economic literature that low number of firms and high entry barriers facilitate collusion. Indeed, it is easier to agree on a common policy, to monitor and implement a punishment in a concentrated market than in a less-concentrated one and high entry barriers prevent a potential entrant to break the collusive outcome. However, in the digital economy, these features are less relevant than in traditional markets since self-learning algorithms are able to monitor, analyze and predict rivals' actions and market conditions regardless the number of firms in the market (indeed, algorithms can collect and process almost unlimited data) and can react immediately to any market entries. The current literature on algorithmic collusion is on little help to conclude to a non-ambiguous answer since the importance of these factors depends on the performance of the pricing algorithms used to reach and sustain a collusive outcome. With the advance in AI, it is not inconceivable that structural factors will play an insignificant role in the future.

⁵³⁷ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 24.

⁵³⁸ Adic and BKartA, *Algorithms and Competition*, November 2019, pp. 17-19.

- 86.** Demand factors have in traditional markets an impact on collusion. The high demand elasticity, the high buyer power, the positive shock in demand and the possibility to shop around by consumers discourage collusion since participants have the incentive to deviate in order to capture the demand. In the digital economy, algorithms are again able to analyze and predict market conditions and thus to adjust immediately a common policy to any changes in demand. Comparison websites and the use of algorithms by consumers to form buying groups or to buy a product at a specific period does not affect collusion (or in the case of comparison websites may even facilitate collusion). Indeed, comparison websites only collect price on market participants and make the market more transparent and thus more prone to collusion. The use of algorithms by consumers may potentially affect market demand but the use of algorithms by firms can analyze in real time this impact and adapt the common policy to such change. Even though a participant would have the incentive to deviate due to a powerful buyer power, the risk of immediate retaliation eliminates entirely the benefit from deviation. Therefore, demand factors have a neutral impact on collusion in the digital economy.
- 87.** Supply factors have in traditional markets a leading role in the sustainability of the collusive outcome. Indeed, product heterogeneity, asymmetry (in market shares, capacities, varieties and costs) and innovation may prevent competitors to agree on a common policy since their products and assets are different. In the presence of an unbalanced agreement among participants, collusion may not be sustainable since a participant will always have an incentive to deviate by supplying a better offer than the collusive one. In the digital economy, regardless of the performance of the algorithms used to collude, algorithms will face exactly the same problems as humans to reach an agreement since supply factors are independent to algorithms but only depend on the participants to the collusive outcome. Moreover, in a perfectly transparent market, algorithms can adjust their strategies by analyzing and predicting the assets and the distribution of assets in the market which may facilitate (in case of equal distribution) or discourage (in case of unequal distribution) collusion. Therefore, supply factors have an ambiguous or a negative impact on collusion.
- 88.** In sum, as in traditional markets, a common policy has to be reached among algorithms. The difficulty to reach a collusive outcome due to differences in supply factors may substantially prevent the sustainability of the collusive outcome whereas demand factors play an insignificant role in the digital economy. As the same time, as the result of

the availability of data and the use of pricing algorithms, the market is transparent and the interaction are frequent which eliminate the benefit of deviation owing to immediate retaliation.

4.2.3. *Theories of harm of algorithmic tacit collusion*

89. The economic literature has already identified several theories of harm of algorithmic tacit collusion. In a 2015 famous paper, professors Ezrachi and Stucke described for the first time, three ways in which algorithms can serve to tacitly collude: hub and spoke; predictable agent; and autonomous machine.⁵³⁹ Two years after, in 2017, the OECD detailed the role of algorithms to reach a collusive outcome.⁵⁴⁰ This section summarizes these findings.⁵⁴¹

90. The first scenario is not exclusive to digital markets. In the hub and spoke, competitors (spokes) communicate indirectly through a common intermediary (the hub) active in another relevant market to determine the common policy. In the digital economy, the hub-and-spoke scenario may happen when rivals use a common pricing algorithm or, to delegate their pricing decisions, a common intermediary which provides pricing services by using the same pricing algorithm. However, the fact that firms use the same pricing algorithm or the same intermediary is not sufficient to establish a tacit collusion. Indeed, competitors may not be aware that they are using the same pricing algorithm or the same intermediary. In such case, a tacit collusion outcome may occur unintentionally. A collusion is only prohibited if there is at least an intention to set a common policy.

91. The predictable agent is a very simple scenario in which the programmer designs the pricing algorithm to execute a rule in a predictable way such as matching price of rivals.

⁵³⁹ Ezrachi, A. and Stucke, M. E., *Artificial Intelligence & Collusion: When Computers Inhibit Competition*, University of Illinois Law Review, Vol. 2017, 2017; Oxford Legal Studies Research Paper No. 18/2015; University of Tennessee Legal Studies Research Paper No. 267, 8 April 2015.

<https://ssrn.com/abstract=2591874>

⁵⁴⁰ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp. 25-32.

⁵⁴¹ See also, Adlc and BKartA, *Algorithms and Competition*, November 2019, pp. 26-52. The Adlc and BKartA examined the use of algorithms in three scenarios: (i) algorithms as supporters or facilitators of “traditional” anticompetitive practices; (ii) algorithm-driven collusion between competitors involving a third-party; and (iii) collusion induced by the (parallel) use of individual algorithms.

The algorithm will be able to monitor the market, follow the rule and apply a retaliation in case of deviation. A tacit collusion may occur if the pricing algorithm's behavior can be easily recognized by rivals. In this scenario, the programmer explicitly designs the algorithm to tacitly collude.

- 92.** The autonomous machine is a scenario in which the programmer designs the pricing algorithm to reach an outcome such as maximizing the profit of the firm. The algorithm will self-learn to reach this outcome. A tacit collusion may occur if the algorithm considers that such outcome is a profit-maximizing strategy. In this scenario, contrary to the predictable agent, the programmer does not explicitly design the algorithm to tacitly collude but the algorithm will learn by itself to tacitly collude with competitors.
- 93.** The ways in which algorithms can perform these scenarios are very straightforward. Programmers may design, explicitly or not, algorithms in such a way that they are able to agree on a common policy by signaling an intention to collude with competitors (signaling algorithms); to implement the common policy through parallel behavior (parallel algorithms); to monitor the implementation of the agreement by collecting in real time data on the market; and to detect and punish in real time any deviation from the collusive outcome (monitoring algorithms). Finally, ML and DL algorithms can achieve and sustain a collusive agreement among competitors without being explicitly programmed to do so and without the firms being aware of it (self-learning algorithms).
- 94.** In conclusion, these theories of harm pose some complex issues for competition enforcers to tackle these anti-competitive practices and to detect algorithmic tacit collusion, especially if algorithms are not explicitly designed to achieve a collusive outcome. In this latter scenario, the programmer is not even aware of the tacit collusion. Therefore, a new antitrust toolbox is urgently needed.

4.3. The adaptation of competition law to algorithmic tacit collusion

- 95.** Competition law is already well-equipped to tackle and detect different scenarios of explicit collusion. Indeed, the law only prohibits the mean to achieve a collusive outcome such as an exchange of information among competitors on future price, but

not the outcome in itself.⁵⁴² Accordingly, most antitrust cases prosecute an agreement regardless of the effect on the market (restriction by object). These (explicit) hard-core cartels, either implemented by humans or algorithms, are *per se* prohibited and heavily fined by competition authorities. However, when it comes to tacit collusion, regulators face a hard-time to find evidences of a coordination and to detect such concerted practices.

96. The law and economics literature on tacit collusion is not new.⁵⁴³ However, the topic has revived in the antitrust sphere with the availability of big data and the widespread use of algorithms that may replace explicit collusion with tacit collusion.⁵⁴⁴ Two challenges have been identified: the notion of tacit collusion; and the antitrust tools to detect such coordination. Without an adaption, algorithmic tacit collusion does not currently fall within the scope of competition law.⁵⁴⁵

4.3.1. *The notion of tacit collusion*

97. The current definition of tacit collusion defined above may be able to tackle some forms of implicit coordination under EU competition law. However, the legal test is so demanding that tacit collusion is, in practice, rarely fined by the Commission or the Court. Tacit collusion is likely to be more frequent in the future. Therefore, a new legal test with less restrictive conditions is needed to address competition concerns related to algorithmic tacit collusion. Broadly speaking, tacit collusion is the following of a behavior based on commercially sensitive information such as price resulting in the reaching of a collusive outcome without explicit agreement among competitors. Two elements play a substantial role in the implementation and monitoring of such practice: (i) the following of a behavior; and (ii) commercially sensitive information. This section

⁵⁴² OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 19.

⁵⁴³ Indeed, tacit collusion is debated in the literature concerning “oligopoly”, “oligopoly behavior” and “oligopoly coordination”. Oligopolies are characterized by mutual interdependence in which firms on the market follow rivals’ actions. In other words, oligopolies markets are prone to tacit collusion.

⁵⁴⁴ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, p. 25.

⁵⁴⁵ See also, Adlc and BKartA, *Algorithms and Competition*, November 2019, p. 56. Note that the Adlc and BKartA considered that “it is yet to be seen whether (legal) parallel behavior will increase in the future and thus seems too early to think about an expanded application of Art. 101 TFEU at this stage.”

offers an alternative to tackle tacit collusion under competition law based on these two elements.

- 98.** First, the following of a behavior is deemed illegal if firms pursue (intentionally or voluntary) any forms of invitation, namely a signal, that is not rational in a competitive market such as an offer to increase price. Indeed, in a competitive market, a firm can make a higher (short-term) profit by undercutting its price compared to those of its rivals, unless market participants decide to collude to achieve a supra-competitive strategy and to maximize their joint-profit.
- 99.** Second, commercially sensitive information refers to all commercial information that are publicly or not publicly available. In this regard, the current legal approach on information exchanges between competitors (including actual and potential competitors, and through third parties such as trade union and consultancy firms) can serve as a basis to define which kind of information can be shared legally among rivals.⁵⁴⁶ In the EU, the Commission assesses them on a case-by-case basis according to the guidelines on the applicability of Article 101 TFEU to horizontal co-operation agreements.⁵⁴⁷ There is no list of types of information that are legally or illegally. However, it is possible to identify which information is likely or unlikely to be prohibited. After the assessment, two situations shall be distinct. The information exchange is permissible, and the information exchange is impermissible. Therefore, in the former case, the first condition has to be proven (necessary but not sufficient condition) whereas in the latter case, the first condition must not be proven (necessary and sufficient condition) since the exchange is already deemed illegal regardless of whether firms pursue any forms of invitation to collude.

⁵⁴⁶ OECD, *Information Exchanges between Competitors under Competition Law*, 2010.

<https://www.oecd.org/daf/competition/cartels/48379006.pdf>

⁵⁴⁷ EC, *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (2011/C 11/01)*, 14 January 2011.

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114\(04\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114(04)&from=EN)

See also, Wood, D. and Healy, M., *Information Exchange Europe Union*, GCR, 21 March 2018 (accessed 22 December 2018).

<https://globalcompetitionreview.com/jurisdiction/1003168/european-union>

100. Under this frame, the hub-and-spoke scenario shall be prohibited as soon as competitors set a common policy (e.g. price) based on unlawful information exchanges. If the information exchange is deemed lawful, an intention (or awareness) to use the same algorithm or the same intermediary must be proven, in addition to the intent to pursue an irrational behavior defined by the hub. The predictable agent now falls within the scope of competition law if the programmer intentionally designs the algorithms: to monitor sensitive data (monitoring algorithms); to signal an irrational behavior (signaling algorithms); and to follow this irrational behavior (parallel algorithms), even if based on lawful information exchanges. However, it would appear difficult to categorize the autonomous machine scenario as illegal since the programmer does not intentionally design the algorithm to tacitly collude and the firms are not even aware of how the algorithms have reached and implemented the collusive outcome.

4.3.2. Antitrust toolkit to detect algorithmic tacit collusion

101. Aside to a revisited notion of tacit collusion to tackle algorithmic tacit collusion under competition laws, regulators need the right toolkit to detect such coordination. Currently, competition authorities have ex-ante and ex-post solutions to avoid the formation of a cartel and to break up an existing cartel.

102. An ex-ante intervention enables a competition authority to detect and eventually to prevent the formation of a cartel. The current toolbox includes three main ways: (i) deterrence (close monitoring of a particular sector through a market study; high fines; criminal sentences); (ii) list of hard-core restrictions such as Resale Price Maintenance (RPM);⁵⁴⁸ and (iii) merger analysis to assess whether a potential transaction might facilitate a collusion in the market. In the digital economy, these tools may not be as efficient as in traditional markets.

103. Deterrence is powerful if the sector is not fast-moving and if and only if a liability can be assigned to a human and a firm. A market study is undertaken to understand a

⁵⁴⁸ EC, Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices, 23 April 2010, art. 4.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0330&from=EN>

particular sector of the economy. Following this in-depth investigation, the regulator can address competition concerns through recommendations to market participants and for the government, as well as the opening of formal investigations.⁵⁴⁹ For instance, The CMA has published a study on pricing algorithms⁵⁵⁰ and the German and French competition authorities a joint report on algorithms and Competition.⁵⁵¹ However, in a fast-moving market with rapid innovation cycles and development in AI, a market study may only provide insights and solutions for the short-run but not for the long-run. In the digital economy, a market study can only be an efficient tool if the study is updated on a permanent basis. This can be resource intensive and time consuming for the regulator. Moreover, deterrence is useful if a liability of an anticompetitive practice can be attributed to a human and a firm. Indeed, knowing the potential high fines and the possibility to be in prison as in the US, a human or an undertaking may be discouraged to engage in an antitrust practice. The latter can be liable if it programs and uses the pricing algorithm to explicitly or tacitly collude. The Commission warns firms that *“companies cannot hide behind algorithms. Practices that are illegal offline will likely be just as illegal when implemented through algorithms”*.⁵⁵² Nonetheless, in digital markets, where a collusion can be made autonomously among machine learning algorithms (and especially among deep learning algorithms) without human intervention and without awareness by the programmer/firm, the antitrust liability is still an open question that is beyond the scope of this paper.⁵⁵³ If the liability is

⁵⁴⁹ For instance, see ADLC, Press release, *Sector-specific investigation into online advertising*, 6 March 2018 (accessed 27 December 2018).

http://www.autoritedelaconurrence.fr/user/standard.php?id_rub=684&id_article=3133&lang=en

⁵⁵⁰ CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, 8 October 2018.

⁵⁵¹ Adlc and BKartA, *Algorithms and Competition*, November 2019,

⁵⁵² EC, Speech, Johannes Laitenberger, *Enforcing EU competition law-recent developments and a glance to the future*, CMS EU Competition Conference, Brussels, 19 October 2017 (accessed 27 December 2018).

http://ec.europa.eu/competition/speeches/text/sp2017_18_en.pdf

See also, EC, Speech, Margrethe Vestager, *Algorithms and competition*, Bundeskartellamt 18th Conference on Competition, Berlin, 16 March 2017. (accessed 27 December 2018)

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march-2017_en

“So as competition enforcers, I think we need to make it very clear that companies can’t escape responsibility for collusion by hiding behind a computer program.”

⁵⁵³ For a general discussion on the scope for antitrust liability, see OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp.39-40.

attributed to the machine, it is obvious that the algorithm is not afraid about high fines and criminal sentences. In such scenario, deterrence will not work.

- 104.** The list of hard-core restrictions prohibits *per se* some practices. In July 2018, the Commission has fined four consumer electronics manufacturers (Asus, Denon & Marantz, Philips and Pioneer) for having imposed fixed or minimum resale prices on their online retailers under article 101(1) TFEU. The practice inhibits online retailers to set independently their own retail prices. Manufacturers used pricing algorithms to monitor resale price setting and to retaliate quickly and aggressively in case of price decreases.⁵⁵⁴ RPM is an explicit collusion which is *per se* prohibited by competition rules. The list of hard-core restrictions is a useful tool to identify which practices are illegal while ensuring legal certainty to companies. It includes only explicit forms of restrictions but not tacit forms. Therefore, the list is workable only for explicit collusion but not for tacit collusion.
- 105.** Merger analysis is used to assess whether a merger is likely to significantly impede effective competition and facilitate collusion among market participants due to the elimination of one player. In traditional markets, this approach is particularly efficient to identify the likelihood of tacit collusion when the merger leads to the creation of a duopoly or an oligopoly. Merger control is therefore mainly useful when the number of firms is a significant factor of collusion. However, as noted above, in the digital economy, pricing algorithms can coordinate between them regardless of the number

See also, OECD, *Big data: bringing competition policy to the digital era-Background note by the Secretariat*, 27 October 2016, p. 23.

“The two last strategies may pose serious challenges to competition authorities in the future, as it may be very difficult, if not impossible, to prove an intention to coordinate prices, at least using current antitrust tools. Particularly in the case of artificial intelligence, there is no legal basis to attribute liability to a computer engineer for having programmed a machine that eventually ‘self-learned’ to coordinate prices with other machines.”

See also, OECD, *Algorithmic Collusion: Problems and Counter-Measures-Note by A. Ezrachi & M. E. Stucke*, Roundtable on Algorithms and Collusion, 31 May 2017, pp. 19-22.

<https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD%282017%2925&docLanguage=En>

See also, Adic and BKartA, *Algorithms and Competition*, November 2019, pp. 56-59.

⁵⁵⁴ EC, Press release, *Antitrust: Commission fines four consumer electronics manufacturers for fixing online resale prices*, 24 July 2018 (accessed 29 November 2018).

of firms on the market. In other words, algorithmic tacit collusion can occur even in less concentrated markets. In digital markets, transparency and the frequency of interaction are the two main factors that are likely to facilitate algorithmic tacit collusion. Competition authorities should thus focus their merger analysis on whether the transaction is likely to strengthen such factors.⁵⁵⁵ Nonetheless, it may be very challenging to forbid a merger based on these elements since market transparency and high frequency of orders foster effective competition and bring consumer benefits.

- 106.** An ex post intervention enables a competition authority to break up existing cartels. To do so, the regulator uses its power of investigations (a dawn raid) and a leniency policy. The former is a surprise inspection to the alleged firms and individuals of the suspicious cartel to collect evidences of collusion. The latter provides an incentive to participant undertakings to disclose information about the cartel in exchange of full or partial immunity from fines.⁵⁵⁶ In addition, some competition authorities allow individuals, not necessarily involved in a cartel, to provide information about a potential anti-competitive practice through an anonymous whistleblower tool. If the individual is empowered to represent an undertaking engaged in a collusive agreement, he/she can also apply to the previous leniency policy.⁵⁵⁷ These tools are successful to fight explicit agreements. However, in the presence of a tacit collusion, the incentive to reveal evidences is much lower as the probability to be detected by a competition authority is low. Moreover, when implemented among deep learning algorithms, firms and individuals involved in the tacit collusion are not even aware of the coordination. Therefore, in the digital economy, an ex-post intervention might not be efficient to detect algorithmic tacit collusion.
- 107.** In sum, the current ex-ante and ex-post detection tools appear ineffective in fighting algorithmic tacit collusion. Along this toolbox, other detection tools must thus be designed to adequately discover these new forms of coordination among algorithms. Professors Stucke and Ezrachi propose solutions to detect them such as auditing the

⁵⁵⁵ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp. 41-42.

⁵⁵⁶ For more information about the leniency policy offered by the Commission (accessed 29 December 2018). <http://ec.europa.eu/competition/cartels/leniency/leniency.html>

⁵⁵⁷ For more information about the anonymous whistleblower tool offered by the Commission (accessed 29 December 2018).

<http://ec.europa.eu/competition/cartels/whistleblower/index.html>

algorithm in a “sand box” and shifting the burden to the undertakings to demonstrate that they fully comply with a set of rules (compliance by design). However, these solutions have their shortcomings notably concerning deep learning algorithms as the learning process is deemed opaque (black boxes).⁵⁵⁸ However, it seems unanimous that competition authorities must urgently add computer scientists in their teams.⁵⁵⁹ Recently the Australian Competition and Consumer Commission (ACCC)⁵⁶⁰ and the UK Competition and Markets Authority (CMA)⁵⁶¹ have created a Data Analytics Unit to understand the use of Big Data and algorithms and to support the investigation teams. The French government is considering the creation of a similar unit.⁵⁶²

108. In any field including military intelligence, detection is all about information. One needs the right data to identify and quickly react to an attack. It may be hard to understand the algorithm but it is easy to understand the data, and the data is the blood of the algorithm. So instead of trying to understand and to detect complex algorithms that can lead to a tacit collusive outcome as proposed by the Adlc and the BKartA in their joint study,⁵⁶³ regulators must focus on the data that are collected to train the algorithm. It is the heart of the problem. Indeed, as noted by Professor Gal, “[t]he best theoretical model will only work well if it has the necessary information on which to base its decisions. Accordingly, the ability of firms to access data which is necessary in

⁵⁵⁸ OECD, *Algorithmic Collusion: Problems and Counter-Measures - Note by A. Ezrachi & M. E. Stucke*, Roundtable on Algorithms and Collusion, 31 May 2017, pp. 22-25.

⁵⁵⁹ OECD, *Big data: bringing competition policy to the digital era-Background note by the Secretariat*, 27 October 2016, p. 24.

⁵⁶⁰ ACCC, Press release, *New competition laws a protection against big data e-collusion*, 16 November 2017 (accessed 29 December 2018).

<https://www.accc.gov.au/media-release/new-competition-laws-a-protection-against-big-data-e-collusion>

⁵⁶¹ CMA, Press release, *CMA’s new DaTA unit: exciting opportunities for data scientists*, 24 October 2018 (accessed 29 December 2018).

<https://competitionandmarkets.blog.gov.uk/2018/10/24/cmas-new-data-unit-exciting-opportunities-for-data-scientists/>

⁵⁶² Adlc, @Echelle event with Cédric O, November 2019.

<https://www.autoritedelaconcurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

“The minister disclosed that the government is currently thinking about creating a pool of data scientists and algorithm experts that could be shared by regulators, the French competition authority and general administration when dealing with digital issues.”

⁵⁶³ Adlc and BKartA, *Algorithms and Competition*, November 2019, pp. 68-74.

order to determine the coordinated outcome, affects their ability to coordinate".⁵⁶⁴ It is now clear how to detect and prevent algorithms from reaching and sustaining a coordination. Auditing the data is the best answer to algorithmic tacit collusion. In some jurisdictions, the law already requires firms to provide meaningful information behind the algorithmic process. In Europe, the General Data Protection Regulation (GDPR),⁵⁶⁵ entered into force on 25 May 2018, is a set of rules for the collection, storage and processing of personal data that imposes to comply with these rules and to prove from the outset how the algorithm has reached a particular outcome, especially in case of automated decision-making and profiling.⁵⁶⁶ If firms cannot explain the logic, they can be heavily fined up to 4 percent of the total worldwide annual turnover of the preceding financial year.⁵⁶⁷ The GDPR deals with data protection. A similar regulation can be written to deal with antitrust in which firms must design the algorithm based on competition rules and to prove from the outset which data are collected to train the algorithm and for what purposes as actually required by the GDPR. As an example, if the algorithm is trained based on impermissible information exchanges, regardless of whether a collusive outcome might happen, the firm is liable of an antitrust infringement. Likewise, firms must be able to prove that the training data are not motivated to reach and sustain a collusive outcome. In sum, algorithms must be designed and trained in a way that prevent anti-competitive consequences. The risk of random investigations can provide an incentive to conduct internal audits and to enter into leniency programs if the firm detects anti-competitive behaviors. As stated in a public statement by Margrethe Vestager, the Commission seems to promote such solution.

⁵⁶⁴ Gal, M., *Algorithms as Illegal Agreements*, Berkeley Technology Law Journal, Forthcoming, 2 May 2018, p. 11.

<https://ssrn.com/abstract=3171977>

⁵⁶⁵ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) (GDPR), 4 May 2016.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=EN>

⁵⁶⁶ Article 13(2)(f), article 14(2)(g) and article 15(1)(h) GDPR.

⁵⁶⁷ Article 83(5) GDPR.

“They [businesses] may not always know exactly how an automated system will use its algorithms to take decisions. What businesses can – and must – do is to ensure antitrust compliance by design. That means pricing algorithms need to be built in a way that doesn't allow them to collude.”⁵⁶⁸

- 109.** Besides auditing the data, regulators can use algorithms in fighting algorithmic collusion. As considered by the Commission, an algorithm can be trained with enough data to detect anticompetitive practices.⁵⁶⁹ The algorithm can provide evidences of a suspicious behavior on the market to launch an in-depth investigation. In this regard, some agencies already use algorithms to detect bid-rigging cartels.⁵⁷⁰ However, such

⁵⁶⁸ EC, Speech, Margrethe Vestager, *Algorithms and competition*, Bundeskartellamt 18th Conference on Competition, Berlin, 16 March 2017 (accessed 27 December 2018).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march-2017_en

See also, EC, Speech, Johannes Laitenberger, *Level and open markets are good for business*, AMCHAM-EU 34th Annual Competition Policy Conference, Brussels, 27 October 2017 (accessed 27 December 2018).

http://ec.europa.eu/competition/speeches/text/sp2017_19_en.pdf

“As machines learn to behave more and more autonomously, we will likely have to monitor potential antitrust issues related to algorithms. The basic principle here is actually quite simple. Companies cannot hide behind an algorithm. Practices that are illegal offline will likely be as illegal when implemented through an algorithm. Algorithm should be designed to comply with competition rules in the first place. Respect for the rules must be part of the algorithm that a company configures and for whose behaviour the company will be ultimately liable. »

⁵⁶⁹ Reuters, *EU considers using algorithms to detect anti-competitive acts*, 4 May 2018 (accessed 27 December 2018).

<https://www.reuters.com/article/us-eu-antitrust-algorithm/eu-considers-using-algorithms-to-detect-anti-competitive-acts-idUSKBN1I5198>

⁵⁷⁰ For an overview of screening methods in the digital era, see OECD, *Workshop on cartel screening in the digital era*, 30 January 2018 (accessed 27 December 2018).

<http://www.oecd.org/competition/workshop-on-cartel-screening-in-the-digital-era.htm>

See also, OECD, *Policy Roundtables on ex officio cartel investigations and the use of screens to detect cartels*, 2013.

<http://www.oecd.org/daf/competition/exofficio-cartel-investigation-2013.pdf>

For a presentation of the cartel screening used by The Korea Fair Trade Commission (KFTC), see OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017, pp.13-14.

tool requires lots of data and it is time-consuming and resource intensive for a competition authority. To design such algorithm, regulators need deep knowledge about the industry concerned as well as the expertise of data scientists and machine learning and deep learning engineers. Moreover, the algorithm might over-or-under detect a coordination since a collusive outcome may also be the result of independent strategic decisions to the existing or anticipated conduct of market participants. Therefore, the use of algorithms to detect algorithmic tacit collusion is not perfect and, like humans, may lead to false positives (detect cases which do not raise competition concerns) and false negatives (falling to detect cases which raise competition concerns) but the tool enables to flag suspicious behaviors that can be investigated following a dawn raid and thus discourages anti-competitive practices and provides an incentive to firms to apply into leniency programs.

- 110.** In conclusion, the proposed tools, auditing the data and detection by algorithms, have their shortcomings in terms of costs and risks of incorrectly report collusive signs. However, these new tools can complement effectively the current toolbox by increasing compliance, deterrence and the incentive to firms to signal anti-competitive practices through leniency programs and anonymous whistleblower tools.

For a presentation of the cartel screening used by the UK Competition and Markets Authority (CMA), see *Cartel screening in the digital era-UK Competition & Markets Authority, OECD, Workshop on cartel screening in the digital era*, 30 January 2018.

<https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-uk-competition-markets-authority-january-2018-oecd-workshop>

For a presentation of the cartel screening used by the Swiss Competition Commission (COMCO), see *Cartel screening in the digital era-Swiss Competition Commission, OECD, Workshop on cartel screening in the digital era*, 30 January 2018.

<https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-swiss-competition-commission-january-2018-oecd-workshop>

For a presentation of the cartel screening used by the Brazilian Administrative Council for Economic Defense (CADE), see *Cartel screening in the digital era-CADE Brazil, OECD, Workshop on cartel screening in the digital era*, 30 January 2018.

<https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-cade-brazil-january-2018-oecd-workshop>

5. Merger

111. Merger control plays an important role in the economy due to the potential adverse effect on the competition process and the consumer welfare in terms of price, choice, quality and innovation. In the digital economy, mergers are currently shaping this growing economy with numerous deals⁵⁷¹ especially by big tech such as Google⁵⁷² or Facebook.⁵⁷³ The stake is high and particularly challenging for competition authorities. Firstly, only a few of them are reviewed by agencies whereas the acquisition often concerns an innovative company at a very early stage with a valuable database and the potential to be a disruptive competitor of the acquirer due to criteria (turnover, assets) that fall below the merger control notification thresholds. Secondly, they involve new issues such as privacy or data combination. Hence, (i) authorities must reform their merger control notification thresholds, and (ii) consider the data-driven issues in their analysis.

5.1. Reforming merger control notification thresholds⁵⁷⁴

112. From a law and economics perspective, this section suggests a reform of the merger control notification thresholds that catches the right mergers while ensuring legal certainty to parties and minimizing the notification costs of public and private resources.

⁵⁷¹ According to the OECD, the number of data-driven mergers has dramatically increased between 2008 and 2012 from 55 to 164 deals.

OECD, *Data-Driven Innovation: Big Data for Growth and Well-Being*, 6 October 2016, p. 94.

<http://www.oecd.org/sti/data-driven-innovation-9789264229358-en.htm>

⁵⁷² Google has acquired from 2001 more than 200 firms.

Wikipedia, *List of mergers and acquisitions by Alphabet* (accessed 18 September 2018).

https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Alphabet

⁵⁷³ Facebook has acquired from 2005 around 70 firms.

Wikipedia, *List of mergers and acquisitions by Facebook* (accessed 18 September 2018).

https://en.wikipedia.org/wiki/List_of_mergers_and_acquisitions_by_Facebook

⁵⁷⁴ A previous version of this article has been published in *Concurrences*.

Carugati, C., *Reforming merger control notification thresholds*, *Concurrences Review*, N° 2-2019, Art. N° 89872, May 2019.

<https://www.concurrences.com/fr/revue/issues/no-2-2019/pratiques/reforming-merger-control-notification-thresholds>

5.1.1. A review of the current merger control notification thresholds

- 113.** At the global level, most of the countries have adopted a merger control mechanism in order to ensure only the review of mergers that may have an impact on the local economy. From a law and economics standpoint and especially a cost–benefit one, the notification regime should minimize the expenditure of public (competition authorities) and private (parties to the merger) resources while minimizing the notification of potential non-harmful mergers.⁵⁷⁵ Consequently, following the recommendations of the International Competition Network (ICN) and the Organization for Economic Co-operation and Development (OECD), the notification thresholds must (i) have an appropriate local nexus; (ii) be clear and understandable, (iii) be based on objectively quantifiable criteria; and (iv) be based on information that is readily accessible to the parties to the proposed transaction. Furthermore, the transaction should be measured by reference to the activities of at least two parties to the proposed transaction or of the activities of the acquired business (the target) in the local territory.⁵⁷⁶
- 114.** In 2016, the OECD has conducted a competition policy roundtable on jurisdictional nexus in merger control regimes. The paper provides an overview of the merger control thresholds and local nexus criteria of 53 jurisdictions. The organization identified four main notification criteria: (i) turnover (worldwide and local); (ii) assets (worldwide and local); (iii) the value of the transaction; and (iv) market shares. Moreover, some jurisdictions have additional tools such as exemptions (the proposed transaction meets the notification threshold but does not have to be notified), residual jurisdiction (the proposed transaction does not meet the notification threshold but has to be notified), and other criteria such as previous finding of dominant position or a domestic effect.

⁵⁷⁵ OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016, p. 5.

[https://one.oecd.org/document/DAF/COMP/WP3\(2016\)4/REV1/en/pdf](https://one.oecd.org/document/DAF/COMP/WP3(2016)4/REV1/en/pdf)

⁵⁷⁶ ICN, *Recommended Practices for Merger Notification and Review Procedures*, 12 September 2018.

https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/MWG_NPRecPractices2018.pdf

OECD, *Executive Summary of The Roundtable on Jurisdictional Nexus in Merger Control Regimes*, 7 November 2016, p. 2.

[https://one.oecd.org/document/DAF/COMP/WP3/M\(2016\)1/ANN3/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WP3/M(2016)1/ANN3/FINAL/en/pdf)

Of the 53 jurisdictions, more than 85% adopt notification thresholds based on turnover, nearly 20% rely on assets, around 7% on the value of the transaction and 9% on market shares. Thus, turnover is the most used notification criterion.

- 115.** Each of these criteria has some advantages and drawbacks as regards the digital economy. Turnover is generally defined as the amount derived from sales of products and services.⁵⁷⁷ This provides a clear, objective and quantifiable measure of the potential local impact of a proposed transaction and the information is readily available to the parties in the audited accounts, income statement or balance sheet. However, at an early stage, a company that provides a service for free such as WhatsApp may have a low turnover.⁵⁷⁸ Asset outlines all the economic value that a corporation owns. This may also provide a clear, objective and quantifiable metric available to the parties and an information on the local impact of the deal. In the data-driven economy, data is the most valuable asset. However, the valuation of personal data, which is “*sensitive to contextual effects*,”⁵⁷⁹ is currently difficult to quantify. The value of the transaction is the value of the proposed deal. This information is clear, objective and quantifiable and available to the proposed parties. However, the criterion gives no precise information on the potential local impact on the market,⁵⁸⁰ parties can through a complex payment scheme lower the value of the transaction in order to avoid the notification, and the real value of the transaction may be below the transaction thresholds since the acquisition occurs at an early stage.⁵⁸¹ Finally, market shares is the

⁵⁷⁷ OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016, p. 10.

⁵⁷⁸ Indeed, as explained in *Facebook/Instagram*, “*social apps and websites do not always present monetisation opportunities from the outset, but rather grow their user base and then develop monetisation opportunities once they have a large enough user base to be attractive to advertisers.*”

ME/5525/12-*Anticipated acquisition by Facebook Inc of Instagram Inc*, 14 August 2012, para. 19.

<https://assets.publishing.service.gov.uk/media/555de2e5ed915d7ae200003b/facebook.pdf>

⁵⁷⁹ OECD, *Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value*, 2 April 2013, p. 5.

[https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/REG\(2011\)2/FINAL&docLanguage=EN](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/REG(2011)2/FINAL&docLanguage=EN)

⁵⁸⁰ OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016, p. 15.

⁵⁸¹ ACCO, *The Data-Driven Economy. Challenges for Competition*, December 2016, pp. 34–35.

http://acco.gencat.cat/web/.content/80_acco/documents/arxiu/actuacions/Eco-Dades-i-Competencia-ACCO-angles.pdf

percentage of a market owned by a firm in terms of value or volume. The criterion establishes a local nexus since market shares is computed based on a relevant product and geographic market. However, this information is not readily available to the parties (they have to know some information about their competitors) and objective (the market shares depend on the definition of the relevant market, which may differ between parties and competition authorities). Moreover, in the digital economy, large market shares may turn out to be ephemeral.⁵⁸² Therefore, the criterion poses many costs and uncertainties to the parties, and thus market shares thresholds should not be used.⁵⁸³

116. The information on merger cases in the data-driven economy is not readily available since only a few of them were notified before a competition authority. According to table 1 below, which listed all the European digital cases, four cases (*Travelport/Worldspan*, *Google/DoubleClick*, *Facebook/WhatsApp*, *Apple/Shazam*) were notified by using corrective mechanisms. In the European Union, a merger can be reviewed either by the Commission or by a Member State or States. The Commission is competent over national jurisdictions if the deal has a Community dimension (“one-stop shop” system). The notification mechanism is based on turnover thresholds of a least two parties to the transaction (Article 1(2) and Article 1(3) EUMR). The EC Merger Regulation (EUMR) provides corrective mechanisms in order to enable an efficient allocation of competences between the Commission and a Member State. The parties or Member States may request a referral from Member States to the Commission (Article 4(5) and Article 22(1) EUMR) and, conversely, they may request a referral from the Commission to Member States to review the acquisition (Article 4(4) and Article 9 EUMR). In these four cases, the proposed deal did not have a Community dimension due to the turnover of the acquired business (the target) below the EU turnover threshold. Therefore, in all these cases except the merger *Apple/Shazam*, in order to benefit from the “one-stop shop,” the notifying parties requested a referral to the

⁵⁸² AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 267.

COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 99.

T-79/12, *Cisco Systems and Messagenet v. Commission*, ECLI:EU:T:2013:635, 11 December 2013, para. 69.

COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 78.

⁵⁸³ OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016, p. 14.

Commission.⁵⁸⁴ In *Apple/Shazam*, the request was made by seven Member States because the transaction would have affected trade between Member States and would have threatened to significantly affect competition within the territory of the Member State or States making the request.

Cases	Notification mechanism	Reasons
M.4523- <i>Travelport/Worldspan</i> (2007)	Article 4(5) EUMR	The target, Worldspan, has a community-wide turnover below the European turnover threshold. The deal would have been subject to mandatory notification in four Member States with two additional Member States competent to review the transaction. The notifying party requested a referral to the Commission.
M.4731- <i>Google/DoubleClick</i> (2008)	Article 4(5) EUMR	The transaction does not have a Community dimension. The deal would have been reviewed in five Member States. The notifying party requested a referral to the Commission.
M.5008- <i>Vivendi/Activision</i> (2008)	Article 1(2) EUMR	The transaction has a Community dimension.
M.5727- <i>Microsoft/Yahoo! Search Business</i> (2010)	Article 1(3) EUMR	The transaction has a Community dimension.

⁵⁸⁴ Pursuant to Article 4(5) EUMR, the notifying party may request a referral to the Commission only if the transaction is capable of being reviewed by at least three Member States.

M.6281- <i>Microsoft/Skype</i> (2011)	Article 1(3) EUMR	The transaction has a Community dimension.
M.6314- <i>Telefónica UK Vodafone UK / Everything Everywhere / JV</i> (2012)	Article 1(2) EUMR	The transaction has a Community dimension.
M.6967- <i>BNP Paribas Fortis/Belgacom Belgian Mobile Wallet</i> (2013)	Article 1(2) EUMR	The transaction has a Community dimension.
M.7023- <i>Publicis/Omnicom</i> (2014)	Article 1(2) EUMR	The transaction has a Community dimension.
M.7047- <i>Microsoft/Nokia</i> (2013)	Article 1(2) EUMR	The transaction has a Community dimension.
M.7217- <i>Facebook/WhatsApp</i> (2014)	Article 4(5) EUMR	The target, WhatsApp, has a community-wide turnover below the European turnover threshold. The deal should have been reviewed in three Member States. The notifying party requested a referral to the Commission.
M.7866- <i>Activision Blizzard/King</i> (2016)	Article 1(2) EUMR	The transaction has a Community dimension.
M.8124- <i>Microsoft/LinkedIn</i> (2016)	Article 1(2) EUMR	The transaction has a Community dimension.
M.8180- <i>Verizon/Yahoo</i> (2016)	Article 1(3) EUMR	The transaction has a Community dimension.
M.8788- <i>Apple/Shazam</i> (2018)	Article 22(1) EUMR	The target, Shazam, has a community-wide turnover below the European turnover threshold. Seven Member States requested a referral to the Commission.

117. In sum, the turnover threshold is the most commonly used by jurisdictions. However, in the digital economy, the criterion may not be adapted due to the low turnover of the acquired business. In Europe, the referral mechanism enables the Commission to review a deal without a Community dimension but important deals might be missed if the turnover of the target is below the European and national turnover thresholds. Therefore, the merger control notification thresholds need to be revised.

5.1.2. *Propositions to reform the merger control notification thresholds*

5.1.2.1. An analysis of the current reforms

118. In Europe, the merger *Facebook/WhatsApp* has triggered a wave of reform to refine the merger control system to the digital economy. In 2014, Facebook bought WhatsApp for \$19 billion whereas the company showed only \$10.21 million of revenue and \$138.146 million of net loss in 2013.⁵⁸⁵ However, WhatsApp was a potential threat to Facebook with a valuable database on nearly 600 million users worldwide, nearly twice the number of Facebook Messenger users (approximately 250–350 million users worldwide) in July 2014.⁵⁸⁶ At the time of the merger, WhatsApp was by far the leading consumer communication app followed by Facebook Messenger.⁵⁸⁷ Thus the deal was viewed as the acquisition by the number two of the number one on the market. Nonetheless, the turnover of the target was too low to notify the merger before the European Commission despite the potential adverse effect on consumers and competition in Europe.⁵⁸⁸ The deal was finally reviewed (and cleared without conditions) by the Commission thanks to the referral mechanism as the request of the notifying party.⁵⁸⁹ After the merger, academics, organizations⁵⁹⁰ and even the

⁵⁸⁵ Adweek, *Facebook Reveals WhatsApp's Financial Results; Heavy Net Losses in 2013, First Half of 2014*, 28 October 2014 (accessed 19 September 2018).

<http://www.adweek.com/digital/whatsapp-financial-results>

⁵⁸⁶ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 84 and 128.

⁵⁸⁷ *Ibid*, para. 96.

⁵⁸⁸ *Ibid*, para. 9.

⁵⁸⁹ *Ibid*, para. 11.

⁵⁹⁰ OECD, *Big Data: Bringing Competition Policy to the Digital Era-Background Note by the Secretariat*, 27 October 2016, p. 20.

European competition commissioner, Margrethe Vestager, discussed the need to revise the merger control. She stated in a public announcement:

“The issue seems to be that it’s not always turnover that makes a company an attractive merger partner. Sometimes, what matters are its assets. That could be a customer base or even a set of data. (...) A merger that involves this sort of company could clearly affect competition, even though the company’s turnover might not be high enough to meet our thresholds. So by looking only at turnover, we might be missing some important deals that we ought to review.”⁵⁹¹

119. Austria and Germany were the first to refine their merger control. In addition to the turnover threshold, they introduced a new notification threshold based on the value of the transaction which entered into force in Germany and Austria in June and November 2017 respectively. In the former, a transaction must be notified if the transaction exceeds €400 million.⁵⁹² In the latter, if the transaction exceeds €200 million.⁵⁹³ In France, the French Autorité de la concurrence (FCA) published in June 2018 its conclusion about the modernization of its merger control. It confirmed the current turnover threshold and estimated that the introduction of a new notification threshold based on the value of the transaction is not justified for the French economy. However, the FCA studies the introduction of an *ex post* control as in Sweden, the UK and the US, which might be more adapted to mergers that do not have a national or a Community dimension.⁵⁹⁴ Moreover, in a recent contribution published in February 2020, the FCA

⁵⁹¹ EC, Speech, Margrethe Vestager, *Refining the EU merger control system*, Studienvereinigung Kartellrecht, Brussels, 10 March 2016 (accessed 19 September 2018).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/refining-eu-merger-control-system_en

⁵⁹² Paragraph 35(1a) of the Act against Restraints of Competition (Competition Act – GWB).

⁵⁹³ Getting the Deal Through, *Austria Merger Control* (accessed 19 September 2018).

<https://gettingthedealthrough.com/area/20/jurisdiction/25/merger-control-austria>

⁵⁹⁴ Adlc, Press release, *Modernization and simplification of merger control*, 7 June 2018 (accessed 20 September 2018),

http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=684&id_article=3182&lang=en

See also, Adlc, Press release, *The Autorité de la concurrence announces its priorities for 2019*, 11 January 2019 (accessed 27 January 2019),

is also considering mandatory notification for “*structuring businesses*” and the introduction of an additional notification mechanism if three conditions are fulfilled that could order an *ex-ante* or *ex-post* notification of the deal or the possibility for the companies concerned to voluntarily notify the mergers.⁵⁹⁵ In Europe, the Commission is currently thinking about the introduction of the value of the transaction as well as the size of the merging parties’ revenue as new thresholds for merger review.⁵⁹⁶ In sum, the transaction-value threshold seems the preferred additional criterion to turnover threshold despite its shortcoming.

- 120.** As already noticed, the transaction-value threshold might not be an efficient cost-benefit solution to merger control. The criterion enables the review of a deal that does not necessarily meet the turnover threshold, reflects the price that the buyer is willing to pay for acquiring the data of the target and could be a good indicator to identify preemptive acquisitions.⁵⁹⁷ However, it might not tackle all potentially problematic transactions (due to complex payment schemes to avoid the notification, value of the transaction below the transaction-value threshold) while incorporating significant constraints and costs to the parties and the competition authorities. Indeed, from the parties’ standpoint, the computation of the transaction value might give rise to uncertainty in the absence of a clear guideline on the assessment methods. To tackle this issue, the German Bundeskartellamt and the Austrian Bundeswettbewerbsbehörde issued a joint guidance on their new transaction-value

http://www.autoritedelaconurrence.fr/user/standard.php?id_rub=697&id_article=3329&lang=en

⁵⁹⁵ Adlc, *The Autorité de la concurrence’s contribution to the debate on competition policy and digital challenges*, 19 February 2020, p. 12.

https://www.autoritedelaconurrence.fr/sites/default/files/2020-03/2020.03.02_contribution_adlc_enjeux_numeriques_vf_en.pdf

Note that the FCA is also considering the adoption of mandatory notification for digital platforms.

Global Competition Review, *France considers mandatory merger notification for digital platforms*, 29 November 2019 (accessed 30 January 2020).

<https://globalcompetitionreview.com/article/1211532/france-considers-mandatory-merger-notification-for-digital-platforms>

See also, Adlc, *@Echelle event with Cédric O*, November 2019.

⁵⁹⁶ MLex, *EU merger reviews could depend on transaction value as officials debate new criteria*, 14 September 2018 (accessed 20 September 2018).

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1023033&siteid=190&rdir=1>

⁵⁹⁷ OECD, *Big Data: Bringing Competition Policy to the Digital Era-Background Note by the Secretariat*, 27 October 2016, p. 20.

thresholds.⁵⁹⁸ Moreover, from the agencies' standpoint, the criterion might increase the number of non-harmful mergers notified, and thus lead to an inefficient use of the competition authority's resources and time.

121. The *ex post* control may not be efficient either. To ensure legal certainty, as noted by the FCA in its paper on the *ex post* control, two elements are required: (i) a clear definition of the notion “*substantial competition concerns*” in France, and (ii) a limited time frame in which such controls may be performed.⁵⁹⁹ However, these elements present two major shortcomings for digital cases. First, even a clear definition through guidelines or in the legislation might still give rise to uncertainty for companies, for instance in the event where the proposed deal does not match well the definition. Second, defining the right time frame might be a challenging issue. The FCA is considering a time frame of between six months and two years.⁶⁰⁰ In its recent 2020's contribution, the FCA is considering a time frame of twelve months.⁶⁰¹ However, by knowing this information, parties to a merger might thus implement harmful effects after the end of the time frame. For example, WhatsApp has started to share its data with Facebook two years after the merger clearance by the Commission in 2014.⁶⁰² After the merging of the data, a user might be locked in on both Facebook and WhatsApp. Indeed, for instance, Facebook now recommends on the “friend suggestions” a WhatsApp user. This in turn enhances the identity-based network effects⁶⁰³ which increase the attractiveness of Facebook and the lock-in effect. It can

⁵⁹⁸ Bundeskartellamt (BKartA) and Bundeswettbewerbshörde (BWB), *Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)*, July 2018. https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Leitfaden/Leitfaden_Transaktionsschwelle.pdf?__blob=publicationFile&v=2

⁵⁹⁹ Adlc, *Reform of merger law and ex-post control* (accessed 20 September 2018). http://www.autoritedelaconurrence.fr/doc/note_controle_expost_en_final.pdf

⁶⁰⁰ Ibid.

⁶⁰¹ Adlc, *The Autorité de la concurrence's contribution to the debate on competition policy and digital challenges*, 19 February 2020, p. 12.

⁶⁰² The New York Times, *Relaxing Privacy Vow, WhatsApp Will Share Some Data with Facebook*, 25 August 2016 (accessed 21 September 2018). https://www.nytimes.com/2016/08/26/technology/relaxing-privacy-vow-whatsapp-to-share-some-data-with-facebook.html?_r=0

⁶⁰³ The identity-based network effects are a decisive criterion for the choice of a social network, which can be defined by the Bundeskartellamt as the size and the possibility to find the persons they want to be in contact with on it. Therefore, the more the size of a social network is important and the easier is to find the persons

be thus more difficult to switch to one of Facebook's competitors. Facebook has applied the same strategy with Instagram five years after the green light of the UK competition authority in 2012. Since 2017, an Instagram user can link its account with its Facebook one. Consequently, by doing so, a user is locked-in on Facebook, WhatsApp and Instagram. In order to avoid such issue, the optimal time frame is thus the absence of a limited one as in the United States where the competition authorities can investigate a consummated merger without limits in time⁶⁰⁴ but this might give rise to legal uncertainty to many non-harmful mergers. It is worth noting that the Federal Trade Commission (FTC) has recently created a task force to monitor Big Tech. The team will notably be in charge to examine "*prospective merger reviews in the technology sector and reviews of consummated technology mergers.*"⁶⁰⁵ In that respect, in February 2020, the FTC issued special orders to Alphabet, Facebook, Amazon, Apple, and Microsoft, requiring them to provide information about prior acquisitions that were not notified in order to review each company consummated acquisitions between 1st January 2010 and 31 December 2019.⁶⁰⁶

5.1.2.2. How to reform merger control?

- 122.** From a law and economics angle, three possible solutions may capture the right mergers that pose competition concerns while minimizing the uncertainty and the number of non-harmful mergers notified.

that a user wants to be in contact with on it, the more the social network is attractive to users. More broadly, these effects can be classified as a sub-category of direct network effects for social networking services. Bundeskartellamt, *Background information on the Facebook proceeding*, 19 December 2017.

⁶⁰⁴ OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016, p. 17.

⁶⁰⁵ Federal Trade Commission (FTC), Press release, *FTC's Bureau of Competition Launches Task Force to Monitor Technology Markets*, 26 February 2019 (accessed 15 March 2019).

<https://www.ftc.gov/news-events/press-releases/2019/02/ftcs-bureau-competition-launches-task-force-monitor-technology>

⁶⁰⁶ FTC, Press release, *FTC to Examine Past Acquisitions by Large Technology Companies*, 11 February 2020 (accessed 17 February 2020).

<https://www.ftc.gov/news-events/press-releases/2020/02/ftc-examine-past-acquisitions-large-technology-companies>

- 123.** Firstly, mandatory notification of certain mergers and acquisitions in a specific sector. The competition act may specify certain sectors in which the notification is mandatory even if the thresholds are not met. In Ireland, the Minister for Business, Enterprise and Innovation may, after consultation with the competition authority, specify certain class or classes of compulsory notification merger. In particular, media mergers involving media businesses with a physical presence in Ireland and making sales to consumers located in the state or firms that have made sales in Ireland of at least €2 million in the most recent financial year have to be notified before the Competition and Consumer Protection Commission (CCPC) and the Minister for Communication, Climate Action and Environment.⁶⁰⁷ This kind of legislation targets only those mergers where a public interest and potential competition concerns have been identified by the minister and the competition authority. The solution is thus efficient and cost-benefit. A similar legislation could be implemented with digital mergers. Digital merger means a merger or acquisition in which one or more of the undertakings involved carry on a digital business (online advertising, merchant platforms, to name a few). Indeed, they involve a public interest (privacy and data protection) and potential competition concerns (preemptive acquisitions of potential disruptive innovators or a firm with a valuable dataset). Moreover, the merger could be reviewed, as in Ireland, by both the competition authority under the test “whether the proposed digital merger would significantly impede effective competition as a result of the creation or strengthening of a dominant position,” and the authority/minister in charge of the public interest under the test “whether the proposed digital merger would be contrary to the public interest.” If the latter is not competent to review the deal due to legal reasons, for instance a data protection authority cannot review a merger, this authority/minister must be involved in the merger review through an active cooperation with the competition authority.
- 124.** Secondly, the introduction of a new criterion based on the number of users or customer base (hereafter “the user-based threshold”). Indeed, as noted by Margrethe Vestager,

⁶⁰⁷ Getting the Deal Through, *Ireland Merger Control* (accessed 21 September 2018),

<https://gettingthedealthrough.com/area/20/jurisdiction/14/merger-control-ireland>

Competition Act 2002 (Section 18(5) and (6)) and Notice 122/2007 – Competition Act 2002 (Section 18 (5) and (6)) Order 2007.

<http://www.irishstatutebook.ie/eli/2002/act/14/section/18/enacted/en/html#sec18>

and <http://www.irishstatutebook.ie/eli/2007/si/122/made/en/print>.

the attractiveness of a merger partner depends on its customer base—namely, the number of users using the service—which may be a good proxy of the value of the data and thus the price that the buyer is willing to pay. For instance, WhatsApp was an attractive merger partner to Facebook thanks to its 600 million users worldwide at the time of the merger. The criterion satisfies the recommendations of the ICN and the OECD. The user-based threshold may depend on the number of users using the service in a local territory (and even worldwide), which is objectively quantifiable on an active daily or monthly basis and the information is readily accessible to the parties to the proposed deal in the annual report of the company.⁶⁰⁸ Furthermore, as noted above, the transaction should be measured by reference to the number of users of at least two parties to the deal or of the number of users of the acquired business in the local territory. Only those mergers with a significant number of users at the time of the merger might pose competition concerns due to the risk of tipping. Therefore, the user-based threshold could be set as follows: At the time of the notification, the combined worldwide daily (or monthly) active users of all the undertakings concerned is more than 500 million, one participating undertaking had a number of daily (or monthly) active users exceeding 25 million within the local territory, and at least one another undertaking had a number of daily (or monthly) active users exceeding 5 million within the local territory.

- 125.** Thirdly, mandatory notification for dominant companies. In the digital economy, a dominant undertaking such as Google or Facebook may acquire a target to expand its market power on another market and to acquire valuable data. However, as noted by the EC competition commissioner in a public statement, the concentration of essential data in the hand of just a few firms can increase the foreclosure effect and therefore “*could give them the power to drive their rivals out of the market.*”⁶⁰⁹ Hence, a merger

⁶⁰⁸ As noted in the joint guidance by the German and Austrian competition authorities, the monthly active users (MAU) or daily active users (DAU) are both industry’s standard measure. The access frequency of a website (unique visitors) can also be used.

Bundeskartellamt (BKartA) and Bundeswettbewerbsbehörde (BWB), *Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)*, July 2018, pp. 20 and 25.

⁶⁰⁹ EC, Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016 (accessed 19 September 2019).

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

between a dominant company and a firm with a valuable dataset may give rise to competition concerns if it increases the foreclosure effect and the barriers to entry. In *Microsoft/LinkedIn*, the Commission cleared the merger subject to conditions due to the risk of tipping in case of the pre-installation of a LinkedIn application on Windows PCs and the integration of LinkedIn features into Office post-transaction while denying access to Office APIs. The practice would increase the user base and the activity on LinkedIn in a way that competing providers of professional social network (“PSN”) services would be unable to match.⁶¹⁰ The market would tip in favor of LinkedIn to the detriment of competing PSN services and new entrants would lack the ability or the incentive to enter the markets for PSN services.⁶¹¹ In the present case, network effects could strengthen the foreclosure effect and neither multi-homing nor potential entry may be sufficient to prevent the market from tipping.⁶¹² Once the market would reach the tipping point, LinkedIn would remain the only PSN service provider in Europe. Therefore, these foreclosure effects would reduce the consumer choice and especially in relation to privacy protection due to the marginalization of a competitor, XING, which offers a greater degree of privacy protection.⁶¹³ Consequently, tipping is likely to have a negative impact on consumer choice and especially consumer choice regarding privacy protection. After the transaction, in the absence of a competitor, LinkedIn may lose the incentive to offer a greater degree of privacy protection and better services to its users. This mandatory notification already exists in Switzerland if one of the undertakings concerned has been found dominant in a final and non-appealable decision in a market in Switzerland, and the transaction concerns that market, an adjacent market or an upstream or downstream market.⁶¹⁴ However, such notification may not be as efficient as the others since it targets no specific sectors. Moreover, the dominant undertaking should have the right to request to the competition authority an assessment of the dominant position at the time of the potential notification due to possible change of the market and the position of the dominant undertaking on such market, and especially in the digital economy, in which large market shares may turn

⁶¹⁰ M.8124-*Microsoft/LinkedIn*, para. 338.

⁶¹¹ *Ibid*, para. 339.

⁶¹² *Ibid*, paras. 343–347.

⁶¹³ *Ibid*, paras. 349–350.

⁶¹⁴ Federal Act on Cartels and other Restraints of Competition (Cartel Act, CartA) of 6 October 1995 (Status as of 1 December 2014), Article 9(4).

<https://www.admin.ch/opc/en/classified-compilation/19950278/201412010000/251.pdf>

out to be ephemeral. Such right would impose some costs to the authority since it would have to calculate again the market shares regardless of whether the deal must be notified. The transaction may thus be subject to uncertainty and substantial delays.

5.2. Data-driven issues

5.2.1. Preemptive data-driven merger issues

126. In the data-driven economy, an innovative startup is often acquired at a very early stage by a big tech company such as Google or Facebook. The latter is able to quickly identify and purchase a potential disruptive innovator, which may be a data-driven innovator, thanks to the data collected about the use of disruptive startups on their own services (e.g. by analyzing Facebook status or the number of downloads of a particular application on the Google Play Store) and their substantial financial resources.⁶¹⁵ Once a startup starts to grow, it faces two choices: either to be acquired by a tech company in exchange of a generous offer or try to challenge the position of the incumbent firm. The acquisition is even seen as an important exist strategy.⁶¹⁶ In the majority of cases, a startup prefers to be purchased instead of trying to compete due to the high barriers to entry and the probability to be copied by the incumbent if it declines the offer. Facebook offered billions of dollars to Instagram (\$1 billion), WhatsApp (\$19 billion) and Snapchat (\$3 billion). The bids were accepted by Instagram and WhatsApp in 2012 and 2014 respectively but not by Snapchat, which it is now copied since 2015 by Facebook. Nowadays, thanks to these acquisitions, Facebook is an indispensable gateway to be connected to the digital environment.

127. At the time of the notification of Instagram and WhatsApp, both applications were at an early stage of development with low or no revenue but with a great potential value.

⁶¹⁵ For instance, in 2017, Google's annual revenue reached more than \$110.9 billion.

Alphabet, Press release, *Alphabet Announces Fourth Quarter and Fiscal Year 2017 Results* (accessed 27 September 2018).

https://abc.xyz/investor/pdf/2017Q4_alphabet_earnings_release.pdf

⁶¹⁶ Akman, P., *Competition Policy in a Globalized, Digitalized Economy*, World Economic Forum, December 2019, p. 12.

http://www3.weforum.org/docs/WEF_Competition_Policy_in_a_Globalized_Digitalized_Economy_Report.pdf

Instagram's acquisition was only reviewed by the UK Office of Fair Trading (OFT) in August 2012.⁶¹⁷ At that time, Instagram was a free mobile photo application without revenue but with nearly 24 million users in February 2012.⁶¹⁸ The OFT recognized that given the rapid growth of Instagram's user base (from 1.4 million in January 2011 to around 24 million users in February 2012),⁶¹⁹ Facebook may have perceived Instagram as a credible social network competitor.⁶²⁰ The parties overlapped in the supply of virtual social networking services but the OFT did not believe that Instagram "*would be uniquely placed to compete against Facebook, either as a potential social network or as a provider of advertising space*".⁶²¹ The analysis on horizontal issues focused on the actual competition in the supply of photo apps and potential competition in the supply of online display advertising. The OFT concluded that the transaction would not give rise to competition concerns since there were several strong competitors to Instagram in the supply of camera and photo editing apps,⁶²² and that the target was not an actual competitor to Facebook for advertising revenue with limited social networking functions.⁶²³ For the latter, the assessment lacks a thorough analysis on whether Instagram should have been a potential constraint on Facebook in the supply of online display advertising if the target would have introduced advertising in its application (it only asserted that other firms were able to compete against for brand advertising).⁶²⁴ Moreover, the OFT did not analyze in-depth whether Instagram had the potential to compete against Facebook in the supply of social networking services neither in terms of product quality nor in terms of innovation. Indeed, pre-merger, some Instagram users used the application due to its functionality (only a photo-sharing application), its user-friendly interface without ads, and last but not least, it appeared that Instagram was an alternative to Facebook for some Instagram users since as noted in the decision "*there is speculation that the acquisition by Facebook in itself may discourage some Instagram users from using the app*".⁶²⁵ However; the most important mistake of the

⁶¹⁷ ME/5525/12-*Anticipated acquisition by Facebook Inc of Instagram Inc*, 14 August 2012.

<https://assets.publishing.service.gov.uk/media/555de2e5ed915d7ae200003b/facebook.pdf>

⁶¹⁸ Para. 2 and para. 36.

⁶¹⁹ *Ibid*, para. 36

⁶²⁰ *Ibid*, para. 25.

⁶²¹ *Ibid*, para. 44.

⁶²² *Ibid*, para. 21.

⁶²³ *Ibid*, para. 24.

⁶²⁴ *Ibid*, para. 22-29.

⁶²⁵ *Ibid*, para. 36.

decision is that the OFT did not take enough into account that Instagram was only at an early stage of its development. At the time of the merger, Instagram was developed since only two years and was used by already 24 million users, twice the number of Facebook users two years after its creation in 2004.⁶²⁶ As noted in the decision, Instagram grew rapidly without signs of decline. Therefore, Instagram had the potential to growth in the absence of the merger. Post-merger, Instagram's user base has continued to grow to reach 1 billion users in June 2018.⁶²⁷ However, post-merger, it is difficult to assert whether this growth is due to Instagram as an independent application because one can assume that the application has received since 2012 some investments from Facebook in terms of know-how, expertise and financial resources. Furthermore, a social networking service is based on a typical free-and-paid side relationship. The social network is free from the outset in order to build a large user base. Once the latter is large enough, it becomes attractive to advertisers and thus it can start its monetization by supplying online display advertising on its application. Despite this ascertainment in its decision,⁶²⁸ the OFT did not believe that Instagram was a potential competitor to Facebook in the supply of online advertising which would result in a substantial lessening of competition in this market.⁶²⁹ In July 2018, Instagram has nearly two million advertisers, 25 million business profiles⁶³⁰ and, according to eMarketer, accounted for nearly 11% of Facebook's revenue in 2017.⁶³¹ Once again, as noted by the Chief Executive of the UK Competition and Markets Authority (CMA),⁶³²

⁶²⁶ Facebook was launched in 2004. At the end of 2006, the number of active users on Facebook was 12 million. The Guardian, *Facebook: 10 years of social networking, in numbers*, 4 February 2014 (accessed 28 September 2018).

<https://www.theguardian.com/news/datablog/2014/feb/04/facebook-in-numbers-statistics>

⁶²⁷ Statista, *Instagram's Rise to 1 Billion*, 21 June 2018.

<https://www.statista.com/chart/9157/instagram-monthly-active-users/>

⁶²⁸ ME/5525/12-*Anticipated acquisition by Facebook Inc of Instagram Inc*, 14 August 2012, para. 19.

⁶²⁹ *Ibid*, para. 29.

⁶³⁰ Facebook, *Second Quarter 2018 Results Conference Call*, 25 July 2018, p. 16 (accessed 28 September 2018).

https://s21.g4cdn.com/399680738/files/doc_financials/2018/Q2/Q218-earnings-call-transcript.pdf

⁶³¹ Bloomberg, *Instagram Is Estimated to Be Worth More than \$100 Billion*, 25 June 2018 (accessed 28 September 2018).

<https://www.bloomberg.com/news/articles/2018-06-25/value-of-facebook-s-instagram-estimated-to-top-100-billion>

⁶³² In 2014, the Competition and Markets Authority (CMA) brought together the Competition Commission (CC) and the Office of Fair Trading (OFT).

Andrea Coscelli, “*Obviously on Facebook Instagram we will never know. We will never know what the counterfactual is because of the ownership by Facebook- we would never know what the independent app would have been*”.⁶³³ Indeed, we cannot know whether Instagram as an independent application would have been as much as successful as today absent the merger. In 2018, according to Bloomberg, “*Instagram is attracting new users faster than Facebook’s main site and is on track to exceed 2 billion users within the next five years*”. Instagram’s audience is younger than Facebook and thus Instagram is more attractive to advertisers. Finally, Instagram is still growing in the U.S unlike Facebook.⁶³⁴ Nowadays, Instagram is therefore an actual competitor to Facebook for social networking services and online display advertising. Andrea Coscelli said Instagram clearance may have been “naïve” and the decision may have been different had the case been looked at today.⁶³⁵ With hindsight, there is thus no doubt that Facebook bought Instagram in order to eliminate a potential competitor before it would become an actual threat on both social networking services and online display advertising.⁶³⁶

- 128.** The same observation can be done with the mergers *Google/Waze* in 2013 and *Facebook/WhatsApp* in 2014. The merger review of these acquisitions, when they fall under the notification thresholds, are very challenging for competition authorities since either the acquired business is not an actual competitor of the acquirer (*Facebook/Instagram; Facebook/WhatsApp; Google/Waze*) or the acquirer is not a full-

Gov.uk, Press release, *New competition authority comes into existence*, 1st October 2013 (accessed 28 September 2018).

<https://www.gov.uk/government/news/new-competition-authority-comes-into-existence>

⁶³³ Mlex, Facebook, *Instagram clearance may have been 'naïve,' CMA boss says*, 7 September 2018 (accessed 28 September 2018).

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1020888&siteid=190&rdir=1>

⁶³⁴ Bloomberg, *Instagram Is Estimated to Be Worth More than \$100 Billion*, 25 June 2018 (accessed 28 September 2018).

⁶³⁵ Mlex, Facebook, *Instagram clearance may have been 'naïve,' CMA boss says*, 7 September 2018 (accessed 28 September).

⁶³⁶ For another ex-post assessment of the merger, see Argentesi, E. et al, *Ex-post Assessment of Merger Control Decisions in Digital Markets-Final report*, Document prepared by Lear for the Competition and Markets Authority, Lear, 9 May 2019, pp. 51-72.

https://www.learlab.com/wp-content/uploads/2019/06/CMA_past_digital_mergers_GOV.UK_version-1.pdf

fledged competitor of the acquired business (*Google/Nest Labs; Microsoft/LinkedIn*). As noted by the Chairman of the US Federal Trade Commission (FTC), Joseph Simons, “and also the likely level of competition with the acquiring firm is frequently, may be more than frequently, not apparent. But harm to competition can nonetheless be significant”.⁶³⁷

- 129.** Indeed, these acquisitions may have a significant impact on the competitive environment. For instance, by buying Instagram and WhatsApp, Facebook has acquired a significant amount of market power in both online advertising services and social networking services. Facebook, Instagram and WhatsApp are indispensable to be connected to the digital environment for both users and advertisers due to the large number of active users who uses these applications daily or monthly. Facebook is thus a kind of inevitable gateway. In 2018, its database cannot be matched by competitors neither in terms of volume nor in terms of variety thanks to its data collection (and processing) about nearly 1 billion monthly active users on Instagram,⁶³⁸ 1.5 billion on WhatsApp⁶³⁹ and 2.3 billion on Facebook.⁶⁴⁰ Facebook uses its tremendous database to be one of the most important supplier of online display advertising⁶⁴¹ in the world and to enhance its market power on the social networking services market.
- 130.** The law and economics literature on pre-emptive mergers or “killer acquisitions” is becoming more and more important as this issue is highly debated in the antitrust

⁶³⁷ Big Law Business, *Big Tech’s Purchases of Startups Under Microscope, FTC Chief Says*, 26 September 2018 (accessed 28 September 2018).

<https://biglawbusiness.com/big-techs-purchases-of-startups-under-microscope-ftc-chief-says/>

⁶³⁸ Statista, *Number of monthly active Instagram users from January 2013 to June 2018 (in millions)* (accessed 28 September 2018).

<https://www.statista.com/statistics/253577/number-of-monthly-active-instagram-users/>

⁶³⁹ Statista, *Number of monthly active WhatsApp users worldwide from April 2013 to December 2017 (in millions)* (accessed 28 September 2018).

<https://www.statista.com/statistics/260819/number-of-monthly-active-whatsapp-users/>

⁶⁴⁰ Statista, *Number of monthly active Facebook users worldwide as of 2nd quarter 2018 (in millions)* (accessed 28 September 2018).

<https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>

⁶⁴¹ ADLC, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018, para. 100.

http://www.autoritedelaconurrence.fr/doc/avis18a03_en_.pdf

sphere among competition experts.⁶⁴² At the time of the acquisition, competition authorities are allowed to carry out a market investigation namely to contact third parties, including main clients, competitors and suppliers of the parties to the merger, to request internal documents to the parties, and to use public information and market studies, but they might be unable to match the level of knowledge shown by the notifying party concerning the potential of the target on the market. In *Facebook/Instagram*, the OFT recognized that Facebook may have perceived Instagram as a credible social network competitor given the rapid growth of Instagram's user base.⁶⁴³ However, this ascertainment did not trigger a warning about the potential adverse effect on the competitive environment in the future. The notifying party has no interest to reveal the underlying reasons of the acquisition and to assert that the target may be a credible competitor in the future due to the risk of conditional approval or even blocking. Therefore, given the level of knowledge of the notifying party, an efficient solution would be to introduce a rebuttable presumption for dominant firms in merger control that shift the burden of proof onto the notifying party to demonstrate that the merger is not likely to significantly impede effective competition and to eliminate a credible competitor in the future. Such a rebuttable presumption has been suggested by the president of the BKartA, Andreas Mundt, and by Crémer et al in their report, to answer complex issues about abuse of dominance in the digital economy.⁶⁴⁴

⁶⁴² Cunningham, C. et al., *Killer Acquisitions*, 22 March 2019.

<https://ssrn.com/abstract=3241707>

Argentesi, E. et al., *Ex-post Assessment of Merger Control Decisions in Digital Markets-Final report*, Document prepared by Lear for the Competition and Markets Authority, Lear, 9 May 2019, pp. 134-136.

Crémer, J. et al., *Competition policy for the digital era*, April 2019, pp. 117-118.

<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

Furman, J. et al, *Unlocking digital competition-Report of the Digital Competition Expert Panel*, p. 91.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

⁶⁴³ ME/5525/12-*Anticipated acquisition by Facebook Inc of Instagram Inc*, 14 August 2012, para. 19.

⁶⁴⁴ Global Competition Review, *Germany considers new rebuttable presumptions*, 20 March 2018 (accessed 30 September 2018).

<https://globalcompetitionreview.com/article/1166816/germany-considers-new-rebuttable-presumptions>

Crémer, J. et al., *Competition policy for the digital era*, April 2019, p. 71.

See also, Competition Policy International, *EU: Vestager considers toughening 'burden of proof' for Big Tech*, 30 October 2019 (accessed 30 January 2020).

<https://www.competitionpolicyinternational.com/eu-vestager-considers-toughening-burden-of-proof-for-big-tech/>

A similar idea has been proposed by the EU Chief Competition Economist, Tommaso Valletti, and by the Stigler Center concerning acquisitions by large companies.⁶⁴⁵ The purpose of this presumption is to fill the gap between the level of knowledge of the competition authority and the level of knowledge of the notifying party about the potential of the acquisition. In complement to this solution, as argued by the Chief executive of the CMA, to bridge future gaps, a competition authority must increase its knowledge in-house and learning from past cases.⁶⁴⁶ In fast-moving digital economy, it should not only constantly update its competition toolkit and analysis from past cases in relation to the current and predictable evolution of the market but also be more conscious about the opportunities coming out of a transaction at an early stage between a big tech company and an innovative startup. For instance, the valuation of the acquired startup, the value of the proposed transaction,⁶⁴⁷ the number (and growth) of the target's user base, the services of the target and the possibility for the latter to add at least some functionalities similar to the buyer may be an indicator of

⁶⁴⁵ Global Competition Review, *DG Comp chief economist: Reverse burden of proof to catch killer acquisitions*, 20 November 2018 (accessed 21 November 2018).

"Speaking at a conference in Brussels today, Tommaso Valletti said asking "super large companies" to prove benefits before being allowed to acquire a smaller rival could be a way to increase enforcement against deals that "kill off" the smaller company's innovative projects or preempt future competition."

<https://globalcompetitionreview.com/article/1177095/dg-comp-chief-economist-reverse-burden-of-proof-to-catch-killer-acquisitions>

See also, Mlex, *Tech-market 'killer acquisitions' could prompt merger-rules rethink, Valletti says*, 20 November 2018 (accessed 21 November 2018).

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1042208&siteid=190&rdir=1>

See also, Mlex, *Digital giants should show deals boost competition or face veto, EU's Valletti says*, 5 December 2018 (accessed 10 December 2018). Valletti suggests that the acquisition should be prevented unless the notifying parties convince the regulator that the deal would increase competition through efficiencies.

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1047089&siteid=190&rdir=1>

Morton, F. S. et al, *Stigler Committee on Digital Platforms*, Final Report, September 2019, p. 17.

<https://www.publicknowledge.org/wp-content/uploads/2019/09/Stigler-Committee-on-Digital-Platforms-Final-Report.pdf>

⁶⁴⁶ Mlex, *Facebook, Instagram clearance may have been 'naïve,' CMA boss says*, 7 September 2018 (accessed 28 September).

⁶⁴⁷ Mlex, *Google's and other tech mergers have been under-enforced, EU's Valletti says*, 7 November 2018 (accessed 8 November 2018).

EU's Chief Competition Economist Tommaso Valletti said *"if you see that the acquisition price is... way above the valuation of the company, maybe you could investigate"*.

<https://www.mlex.com/GlobalAntitrust/Home.aspx?siteid=-5>

the potential of the target to disrupt the acquirer in the future. This is especially relevant if the target is active in a niche sector that has the potential, according to investors, to either impede the business of the buyer or to create additional market power to the latter in the market or in an adjacent market. If the presumption cannot be rebutted by the notifying party and if there are several indicators about the potential elimination of a credible competitor or the strengthening of a dominant position, an in-depth investigation must be required and the merger should be cleared under conditions or even blocked if no remedies can be found to protect the competitive environment in the future. In sum, a competition authority should think like an investor about the potential of the target for the buyer in order to anticipate the theories of harm that the merger is likely to involve.⁶⁴⁸

5.2.2. Data-aggregation issues

- 131.** In the data-driven economy, the target is often acquired by the buyer for its valuable dataset. For instance, this is the underlying reason of the mergers *Microsoft/Yahoo! Search Business* and *Facebook/WhatsApp*. Post-merger, the merged entity will have the incentive to combine the two datasets into one in order to offer better services to both sides of the market for which data are a valuable input such as better personalized services to users and better target ads to advertisers.⁶⁴⁹ In chapter 1, we have already underlined these issues with respect to market power. In this section, we will extend these issues with respect to merger analysis.

⁶⁴⁸ Mlex, *Digital markets tough and slow to police, EU's Valletti says*, 14 December 2018 (accessed 15 December 2018)

"To keep up with digital markets, the commission's competition service needs to employ more computer scientists, he [Tommaso Valletti] added, as well as management consultants with "forward-looking" views on markets".

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1050328&siteid=190&rdir=1>

⁶⁴⁹ M.8788-Apple/Shazam, 6 September 2018, para. 262.

"Furthermore, data collected by music recognition apps, and in particular by Shazam, could be used to improve existing functionalities, or offer additional functionalities, on digital music streaming apps. In this context, user data collected by Shazam could be considered as an important input within the meaning of paragraph 30 and 34 of the Non-Horizontal Merger Guidelines for providers of digital music streaming apps".

http://ec.europa.eu/competition/mergers/cases/decisions/m8788_1279_3.pdf

- 132.** These concerns are not new for competition authorities. The Commission has already investigated three types of theories of harm. Firstly, with regards to horizontal effects, the merging parties' datasets could provide them with a competitive advantage in a way that competitors would be unable to match.⁶⁵⁰ Secondly, with regards to vertical effects, the merged entity is a provider of data to third parties and could either increase the price at which it sells its data post-merger or refuse to supply such data.⁶⁵¹ Thirdly, with respect to conglomerate effects, the buyer may leverage its position from one market into another where the target is active in order to increase the target's user base (and so increase the volume and variety of data) and to tip the market to the detriment of competitors.⁶⁵² However, some shortcomings are present in the reasoning of the Commission in particular with respect to horizontal effects. Only the latter will be analyzed in this section.
- 133.** Firstly, the Commission analyzes the merging parties' datasets only to the extent that it is likely to strengthen the buyer's position in the online advertising market.⁶⁵³ However, the agency did not analyze that such data combination may strengthen the buyer's position on the other side of the market, namely the user's side as the result of the increased amount of data in terms of volume and variety which will come under the buyer's control and the possibility to match the buyer users' profiles with the target users' profiles in order to offer better services such as friend recommendations or more targeted advertisements. There are two main ways in which the consumer may be harmed, that is to say, as a breach of data protection law and as an increase in the lock-in effect of the user as a result of the strengthening of network effects and the impossibility to switch to a competitor.
- 134.** In the first place, even if the Commission has underlined that the data combination could only be implemented to the extent that it is allowed under the applicable data

⁶⁵⁰ COMP/M.4731-*Google/DoubleClick*, 11 March 2008, paras. 359–366; COMP/M.6314-*Telefonica UK/Vodafone UK/Everything Everywhere/JV*, 4 September 2012, paras. 529-558; COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, paras. 180-189; M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 176-181.

⁶⁵¹ M.8788-*Apple/Shazam*, 6 September 2018, paras. 328-329; M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 246-277.

⁶⁵² M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 295-352.

⁶⁵³ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 164 and para. 187.

protection legislation such as the General Data Protection Regulation (“GDPR”)⁶⁵⁴ and e-Privacy Directive,⁶⁵⁵ this assumption does not prevent the merged entity to not do so if the benefit to breach is higher than the cost to implement applicable data protection rules. In this regard, it is worth noting that the Commission analyzed in-depth the legal limitations stemming from the GDPR on the collection and processing of the target’s data.⁶⁵⁶ In such situation, the consumer is harmed and only an ex-post intervention by the competent data protection authority is possible but its powers are limited to issue formal notices, fine a firm in case of data protection breaches and order it to stop the infringement. Therefore, if there are some evidences from past cases of data protection breaches by the notifying parties and that it could be more profitable for the merged entity to breach applicable data protection law, the competition authority should either allow the merger under the condition that the merged entity will respect applicable data protection rules and would not have adverse effects on consumers and competition (i.e., loss of control over how personal data are used and help the company to attain or maintain its market power by increasing the lock-in effect to the detriment of other social networks)⁶⁵⁷ or, as in the US about the merger *Facebook/WhatsApp*, to send a formal notice to the parties about their obligations to protect the privacy of their users. The letter reminds the notifying parties that, regardless of the acquisition, WhatsApp must continue to honor its privacy promises to consumers and if it fails, both companies could be in violation of Section 5 (unfair practice) of the FTC Act as well as the 2012 FTC’s order against Facebook.⁶⁵⁸ In August 2016, The FTC has started to review

⁶⁵⁴ M.8788-*Apple/Shazam*, 6 September 2018, para. 226 and para. 314; M.8124-*Microsoft / LinkedIn*, 6 December 2016, paras. 177-178; M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 90.

⁶⁵⁵ M.8788-*Apple/Shazam*, 6 September 2016, para. 233 and para. 314.

⁶⁵⁶ *Ibid*, paras. 226-238.

⁶⁵⁷ Carugati, C., *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, *European Competition and Regulatory Law Review* Volume 2, Issue 1 (2018) pp. 4 – 10.

⁶⁵⁸ Federal Trade Commission (FTC), Press release, *FTC Notifies Facebook, WhatsApp of Privacy Obligations in Light of Proposed Acquisition*, 14 April 2014 (accessed 3 October 2018).

<https://www.ftc.gov/news-events/press-releases/2014/04/ftc-notifies-facebook-whatsapp-privacy-obligations-light-proposed>

a complaint⁶⁵⁹ about this practice⁶⁶⁰ after WhatsApp had announced in August 2016 to “share some member information with Facebook”⁶⁶¹ such as phone numbers. In May 2017, the Italian Competition Authority fined WhatsApp “for 3 million euro for having forced its users to share their personal data with Facebook” based on a consumer law violation.⁶⁶² And, also in May 2017, the Commission fined “Facebook €110 million for providing misleading information about WhatsApp takeover” about the possibility to automatically match Facebook and WhatsApp users’ accounts. However, this decision has no impact on the outcome of the merger approval since the Commission has assumed this possibility in its 2014 Decision.⁶⁶³ It is worth noting that, in July 2019, the FTC imposed a 5 billion dollars fine to Facebook for having violated the 2012 FTC’s

⁶⁵⁹ Complaint to the FTC by the EPIC and the CDD about WhatsApp’s plan to transfer user data, 29 August 2016 (accessed 3 October 2018).

<https://epic.org/privacy/ftc/whatsapp/EPIC-CDD-FTC-WhatsApp-Complaint-2016.pdf>

⁶⁶⁰ FTC, *Response to the EPIC and the CDD complaint about WhatsApp’s plan to transfer user data*, 31 August 2016 (accessed 3 October 2018).

<https://epic.org/privacy/ftc/whatsapp/FTC-Response-to-EPIC-CDD-WhatsApp-Complaint.pdf>

⁶⁶¹ The New York Times, *Relaxing Privacy Vow, WhatsApp Will Share Some Data with Facebook*, 25 August 2016 (accessed 3 October 2018).

https://www.nytimes.com/2016/08/26/technology/relaxing-privacy-vow-whatsapp-to-share-some-data-with-facebook.html?_r=0

⁶⁶² Autorità Garante della Concorrenza e del Mercato (AGCM), Press release, *WhatsApp fined for 3 million euro for having forced its users to share their personal data with Facebook*, 12 May 2017 (accessed 3 October 2018).

<http://www.agcm.it/en/newsroom/press-releases/2380-whatsapp-fined-for-3-million-euro-for-having-forced-its-users-to-share-their-personal-data-with-facebook.html>

On 10 January 2018, the AGCM fined WhatsApp for 50 thousand euro for having not executed the order of publication of the previous decision of May 2017.

AGCM, Press release, *Sanzione da 50 mila euro a Whatsapp per inottemperanza a obblighi informativi agli utenti*, 10 January 2018 (accessed 3 October 2018).

<http://www.agcm.it/media/dettaglio?id=b7a30c59-9ed6-433e-957f-0de181a6e350>

⁶⁶³ EC, Press release, *Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover*, 18 May 2017 (accessed 3 October 2018).

http://europa.eu/rapid/press-release_IP-17-1369_en.htm

order.⁶⁶⁴ Recently in May 2020, the Canadian Competition Authority also fined Facebook 9 million dollars due to false or misleading privacy claims.⁶⁶⁵

- 135.** In the second place, the data combination may increase the lock-in effect with respect to users and advertisers as the result of the strengthening of network effects and the impossibility to switch to competitors. By gathering even more data in terms of volume and variety, the merged entity can improve its services. Accordingly, it becomes even more attractive to users and thus the (direct and indirect) network effects increase and, consequently, the lock-in of users increases.⁶⁶⁶ Moreover, with the merging of both Facebook and WhatsApp users' accounts, users are even more entrenched since the former can tie more users to its network by, for instance, suggesting phone contacts as friends.⁶⁶⁷ In this regard, the analysis of the Commission in *Facebook/WhatsApp* is inaccurate.⁶⁶⁸ The Commission concluded that pre-existing network effects would be unlikely to be substantially strengthened by the transaction as the result of such user matching.⁶⁶⁹ Indeed, based on the notifying party's view, the Commission considered that technical integration between Facebook and WhatsApp would not be straightforward,⁶⁷⁰ but this information were misleading.⁶⁷¹ Thereafter, the agency

⁶⁶⁴ FTC, Press release, *FTC Imposes \$5 Billion Penalty and Sweeping New Privacy Restrictions on Facebook*, 24 July 2019 (accessed 30 January 2020).

<https://www.ftc.gov/news-events/press-releases/2019/07/ftc-imposes-5-billion-penalty-sweeping-new-privacy-restrictions>

⁶⁶⁵ Competition Bureau, Press release, *Facebook to pay \$9 million penalty to settle Competition Bureau concerns about misleading privacy claims*, 19 May 2020 (accessed 27 May 2020).

<https://www.canada.ca/en/competition-bureau/news/2020/05/facebook-to-pay-9-million-penalty-to-settle-competition-bureau-concerns-about-misleading-privacy-claims.html>

⁶⁶⁶ BKartA, *Background information on the Facebook proceeding*, 19 December 2017.

"Based on its dominant position, Facebook can use them [the data] to optimise its offer and tie more users to its network. With the merging of the data the "identity-based network effects" and, consequently, the "locking-in" of users increase, to the detriment of other providers of social networks."

⁶⁶⁷ The New York Times, *Relaxing Privacy Vow, WhatsApp Will Share Some Data with Facebook*, 25 August 2016 (accessed 3 October 2018).

⁶⁶⁸ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, paras. 136-140.

⁶⁶⁹ *Ibid*, para. 140.

⁶⁷⁰ *Ibid*, para. 139.

⁶⁷¹ EC, Press release, *Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover*, 18 May 2017 (accessed 3 October 2018).

ascertained that users could switch to competing consumer communications apps.⁶⁷² However, switching costs are high since they will only switch if they can use an application with a similar size and at least the possibility to find the persons they want to be in contact with on it otherwise they will be worse off. WhatsApp offers a better degree of privacy protection than Facebook, therefore users who significantly value privacy and security will switch more easily to another application as proved by the high number of German users who switched to Threema (a competing application which offers increased privacy protection) in the 24 hours following the announcement of the acquisition.⁶⁷³ Nonetheless, they are only better off if they can communicate with the persons they want to be in contact with on it, otherwise they will be forced to use again WhatsApp. As argued by Professors Stucke and Grunes, the Commission missed here this important issue “*namely how competition can be dampened when the tyranny of the majority dictates the privacy choices of the minority*”.⁶⁷⁴ The higher are the network effects, the higher is the switching cost to a competing application.⁶⁷⁵ It is worth noting that, contrary to the Commission’s allegation, switching did not occur. Despite the transaction, WhatsApp’s dominance has (and still) increased in the consumer communications services after the announcement in February 2014,⁶⁷⁶ from 450 million users worldwide to 600 million users at the time of the Commission’s decision in October 2014 and 1.5 billion users in December 2017.⁶⁷⁷ Moreover, the Commission claimed that multi-homing between WhatsApp and Facebook was significant and thus the net gain in terms of new members to the communications network would be more limited than the addition of WhatsApp users to the Facebook user base would suggest.⁶⁷⁸ However, this also means that a large number of WhatsApp users already uses Facebook Messenger or Facebook and thus the lock-in effect of

⁶⁷² COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 139.

⁶⁷³ Ibid, para. 174 and footnote 79.

⁶⁷⁴ Stucke, M. E., and Grunes, P. A., Big Data and Competition policy, *Oxford University Press*, 2016, p. 168.

⁶⁷⁵ Ibid, pp. 168-169.

“the choice [of an application] may not reflect personal preference, but the degree of market power, through network effects, that each app has within that social group.”

⁶⁷⁶ Facebook, Newsroom, *Facebook to Acquire WhatsApp*, 19 February 2014 (accessed 6 October 2014).

<https://newsroom.fb.com/news/2014/02/facebook-to-acquire-whatsapp/>

⁶⁷⁷ Statista, *Number of monthly active WhatsApp users worldwide from April 2013 to December 2017 (in millions)* (accessed 6 October 2018).

<https://www.statista.com/statistics/260819/number-of-monthly-active-whatsapp-users/>

⁶⁷⁸ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 140.

users would be important since a significant number of Facebook users could receive suggesting phone contacts as friends and thus they will be more entrenched on the platform. Facebook will become even more indispensable to advertisers when Facebook will put personalized ads on WhatsApp by using personal data from both Facebook and WhatsApp users' account.⁶⁷⁹ Accordingly, this may reduce consumer choice and the quality (including privacy) of WhatsApp and therefore, users, advertisers and competitors (due to foreclosure) will be harmed.

- 136.** Secondly, the Commission's analysis in the online advertising market looks a bit naive. The Commission assesses the likelihood of anticompetitive input foreclosure with respect to the ability, incentive and the overall likely impact on effective competition.⁶⁸⁰ As regards the ability, the merged entity has to change the target's privacy policy.⁶⁸¹ However, in general, users have no choice but to accept the new terms if they want to continue to use the service, thus the change is not likely to undermine the ability of the merged entity. As regards the incentive, the Commission asserted that switching may occur to different consumer communications apps that they perceived less intrusive.⁶⁸² Nonetheless, as demonstrated above, switching costs are high. Finally, as regards the overall likely impact on effective competition, the Commission concluded that there will continue to be a large amount of internet user data that are valuable for advertising purposes and that are not within the Parties'

⁶⁷⁹ The Sun, *Facebook is putting ADVERTS in WhatsApp next year – against app founders' wishes*, 1st October 2018 (accessed 4 October 2018).

<https://www.thesun.co.uk/tech/7391270/whatsapp-ads-facebook-brian-action-ian-koum/>

⁶⁸⁰ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004.

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52004XC0205\(02\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52004XC0205(02)&from=EN)

EC, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07)*, 18 October 2008.

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1018\(03\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1018(03)&from=EN)

⁶⁸¹ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 185.

The Commission also considered two other arguments. First, concerning the requirement for Facebook to match each users' WhatsApp profile with her or his Facebook profile. As noted above, Facebook gave a misleading information to the Commission. Second, the necessity for Facebook to retract a WhatsApp's plan covered by business secrets in the decision.

⁶⁸² *Ibid*, para. 186.

exclusive control.⁶⁸³ According to the Commission, there are a significant number of market participants that collect user data alongside the Parties (or at least the buyer). It includes in the same packet all the market participants that collect user data without considering that each market participant is active on a particular service. From the advertiser standpoint, the two main decisive criteria for the choice of a data provider are its size in terms of volume, variety, velocity and value of data and the service at hand to users (e.g. social networking, general search, marketplace) allowing them to reach the persons they want to be in contact with on it. Thus, if they want to target someone on a social network they will likely use a data provider which is active in the social networking services such as Facebook instead of Amazon which is active in the e-commerce. Since the value of the data depends on the context at issue, the data that is valuable to a market participant (e.g. Facebook) may not be valuable to another (e.g. Amazon).⁶⁸⁴ Therefore, the data combination will only have an impact on the market participants who are active in the same service's market to users. Post-merger the merged entity's market power in a market for the supply of service to users such as social networks (see chapter 1, section 4.2.3) will be higher as the result of the increasing amount of data in terms of volume and variety in the hand of the new entity. The merged entity will provide better services to users and personalized ads to advertisers. Therefore, the barriers and expansion will be strengthened due to the higher switching costs and lock-in effect of users and advertisers. Accordingly, the new entity will become even more indispensable for both users and advertisers. Competitors or potential competitors will have to collect a larger dataset to compete effectively with the new entity than absent the merger.⁶⁸⁵ This concern is exacerbated when the companies' datasets are not easily replicable by rivals. Facebook thanks to its relevant data and the possibility to target billions of users on Facebook, Instagram and WhatsApp is now a must-have for advertisers. Such data combination will also have pro-competitive effect when it enables the merged entity (when the Parties are small

⁶⁸³ Ibid, para. 189; M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 180; M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 91.

⁶⁸⁴ Stucke, M. E., and Grunes, P. A., *Big Data and Competition policy*, Oxford University Press, 2016, pp. 79-80. Commenting the *Facebook/WhatsApp* merger, "[o]ther competitors may control valuable data. But the search data that is valuable to Google may not be as valuable to Facebook."

⁶⁸⁵ COMP/M.5727-*Microsoft / Yahoo! Search Business*, 18 December 2010, para. 179; M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 82.

players) to improve its competitiveness against existing stronger competitors.⁶⁸⁶ In *Microsoft/Yahoo! Search Business*, the merging of data between Microsoft and Yahoo is related to scale. Scale is an important factor of competition (see chapter 1, section 4.2.9). In this case at hand, scale will enable the new entity to be a stronger competitor to Google, more able to innovate. Thus, according to the Commission, this will incentivize Google to keep, or even accelerate, its innovative efforts in the market.⁶⁸⁷ Finally, it is worth noting that the Commission correctly examined the theory of harm in which, even though no data combination occurs post-merger, the competition between the merging parties would be eliminated by the transaction, if pre-merger, they were competing between them on the basis of the data they controlled in online advertising. To date, the Commission has analyzed this scenario in *Microsoft/LinkedIn*⁶⁸⁸ and *Verizon/Yahoo!*⁶⁸⁹ in which the Parties were small players and were competing with each other only to a very limited extent in the market. Therefore, competition will not be harmed. The conclusion would not be the same if they were big players and were competing vigorously because they could for instance increase the price at which they sell their data post-merger (vertical effects) or lose the incentive to innovate to offer better services for advertising purposes (horizontal effects)

5.2.3. Privacy issues

137. Privacy and data protection analysis in the digital economy has become an important issue of concern to the international community after the revelation of privacy scandals such as the Facebook-Cambridge Analytica data scandal in March 2018⁶⁹⁰ and the enforcement of the new General Data Protection Regulation (“GDPR”) on 25 May

⁶⁸⁶ COMP/M.5727-*Microsoft/Yahoo! Search Business*, 18 December 2010, paras. 160-176; M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 93.

⁶⁸⁷ COMP/M.5727-*Microsoft/Yahoo! Search Business*, 18 December 2010, para. 219.

⁶⁸⁸ M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 179-180.

⁶⁸⁹ M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 83 and para 92.

⁶⁹⁰ Forbes, *Here's What's Amazing About The Facebook Cambridge Analytica Story*, 27 March 2018 (accessed 9 October 2018).

<https://www.forbes.com/sites/jodywestby/2018/03/27/what-is-amazing-about-the-facebook-cambridge-analytica-story/#604a248a7d34>

2018.⁶⁹¹ Competition authorities are under pressure to increasingly absorb them in their antitrust and merger analysis. The question is tricky and two sides express different views on if and how privacy should be included in the competitive assessment. On one hand, some academics,⁶⁹² practitioners⁶⁹³ and even regulators⁶⁹⁴ consider that the purpose of competition rules is not to solve privacy issues and that competition law and data protection/privacy laws are complements and not substitutes. On the other hand, others promote the integration of privacy in antitrust and merger cases.⁶⁹⁵

⁶⁹¹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R0679>

⁶⁹² Cooper, J. C., *Privacy And Antitrust: Underpants Gnomes, The First Amendment, And Subjectivity*, George Mason Law Review, Forthcoming, George Mason Law & Economics Research Paper No. 13-39, June 2013.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2283390

⁶⁹³ Gilbert, P. and Pepper, R., *Privacy Considerations in European Merger Control: A Square Peg for a Round Hole*, Competition Policy International Antitrust Chronicle, May 2015.

<https://www.competitionpolicyinternational.com/assets/Uploads/PepperGilbertMay-152.pdf>

Tucker, D. S. and Wellford, H. B., *Big Mistakes Regarding Big Data*, the Antitrust Source, December 2014.

https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/dec14_tucker_12_16f.authcheckdam.pdf

⁶⁹⁴ Competition Policy International, *CPI talks... with Thomas Kramler* [DG Comp, head of the EU's Digital Single Market Task Force], 20 September 2018.

<https://www.competitionpolicyinternational.com/wp-content/uploads/2018/09/CPI-Talks-Kramler.pdf>

Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015, 2015.

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

⁶⁹⁵ Lynskey, O., *Considering Data Protection in Merger Control Proceedings*, OECD roundtable, Non-price Effects of Mergers, 1st June 2018.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)70/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)70/en/pdf)

Stucke, M. E and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016.

Wolfgang, K., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, April 2016, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, 639-647, 26 April 2016.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770479

Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 25 February 2008.

<https://pdfs.semanticscholar.org/018b/0e2e468aab1a0e899c0e23c5596ef573f9d2.pdf>

European Data Protection Supervisor, *Privacy and competitiveness in the age of big data, The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014.

138. This section supports the latter view and shows that the former misses the important point that personal data necessarily imply privacy and data protection concerns and thus any mergers involving the collection and use of personal data may have an adverse effect on privacy and data protection that competition rules must consider in the analysis. Post-merger, the new entity may either reduce the quality of the service as regards privacy as in *Facebook/WhatsApp* or reduce consumer choice in relation to privacy as in *Microsoft/LinkedIn* or even lessen the incentive to compete on privacy as the result of the absence of strong players that offers a greater degree of privacy protection. But, beyond those issues, finding a theory of harm based on the relationship between the accumulation of data power in the hand of a monopolist or quasi-monopolist and the impact of a potential privacy breach on consumers might be one of the biggest challenges that competition authorities have ever faced. As noted

https://edps.europa.eu/sites/edp/files/publication/14-03-26_competition_law_big_data_en.pdf

BKartA, Press release, *Preliminary assessment in Facebook proceeding: Facebook's collection and use of data from third-party sources is abusive*, 19 December 2017. (accessed 9 October 2018). Andreas Mundt said “[d]ata protection, consumer protection and the protection of competition interlink where data, as in Facebook's case, are a crucial factor for the economic dominance of a company.”

Mlex, *EU privacy rules key to competition analyses, head of France's antitrust watchdog says*, 4 May 2018. (accessed 21 November 2018). Isabelle De Sivla said “it's interesting to see the importance of privacy rules [in] really shaping the way the market is working, and this needs to be taken into account in our competitive analysis”

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=986723&siteid=190&rdir=1>

Mlex, *Tech and data antitrust challenges are being met by enforcers, French regulator says*, 20 November 2018 (accessed 21 November 2018). Isabelle De Sivla stressed that “data protection needs to be addressed, and it is being addressed”.

<http://www.mlex.com/GlobalAntitrust/DetailView.aspx?cid=1042304&siteid=190&rdir=1>

DOJ, Speech, Makan Delrahim, “Blind[ing] Me With Science”*: *Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, 8 November 2019 (accessed 30 January 2020).

<https://www.justice.gov/opa/speech/file/1217071/download>

“Although privacy fits primarily within the realm of consumer protection law, it would be a grave mistake to believe that privacy concerns can never play a role in antitrust analysis. Indeed, we take note of evidence that some consumers appear to hold revealed preference for privacy.”

EC, Speech, Margrethe Vestager, *Privacy and competition in an age of data*, IAPP Europe Data Protection Congress, Brussels, 21 November 2019 (accessed 30 January 2020).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/privacy-and-competition-age-data_en

“So protecting that data is an absolutely necessity, to build a digital world that works well for humans. And competition policy has an important contribution to make.”

by Professor Lande *“a monopoly probably could weather even the worst public relations storm, but a firm making a habit of huge privacy mistakes in a competitive market could soon go out of business as customers took their business elsewhere”*.⁶⁹⁶ Consider the Facebook-Cambridge Analytica scandal, Facebook faced a huge privacy mistakes that affected 87 million users but post-scandal, Facebook is still growing. Since the revelation of the case, the number of monthly active users has increased by nearly 5% from 2 129 billion in January 2018 to 2 234 billion users in July 2018.⁶⁹⁷ Facebook did not go out of business as consumers cannot take their business elsewhere due to strong network effects and the absence of competitors with a similar consumer base and data about users. Even if they could, Instagram is the only alternative available in the market but it owns by Facebook. Thanks to its data power, Facebook is simply too powerful to fail. The goal of competition law, at least in Europe, is to prevent an already dominant company to strengthen its position⁶⁹⁸ and to promote a competitive market but by authorizing data combination mergers by big tech companies, competition authorities clearly fail to do so. They fail to promote a privacy competition in the market and to ensure a high level of quality.

- 139.** In zero-price markets, in the absence of price, quality is the only parameter of competition that affects consumer welfare.⁶⁹⁹ Quality includes privacy and data protection, advertising, choice, innovation and market-specific features of a service

⁶⁹⁶ Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. *FTC: Watch*, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 25 February 2008, p. 2.

⁶⁹⁷ Statista, *Number of monthly active Facebook users worldwide as of 2nd quarter 2018 (in millions)* (accessed 9 October 2018).

<https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>

⁶⁹⁸ EC, *Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)*, para. 26.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004R0139&from=EN>

“[...] this Regulation should accordingly establish the principle that a concentration with a Community dimension which would significantly impede effective competition, in the common market or in a substantial part thereof, in particular as a result of the creation or strengthening of a dominant position, is to be declared incompatible with the common market.”

⁶⁹⁹ OECD, *Quality considerations in digital zero-price markets-Background note by the Secretariat*, 9 October 2018, p. 6.

[https://one.oecd.org/document/DAF/COMP\(2018\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)14/en/pdf)

“While quality arises as a dimension of competition in many markets, quality in non-price markets will be the only parameter that affects consumer welfare, and the only measure of the effects of firm conduct or mergers.”

(e.g. speed, functionality, reliability, etc.).⁷⁰⁰ In particular, in the data-driven economy where the service is offered for free to users in exchange of data acquisition, privacy is an important non-price parameter of competition.⁷⁰¹ As noted by the OECD, privacy as a dimension of quality refers broadly to:

*“the control that consumers have over whether and how much of their data is collected (the range of data and its frequency); how it is used, both by the collecting entity and any third parties that are granted access to it; and how it is safeguarded from unauthorised or inappropriate uses. The latter safeguards contribute to what is referred to below as data security, which in the context of consumer data is one element of privacy.”*⁷⁰²

- 140.** Even if privacy may not be salient to consumers, the level of privacy protection offered by the firm has a direct impact on the level of data acquisition and thus on the quality of services such as targeted advertising or accuracy of search results. The lower is the level of privacy protection, the higher is the data collection and the higher is the quality of market-specific features of a particular service. These quality dimensions are further enhanced by network effects and in particular data-driven network effects (see chapter 1, section 2.2). This explains why in the data-driven economy firms do not compete fiercely on privacy and why the most used services such as Facebook or Google are the

⁷⁰⁰ Ibid, pp. 6-10.

⁷⁰¹ OECD, *Quality considerations in the zero-price economy-Note by the United Kingdom*, 14 November 2018, p. 5.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)134/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)134/en/pdf)

“However privacy is an increasingly important dimension of competition for consumers in the zero-price economy.”

See also, DOJ, Speech, Makan Delrahim, *“Blind[ing] Me With Science”*: Antitrust, Data, and Digital Markets, Challenges to Antitrust in a Changing Economy* Harvard Law School, 8 November 2019 (accessed 30 January 2020).

“Like other features that make a service appealing to a particular consumer, privacy is an important dimension of quality. For example, robust competition can spur companies to offer more or better privacy protections. Without competition, a dominant firm can more easily reduce quality – such as by decreasing privacy protections – without losing a significant number of users.”

⁷⁰² OECD, *Quality considerations in digital zero-price markets-Background note by the Secretariat*, 9 October 2018, p. 7.

ones that offer the minimum level of privacy protection leading to a market for lemons in privacy protection. Therefore, the level of privacy offered and the underlying amount of data collected is an important dimension of quality.⁷⁰³ Further, some evidences show that firms compete over privacy in order to attract users that prefer a greater degree of privacy protection. For instance, as mentioned above, in the market for consumer communications services, Signal, Silent, Telegram, Threema, WhatsApp, Wickr Me and Viber offer chat encrypted whereas Facebook Messenger, Line and We Chat collect and use user data. In the market for search engine services, Google tracks users whereas DucDuckGo proposes anonymous search. In the market for professional social networking services, XING offers a greater degree of privacy protection than LinkedIn. Accordingly, privacy is an important quality dimension of competition. Nonetheless, to date, only few competition cases consider privacy as a non-price parameter of competition. The factor was only recognized in *Facebook/WhatsApp*⁷⁰⁴ and *Microsoft/LinkedIn*.⁷⁰⁵

- 141.** In these decisions, the Commission did not analyze in-depth the effect on consumer welfare of the proposed deal on privacy. Indeed, in line with the European Court of Justice (EJC) in *Asnef-Equifax*,⁷⁰⁶ the authority stated in *Facebook/WhatsApp*:

⁷⁰³ Ibid, p. 30.

“Thus, privacy may be a relevant dimension of quality competition, even if the current state of competition in the market means that low quality prevails. Anticompetitive mergers could permit quality to drop further, particularly without the likely entry of high privacy quality alternatives.”

[https://one.oecd.org/document/DAF/COMP\(2018\)2/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)2/en/pdf)

OECD, *Quality considerations in the zero-price economy-Note by the United Kingdom*, 14 November 2018, p. 4.

“Another important aspect of quality in the zero-price economy is the amount of information a consumer exchanges for use of a good or service, for example a website, search engine or social media platform.”

⁷⁰⁴ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 87, para. 102 and footnote 79.

⁷⁰⁵ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 350 and footnote 330.

⁷⁰⁶ Case C-238/05-*Asnef-Equifax, Servicios de Información sobre Solvencia y Crédito, SL v Asociación de Usuarios de Servicios Bancarios (Ausbanc)*, ECLI:EU:C:2006:734, 23 November 2006, para. 63.

<http://curia.europa.eu/juris/showPdf.jsf?text=&docid=65421&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=853651>

“[...] any possible issues relating to the sensitivity of personal data are not, as such, a matter for competition law, they may be resolved on the basis of the relevant provisions governing data protection.”

“Any privacy-related concerns flowing from the increased concentration of data within the control of Facebook as a result of the Transaction do not fall within the scope of the EU competition law rules but within the scope of the EU data protection rules.”⁷⁰⁷

- 142.** In *Microsoft/LinkedIn*, the Commission developed in what extent privacy can be considered in the competitive assessment. Two conditions are required: (i) privacy is seen as a significant parameter of competition by consumers; and (ii) the merging parties compete with each other on this factor.⁷⁰⁸ In this case, the Commission concluded that tipping is likely to foreclose the market in favor of LinkedIn’s PSN which would lead to the marginalization of an existing competitor, XING, which offers a greater degree of privacy protection. Therefore, the merger would restrict consumer choice in relation to privacy and thus will have a negative impact on effective competition in the market for PSN services.⁷⁰⁹ Nonetheless, this theory of harm is

⁷⁰⁷ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 164.

See also, EC, Press release, *Mergers: Commission approves acquisition of LinkedIn by Microsoft, subject to conditions*, 6 December 2016 (accessed 15 October 2018).

http://europa.eu/rapid/press-release_IP-16-4284_en.htm

“The Commission analysed potential data concentration as a result of the merger with regard to its potential impact on competition in the Single Market. Privacy related concerns as such do not fall within the scope of EU competition law [...]”

See also, a similar statement in M.7813-Sanofi/Google/DMI JV, 23 February 2016, para. 70. In this decision, privacy is not recognized as a non-price parameter of competition.

http://ec.europa.eu/competition/mergers/cases/decisions/m7813_479_2.pdf

“For the purposes of this decision, the Commission notes that any privacy-related concerns flowing from the use of data within the control of the Parties do not fall within the scope of the EU competition law rules but within the scope of the EU data protection rules.”

⁷⁰⁸ EC, Press release, *Mergers: Commission approves acquisition of LinkedIn by Microsoft, subject to conditions*, 6 December 2016 (accessed 15 October 2018).

“The Commission analysed potential data concentration as a result of the merger with regard to its potential impact on competition in the Single Market. Privacy related concerns as such do not fall within the scope of EU competition law but can be taken into account in the competition assessment to the extent that consumers see it as a significant factor of quality, and the merging parties compete with each other on this factor.”

⁷⁰⁹ M.8124-Microsoft/LinkedIn, 6 December 2016, paras. 350-351.

mainly based on consumer choice instead of privacy.⁷¹⁰ Accordingly, in the absence of competition cases in relation to a theory of harm based on privacy, it remains unclear what will be the competitive assessment of privacy on consumer welfare.

- 143.** From a competition standpoint, the impact on consumer welfare is a daunting task. First, privacy, like other dimensions of quality, is a subjective concept.⁷¹¹ Therefore, consumers may exhibit different values of privacy protection. Second, as noted above, the level of privacy has a direct impact on the level of market-specific features of a particular service such as accuracy of search results. Thus, the level of privacy and the underlying data collection is procompetitive and beneficial to consumers in a way that it can improve the level of quality, efficiency and innovation.⁷¹² Nonetheless, consumers may also be harmed by the level of privacy offered by the firm, especially if they do not have the choice but to accept the terms and conditions (and the privacy policy) to use the service. The terms are either not read at all or are not easily and entirely understood.⁷¹³ Although they can manage their privacy, consumers are generally unaware of this possibility and even if they are, they will not choose to change their parameters due to inertia and the fear to lose in quality of service.⁷¹⁴ At the end

⁷¹⁰ Indeed, as noted by the Commission about the merger, “[t]he transaction would indirectly impair privacy since, through promoting LinkedIn on its operating system, Microsoft would foreclose and marginalise competing professional social networks, some of which offered greater privacy protection.”

OECD, *Non-price Effects of Mergers - Note by the European Union*, 6 June 2018, p. 11.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)14/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)14/en/pdf)

⁷¹¹ OECD, *The Role and Measurement of Quality in Competition Analysis*, 2013, p. 5.

<http://www.oecd.org/daf/competition/Quality-in-competition-analysis-2013.pdf>

⁷¹² OECD, *Big data: bringing competition policy to the digital era- Background note by the Secretariat*, 27 October 2016, pp. 7-9.

⁷¹³ OECD, *Quality considerations in digital zero-price markets-Background note by the Secretariat*, 9 October 2018, p. 25.

⁷¹⁴ For instance, to manage our privacy on Google, the steps are the following: 1/ Access to Google’s privacy policy; 2/ Access to the section “your privacy controls”; 3/ Click on the button “Go to Privacy Checkup”; 4/ Click on the button “Start now”; 5/ To personalize, one has to click on each kind of data collected (e.g, web&App activity; Location History; Device Information) to change the privacy setting. Even if the information are clear, it is time-consuming to change the privacy setting and the information are written in a way that discourage any change. For instance, the section Web& App activity” states: “Google is saving your searches and other Google activity. Google is also saving activity such as which apps you use, your Chrome history, and which sites you visit on the web. This helps Google to give you faster results by autocompleting searches, as

of the day, consumers are thus not fully aware about the collection and processing of their personal data due to information asymmetries between consumers and providers. Accordingly, consumers might be unaware of a degradation of privacy protection to collect and process more data. However, such degradation can be seen as either an increase in price that the user has to pay to use the service since data is the price in zero-price markets or as a degradation of the quality of the service since privacy is a dimension of quality.⁷¹⁵ A decrease in privacy may be more harmful to consumer welfare than an increase in price given that privacy is a fundamental right.⁷¹⁶

well as smarter and more useful experiences in Maps, Assistant, and other Google services. (accessed 15 October 2018).

<https://policies.google.com/privacy?hl=en&gl=ZZ>

See also, Forbrukerradet, *Deceived by design, how tech companies use dark patterns to discourage us from exercising rights to privacy*, 27 June 2018.

<https://fil.forbrukerradet.no/wp-content/uploads/2018/06/2018-06-27-deceived-by-design-final.pdf>

⁷¹⁵ Ocello. E. et al, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015-Article 1, February 2015, p. 6.

"In two-sided markets, where products are offered to users for free and monetised through targeted advertising, personal data can be viewed as the currency paid by the user in return for receiving the 'free' product, or as a dimension of product quality. Hence, a website that, post-merger, would start requiring more personal data from users or supplying such data to third parties as a condition for delivering its 'free' product could be seen as either

increasing its price or as degrading the quality of its product."

See also, Australian Competition and Consumer Commission (ACCC), Speech, Rod Sims, *Gilbert & Tobin seminar: the data economy*, 15 October 2018 (accessed 16 October 2018).

<https://www.accc.gov.au/speech/gilbert-tobin-seminar-the-data-economy>

"Where users value their privacy and their personal information, an erosion of privacy is equivalent to an increase in price in the case of zero price markets. "

See also, DOJ, Speech, Makan Delrahim, *"Blind[ing] Me With Science"*: Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, 8 November 2019 (accessed 30 January 2020).

"Just as antitrust enforcers care about companies charging higher prices or degrading quality as a sign of allocative inefficiency, it may be important to examine circumstances where companies acquire or extract more data from consumers in exchange for less."

⁷¹⁶ Charter of fundamental rights of the European Union (2012/c 326/02), 26 October 2012, art. 7 and 8.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN>

See also, Regulation (EU) 2016/679 of the European parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing directive 95/46/EC (General Data Protection Regulation), 4 May 2016.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=FR>

- 144.** To tackle this challenge in a clear and objective way, competition authorities need a guideline on how to assess consumer welfare in relation to non-price parameters of competition, and in particular to privacy. As noted in chapter 1, they must use a benchmark of quality that is salient, objective and quantifiable. An industry’s standard measure of quality appears to be the most suitable one. In complement, they can proceed to a survey of users to define a “user’s standard measure of quality”. In relation to privacy, agencies can use five main metrics:
- Whether the service collects personal data.
 - Whether the service uses personal data for the purposes of its advertising activities.
 - Whether the service requires more personal data to use the service.
 - Whether the service supplies user data to third-parties.
 - Conformity with the General Data Protection Regulation (GDPR) and e-Privacy Directive as data protection and privacy standard.
- 145.** In the competitive assessment, authorities have to analyze whether the merged entity has the ability and incentive to degrade one of those metrics. For instance, consumers will be clearly harmed, if post-merger, the new entity starts to collect and use data from the target for advertising purposes, whereas pre-merger, the absence of data collection was an important factor of quality to use the service. In *Facebook/WhatsApp*, the Commission investigated such possibility. However, the analysis was only focused on whether this theory of harm will strengthen Facebook’s position in advertising.⁷¹⁷ In this case, privacy is an important non-price parameter of competition. It is therefore not understandable why the Commission did not weigh up consumer welfare in its assessment.
- 146.** After having defined a benchmark of quality, agencies must assess whether consumers will be harmed by considering both anti and pro-competitive effects of the theory of harm in an overall competitive assessment. As a reminder, in practice, competition authorities identify first a negative impact on effective competition and a potential harm to consumers, then the notifying party can prove that such effects can be offset by pro-competitive effects at the stage of efficiency claims (see section 5.3). If the latter

⁷¹⁷ COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 187.

cannot counteract the former, the merger has to be cleared under conditions or blocked. Contrary to the price-based approach, it may be challenging, if not impossible, to quantify non-price effects. Competition authorities have to shift from traditional quantitative analysis to qualitative analysis, otherwise they will face a hard time to balance the privacy degradation with the quality improvement of the service. Since the conduct directly affects consumers, agencies must understand consumer preferences in relation to privacy. The use of traditional economics such as microeconomics is not adapted in the absence of price and where consumers do not behave rationally as in zero-price markets due to information asymmetries and behavioral biases. Instead, the use of behavioral economics enables to consider consumer behavioral biases. The OECD identifies two main effects of consumer biases in zero-price markets namely, the “free effect” and the “privacy paradox”.⁷¹⁸ The former refers to the impact of a price of zero on consumers. Some studies show that they prefer a low quality product at a price of zero instead of a high quality one at a (even a small) positive price. So, consumers overestimate the value attached to zero-price products.⁷¹⁹ The latter refers to the importance of privacy to consumers. Consumers express concerns about their privacy but do not actually make decisions to protect their personal data.⁷²⁰ Consumer and data protection authorities are better placed to understand and analyze such biases. Therefore, competition authorities have to actively cooperate with them in order to design accurate surveys that consider consumer biases.

⁷¹⁸ OECD, *Quality considerations in digital zero-price markets-Background note by the Secretariat*, 9 October 2018, pp. 25-27.

⁷¹⁹ Shampner, K. and Ariely, D., *How Small is Zero Price? The True Value of Free Products*, Federal Reserve Bank of Boston Working Papers n°06-16, October 2006, pp. 3-4.

<https://www.bostonfed.org/publications/research-department-working-paper/2006/how-small-is-zero-price-the-true-value-of-free-products.aspx>

“In a series of experiments, we demonstrate that when people are faced with a choice between two products, one of which is free, they “overreact” to the free product as if zero price meant not only a low cost of buying the product, but also increased consumers’ valuation of the product itself.”

⁷²⁰ Barth, S. and De Jong, M. D. T., *The privacy paradox-Investigating discrepancies between expressed privacy concerns and actual online behavior-A systematic literature review*, *Telematics and Informatics* Volume 34, Issue 7, November 2017, pp. 1038-1058.

<https://www.sciencedirect.com/science/article/pii/S0736585317302022?via%3Dihub>

- 147.** If consumers express a clear preference for privacy protection, competition authorities must conclude that the possible degradation of privacy will have a negative impact on effective competition in the market due to its effect on quality and consumer choice.
- 148.** In such cases, if the privacy degradation cannot be offset by the quality improvement at the stage of efficiency claims, the transaction must be cleared under conditions or even blocked. Competition authorities have to work with consumer and data protection authorities to identify market failures (such as information asymmetries and consumer biases) in order to provide meaningful remedies that address them to the benefit of competition and consumers. Consider the merger *Facebook/WhatsApp* in which post-merger, the new entity will start to collect and process data from the target for advertising purposes. This data sharing will only be possible if consumers consent to the new terms and conditions. However, as the WhatsApp's investigation by the Italian competition authority revealed, consumers can be forced to accept the terms without full consent due to excessive emphasis, inadequate information, pre-selection option (opt-in option to share the data) or difficulty to active the opt-out option.⁷²¹ To avoid this issue, the merger has to be cleared under the condition that consumers must understand and consent explicitly to any changes of the privacy policy and that, in the absence of consent, they will remain free to use the service. In this way, consumers can freely choice and consent to their preferred level of privacy protection, which is key to effective competition.⁷²² This remedy will not only protect consumers against a potential anti-competitive effect and possible infringement of the data protection and consumer rules but it will also maintain competitive pressure to provide privacy

⁷²¹ AGCM, Press release, *WhatsApp fined for 3 million euro for having forced its users to share their personal data with Facebook*, 12 May 2017 (accessed 3 October 2018).

It is worth noting that the Italian Competition authority (ICA) fined Facebook 10 million euro for unfair commercial practices for using its subscribers' data for commercial purposes on the basis of consumer law. The ICA found that Facebook misleads consumers about the processing of their data for commercial purposes during the registration process. Moreover, Facebook carries out an aggressive practice through the pre-selection option of data sharing with third-parties websites/apps without express and prior user consent.

AGCM, Press release, *Facebook fined 10 million Euros by the ICA for unfair commercial practices for using its subscribers' data for commercial purposes*, 7 December 2018 (accessed 10 December 2018).

<http://en.agcm.it/en/media/press-releases/2018/12/Facebook-fined-10-million-Euros-by-the-ICA-for-unfair-commercial-practices-for-using-its-subscribers'-data-for-commercial-purposes>

⁷²² OECD, *Quality considerations in the zero-price economy-Note by the United Kingdom*, 14 November 2018, p. 6.

competition in the market and thus to deliver the level of privacy that consumers want.⁷²³ A similar remedy has already been applied by the *Autorité de la Concurrence* in its *GDF Suez* case⁷²⁴ (see section 5.4).

5.3. Data-driven efficiency gains

- 149.** In the competitive assessment, competition authorities assess both anti and pro-competitive effects (also called efficiencies) of a merger.⁷²⁵ If the latter outweighs the former, then the merger may be declared compatible within the common market.⁷²⁶ In practice, efficiency claims are rarely invoked by the notifying party. This may be explained by two main reasons. First, in most cases, the merger will not give rise to competition concerns, thus efficiency claims are not required. Second, information on efficiencies are voluntary, difficult to prove, time consuming and may be turned against the parties. Therefore, to address competition concerns (if any), the merged entity prefers offering commitments.
- 150.** In the digital economy, the role of efficiency claims is important since data-driven mergers may provide better services to users and advertisers by collecting and using data from the target. However, as noted above, data combination and privacy issues (such as degradation of privacy protection) may cause a negative impact on effective competition and consumer welfare. Since benefits to consumers appear to be more obvious than in traditional industries, parties have a greater incentive to submit efficiency offence. It is for the notifying party to prove that efficiencies benefit

⁷²³ Ibid.

⁷²⁴ Adlc, *Décision n° 14-MC-02 du 9 septembre 2014 relative à une demande de mesures conservatoires présentée par la société Direct Energie dans les secteurs du gaz et de l'électricité*, 9 September 2014, pp. 49-51.

<http://www.autoritedelaconcurrence.fr/pdf/avis/14mc02.pdf>

⁷²⁵ COMP/M.4854-TomTom/Tele Atlas, 14 May 2008, para, 238.

http://ec.europa.eu/competition/mergers/cases/decisions/m4854_20080514_20682_en.pdf

“While there is a lack of anti-competitive effects irrespective of efficiencies, these efficiencies form a part of the overall competitive assessment.”

⁷²⁶ EC, *Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)* 29 January 2004, para. 29.

consumers, are merger specific and are verifiable.⁷²⁷ These conditions are cumulative.⁷²⁸

- 151.** The first condition poses a new challenge for both parties and competition authorities. It is clear from the guidelines that *“the relevant benchmark in assessing efficiency claims is that consumers will not be worse off as a result of the merger”*.⁷²⁹ Consumers are defined as *“users of the products covered by the merger”* including intermediate and ultimate consumers.⁷³⁰ In addition, efficiencies must be timely, *“substantial, likely to be realised, and to be passed on, to a sufficient degree, to the consumer”*.⁷³¹ The tricky question is therefore how to balance the privacy degradation, in which consumers will be worse off, with the quality improvement of the service, in which consumers will be better off.
- 152.** In the absence of competition cases about this issue, the debate is still ongoing. On one hand, from *Facebook/WhatsApp, Microsoft/LinkedIn* and *Sanofi/Google/DMI JV*, one can argue that any privacy-related concerns must be solved by data protection rules and therefore there is no need to balance privacy harms with economic benefits. Competition authorities will only look at whether consumers will benefit from better services. Any privacy harms will be investigated ex-post by data protection authorities. On the other hand, the authors who support the integration of privacy in the competitive assessment will argue that privacy must be considered in the efficiency analysis as any price and non-price parameters of competition. A trade-off is therefore needed. Professors Stucke and Grunes go even further by arguing that *“efficiencies must prevent any significant harm to consumers, including non-quantifiable privacy harms”*.⁷³² In other words, notwithstanding the potential benefits to consumers, if

⁷²⁷ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 78.

⁷²⁸ Case T-342/07- *Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, para. 387 and para. 389.

<http://curia.europa.eu/juris/document/document.jsf?text=&docid=83126&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=1391396>

⁷²⁹ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 79.

⁷³⁰ *Ibid*, para. 79 and footnote 105.

⁷³¹ *Ibid*, para. 79 and para. 84.

⁷³² Stucke, M. E and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, p. 310.

there is a risk of a potential degradation of privacy to consumers, competition authorities must not accept the efficiency claims presented by the notifying party. The merger must be cleared with commitments or even blocked.

- 153.** This interpretation is too narrow and may inhibit the emergence of an efficient competitor and substantial benefits to consumers. For instance, in *Microsoft/Yahoo*, according to the notifying party, the transaction will enable Microsoft to increase its scale to the benefit of users and advertisers.⁷³³ Users will be better off from higher relevance to search queries whereas advertisers will benefit from higher degree of user engagement and a better ability of the platform to target users with relevant ads, which will have a positive impact on the return on investment (ROI) of advertisers. Moreover, the transaction will allow advertisers to reduce their fixed costs of managing multiple ad campaigns due to the possibility to manage large scale advertising campaigns on a larger combined platform.⁷³⁴ The notifying party failed to provide evidences of such benefits to users and advertisers.⁷³⁵ However, competitors argue that scale is important to become an effective competitor in search advertising⁷³⁶ and both parties and respondents to the market investigation indicate that scale will enable Microsoft to become a more credible alternative to Google.⁷³⁷ The Commission's analysis confirmed this view.⁷³⁸ Users and advertisers will thus be better off from greater scale than absent the merger and the new entity is likely to boost competitiveness and innovation on the market.⁷³⁹ It is worth noting that the decision does not mention the potential privacy issue arising from the data combination. In this instance, privacy was neither recognized as a quality parameter nor as a non-price parameter of competition. However, the privacy trade-off may arise in a potential merger between Microsoft and DuckDuckGo. The latter attracts users by offering greater privacy protections than

⁷³³ COMP/M.5727 -*Microsoft/Yahoo! Search Business*, 18 February 2010, para. 161.

⁷³⁴ *Ibid*, paras. 162-164.

⁷³⁵ *Ibid*, para. 171.

⁷³⁶ *Ibid*, para. 173.

⁷³⁷ *Ibid*, para. 160, para. 176 and para. 256.

⁷³⁸ *Ibid*, paras. 178-226.

⁷³⁹ *Ibid*, para. 219.

"Additionally, the market investigation has revealed that currently Google enjoys a large competitive advantage compared to other search engines and is perceived as a "must-have" for users. Therefore, it is possible that if the transaction, through the scale effects, leads to a stronger competitor more able to innovate, Google will also have an incentive to keep, or even accelerate, its innovation efforts in the market."

other search engines including Bing, Yahoo and Google. It is clear from the privacy policy that DuckDuckGo does not collect or share personal data.⁷⁴⁰ Privacy protection is the main driving force and parameter of competition. In the competitive assessment, the transaction will have to assess the possible degradation of DuckDuckGo as regards its privacy policy to collect and use data about its users in order to increase scale and the relevance of ads and search queries. As in *Microsoft/Yahoo*, users and advertisers will benefit from greater scale and Microsoft will be more able to compete against Google. However, the merger will remove a competitor that is trying to increase the level of privacy protection offered on the market for general search services and DuckDuckGo's users will be worse off since they use the service for its privacy policy, implying that they prefer more privacy not less. If as argued by Professors Stucke and Grunes, efficiencies must prevent privacy harms to consumers, this will inhibit users and advertisers from relevant search queries and ads respectively and the emergence of a stronger competitor against Google. Again, privacy protection and relevance⁷⁴¹ are the most important factors to attract users to DuckDuckGo. The competitive assessment will have to balance a negative effect (privacy degradation) against a positive one (better relevance). It is worth noting that efficiencies benefiting consumers as the result of anti-competitive means must be rejected by competition authorities.⁷⁴² To overcome this issue, we will develop below a relevant benchmark in assessing efficiency claims that face potential privacy harms.

- 154.** In the data-driven economy, another issue may arise if the market would tip in favor of the incumbent as the result of the merger as in *Microsoft/LinkedIn*. When the market is likely to tip, competitors may exit the market and new entrants may lack the ability and incentive to enter the market. The existence of competitive pressure from the

⁷⁴⁰ DuckDuckGo, *privacy policy* (accessed 2 November 2018).

<https://duckduckgo.com/privacy>

"We don't collect or share personal information. That's our privacy policy in a nutshell."

⁷⁴¹ COMP/M.5727-*Microsoft/Yahoo! Search Business*, 18 February 2010, para. 220.

"Concerning the possible post-merger effects of the transaction on the level of relevance, the respondents to the market investigation stated that algorithmic search engines' quality and relevance are the most important factors to attract users to a particular search engine".

⁷⁴² EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 80.

"Cost reductions, which merely result from anti-competitive reductions in output, cannot be considered as efficiencies benefiting consumers."

remaining firms and from potential new entries on the merged entity has to be considered since the incentive to pass efficiency gains on to consumers depends on such pressure.⁷⁴³ Moreover, the EU guidelines express clearly that *“It is highly unlikely that a merger leading to a market position approaching that of a monopoly, or leading to a similar level of market power, can be declared compatible with the common market on the ground that efficiency gains would be sufficient to counteract its potential anti-competitive effects”*.⁷⁴⁴ In case of tipping, the transaction may create a monopoly, or at least a substantial degree of market power, that would significantly hinder an effective competition to occur. In that situation, efficiencies must be particularly substantial to prevent the significant impediment to effective competition, *“including the loss of actual and potential competition and the loss of competition in innovation”*.⁷⁴⁵ Since the loss in innovation competition is taken into account, competition authorities must also consider the loss of privacy competition where such quality parameter is an important factor of competition on the market.

- 155.** The second condition imposes to the notifying party to prove that the efficiencies are merger-specific, namely that *“they are a direct consequence of the notified merger and cannot be achieved to a similar extent by less anticompetitive alternatives”* such as a licensing agreement or a joint venture.⁷⁴⁶ In the data-driven economy, this criterion does not involve particular problems. In *TomTom/Tele Atlas*, the Commission assessed the potential efficiencies arising from *“the integration of TomTom’s [...] data to improve Tele Atlas’s map databases”*.⁷⁴⁷ TomTom is a manufacturer of portable navigation devices (PNDs) and a supplier of navigation software for use in navigation devices. Tele Atlas is a supplier of digital map databases for navigation and other end-

⁷⁴³ Ibid, para. 84.

See also, COMP/M.6166-*Deutsche Börse/NYSE Euronext*, 1st February 2012, para. 1179.

http://ec.europa.eu/competition/mergers/cases/decisions/m6166_20120201_20610_2711467_EN.pdf

⁷⁴⁴ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 84.

⁷⁴⁵ COMP/M.6166 -*Deutsche Börse/NYSE Euronext*, 1st February 2012, para. 1337.

⁷⁴⁶ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 85.

⁷⁴⁷ COMP/M.4854-*TomTom/Tele Atlas*, 14 May 2008, para, 246.

https://ec.europa.eu/competition/mergers/cases/decisions/m4854_20080514_20682_en.pdf

uses.⁷⁴⁸ Both parties collect data and notably feedback data.⁷⁴⁹ According to the parties, the data combination will allow the new entity to produce “*better maps-faster*”.⁷⁵⁰ The Commission’s decision found that the efficiencies cannot be achieved by other means including a contract agreement, which allows the exchange of feedback data, than absent the merger. The Commission considered whether such contractual means is “*reasonably practical in the business situation faced by the merging parties having regard to established business practices in the industry concerned.*”⁷⁵¹ Firstly, at the time of the merger, there was no example of such a contract in practice.⁷⁵² Secondly, a contract will not provide enough protection to a non-integrated firm to be implemented by the parties due to the problem of specific investments (hold-up problem),⁷⁵³ the difficulty to specify all the required investments upfront and the uncertainty about the future environment in which the parties will operate.⁷⁵⁴ The Commission recognized that the efficiencies benefit end-customers⁷⁵⁵ and are merger-specific⁷⁵⁶ but the parties failed to prove their verifiability.

- 156.** The third condition, efficiencies must be verifiable, namely “*reasoned, quantified and supported by internal studies and documents if necessary*”,⁷⁵⁷ is the most challenging criterion to prove, and in particular, in zero-price markets. Indeed, the notifying party

⁷⁴⁸ Ibid, paras. 1-2.

⁷⁴⁹ Ibid, para 246.

⁷⁵⁰ Ibid, para, 245.

⁷⁵¹ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 85. See also, Case T-342/07-*Ryanair Holdings plc v European Commission*, para. 427.

⁷⁵² COMP/M.4854-*TomTom/Tele Atlas*, 14 May 2008, para. 190.

⁷⁵³ Ibid, para. 249.

“*Such investments are risky for the non-integrated company since they are very specific to the particular relationship and hence subject to a so-called hold-up problem. Such a situation arises when a party refrains from cooperating with another due to the concern that it would become captive of its partner, for instance, because of specific investments that are only valuable if used with this partner and therefore loses all bargaining power*”.

⁷⁵⁴ Ibid, para. 249.

⁷⁵⁵ Ibid, para. 248.

⁷⁵⁶ Ibid, para. 249.

⁷⁵⁷ Case T-342/07-*Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, para. 389.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:62007TJ0342&from=EN>

must quantify them when reasonably possible.⁷⁵⁸ In the absence of data for a precise quantitative analysis, the parties must foresee a clearly identifiable positive impact on consumers, not a marginal one.⁷⁵⁹ To do so, they can rely on “*internal documents that were used by the management to decide on the merger, statements from the management to the owners and financial markets about the expected efficiencies, historical examples of efficiencies and consumer benefit, and pre-merger external experts' studies on the type and size of efficiency gains, and on the extent to which consumers are likely to benefit*”.⁷⁶⁰ The evidences do not need of capable of being independently verified or dated pre-merger.⁷⁶¹ In *TomTom/Tele Atlas*, the efficiencies justifying the quality improvement of the digital map for consumers are “*difficult to quantify and the estimates provided by the parties are not particularly convincing*”.⁷⁶² This case shows the difficulty to demonstrate that users will benefit from a better service quality as the result of the data combination even though there is no requirement to quantify them with the utmost precision.⁷⁶³ In *Ryanair Holdings plc v European Commission*,⁷⁶⁴ Ryanair appealed the Commission’s decision to block the merger with its competitor Aer Lingus.⁷⁶⁵ The European Court of Justice rejected the expected efficiencies “*as a result of the transfer to Aer Lingus of Ryanair’s business model*” because Ryanair failed to demonstrate “*that it could reduce Aer Lingus’s costs without offsetting reductions in service quality*”.⁷⁶⁶ The Court may enact a similar statement if the notifying party fails to prove that it could improve the service quality without offsetting reductions in privacy protection.

⁷⁵⁸ EC, *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)*, 5 February 2004, para. 86.

⁷⁵⁹ *Ibid*, para. 86. See also, Case T-342/07-*Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, para. 406.

⁷⁶⁰ *Ibid*, para. 88. See also, Case T-342/07- *Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, para. 408.

⁷⁶¹ Case T-342/07-*Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, paras. 406-409.

⁷⁶² COMP/M.4854-*TomTom/Tele Atlas*, 14 May 2008, para. 248.

⁷⁶³ COMP/M.5830-*Olympic/Aegean Airlines*, 26 January 2011, para. 1779.

http://ec.europa.eu/competition/mergers/cases/decisions/m5830_7897_2.pdf

⁷⁶⁴ Case T-342/07- *Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010,

⁷⁶⁵ COMP/M.4439-*Ryanair/Aer Lingus*, 27 June 2007.

http://ec.europa.eu/competition/mergers/cases/decisions/m4439_20070627_20610_en.pdf

⁷⁶⁶ Case T-342/07- *Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010, para. 413.

- 157.** So far, the most challenging issue is therefore how to demonstrate the efficiency claims. In the data-driven economy, efficiency claims must consider all sides of the market.⁷⁶⁷ A quantitative analysis may be very tricky in the absence of quantifiable data about a quality parameter of competition. For instance, the notifying party may be able to quantify the potential benefit in terms of better services such as relevant ads by assessing the ROI on advertisers on the advertiser side, but it may face a hard time to quantify a reduction in privacy degradation on the consumer side. A quantitative analysis is thus not appropriate. A qualitative analysis based on internal documents and consumer preferences is more relevant.
- 158.** Indeed, in the digital economy, firms and consumers are best place to evaluate quality considerations and rank which quality parameters they value the most according to the industry's standard and consumer preferences respectively. By using behavioral economics, it is possible to design a survey in which consumers will have to make a trade-off between quality improvement and degradation of privacy. As noted above, in the absence of data, the parties must prove a clearly identifiable impact on consumers, not a marginal one. Therefore, if consumers express a clear view that the degradation of privacy is more harmful than the quality improvement, then the merger has to be cleared under conditions or blocked. However, even though the consumer survey is designed in a way that it is avoid consumer behavioral biases, the probability of absence of such biases is not zero. Moreover, although a clear view may be expressed, consumer preferences might still differ among consumers, some of them will prefer more privacy instead of a better service whereas others will prefer the opposite choice. The efficiencies must prevent consumers from being worse off from privacy harms but agencies must also not prevent consumers from better services by imposing a strict remedy that would make some consumers worse off.

⁷⁶⁷ OECD, *Network Effects and Efficiencies in Multisided Markets-Note by H. Shelanski, S. Knox and A. Dhilla Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets*, 15 November 2017, pp. 7-8.

[https://one.oecd.org/document/DAF/COMP/WD\(2017\)40/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)40/FINAL/en/pdf)

“Agencies should similarly consider the extent to which the efficiencies from the conduct at issue accrue on all sides of a platform. The effects (positive or negative) of conduct will usually differ across a platform and therefore may not warrant equal scrutiny on every side of the market.”

159. A Pareto optimal efficiency, namely a situation in which it is impossible to make one individual better off without making at least one individual worse off, is the most appropriate solution to solve this trade-off. Instead of balancing quality improvement with privacy degradation, it may be more efficient to impose to the new entity to design a mechanism that provides efficiencies to those consumers who value “high” a better service while giving choice and without harming consumers who value “high” privacy.⁷⁶⁸ Such remedy may take the form of an understandable and readable terms and conditions in which consumers must consent explicitly to any changes of privacy policy and that, in the absence of consent, they will remain free to use the service.

5.4. Remedies

160. Remedies are modifications to concentrations (hereinafter “commitments”) designed by the notifying party⁷⁶⁹ intended to resolve competition concerns identified during the market investigation by the competition authority and thus to clear the merger. After the preliminary assessment of the remedy proposals by the agency, the parties can modify them if they do not eliminate the competition concerns. It is then for the notifying party to propose adequate remedies in order to avoid a prohibition decision.⁷⁷⁰ To be effective, competition authorities attach conditions and obligations.

⁷⁶⁸ Swire, P. P, *Submitted Testimony to the Federal Trade Commission Behavioral Advertising Town Hall*, 18 October 2007.

http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/testimony_peterswire_/Testimony_peterswire_en.pdf

“There may be mechanisms that provide efficiencies to those favoring personalization while giving effective choice about tracking to the many consumers who have “high” or “medium” privacy concern. If such mechanisms exist, then they may be appropriate conditions of a merger.”

⁷⁶⁹ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 6.

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1022\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008XC1022(01)&from=EN)

“The Commission communicates its competition concerns to the parties to allow them to formulate appropriate and corresponding remedies proposals. It is then for the parties to the concentration to put forward commitments; the Commission is not in a position to impose unilaterally any conditions to an authorisation decision, but only on the basis of the parties' commitments”

⁷⁷⁰ Ibid, para. 6. In its best practice guidelines, the Commission notes that it will help the parties to the design of the commitments by providing “*guidance to the parties as to the general appropriateness of their draft proposal in advance of submission*”

EC, *Best practices on merger control proceedings*, 20 January 2004, para. 41.

The commitments are generally implemented following clearance but may be established before the clearance decision.⁷⁷¹

- 161.** Remedies are classified as either structural or behavioral. The former is recommended to restore the competitive structure of the market. They can take the form of divestitures, granting access to key infrastructure or inputs on non-discriminatory terms.⁷⁷² In particular, in horizontal mergers, divestiture commitments are the best way to eliminate competition concerns such as overlaps in the relevant geographic market.⁷⁷³ The latter is ongoing remedies designed to correct the behavior of the merged entity during a specified period from the closing of the deal.⁷⁷⁴
- 162.** It is for the notifying party to choose the relevant type of remedies. In Europe, divestitures are considered to be the most appropriate remedies to resolve all types of horizontal, vertical and conglomerate concerns.⁷⁷⁵ Therefore, the Remedies Notice sets them as the relevant “*benchmark for other remedies in terms of effectiveness and efficiency*”.⁷⁷⁶ Accordingly, other non-divestitures remedies will only be accepted if there are equivalent to divestitures in their effects⁷⁷⁷ and if they can be effectively implemented and monitored.⁷⁷⁸
- 163.** In the digital economy, the parties own only non-physical assets. Hence, divestitures commitments are unsuitable to resolve competition concerns. Other structural

<http://ec.europa.eu/competition/mergers/legislation/proceedings.pdf>

⁷⁷¹ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 5.

⁷⁷² *Ibid*, para. 17.

⁷⁷³ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 442.

See also, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 17.

See also, OECD, *Remedies in Merger Cases*, 2011, p. 19.

<http://www.oecd.org/daf/competition/RemediesinMergerCases2011.pdf>

⁷⁷⁴ OECD, *Remedies in Merger Cases*, 2011, p. 19.

⁷⁷⁵ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 17.

⁷⁷⁶ *Ibid*, para. 61.

⁷⁷⁷ *Ibid*, para. 442.

⁷⁷⁸ *Ibid*, para. 17 and para. 66.

commitments such as granting access to data or behavioral commitments are thus better suited. So far, in Europe, only the merger *Microsoft/LinkedIn* has been approved under conditions due to potential foreclosure concerns in the PSN services market stemming from the integration of LinkedIn features into Office, the denial access to Microsoft APIs by competing PSN service providers and the pre-installation of a LinkedIn application on Windows PCs.⁷⁷⁹ In that case, the notifying party offered structural remedies (e.g. obligation to ensure third-party PSN services to access to the Office APIs) and behavioral remedies (e.g. obligation to ensure users' ability to disable the LinkedIn features for all major Office products).

- 164.** In particular, in the data-driven economy, the Commission has not yet cleared a merger under conditions to resolve competition concerns stemming from the data combination of the merging parties or the degradation of privacy after the transaction. As already noticed, the merger *Facebook/WhatsApp* would have been authorized with remedies to address privacy concerns resulting from the potential collection and combination of data from WhatsApp within the new entity to foreclose users and competitors. In such situation, commitments must clearly address privacy harms.⁷⁸⁰
- 165.** In case of data combination, parties should commit to either ensure that the merged entity will not merge the data after the transaction or that the new entity will ensure that third-parties, including competitors and clients (in the event of vertical effects), will have access to the data post-merger. The latter raises privacy and data protection concerns since it may imply personal data to be combined within the merged entity and shared with third-parties. Therefore, competition authorities must not neglect data protection rules and prior commitments made by the parties concerning the sharing of data.⁷⁸¹ The French *GDF Suez* case considered these issues. The former gas

⁷⁷⁹ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 446 and para. 452.

⁷⁸⁰ Swire, P. P., *Submitted Testimony to the Federal Trade Commission Behavioral Advertising Town Hall*, 18 October 2007.

"Where consumers suffer from lower product quality and reduction of consumer welfare, such as through privacy harms, it thus is logically consistent to consider merger conditions that address privacy harms."

⁷⁸¹ For instance, in 2014, the FTC notified Facebook and WhatsApp to keep WhatsApp's privacy promises after the transaction. In its privacy policy, WhatsApp stated, among other things, that users' Personal identifiable Information such as phone number will not be shared with third-parties without the users' consent.

FTC, *Letter From Jessica L. Rich, Director of the Federal Trade Commission Bureau of Consumer Protection, to Erin Egan, Chief Privacy Officer, Facebook, and to Anne Hoge, General Counsel, WhatsApp Inc.*, 10 April 2014.

monopoly used its historical database on regulated tariffs to propose to its customers personalized offers on gas and electricity on the competitive market.⁷⁸² Competitors were at a disadvantage since they could not replicate the database under reasonable conditions to target consumers. To eliminate this competition concern, the French *Autorité de la concurrence* adopted an interim measure ordering GDF Suez to grant its competitors access to some of the data in its historical file, including consumer and consumption data. In its decision, the French data protection authority, the CNIL, issued an opinion to the *Autorité* to ensure that the data sharing respected data protection law.⁷⁸³ For individual costumers, data had to be disclosed only if they did not explicitly oppose to the data-sharing in a paper or electronic form within 30 days.⁷⁸⁴ However, such opt-out option may not be effective and efficient since it does not consider the consumer biases, the power of the default option and consumer inertia. An opt-in option, where consumers have to actively express affirmative consent to the data sharing by ticking a box would better protect the consumer privacy. Against this background, in addition to the data protection authority, the consumer protection authority must be involved to ensure that remedies will not be ineffective and inefficient as the result of consumer biases. In Europe, the Remedies Notice enables the Commission to consult the competent national regulatory authorities⁷⁸⁵ such as the Communication authority.⁷⁸⁶

- 166.** In case of privacy harms such as degradation of privacy protection as in *Facebook/WhatsApp*, parties should commit to protect the fundamental rights of

<https://www.ftc.gov/public-statements/2014/04/letter-jessica-l-rich-director-federal-trade-commission-bureau-consumer>

⁷⁸² Adlc, Press release, *Gas Market*, 9 September 2014. Since 2007, the gas market is opened to competition. Customers have choice between two offers. An offer at regulated tariffs, which can be supplied by only GDF Suez (now Engie) at a price fixed by the government, and a “market offer” which can be supplied by all suppliers at a price freely fixed by the latter.

http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=592&id_article=2420

⁷⁸³ Adlc, *Décision n° 14-MC-02 du 9 septembre 2014 relative à une demande de mesures conservatoires présentée par la société Direct Energie dans les secteurs du gaz et de l'électricité*, 9 September 2014, para. 289.

⁷⁸⁴ Ibid, paras. 294-295.

⁷⁸⁵ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 17 and para. 66.

⁷⁸⁶ COMP/M.2876 -*Newscorp/Telepiuin*, 2 April 2003, para. 259.

consumers as regards privacy. As noted in section 5.2.3, consumer choice and consent are key to effective competition. In this regard, a remedy can only be effective and efficient if it ensures that consumers can freely choice and consent to their preferred level of privacy protection. Accordingly, the notifying party must ensure that consumers have to actively express affirmative consent (opt-in option by default)⁷⁸⁷ to clear, concise and understandable, namely simple, easy and accessible language, terms and conditions. Moreover, the commitments must provide that consumers will remain free to use the service if they do not consent to any changes of the privacy policy in order to avoid a situation of “take it or leave it” offer, where users have the option to either accept the terms or to leave the service. In the absence of consumer power and alternative to use another service, such offer provides little option to consumers. Indeed, if the service is considered to be a must have, such as Facebook in the social networking services market, users will consent even if they do not actually want to. In other words, a “take it or leave it offer” forces users to accept in full the new terms without effective consent. In addition, terms and conditions have to ensure adequate and transparent information as regards the collection and processing of data. For instance, besides written policies, the parties may fashion clear pictograms to display privacy information and thus to increase the user’s awareness in a readily and easily way.⁷⁸⁸ However, on the basis of the Commission’s statements that data combination could only be implemented to the extent that it is allowed under the applicable data protection legislation,⁷⁸⁹the parties may argue that data protection regulation already

⁷⁸⁷ GDPR, recital 32.

“Consent should be given by a clear affirmative act establishing a freely given, specific, informed and unambiguous indication of the data subject's agreement to the processing of personal data relating to him or her, such as by a written statement, including by electronic means, or an oral statement. This could include ticking a box when visiting an internet website, choosing technical settings for information society services or another statement or conduct which clearly indicates in this context the data subject's acceptance of the proposed processing of his or her personal data. Silence, pre-ticked boxes or inactivity should not therefore constitute consent.”

⁷⁸⁸ Holtz, L-E. et al, *Towards Displaying Privacy Information with Icons*, Fischer-Hübner S., Duquenoy P., Hansen M., Leenes R., Zhang G. (eds) *Privacy and Identity Management for Life. Privacy and Identity 2010. IFIP Advances in Information and Communication Technology*, vol 352. Springer, Berlin, Heidelberg, 2011.

https://link.springer.com/content/pdf/10.1007%2F978-3-642-20769-3_27.pdf

See also, *Privacy Icons* (accessed 15 November 2018)

<http://www.privacytech.fr/privacy-icons/>

⁷⁸⁹ M.8788-*Apple/Shazam*, 6 September 2018, para. 226 and para. 233 and para. 314; M.8124-*Microsoft/LinkedIn*, 6 December 2016, paras. 177-178; M.8180-*Verizon/Yahoo!*, 21 December 2016, para. 90.

ensures that consumers can freely consent to the privacy policy and therefore the merger does not have to be cleared under conditions based on requirements contained in data protection law. Nonetheless, a simple reference to data protection law does not ensure that the parties will effectively comply with data protection rules, and in particular, in a way that eliminates competition concerns. By designing behavioral commitments in this way, the parties ensure full compliance with both data protection and competition law, increasing the legal certainty as regards both legal regimes.⁷⁹⁰ The competent data protection authority may be consulted during the negotiation phase of the commitments to assist the competition authority with unfamiliar rules and to guarantee that commitments fully respect data protection law.⁷⁹¹ In this regard, the parties may fashion commitments that provide the mandatory minimum requirement contained in the data protection law. The latter may be sufficient to ensure privacy but not effective competition.⁷⁹² For instance, the GDPR does not require that consumers have to remain free to use the service in the absence of effective consent to new terms and conditions. It only asserts that “*consent should not be regarded as freely given if the data subject has no genuine or free choice or is unable to refuse or withdraw consent without detriment*”,⁷⁹³ but this does not mean that the parties must grant access to their service in the absence of affirmative consent. The behavioral commitments extend the scope of the GDPR to eliminate competition concerns and promote privacy competition. In sum, these commitments must only be deemed sufficient by the competition authority if the respondents to the market test as well as the data protection authority consider them reasonable to preserve effective competition and the consumer welfare as regards in particular the safeguarding of users’ privacy interests.

⁷⁹⁰ Botta, M. and Wiedemann, K., *EU Competition Law Enforcement vis-à-vis Exploitative Conducts in the Data Economy Exploring the Terra Incognita*, Max Planck Institute for Innovation and Competition Research Paper No. 18-08, 2018, p. 81. The authors even argue that “[a]s such, behavioural commitments might even provide general guidance on how to interpret the GDPR’s provisions”. (p. 87)

http://www.law.nyu.edu/sites/default/files/upload_documents/Botta%20and%20Wiedemann.pdf

⁷⁹¹ Ibid.

⁷⁹² Ibid, p. 82.

⁷⁹³ GDPR, recital 42. See also, article 4(11), 6(1)(a) and 7 GDPR.

- 167.** Non-divestitures are generally limited in their duration on a case by case basis.⁷⁹⁴ In the digital economy, the duration of the remedies is a tricky question since the sector is fast-growing with frequent market entry and short innovation cycles in which large market shares may turn out to be ephemeral.⁷⁹⁵ Therefore, an appropriate time frame must be defined in order to not prevent the merged entity of the incitation to innovate and to compete on the merits in case of new market conditions such as new entries or new innovations. In addition, a classical review clause has to be included in the commitments to allow the competition authority to decide whether the remedies should be modified,⁷⁹⁶ and conversely to enable the notifying party, showing good cause, to request to the authority the amendment of the remedies to the new market situation⁷⁹⁷ (the change has to be significant and on a permanent basis).⁷⁹⁸
- 168.** Finally, irrespective of the type of remedy, commitments must be monitored by the appointment of a trustee, an independent expert, by the parties to oversee the effective implementation and compliance with the commitments.⁷⁹⁹ The monitoring trustee⁸⁰⁰ is paid by the notifying party but it carries out its tasks solely under the supervision of the Commission.⁸⁰¹ Then, on the basis of the periodic reports of the monitoring trustee, the Commission assesses whether the parties comply with the commitments.⁸⁰² The competent data protection and consumer protection authorities may be consulted during the monitoring phase to supervise the compliance of the

⁷⁹⁴ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 70.

⁷⁹⁵ AT.39740-*Google Search (Shopping)*, 27 June 2017, para 267.

COMP/M.7217-*Facebook/WhatsApp*, 3 October 2014, para. 99.

Case T-79/12-*Cisco systems and Messagenet v. Commission*, ECLI:EU:T:2013:635, 11 December 2013, para. 69.

COMP/M.6281-*Microsoft/Skype*, 7 October 2011, para. 78.

⁷⁹⁶ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 75.

⁷⁹⁷ *Ibid*, para. 71.

⁷⁹⁸ *Ibid*, para. 74.

⁷⁹⁹ *Ibid*, para. 117 and para. 130. The trustee is appointed by the parties on the basis of a trustee mandate only after being approved by the Commission. The trustee can be a person or an institution (paras. 123-124).

⁸⁰⁰ *Ibid*, para. 121. In case of divestiture, a divestiture trustee is appointed to sell the assets to be divested during the divestiture period.

⁸⁰¹ *Ibid*, para. 118 and para. 120.

⁸⁰² *Ibid*, para. 119. The monitoring trustee has to submit additional reports requested by the Commission.

commitments as regards their respective fields and to inform the Commission in case of non-compliance.⁸⁰³ The non-compliance of commitments constitutes an infringement of competition law,⁸⁰⁴ irrespective of whether or not it is also considered as an infringement of data protection and consumer rules. In complement, an arbitration clause, namely, a clause providing that any issues relating to the implementation of the remedies will be settled by an arbitration panel, may be particularly helpful in case of access commitments such as access to data in order to monitor and enforce such remedies directly by third parties in a timely manner via a fast track dispute resolution mechanism.⁸⁰⁵

- 169.** In conclusion, these remedies are designed to eliminate market failures in the data-driven economy such as consumer biases and information asymmetries. They can also be implemented in antitrust cases of exploitative abuse as the German Facebook case.⁸⁰⁶ However, these market failures are not exclusive to firms with a dominant

⁸⁰³ Graef, I., *Blurring Boundaries of Consumer Welfare: How to Create Synergies between Competition, Consumer and Data Protection Law in Digital Markets*, Forthcoming by Springer as proceedings of the Max Planck Institute Post-Doc conference on 'Personal Data in Competition, Consumer Protection and IP Law: Towards a Holistic Approach?', held on 21 October 2016 in Munich, December 2016, p. 21.

⁸⁰⁴ Pursuant to the EU Merger Regulation (EUMR), the non-compliance of an obligation is subject to fines not exceeding 10% of the aggregate turnover of the undertaking concerned, and period penalty payments not exceeding 5 % of the average daily aggregate turnover of the undertaking concerned.

EC Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation), articles 14(2)(d) and 15(1)(c). See also, European Commission, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 20. To date, the Commission has only fined an undertaking for non-compliance with the commitments in antitrust cases. See, COMP/C-3/37.792-Microsoft (2006), COMP/C-3/37.792-Microsoft (2008) and COMP/39.530 (Tying)-Microsoft (2013).

⁸⁰⁵ EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008, para. 66.

See also, OECD, *Remedies in Merger Cases*, 2011, pp. 24-26.

⁸⁰⁶ Botta, M. and Wiedemann, K., *EU Competition Law Enforcement vis-à-vis Exploitative Conducts in the Data Economy Exploring the Terra Incognita*, Max Planck Institute for Innovation and Competition Research Paper No. 18-08, 2018, pp. 70-89. In Europe, article 9 of the Regulation (EC) No 1/2003 enables the Commission to adopt a decision on the basis of the commitments offered by the undertaking(s) to end an infringement under article 101 and 102 TFEU.

EC, *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*, 4 January 2003.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003R0001&from=FR>

position. A regulatory response based on the above remedies is needed to ensure that the market preserves the commercial interests of firms and the consumer benefits while safeguarding the privacy interests of users.⁸⁰⁷ To overcome these issues, data combination and privacy harms require an active cooperation among competition, consumer and data protection authorities during the implementation and monitoring phase of merger and antitrust remedies as well as during the design of effective and efficient regulatory framework. The establishment of a Digital ClearingHouse, which promotes the cooperation between these three agencies, is a promising institution in this regard.⁸⁰⁸

6. Conclusion

- 170.** The digital economy is becoming more and more present in our daily lives and changes the way people are living. Nowadays, we use digital technologies to communicate, to shop, to be informed and to travel. But this is just the beginning. Tomorrow, in the near future, the society will be fully connected, fully digitalized.
- 171.** Data, algorithms and artificial intelligence shape this economy and raise new issues that can harm both competition and consumers. Dominant companies may misuse their power to collect and process even more data to the detriment of users and competitors. From explicit to tacit collusion, firms can now collude without any explicit agreements and sustain more easily a collusive outcome than in a traditional cartel. And mergers, when they have to be notified, pose challenging issues as regards the acquisition at a very early stage of firms by big players that have the potential to be a competitor in the future, the acquisition and aggregation of data in the hand of the

⁸⁰⁷ OECD, *Considering non-price effects in merger control-Background note by the Secretariat*, 4 May 2018, pp. 43-44.

“Consumer biases, or short- sightedness regarding personal data usage that could be taken advantage of by a postmerger firm may require both a merger control and regulatory response.”

⁸⁰⁸ Digital ClearingHouse (accessed 31 January 2020).

“The European Data Protection Supervisor launched the initiative of the Digital Clearinghouse in a 2016 Opinion as a voluntary network of regulators involved in the enforcement of legal regimes in digital markets, with a focus on data protection, consumer and competition law.”

<https://www.digitalclearinghouse.org>

merged entity, and the ability and incentive of the acquirer to degrade the privacy protection to access to more data.

- 172.** Shaping competition policy in the era of digitization⁸⁰⁹ is therefore the most important antitrust question of this century. This chapter addresses these challenges and offers a new law and economics analysis of antitrust and merger practices to tackle them under competition laws. The challenges will only be solved by a reform of antitrust rules but also by a reform of the functioning of competition authorities. Whereas the former is necessary to adapt the law to issues such as merger control notification thresholds to review more data-driven mergers and the detection of algorithmic tacit collusion, the latter is indispensable to be able to fully understand big data and algorithms and their implications on competition by adding computer scientists, and by collaborating with consumer protection and data protection authorities.
- 173.** Competition law is a powerful tool to preserve and restore a level playing field and to ensure that consumers will not be harmed by anticompetitive practices and mergers. However, in the digital economy, antitrust intervention may be too late. The economy is already well concentrated in the hand of just a few internet giants, the GAFAM (Google, Apple, Facebook, Amazon and Microsoft), consumers⁸¹⁰ and small and medium businesses⁸¹¹ have little power to negotiate the terms and conditions, firms can track automatically and in real time the online prices of their competitors without any explicit agreements and without the fear to be condemned by regulators, and startups face the risk to be either eliminated or to be acquired by a dominant company.

⁸⁰⁹ EC, *Shaping competition policy in the era of digitization* (accessed 10 January 2019). On 17 January 2019, the Commission organized a conference on this topic. Four issues have been discussed (i) Competition, data, privacy, and artificial intelligence; (ii) Digital platforms' market power; (iii) Competing with data-a business perspective; and (iv) Preserving digital innovation through competition policy.

<http://ec.europa.eu/competition/scp19/>

FTC, *Hearings on Competition and Consumer Protection in the 21st Century* (accessed 10 January 2019). The FTC also organized fourteen hearings on Competition and Consumer Protection in the 21st Century.

<https://www.ftc.gov/policy/hearings-competition-consumer-protection>

⁸¹⁰ B6-22/16-Facebook, 6 February 2019.

⁸¹¹ BKartA, Press release, *Bundeskartellamt obtains far-reaching improvements in the terms of business for sellers on Amazon's online marketplaces*, 17 July 2019 (accessed 31 January 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2018/29_11_2018_Verfahrenseinleitung_Amazon.html?nn=3599398

174. In complement to antitrust rules, a regulation is thus required. Indeed, only a regulation enables to ensure a well-functioning market before the harm actually occurs, and to correct market failures such as the lack of consumer choice and consent without the need to open antitrust or merger cases to solve them by remedies. The regulation of the digital economy will be the topic of the next chapter.

Chapter 3: Regulating the Data-driven Economy

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1. Introduction

1. Regulating or shaping the digital economy is the most important antitrust question of this century. The digital economy is the new industrial revolution that impacts not only the traditional sector in all markets but also the way people are living. Data is the blood and algorithms and artificial intelligence are the vital organs of this economy. On both sides of the Atlantic, the European Commission (hereinafter “the Commission”)⁸¹² and the Federal Trade Commission (hereinafter “the FTC”)⁸¹³ have sought contributions from academics and stakeholders involved in or affected by the digitization of the economy. Meanwhile, numerous reports around the world have been commissioned by governments and organizations.⁸¹⁴
2. As argued by some academics,⁸¹⁵ a strong regulation is now unavoidable because classical approaches do not fit with the characteristics of the digital economy. Indeed,

⁸¹² Crémer, J. et al, *Competition policy for the digital era*, April 2019.

<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

See also contributions from academics and stakeholders (accessed 3 February 2020).

https://ec.europa.eu/competition/scp19/media_en.html#Contributions

⁸¹³ FTC, *Hearings on Competition and Consumer Protection in the 21st Century* (accessed 3 February 2020).

The FTC organized fourteen hearings on Competition and Consumer Protection in the 21st Century.

<https://www.ftc.gov/policy/hearings-competition-consumer-protection>

⁸¹⁴ Furman, J. et al, *Unlocking digital competition Report of the Digital Competition Expert Panel*, March 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

Schallbruch, M. et al, *A new competition framework for the digital economy Report by the Commission ‘Competition Law 4.0’*, September 2019.

https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3

Morton, F. S. et al, *Stigler Committee on Digital Platforms-Final Report*, September 2019.

<https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E>

ACCC, *Digital platforms inquiry-final report*, July 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

Lianos, I. et al, *Digital Era Competition: A BRICS View-Report by the BRICS Competition Law and Policy Centre*, 2019.

<http://bricscompetition.org/upload/iblock/6a1/brics%20book%20full.pdf>

⁸¹⁵ Global Competition Review, *Vestager advisor: strong regulation is “unavoidable” for digital platforms*, 29 October 2018 (accessed 3 March 2019).

in law and economics, a regulation is needed where market failures prevent the market to maximize social welfare, namely the sum of producer and consumer surplus. There are four types of market failures: (i) Market power. A firm with market power may increase its price resulting in deadweight loss, namely the forgone sales that do not translate into consumer or producer surplus; (ii) Negative externalities. The behavior of the firm may have negative consequences for others. In the absence of internalization, the firm thus causes social loss; (iii) Collective goods. They are non-exclusive and non-rivalrous goods (e.g. air), namely respectively one cannot be excluded from using the good and the use of the good by one person does not prevent others from using it. In that case, a firm does not have the incentive to produce the good because consumers who are not willing to pay for the good, the free-riders, cannot be excluded and can use the good; and (iv) Asymmetric information. Parties to a transaction do not have the same level of information. In the absence of full information, consumers may not buy the good because they cannot assess the quality of the product.⁸¹⁶ In the digital economy, two main market failures occur. Market power in the hand of just a few firms and asymmetric information due the lack of information about the collection and use of the data by internet providers.⁸¹⁷ Against this background, a regulation in the digital economy must thus address these two market failures.

3. A self-regulation by market participants does not work since markets are already concentrated in the hand of just a few firms that are now the gatekeepers such as

<https://globalcompetitionreview.com/article/1176067/vestager-advisor-strong-regulation-is-“unavoidable”-for-digital-platforms>

Professor Crémer said that a “*regulation is unavoidable [because] less regulation is just not going to fly*”.

Professor Tirole stated, at a keynote on “*Shaping competition policy in the era of digitization*”, that “*public intervention in the digital economy is unavoidable*” (accessed 3 March 2019).

<https://webcast.ec.europa.eu/shaping-competition-policy-in-the-era-of-digitisation#>

⁸¹⁶ Paccès, M. A. and Visscher, T. L., *Law and Economics – Methodology*, Bart van Klink and Sanne Taekema (Eds.), Law and Method. Interdisciplinary research into Law (Series Politika, nr 4), Tübingen: Mohr Siebeck, 2011, pp. 85-107.

<https://ssrn.com/abstract=2259058>

⁸¹⁷ Data can be considered as public goods since they are non-rivalrous and non-exclusive (see chapter 1). However, if it is clear that volunteered data are non-rivalrous and non-exclusive as they are shared by the user, it is doubtful that observed and inferred are non-exclusive as they are collected by the firm as the result of its own investment in data collection and processing.

Google in the general search engine market,⁸¹⁸ Facebook in the social networking market,⁸¹⁹ Amazon in the market for marketplace services for online sales services to consumers,⁸²⁰ and both Google and Facebook in the online advertising market^{821, 822}. In the absence of competitive pressure, they lack the incentive to promote better services to users as they have fewer incentives to innovate⁸²³ and may foreclose the market at the expense of consumers and businesses.

⁸¹⁸ AT.39740-*Google Search (Shopping)*, 27 June 2017.

https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf

⁸¹⁹ B6-22/16-*Facebook*, 6 February 2019.

https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Entscheidungen/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=5

⁸²⁰ BKartA, Press release, *Bundeskartellamt obtains far-reaching improvements in the terms of business for sellers on Amazon's online marketplaces*, 17 July 2019 (accessed 3 February 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/17_07_2019_Amazon.html

⁸²¹ Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018.

http://www.autoritedelaconurrence.fr/doc/avis18a03_en.pdf

See also, ACCC, *Digital platforms inquiry-final report*, July 2019.

See also, CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019.

https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf

⁸²² EC, Speech, Margrethe Vestager, *Building a positive digital world*, Digital Summit, Dortmund, Germany, 29 October 2019 (accessed 3 February 2020).

[https://wayback.archive-](https://wayback.archive-it.org/12090/20191129200144/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/building-positive-digital-world_en)

[it.org/12090/20191129200144/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/building-positive-digital-world_en](https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/building-positive-digital-world_en)

“Those platforms can start to act, in effect, like market regulators. Their choices about how they rank different businesses can determine who has a chance to compete. And when they decide to remove a product – or a business – from the platform, they can seriously affect the success of that business.”

⁸²³ Paces, M. A. and Visscher, T. L., *Law and Economics – Methodology*, Bart van Klink and Sanne Taekema (Eds.), *Law and Method. Interdisciplinary research into Law* (Series Politika, nr 4), Tübingen: Mohr Siebeck, 2011, pp. 85-107.

See also, Arrow, K., *Economic Welfare and the Allocation of Resources to Invention*, in *The Rate and Direction of Inventive Activity: Economic and Social Factors*, 1962, pp 609-626.

<https://www.nber.org/chapters/c2144.pdf>

For an opposite view, see Schumpeter, J. A., *Capitalism, Socialism and Democracy*, *New York : Harper & Brothers*, 1942.

See also for a discussion about Arrow and Schumpeter, Shapiro, C., *Competition and Innovation: Did Arrow Hit the Bull's Eye?*, A chapter in *The Rate and Direction of Inventive Activity Revisited*, National Bureau of Economic Research, Inc, 2011, pp. 361-404.

4. Divestment regulation as the Standard Oil in 1911 or AT&T in 1982 is on the table on both sides of the Atlantic.⁸²⁴ A divestment is a form of line of business restrictions (LOBRs) used as an antitrust remedy or a regulatory restriction to limit the activities of an undertaking. It can be structural or behavioral.⁸²⁵ The former (also called “full ownership separation”) is a separation of the activities of the undertaking which requires the firm to separate and then sell one of its activities to be divested. The latter is an operational or accounting separation. Operational separation requires that the activities of the firm operate independently (e. g. separate management). Accounting separation requires that the activities of the firm report as if they were independent firms.⁸²⁶ A divestment must be assessed on a case-by-case basis with a cost-benefit analysis and be effective and practical.⁸²⁷ However, if behavioral separation may be feasible, structural separation or a break up of big tech may be more challenging since they do not hold physical assets and splitting their services is mostly infeasible since they are indispensable to the functioning of a two-sided market. For example, general search service and online advertising service cannot be divested as the latter subsidizes the former. The only possible way is to break up previous acquisitions such as WhatsApp and Instagram by Facebook. It is worth noting that alternative behavioral restrictions can be used to limit the activities of the firm without the need to separate it. They are mandated access to an input or product, non-discrimination obligation and mandated

<https://www.nber.org/chapters/c12360.pdf>

⁸²⁴ Competition Policy International, *US: FTC Chief says breaking up big tech is on the table*, 14 August 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/us-ftc-chief-says-breaking-up-big-tech-is-on-the-table/>

Competition Policy International, *US: Delrahim says breakup of Big Tech ‘on the table’*, 22 October 2019.

<https://www.competitionpolicyinternational.com/us-delrahim-says-breakup-of-big-tech-on-the-table/>

European Parliament, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 January 2019.

http://www.europarl.europa.eu/doceo/document/TA-8-2019-0062_EN.pdf

“Reiterates the need for the Commission also to consider the full structural unbundling of digital tech monopolies as a possible solution to enable the restoration of competition and a level playing field within the European digital market;” (para. 25)

⁸²⁵ OECD, *Lines of Business Restrictions – Background note By the Secretariat*, 4 May 2020, p. 4.

[https://one.oecd.org/document/DAF/COMP/WP2\(2020\)1/en/pdf](https://one.oecd.org/document/DAF/COMP/WP2(2020)1/en/pdf)

⁸²⁶ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, pp. 269-271.

⁸²⁷ *Ibid*, p. 26.

See also, OECD, *Lines of Business Restrictions – Background note By the Secretariat*, 4 May 2020, p. 6.

standards for interoperability and portability.⁸²⁸ Are they more effective and practicable to address concerns in the digital economy? This issue will be considered in this chapter.

5. Public utility regulation is used to regulate public utilities with natural monopolies due to the nature of the assets (e.g. railways, gas). Only one firm can control the market. To avoid deadweight loss due to market power, utilities are regulated. In the digital economy, the question is: Should digital platforms and their data be considered as public utilities? The issue is tricky. According to the OECD, natural monopolies derive their position not only from the nature of the asset but also from the nature of the demand (called “natural demand-side monopolies”). Digital platforms may be considered as demand-sided monopolies due to classical (direct and indirect) and data-driven network effects.⁸²⁹ However, even though digital platforms are considered as indispensable to connect users in the digital world, they only provide a service to their users (consumers and businesses) that a competitor can offer with a better service and not the underlying infrastructure necessary to access this service.⁸³⁰ They neither provide the communication network, nor the data to access the service. Therefore, considering digital platforms as public utilities is inappropriate.
6. Antitrust law is an efficient tool to regulate *ex-post* the behavior of dominant companies from anti-competitive practices. However, in the digital economy, *ex post* intervention is deemed too slow and case-specific whereas the economy requires fast-intervention due to its fast-moving nature and faced pervasive issues (e.g. self-preferencing).
7. An *ex-ante* regulation is therefore needed as the digital economy is becoming an important part of our lives and grows quickly. In the EU, the recent nomination of Margrethe Vestager as EU Commissioner for Competition and Executive Vice-President “for Setting the strategic direction of a Europe Fit for the Digital Age”⁸³¹ and, in the US, the opening by the House Judiciary Committee of a “*bipartisan investigation into*

⁸²⁸ OECD, *Lines of Business Restrictions – Background note By the Secretariat*, 4 May 2020, p. 4.

⁸²⁹ *Ibid*, p. 17.

⁸³⁰ Crawford, S., *Calling Facebook a Utility Would Only Make Things Worse*, Wired, 20 April 2020 (accessed 11 May 2020).

<https://www.wired.com/story/calling-facebook-a-utility-would-only-make-things-worse/>

⁸³¹ EC, *Margrethe Vestager* (accessed 3 February 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager_en

competition in digital markets”,⁸³² are strong signals in that way. In the EU, the Commission has recently released its strategies for data and artificial intelligence.⁸³³ In its Communication, “*A European strategy for data*”, the Commission wants that “*the EU to become the most attractive, most secure and most dynamic data-agile economy in the world – empowering Europe with data to improve decisions and better the lives of all of its citizens.*”⁸³⁴ In this regard, the Commission will create “*a single market for data*”⁸³⁵ and consider an *ex-ante* regulation if appropriate, “*to address more systemic issues related to platforms and data*”.⁸³⁶ The Commission further develops in its Communication on “*Shaping Europe’s digital future*” that the aim of the regulation will be to “*ensure that markets characterised by large platforms with significant network effects acting as gate-keepers, remain fair and contestable for innovators, businesses, and new market entrants*”. The regulation is expected to be released in the context of the Digital Services Act package by the end of 2020 (Q4-2020).⁸³⁷ In other words, the Commission is considering an *ex-ante* asymmetric regulation (only dominant firms

⁸³² House Judiciary Committee, *Digital Markets Investigation* (accessed 3 February 2020).

<https://judiciary.house.gov/issues/issue/?IssueID=14921>

See also, Competition Policy international, *House Antitrust Subcommittee Chairman Wants To Learn From Past Merger Mistakes*, 2 February 2020 (accessed 3 February 2020).

<https://www.competitionpolicyinternational.com/house-antitrust-subcommittee-chairman-wants-to-learn-from-past-merger-mistakes/>

“*House Antitrust Subcommittee Chairman David Cicilline is looking toward new regulations to reform the digital marketplace and empower antitrust enforcers, the Rhode Island Democrat told CNBC in an interview.*”

⁸³³ EC, Press release, *Shaping Europe’s digital future: Commission presents strategies for data and Artificial Intelligence*, 19 February 2020 (accessed 19 February 2020).

<https://ec.europa.eu/digital-single-market/en/news/shaping-europes-digital-future-commission-presents-strategies-data-and-artificial-intelligence>

⁸³⁴ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020, p. 25.

https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

⁸³⁵ EC, Press release, *Shaping Europe’s digital future: Commission presents strategies for data and Artificial Intelligence*, 19 February 2020 (accessed 19 February 2020).

⁸³⁶ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020, p. 14.

⁸³⁷ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe’s digital future*, 19 February 2020, p. 10.

based on objective criteria will be subject to the regulation) as opposed to a symmetric regulation (all firms will be subject to the regulation). Which of the two regulations better cures the market failures in the digital economy? It is still an open debate that will be discussed in section 4.

8. This chapter proposes a general regulation that addresses both market failures (market power and asymmetric information) and fairness issues by taking into account various policies that are linked in the digital economy including, competition, data protection and consumer protection policies and not a specific one adapted to a particular model of the digital economy such as taxi with Uber or accommodation-sharing with Airbnb. Moreover, issues beyond competition like tax, labor, harmful online content or fake news do not fall within the scope of this paper.
9. The goal of this chapter 3 is thus to expose a regulation that promotes efficient competition and protect the consumer welfare. Section 2 demystifies the contemporary myths about self-regulation in the digital economy. It shows that the economy is concentrated, that consumers cannot freely choice and consent and that data protection regulation does not fully protect privacy concerns. Section 3 develops the goals of a regulation in the digital economy based on efficient and fair competition. Section 4 presents an efficient regulation in the digital economy on the basis of the proposals made by the government reports and some personal ancillary recommendations. Section 5 concludes.

2. Debunking contemporary myths about self-regulation in the digital economy

10. From an economic standpoint, social welfare is maximized in full (or perfect) competition. It is defined by four conditions: (i) large number of buyers and sellers that cannot individually affect the market price; (ii) no barriers to entry and exit; (iii) perfect information; and (iv) homogenous goods. In this context, the economy is Pareto efficient. The price is equal to marginal cost and firms have no choice but to produce efficiently.⁸³⁸ Departure from this model of perfect competition due to market failures requires, in law and economics, either an *ex-ante* or an *ex-post* intervention to restore

⁸³⁸ OECD, *Glossary Of Industrial Organisation Economics And Competition Law*, 16 July 1993, para. 150.

the lost competition.⁸³⁹ It is therefore only when the market cannot achieve full competition by itself that a legal intervention is needed. In the absence of competition, firms have less incentives to offer lower price, better products and services and to innovate causing deadweight loss.⁸⁴⁰

11. In the digital economy, the question of a regulation is currently discussed around the world by academics, stakeholders, regulators, politicians and even big tech.⁸⁴¹ Two

⁸³⁹ Paccès, M. A. and Visscher, T. L., *Law and Economics – Methodology*, Bart van Klink and Sanne Taekema (Eds.), Law and Method. Interdisciplinary research into Law (Series Politika, nr 4), Tübingen: Mohr Siebeck, 2011, pp. 85-107.

⁸⁴⁰ Arrow, K., *Economic Welfare and the Allocation of Resources to Invention*, in *The Rate and Direction of Inventive Activity: Economic and Social Factors*, 1962, pp 609-626.

⁸⁴¹ Contributions by academics and stakeholders to the European Commission's call for contribution on "shaping competition policy in the era of digitization" (accessed 17 March 2019).

http://ec.europa.eu/competition/scp19/media_en.html

The New York Times, *Elizabeth Warren Proposes Breaking Up Tech Giants Like Amazon and Facebook*, 8 March 2019 (accessed 17 March 2019).

<https://www.nytimes.com/2019/03/08/us/politics/elizabeth-warren-amazon.html>

Techcrunch, *Don't break up big tech-regulate data access, says EU antitrust chief*, 11 March 2019 (accessed 19 March 2019).

https://techcrunch.com/2019/03/11/dont-break-up-big-tech-regulate-data-access-says-eu-antitrust-chief/?guccounter=1&guce_referrer_us=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_cs=o_s3K639KMecv7F_fp6H6w

Competition Policy International, *Australia: Murdoch's News Corp calls for breakup of Google*, 12 March 2019 (accessed 19 March 2019).

<https://www.competitionpolicyinternational.com/australia-murdochs-news-corp-calls-for-breakup-of-google/>

Competition Policy International, *UK: Online platforms need new regulator says parliament report*, 12 March 2019 (accessed 19 March 2019).

<https://www.competitionpolicyinternational.com/uk-online-platforms-need-new-regulator-says-parliament-report/>

Competition Policy International, *US: Facebook prefers more regulation over breakup*, 24 June 2019 (accessed 3 February 2020).

<https://www.competitionpolicyinternational.com/us-facebook-prefers-more-regulation-over-breakup/>

Adlc, *@Echelle event with Cédric O*, November 2019.

<https://www.autoritedelaconcurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

Competition Policy International, *US: Bill Gates: Big Tech must be regulated now*, 25 June 2019 (accessed 3 February 2020).

<https://www.competitionpolicyinternational.com/us-bill-gates-big-tech-must-be-regulated-now/>

opposite views are present in the debate. On one hand, some firms like Facebook⁸⁴² or Google⁸⁴³ assert that markets are competitive thanks to competition from established firms and new entrants as a result of low entry barriers. On the other hand, some academics⁸⁴⁴ highlight the need of a regulation because digital markets are dominated by just a few firms, the famous GAFAM-Google, Amazon, Facebook, Apple and Microsoft-which are now the gatekeepers for businesses and consumers. Furthermore, new entrants lack the incentive and ability to effectively enter into the market due to high entry barriers.

12. The myths about self-regulation are that (i) markets are competitive (myth n°1), (ii) consumers can freely choice and consent (myth n°2), (iii) and data protection regulation fully protect privacy concerns (myth n°3). In this section, I will show that all these myths are wrong and thus a regulation is necessary.

2.1. Myth 1: markets are competitive

13. The current debate on regulating the digital economy is based on evidences from markets such as general search services, social networking services, digital adverting, mobile operating systems and app stores and online marketplaces. Therefore, this section will focus on arguments based on these markets.

Competition Policy International, *Zuckerberg Urges Tighter Online Regulation*, 16 February 2020 (accessed 17 February 2020).

<https://www.competitionpolicyinternational.com/zuckerberg-urges-tighter-online-regulation/>

⁸⁴² Facebook, *Facebook's observations to the European Commission's call for contribution on "shaping competition policy in the era of digitization"*, 30 September 2018.

http://ec.europa.eu/competition/information/digitisation_2018/contributions/facebook.pdf

⁸⁴³ Varian, H. et al, *Digital challenges for competition policy* (contribution to the European Commission's call for contribution on "shaping competition policy in the era of digitization"), September 2018.

http://ec.europa.eu/competition/information/digitisation_2018/contributions/gavin_baird_hal_varian_maurits_dolmans.pdf

⁸⁴⁴ See for instance, Furman, J. et al, *Unlocking digital competition-Report of the Digital Competition Expert Panel*, Mach 2019.

14. In all these markets, it is well demonstrated that they are dominated by only a few established companies, the GAFAM,⁸⁴⁵ but the latter argues that digital markets are competitive.
15. Arguments for and against a regulation are based on the key features relevant to market power in data-driven markets (see chapter 1), namely network effects, access to competitively relevant data, data aggregation, share of control over data, single-homing and multi-homing, switching costs, entry costs and investment costs, economies of scale, economies of scope, the role of velocity, and the role of innovation and dynamic competition. All these factors may lead to a high degree of concentration. Therefore, to understand whether the market is competitive or not, it is necessary to analyze those factors.
16. As a researcher, it is very complicated to collect direct data from participants to do an in-depth investigation of the market, especially in the context of political pressure to regulate big tech. Moreover, this analysis must be done on a case-by-case basis, which is not the purpose of this paper. As a consequence, the following analysis is based on data from reports and decisions by competition experts and authorities, as well as papers by leading digital companies such as Google and Facebook.
17. The first insight is the high level of concentration in the hand of a few players for a long time proven by market shares. In the digital economy, market shares are reliable indicators of market power *“if a fast-growing market does not show signs of marked instability during the period at issue and, on the contrary, a rather stable hierarchy is established”*.⁸⁴⁶ As shown by the Furman et al report, the general search services, social networking services, digital advertising and mobile operating systems markets are characterized by high market shares from at least 2010 without signs of instability, rather, market shares are increasing and stable hierarchies are established.

⁸⁴⁵ *ibid.*

⁸⁴⁶ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 267.

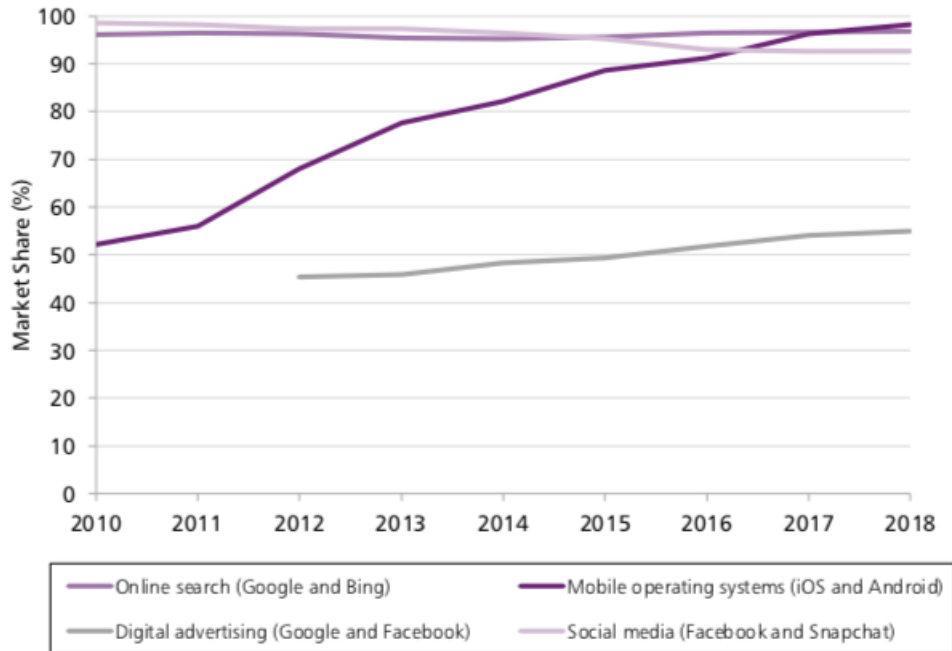


Figure 8: Evidence of concentration in some digital markets (source: Furman et al report, pp. 24-25)

18. Figure 8 shows that these digital markets are thus dominated by one or two firms. The markets are highly concentrated by the largest digital companies. In this context, it may be very complicated for a new entrant to disrupt the position of the incumbents.
19. These markets have a number of common features that explain this level of concentration. They are characterized by strong data-driven network effects, the collection and analysis of a colossal amount of data, economies of scale and scope, the inability for consumers to effectively switch and multi-home to other players and important financial resources to invest.
20. Network effects and data-driven network effects are key to attract consumers and businesses on the multisided of the platforms. Positive and strong network effects not only attract further users but also maintain current users on the platform. When these effects are so strong, the incumbent achieves a critical mass of users and tips the

market.⁸⁴⁷ When the market reaches the tipping point in favor of the dominant company, competitors would be unable to compete effectively and new market participants would lack the ability and incentive to enter into the market.⁸⁴⁸ Competitors would face a slowing down in the growth of their user base and a decline in the activity of their members who would become instead active on the incumbent.⁸⁴⁹

21. Data is the core feature in the data-driven economy. Participants collect personal and non-personal data to monetize and improve their services. The relevance of data is contested because data are non-rivalrous, ubiquitous, tradable, and even for some practitioners, inexpensive.⁸⁵⁰ However, as shown in chapter 1, these features do not mean that data are readily available for all competitors and new entrants. Moreover, the collection and analysis of data may be very costly even for large incumbents. Data are barriers to entry when competitors or new participants are unable or likely unable to collect the same volume and variety of data by themselves or by third parties, and or when they are unable or likely unable to process and analyze the data collected as incumbents. Relevant factors to determine whether data can contribute to market power are the analysis of the “four Vs” namely volume, variety, velocity and value as done for the first by the Commission in *Apple/Shazam*.⁸⁵¹

22. Economies of scale and scope are not specified as such to the digital economy. However, as noted in the Crémer et al report,⁸⁵² economies of scale are pushed “to the

⁸⁴⁷ See chapter 1.

⁸⁴⁸ M.8124-*Microsoft/LinkedIn*, 6 December 2016, para. 339.

⁸⁴⁹ *Ibid*, para. 343.

⁸⁵⁰ Tucker, D. S. and Wellford, H., *Big Mistakes Regarding Big Data*, Antitrust Source, American Bar Association, December 2014, p. 3.

<https://ssrn.com/abstract=2549044>

⁸⁵¹ M.8788-*Apple/Shazam*, paras. 317-324.

“In this respect the Commission has compared the Shazam User Data to other dataset available on users of digital music services using four relevant metrics: that is the variety of data composing the dataset; the speed at which the data are collected (velocity); the size of the data set (volume); and the economic relevance (value). These metrics, the so-called “Four Vs”, comprise the four key parameters that are increasingly used to assess the commercial and thus competitive relevance of large datasets.” (para. 317).

⁸⁵² Crémer, J. et al, *Competition policy for the digital era*, April 2019.

<http://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

*extreme*⁸⁵³. In the digital economy, the cost of production is “*much less than proportional to the number of customers served*”.⁸⁵⁴ Once a service is created such as a search engine, the marginal cost to serve an additional customer is nearly zero.⁸⁵⁵ Furthermore, large digital firms enjoy economies of scope thanks to the variety of data collected and the acquisition of a firm with a valuable dataset. The firm can thus develop other services for its users, creating an ecosystem. Both economies of scale and scope give “*a significant competitive advantage for incumbents*”.⁸⁵⁶

23. Investment is necessary to develop an effective infrastructure. As underlined in chapter 1, the digital economy is characterized by high sunk costs and high investments, even by a large incumbent to maintain or expand its dominant position. In *Google Search (Shopping)*, the Commission recognized “*large capital investments that competitors would have to match*” as barriers to entry.⁸⁵⁷ In 2018, a report by PwC shows that Google, Amazon, Facebook, Apple and Microsoft invest billions of dollars in research and development and are among the top 25 companies for global spending.⁸⁵⁸ The significance of investments may well be exacerbated by two phenomena. First, the race for Artificial Intelligence (AI) and supercomputers requires lots of expenditures and only large incumbents may be able to invest in these technologies. Moreover, investors may be reluctant to invest in a digital company that develops a “*new product or service in a similar space to an existing large incumbent due to the perceived risk that the incumbent might seek to replicate it or kill it off*.”⁸⁵⁹ As an example, Facebook offered 3 billion dollars to Snapchat in 2013.⁸⁶⁰ The latter declined the offer and it is now copied by Facebook since 2015.

⁸⁵³ Ibid, p. 20.

⁸⁵⁴ Ibid.

⁸⁵⁵ OECD, *Big data: Bringing competition policy to the digital era- Background Note by the Secretariat*, 27 October 2016, p. 11.

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

⁸⁵⁶ Crémer, J. et al report, p. 2.

⁸⁵⁷ AT.39740-*Google Search (Shopping)*, 27 June 2017, para. 270. See also, para. 286.

⁸⁵⁸ PwC, *The 2018 Global Innovation 1000 study* (accessed 16 April 2019).

<https://www.strategyand.pwc.com/innovation1000>

⁸⁵⁹ Furman, J. et al report, p. 37.

⁸⁶⁰ Business Insider, *Snapchat Rejected A \$3 Billion All-Cash Offer From Facebook*, 13 November 2013 (accessed 16 April 2019)

<https://www.businessinsider.com/snapchat-rejected-a-3-billion-all-cash-offer-from-facebook-2013-11?IR=T>

24. As the consequence of these features, consumers are locked-in to the services offered by the incumbents. They may be unable to effectively switch and multi-home to other players. A high switching costs, which are all the costs incur by a user to switch from one service to another one (such as the cost to use another player), can prevent a user to use another service. This can in turn increase the cost of multi-homing and thus increases market power. Switching costs play on users' behavior and must thus be analyzed on a case-by-case basis. Multi-homing occurs when consumers use more than one platform simultaneously to get the same kind of service (as opposed to single-homing, which occurs when consumers use only one platform). The ability to switch and multi-home are thus strongly related.⁸⁶¹ The assessment of these features is particularly useful to assess whether they are likely to mitigate the impact of network effects and the incumbent's market power. As argued by Facebook, it is true that consumers can theoretically *"easily switch between services, add new ones, or them to perform identical or similar functions"*⁸⁶² This is particularly relevant in the consumer communications services⁸⁶³ or dating application services, where users are able to easily switch and want to multi-home to widen their social interactions. However, competition is certainly not just *"one click away"*.⁸⁶⁴ Indeed, strong direct network effects lead to a *"lock-in effect"* of users. For instance, in the social networking services such as Facebook, if one user wants to switch to another platform, he or she has to convince all his or her friends to switch otherwise, the competing platform will not be valuable for him or her, and he or she will finally stick with the incumbent platform.⁸⁶⁵ At the same

⁸⁶¹ See Chapter 1.

⁸⁶² Facebook, *Facebook's observations on "Shaping competition policy in the era of digitization"*, 30 September 2018, p. 4.

⁸⁶³ COMP/M.7217-Facebook/WhatsApp, 3 October 2014, para. 87 and paras. 105-115.

⁸⁶⁴ NBC, *Schmidt on Antitrust: Competition is One Click Away*, 21 September 2019 (accessed 24 April 2019).
<https://www.nbcbayarea.com/blogs/press-here/Schmidt-on-Antitrust-Competition-is-One-Click-Away-130300333.html>

⁸⁶⁵ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, p. 27.
<https://publications.parliament.uk/pa/ld201516/ldselect/ldcom/129/129.pdf>

See also, B6-22/16-Facebook, 6 February 2019, para. 462.

"Users wishing to switch to such an incompatible network face several different barriers. Based on the purpose of using social networks, users will only find it useful to switch to an alternative network if they can meet their friends and acquaintances there as well. Users wishing to switch would therefore have to convince their contacts in the original network to switch to another network as well. As these contacts also have further contacts in the previous network, these would also have to be persuaded to switch. The more contacts a user has in the previous network, and the more closely these contacts are connected with other users, the more

way, strong indirect network effects lead to a “lock-in effect” of advertisers. Indeed, if the incumbent is an indispensable partner to access single-homing users (e.g. Google users), advertisers would have no choice but to use the platform even though they would like to use a competing platform.⁸⁶⁶ As noted in chapter 1, Switching and multi-homing are only relevant to market power if and only if multi-homing is significant (a meaningful share of users multi-home), effective (a meaningful share of users uses actively more than one platform on a daily/monthly basis) and long-lasting (multi-homing must occur on a relative long period of time).

25. In conclusion, the digital economy may well be dominated by only a few gatekeepers and markets are thus not competitive. This is confirmed by the recent submissions to the European Commission's call for contribution on "*shaping competition policy in the era of digitization*". The European Director-General for Competition, Johannes Laitenberger, stated in a public statement:

“We received over 100 responses. The submissions clearly showed that many respondents do not feel best served by today's digital sector and would like to see a more competitive digital landscape. The majority of the submissions laid out arguments for a pro-active competition enforcement and competition-driven regulation.”⁸⁶⁷

2.2. Myth 2: consumers can freely choice and consent

26. In the digital sector, consumers and businesses can consent to the terms and conditions of a platform by simply ticking the box and thus access to the service in a matter of

difficult or even impossible will it be to transfer these contacts to a new network. Users wishing to switch will be faced with the question of whether they should still switch to another network if a significant share of their previous contacts will not do the same. The incentive to switch to another social network therefore decreases with higher intensity of use of the previous network. “

⁸⁶⁶ House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016, pp. 28-29.

⁸⁶⁷ EC, Speech, Johannes Laitenberger, *Competition enforcement in digital markets: using our tools well and a look at the future*, 14th Annual Conference of the GCLC “Remedies in EU Competition Law: Substance, Process & Policy”, Brussels, 31 January 2019.

http://ec.europa.eu/competition/speeches/text/sp2019_03_en.pdf

seconds. It is well argued that consumers can freely choice and consent. After all, competition is just a click away and if they disagree with the terms they can simply use another service.

27. However, the picture is not really this one when consumers must rely on the dominant platform to access the market. Most of the time, they have no choice but to accept the terms or to leave the platform (and thus to not use the service). Since they do not have any other options, they will stick the box even if they do not agree with the terms. The picture is even more worried when consumers are already on the platform with a community and again they have no choice but to accept to the new terms and conditions or to leave the platform (and thus to not use the platform anymore and the access to the community). This is very important not only for consumers in the use of a social network such as Facebook for the collection and the use of their personal data but also for merchants of a marketplace such as Amazon. Both cases are or have been under scrutiny by competition authorities around the world.

28. In 2016, the German competition authority, the Bundeskartellamt, opened an investigation *“against Facebook on suspicion of having abused its market power by infringing data protection rules”*.⁸⁶⁸ In 2019, after nearly 3 years of in-depth scrutiny, the German Federal Cartel Office released the first antitrust case against Facebook and last but not least the first case that relies on data protection and competition law.⁸⁶⁹ According to the BKartA, Facebook abused its dominant position in the German market for social networks for private users by making the use of Facebook conditional on the collection of user and device-related data from Facebook-owned services (WhatsApp, Oculus, Masquerade and Instagram) and third-party sources (websites and smartphone apps) and on the combination of these data with the Facebook user accounts without the users’ consent. As stated by the authority, *“[t]here is no effective consent to the*

⁸⁶⁸ BKartA, Press release, *Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*, 2 March 2016 (accessed 27 April 2019).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html

⁸⁶⁹ BKartA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019 (accessed 27 April 2019).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html

users' information being collected if their consent is a prerequisite for using the Facebook.com service in the first place."⁸⁷⁰ By doing so, Facebook is able to collect, process and use *"almost unlimited amount of any type of user data"*⁸⁷¹ to obtain precise information of its users. In addition to the violation of the GDPR, the practice is an exploitative abuse of dominance case to the detriment of Facebook's users (that cannot effectively consent and are not even aware of such collection and merging of data) and an exclusionary abuse of dominance case at the expense of Facebook's competitors (that cannot collect such data and are thus at a competitive disadvantage). From a competition law perspective, as a consequence of the conduct, Facebook has gained a significant competitive data advantage over its rivals and has increased the entry barriers (among other things, data, network effects and lock-in effects).⁸⁷² The BKartA prohibited and ordered the termination of this conduct, which is now only allowed under the users' voluntary consent. In this regard, the President of the BKartA stated in the Press release:

"With regard to Facebook's future data processing policy, we are carrying out what can be seen as an internal divestiture of Facebook's data. In future, Facebook will no longer be allowed to force its users to agree to the practically unrestricted collection and assigning of non-Facebook data to their Facebook user accounts. The combination of data sources substantially contributed to the fact that Facebook was able to build a unique database for each individual user and thus to gain market power. In future, consumers can prevent Facebook from unrestrictedly collecting and using their data. The previous practice of combining all data in a Facebook user account, practically without any restriction, will now be subject to the voluntary consent given by the users. Voluntary consent means that the use of Facebook's services must not be subject to the users' consent to their data being collected and combined in this way. If

⁸⁷⁰ Case Summary B6-22/16, 15 February 2019.

[https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Missbrauchsaufsicht/2019/B6-22-16.pdf? blob=publicationFile&v=4](https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Missbrauchsaufsicht/2019/B6-22-16.pdf?blob=publicationFile&v=4)

⁸⁷¹ BKartA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019 (accessed 27 April 2019).

⁸⁷² Case Summary B6-22/16, 15 February 2019.

*users do not consent, Facebook may not exclude them from its services and must refrain from collecting and merging data from different sources.*⁸⁷³

- 29.** The case is not yet final. The Higher Regional Court (“OLG”) of Düsseldorf suspended the decision.⁸⁷⁴ Facebook is no longer obliged to apply the FCO’s remedies. According to the Court, the FCO failed to demonstrate the exploitative as well as the exclusionary abuse of dominance.⁸⁷⁵ The BKartA appealed the judgment before the Federal Supreme Court.⁸⁷⁶
- 30.** In November 2018, the BKartA initiated abuse of dominance proceedings “*against Amazon to examine its terms of business and practices towards sellers on its German marketplace amazon.de.*”⁸⁷⁷ According to the authority, Amazon might impose abusive terms to its sellers (e.g. liability provisions, choice of law, and jurisdiction clauses). In July 2019, the BKartA closed the proceedings following the amendments made by Amazon about its terms of business for sellers active on all European Marketplaces and worldwide marketplaces (including North America and Asia).⁸⁷⁸

⁸⁷³ BKartA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019 (accessed 27 April 2019).

⁸⁷⁴ OLG Düsseldorf, *Case VI-Kart 1/19 (V)*, 26 August 2019 (the official version is only available in German) https://www.olg-duesseldorf.nrw.de/behoerde/presse/Presse_aktuell/20190826_PM_Facebook/20190826-Beschluss-VI-Kart-1-19- V .pdf

⁸⁷⁵ Colangelo G., *Facebook and the Bundeskartellamt’s Winter of Discontent*, Competition Policy international, 23 September 2019 (accessed 27 January 2020).

⁸⁷⁶ Competition policy international, *Germany: Facebook succeeds in blocking German ban on data collection*, 26 August 2019 (accessed 27 January 2020). <https://www.competitionpolicyinternational.com/germany-cartel-office-to-take-facebook-case-to-high-court/>

⁸⁷⁷ Bkarta, Press release, *Bundeskartellamt initiates abuse proceeding against Amazon*, 29 November 2018 (accessed 27 April 2019). https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2018/29_11_2018_Verfahrenseinleitung_Amazon.html

⁸⁷⁸ Bkarta, Press release, *Bundeskartellamt obtains far-reaching improvements in the terms of business for sellers on Amazon’s online marketplaces*, 17 July 2019 (accessed 3 February 2020). https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/17_07_2019_Amazon.html

- 31.** In February 2019, the Austrian Federal Competition Authority, the Bundeswettbewerbsbehörde (BWB), opened similar proceedings against Amazon concerning its terms of business and the promotion of its own product on the Amazon Marketplace.⁸⁷⁹ The BWB has carried out a market study and found that Amazon holds a dominant position and that Austrian sellers lack the ability and incentive to switch to a competing provider even if Amazon increases the retailers fee. Furthermore, many sellers single-home on Amazon in Austria.
- 32.** In July 2019, the Commission opened an investigation against Amazon concerning the use of sensitive data from independent retailers who sell on its marketplace. The Commission investigates the alleged conduct under article 101 TFEU (collusion) and 102 TFEU (abuse of a dominant position).⁸⁸⁰ At this stage, it is not clear whether the conduct constitutes an exclusionary abuse. However, this cannot be excluded if Amazon uses these data to promote its own products on its marketplace at the expense of the other retailers. Moreover, the Commission did not precise in its Press release whether Amazon collects and uses third-party seller data without their voluntary consent to the terms and conditions as in the Facebook case, but the Commission will investigate the standard agreements between Amazon and marketplace sellers which enable Amazon to collect, use and analyze these data.
- 33.** It is worth noting that, In April 2019, the Italian competition authority, the Autorità Garante della Concorrenza e del Mercato (AGCM), also launched an investigation into Amazon “*on possible abuse of a dominant position in online marketplaces and logistic services*”.⁸⁸¹ The alleged conduct is not based on the collection and use of data without

⁸⁷⁹ BWB, Press release, *Austrian Federal Competition Authority initiates investigation proceedings against Amazon*, 14 February 2019 (accessed 3 February 2020).

https://www.bwb.gv.at/en/news/detail/news/austrian_federal_competition_authority_initiates_investigati_on_proceedings_against_amazon/

⁸⁸⁰ EC, Press release, *Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon*, 17 July 2019 (accessed 28 January 2020).

https://ec.europa.eu/commission/presscorner/detail/en/ip_19_4291

⁸⁸¹ Autorità Garante della Concorrenza e del Mercato (AGCM), Press release, *A528 - Amazon: investigation launched on possible abuse of a dominant position in online marketplaces and logistic services*, 16 April 2019 (accessed 27 April 2019).

<https://en.agcm.it/en/media/press-releases/2019/4/Amazon-investigation-launched-on-possible-abuse-of-a-dominant-position-in-online-marketplaces-and-logistic-services>

the users' consent or the imposition of terms but on the special treatment (e.g. higher search rankings) only to third-party merchants who use Amazon's logistics services to the detriment of competitors in the e-commerce logistics market and of final consumers in the e-commerce platform market.

34. Moreover, on both sides of the Atlantic the data collection practices of Google and Facebook are currently under investigation.⁸⁸²

35. All these cases show that, in the absence of competition, customers (users or merchants) of a platform cannot freely choose and consent to the terms and conditions of the dominant company without taking risks to leave the platform if they do not agree to the terms. By doing so, the incumbent gains a significant competitive advantage at the expense of its consumers (loss of privacy, self-determination and choice) and its competitors (foreclosure and even exclusion).

2.3. Myth 3: data protection regulation fully protects privacy concerns

36. The General Data Protection Regulation (GDPR), which entered into force in May 2018, appears like the regulation that changes the behavior of tech companies in the digital economy and gives more control to users over their personal data. The GDPR fully protects privacy concerns and should be the regulation that harmonizes data protection law not only throughout the EU but also around the world. As stated by Facebook CEO, Mark Zuckerberg, in a recent blog post to regulate the internet:

⁸⁸² Competition policy international, *EU: Facebook tells regulators 'data is complicated'*, 2 December 2019 (accessed 27 January 2020).

<https://www.competitionpolicyinternational.com/eu-facebook-tells-regulators-data-is-complicated/>

Reuters, *Exclusive: EU antitrust regulators say they are investigating Google's data collection*, 30 November 2019 (accessed 3 February 2020).

<https://www.reuters.com/article/us-eu-alphabet-antitrust-exclusive/exclusive-eu-antitrust-regulators-say-they-are-investigating-googles-data-collection-idUSKBN1Y40NX>

Financial times, *Which antitrust investigations should Big Tech worry about?*, 28 October 2019 (accessed 27 January 2020).

<https://www.ft.com/content/abcc5070-f68f-11e9-a79c-bc9acae3b654>

“Third, effective privacy and data protection needs a globally harmonized framework. People around the world have called for comprehensive privacy regulation in line with the European Union’s General Data Protection Regulation, and I agree. I believe it would be good for the internet if more countries adopted regulation such as GDPR as a common framework.”⁸⁸³

- 37.** Enforcing the GDPR as a common framework seems an interesting idea, but one question remains, is the GDPR really efficient? After two years of enforcement, it is still too early to draw conclusions on whether the GDPR works well or not. However, one can make two observations on two important aspects of the GDPR: consent and data portability.
- 38.** In May 2018, to comply with the GDPR, companies sent to their users privacy notices about their new rights. Indeed, pursuant to article 6(1)(a) and 7 GDPR, consent must be given by the data subject (the user) to the processing of his or her personal data. However, most individuals only agree to the terms without even read it and even if they read it, their effective choice might be difficult to select (due to pre-ticked boxes without the possibility to directly modify the terms or a simple text without any options but to continue to visit the website) and to observe (even if a user effectively choice, it is impossible to know whether the firm complies with the user’s choice). Nowadays, even with the GDPR, consent is not freely given and consumers have in reality no choice but to accept the terms and conditions or to leave the service. As noted in a recent interview by the European Data Protection Supervisor, Giovanni Buttarelli:

“Even ticking a box does not necessarily mean consent is freely given. Unambiguous consent means it must not only be explicit but meaningful, not a case of pre-ticked boxes or a case where you have no alternative but to continue through to a website. Perhaps the privacy policy is confined to a corner of a page you will never read. That is not the kind of privacy user-

⁸⁸³ Zuckerberg, M., *Four Ideas to Regulate the Internet*, Facebook Newsroom, 30 March 2019 (accessed 28 April 2019)

<https://newsroom.fb.com/news/2019/03/four-ideas-regulate-internet/>

friendly approach we expected. If you start reading all privacy notices you receive, you will spend too much time reading these notices. On the other hand, if a person [ticks a box] “I accept and understand” but they don’t know what they’re consenting to, that is not acceptable either. A reasonable approach is in-between.”⁸⁸⁴

39. From this perspective the GDPR only raises the users’ awareness on their consent right but it did not fix the essential concern of effective and voluntary consent. As noted below in section 3.2, this aspect is indispensable for fair competition.

40. The second point is about data portability. Pursuant to article 20 GDPR, the data subject has the right to receive its personal data from the data controller (the firm) and to transmit those data to another company. The anti and pro-competitive aspects of data portability will be analyzed in section 4. Here, the question is whether users are aware of their rights to data portability and whether they use it. According to a recent survey by the Italian competition authority:

“Finally, the survey shows that, currently, only 1 in 10 users are aware of their data portability rights, even if about half of users are interested in obtaining a copy of their data. The low interest in the use of portability is due to the poor inclination to use other platforms/applications (41.1%), a limited awareness of the relevance of such data (36.1%), as well as the perception of technological tools as being highly complex (30.4%).”⁸⁸⁵

41. From this survey, four important conclusions must be drawn. First, people are not aware of their data portability right. Therefore, firms must display that right in a more effective way to raise the user’s awareness of such right. Second, nearly half of users do not use

⁸⁸⁴ Digiday UK, *Giovanni Buttarelli on state of GDPR adoption: “Even ticking a box does not necessarily mean consent is freely given”*, 12 April 2019 (accessed 28 April 2019).

<https://digiday.com/media/european-commissions-giovanni-buttarelli-state-gdpr-adoption-even-ticking-box-not-necessarily-mean-consent-freely-given/>

⁸⁸⁵ AGCM, Press release, *Fact-finding Survey on Big Data*, 8 June 2018 (accessed 28 April 2019).

<https://en.agcm.it/en/media/press-releases/2018/6/alias-2497>

it because they do not have the incentive to use other platforms or applications. This may be due to a lack of competition (e.g. there are no competitors to Facebook and even if Instagram can be considered as an alternative, it is part of the Facebook owned-services) or consumers lock-in (one can see here a kind of “chicken and egg” problem where in the absence of competition, there is no incentive to use data portability, and in the absence of data portability, no competition can emerge). Third, people are not aware of the relevance of their data. Again, firms must increase the user’s awareness. And fourth, the exercise of data portability is still too complex. Firms have to enable seamlessly data portability in a simple interface with low transaction costs for the users to move their data from one provider to another. In conclusion, nowadays data portability might not be a relevant tool to restore effective competition if individuals are not aware of that right and if there is no alternative to port their data.

- 42.** To sum up, at this stage, the GDPR does not fully protect privacy concerns. The rights to consent and data portability are not enough to improve competition in the digital economy.
- 43.** The myths are now demystified. Before designing an effective regulation based on the above observations, the goals of this regulation must be developed.

3. The goals of a regulation in the digital economy

- 44.** Competition law and regulation are ancillary and can reinforce each other.⁸⁸⁶ As noted above, a legal intervention is necessary to correct market failures. In economics, there are two theories: The first one, the theory of first best, refers to Pareto efficiency. Removing the failure enables to reach again the optimum. The second one, the theory of second best states that when one of the conditions of perfect competition cannot be fulfilled, then a second best optimum situation can be achieved only by departing from all other conditions.⁸⁸⁷ In other words, when the market is not perfectly competitive due to a market failure (e.g. a polluter in a situation of monopoly), the correction of this failure (e.g. breaking up the monopoly) may not lead to efficiency because this creates

⁸⁸⁶ Crémer, J. et al report, pp. 4-5.

⁸⁸⁷ Lipsey, R. G. and Lancaster, K., *The General Theory of Second Best*, *The Review of Economic Studies*, Vol. 24, No. 1 (1956 - 1957), pp. 11-32.

<https://www.jstor.org/stable/2296233?seq=1>

or exacerbates another failure (e.g. a negative externality in the form of more pollution). Therefore, it is not possible to satisfy all the conditions for perfect competition. In that situation, only a second best situation can be reached. This may be done by including other grounds in competition policy such as fairness.

45. In the digital economy, achieving a situation of perfect competition may be difficult, if not impossible. Indeed, one has to correct both market power and asymmetric information at the same time. However, it is a daunting task as the correction of market power may create or exacerbate asymmetric information and negative externalities due to the intensity of competition (e.g. the collection of data without the users' voluntary consent). As the result, imperfect corrections may decrease efficiency. How to ensure that the corrections of market power and asymmetric information increase, not decrease, efficiency? They have to be accompanied by fairness concerns. A fair competition will offset the adverse effects resulting from the greed of competition to maximize profit in the most efficient way, but without taking into account social or moral values. Against this background, only a second best solution can be reached by (i) promoting efficient competition, and (ii) fair competition.

3.1. Goal 1: promoting efficient competition

46. Promoting efficient competition is an obvious goal for competition experts. Competition spurs, among other things, innovation, quality and choice, which are the three main parameters of competition in data-driven markets in which many services are offered for free on the consumer side. Nowadays, the digital economy is too concentrated and as a result of weak competition, the situation poses two major concerns.

47. First, a lemons equilibrium prevails. Firms do not face enough pressure to offer the best non-price aspects of their products and services such as a better privacy protection, which has the effect of reinforcing the position of the incumbents while degrading the consumer welfare. In other words, without competition, markets do not serve consumers but serve first and foremost the dominant companies.

48. Second, people do not trust the firms and the markets. If people do not trust the market, it will not work well. As argued by Margrethe Vestager in a public statement:

“So before people can embrace the possibilities of technology, they need to know that those risks are being dealt with. They need to trust technology – and the companies that deliver it – not to harm them. Lately, for many people, that trust has been shaken. People have seen their data being stolen or misused; they’ve seen companies abusing their power in the market, at the expense of consumers.”⁸⁸⁸

49. In the digital economy, trust is particularly important because billions of users rely on digital services daily. They start their day by consulting their applications and they end up their day by doing the same thing, every day. Furthermore, data are at the heart of the digital economy, and without trust in how personal data are collected, used, stored and shared people might well be reluctant to share their data with the firms and the digital economy might collapse.⁸⁸⁹ Indeed, as noted by Arrow, “[v]irtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence”.⁸⁹⁰ Chami and Fullenkamp further showed that trust increases efficiency.⁸⁹¹ But, when the market is too concentrated, even if people do not trust the service, they will not have the choice but to use the service because there is no alternative. In an opinion, a former co-founder of Facebook, Chris Hughes, summarized well this concern:

“Even when people want to quit Facebook, they don’t have any meaningful alternative, as we saw in the aftermath of the Cambridge

⁸⁸⁸ EC, Speech, Margrethe Vestager, *Building a fairer digital world*, Web Summit, Lisbon, 7 November 2018 (accessed 12 May 2019).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/building-fairer-digital-world_en

⁸⁸⁹ Carugati C., *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, European Competition and Regulatory Law Review Volume 2, Issue 1 (2018) pp. 4 – 10.

<https://core.lexxion.eu/article/CORE/2018/1/4>

⁸⁹⁰ Arrow, K., *Gifts and Exchanges*, Philosophy & Public Affairs, Vol. 1, No. 4, Summer, 1972, pp. 343-362.

<https://www.jstor.org/stable/2265097?origin=JSTOR-pdf>

⁸⁹¹ Chami, R. and Fullenkamp, C., *Trust and Efficiency*, July 2001.

: <https://ssrn.com/abstract=206368>

“Trust is a powerful tool for raising efficiency, cutting costs, and increasing accountability.” (p. 3).

Analytica scandal. Worried about their privacy and lacking confidence in Facebook's good faith, users across the world started a "Delete Facebook" movement. According to the Pew Research Center, a quarter deleted their accounts from their phones, but many did so only temporarily. I heard more than one friend say, "I'm getting off Facebook altogether — thank God for Instagram," not realizing that Instagram was a Facebook subsidiary. In the end people did not leave the company's platforms en masse. After all, where would they go?"⁸⁹²

50. So even if a huge privacy scandal cannot refrain a company from being used, how the market can be disciplined? Simply by restoring competition. By doing so, people will have an alternative and to keep their consumers on the platform, firms will have no choice but to put all their efforts to increase the trustworthiness of their services. An antitrust case is a powerful tool to fight a particular anti-competitive conduct from one or more firms, but when the conduct is not case specific, only a regulation can be efficient.

3.2. Goal 2: promoting fair competition

51. In her article, *The Battle for the Soul of Antitrust*, Professor Eleanor Fox, distinguished in 1987 between the "Chicagoans" and the "New Coalition".⁸⁹³ The former considers that firms achieve efficiency when unconstrained by law. Oversimplifying, competition law is only driven by economics and its sole goal of efficiency, no other goals because any legal intervention will otherwise undermine the achievement of efficiency. The latter believes that the law is different from economics. The law can be derived from the statutory text. Here, "*economics is one of the tools used to carry out the spirit of the law*". Oversimplify, competition law is driven by the textbook and its goals. Contrary to the "Chicagoans", they thus consider the history of antitrust law. She wondered which school better predicts the future of antitrust.

⁸⁹² Hughes, C., *It's Time to Break Up Facebook*, The New York Times, 9 May 2019 (accessed 11 May 2019).
<https://www.nytimes.com/2019/05/09/opinion/sunday/chris-hughes-facebook-zuckerberg.html>

⁸⁹³ Fox, E. M., *The Battle for the Soul of Antitrust*, 75 Calif. L. Rev. 917, 1987.
<https://lawcat.berkeley.edu/record/1112881>

52. 30 years later, the antitrust law is guided by the “Chicagoans”. Antitrust law is purely economics and efficiency-based. But, the Chicago school is more and more contested around the world. In their catchy book, “*Competition Overdose*”, Professors Stucke and Ezrachi highly criticized the ‘Chicagoans’ and demonstrated “*how the free market mythology transformed us from citizen kings to market servants*”.⁸⁹⁴ Competition is not always good and can even be harmful to consumers. Other scholars, including Professors Eleanor Fox, Damien Gerard and Ioannis Lianos looked at the interactions between equity and efficiency in the context of competition law.⁸⁹⁵ They strongly argue for an integration of equity and fairness concerns in competition law. However, opponents will argue that the integration of social goals (e.g. fairness) will undermine economic efficiency. Efficiency and fairness cannot coincide. But, Bonakele et al demonstrated the contrary by considering excessive pricing, which is considered in many jurisdictions as an unfair practice (in Europe, art. 102(a) TFEU prohibits “*imposing unfair purchase or selling prices or other unfair trading conditions*”).⁸⁹⁶ They showed that excessive pricing by a monopoly is a market failure. The practice is not only an “unfair” harm but also a “market” harm. Excessive pricing means low output, which means lower output in the market, resulting in deadweight loss, namely an allocative inefficiency. The situation is not efficient and not fair. Accordingly, efficiency and fairness coincide. The solution in this case is thus to promote efficient competition and fair competition.

53. To be clear, fair competition does not mean *less competition* but *better competition*. Fairness concerns are a safeguard against the greed of competition to maximize profit in the most efficient way, but without taking into account social or moral values, such as the right for private and family life (art. 7 EU Charter of Fundamental Rights (CFR)), the right for the protection of personal data (art. 8 CFR) or the prohibition against slavery and forced labor (art. 5 CFR). Of course, the history shows us that firms can achieve efficiency when unconstrained by law. By collecting personal data without considering the right for the protection of personal data, one can increase economies

⁸⁹⁴ Stucke, M. E. and Ezrachi, A., *Competition Overdose How Free Market Mythology Transformed Us from Citizen Kings to Market Servants*, Harper business, 2020.

⁸⁹⁵ Gerard, D. and Lianos, I., *Reconciling Efficiency and Equity: A Global Challenge for Competition Policy*, Cambridge University Press, 2019.

⁸⁹⁶ Bonakele, T. et al, *Competition Policy for the New Era: Insights from the BRICS Countries*, OUP Oxford, 2017, pp. 32-33.

of scale and scope and offer better services to consumers. By forcing labor, one can reduce costs and offer better prices. Yes, the economy will certainly achieve efficiency, but at the end of the day, consumers and workers will be harmed. However, the society expects a fair outcome from the application of the law, including from antitrust law. Professor Sandra Marco Colino thus states “*in this sense, fairness considerations might, in fact, save antitrust*”.⁸⁹⁷ In other words, in an economic language, competition must achieve efficiency under the constraint of fairness.⁸⁹⁸ To ensure legal certainty, fairness must be considered with respect to social and moral values rooted in statutory law and legal precedents.

54. The notion of fairness and fair competition is currently a hot topic in the antitrust sphere and especially concerning digital markets.⁸⁹⁹ Fairness is a core principal of competition law and of its rationale of “competition on the merits” and of “level playing field”. They can only compete on the merits if they compete fairly.⁹⁰⁰ As pointed out by Professor

⁸⁹⁷ Marco Colino, S., *The Antitrust F Word: Fairness Considerations in Competition Law*, Journal of Business Law, Forthcoming ; The Chinese University of Hong Kong Faculty of Law Research Paper No. 2018-09, 7 September 2018, pp. 18-19.

<https://ssrn.com/abstract=3245865>

⁸⁹⁸ Gerard, D., *Fairness in EU Competition Policy: Significance and Implications*, Journal of European Competition Law & Practice, 2018, Vol. 9, No. 4, 2018, p. 212.

“To that extent, fair competition may entail that there are boundaries to profit maximisation strategies beyond which these are considered socially unacceptable by reference to certain standards of justice as articulated in anti-trust principles and applied by means of an array of legal tests and enforcement rules”.

<https://academic.oup.com/jeclap/article/9/4/211/4956515>

⁸⁹⁹ EC, Speech, Johannes Laitenberger, *EU competition law in innovation and digital markets: fairness and the consumer welfare perspective*, MLex / Hogan Lovells event, Brussels, 10 October 2017 (accessed 12 May 2019).

http://ec.europa.eu/competition/speeches/text/sp2017_15_en.pdf

See also, EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018 (accessed 12 May 2019).

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-and-fairness-digital-society_en

⁹⁰⁰ EC, Speech, Margrethe Vestager, *How competition can build trust in our societies*, TED Talk, New York, 20 September 2017 (accessed 12 May 2019).

“So from our very first day, in 1957, the EU has had rules that defend fair competition - competition on the merits: On prices, quality, innovation.”

https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/how-competition-can-build-trust-our-societies_en

Damien Gerard from a speech by Commissioner Margrethe Vestager “[she] clarified that fairness was about the social rationale of competition principles and not their application in individual cases”.⁹⁰¹ Not surprisingly, in its recent Communication on “Shaping Europe’s digital future”, the Commission announced that a fair and competitive economy is one of the three key objectives that will shape the digital transformation in Europe.⁹⁰² Accordingly, the Commission wants to create a European single market for data based on European rules and values.⁹⁰³ With regards to digital platforms, the Commission even argue that it will ensure “that the systemic role of certain online platforms and the market power they acquire will not put in danger the fairness and openness of our markets”.⁹⁰⁴ But, why this revival of fairness concerns in the digital economy?

55. Well let’s have a look at the practices by digital platforms. In the digital economy, fairness is particularly salient since gatekeepers have the power to shut down their competitors (exclusionary abuse) or to exploit their consumers (exploitative abuse) by simply enabling the rules of the game.⁹⁰⁵ To name a few, they can impose unfair contract terms and conditions to their users to collect data without their voluntary consent (German Facebook case),⁹⁰⁶ they can enact how the algorithm works to promote their own services and decide to push competitors only far beyond the users’ attention (Google Shopping case),⁹⁰⁷ or decide which applications and software to pre-

⁹⁰¹ Gerard, D., *Fairness in EU Competition Policy: Significance and Implications*, Journal of European Competition Law & Practice, 2018, Vol. 9, No. 4, 2018, p. 211.

⁹⁰² EC, Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 2.

⁹⁰³ Ibid, p. 7.

⁹⁰⁴ Ibid.

⁹⁰⁵ EC, Speech, Margrethe Vestager, *Building a positive digital world*, Digital Summit, Dortmund, Germany, 29 October 2019 (accessed 3 February 2020).

“So when platforms do act as regulators, they ought to set the rules in a way that keeps markets open for competition. But experience shows that instead, some platforms use that power to harm competition, by helping their own services.”

⁹⁰⁶ B6-22/16-Facebook, 6 February 2019.

⁹⁰⁷ AT.39740-Google Search (Shopping), 27 June 2017.

install on a handset (Google Android case).⁹⁰⁸ All these practices are not fair and consumers are harmed either directly or indirectly by less competition and choice.

- 56.** Data and algorithms are the fundamental elements in the digital economy. A fair use of data and algorithms is thus essential to ensure that digital markets will work properly and will serve consumers well. An efficient regulation based on fair principals (e.g. non-discriminatory access, effective consent) can be the solution. Further, transparency and choice can serve as a mean to achieve a fair competition in the digital economy.
- 57.** Indeed, firms and consumers directly benefit from the collection and use of personal and non-personal data. A firm generates profits from targeted ads and consumers benefit from personalized services. In this regard, the collection, processing and use of data are good for firms and consumers.
- 58.** However, data imply privacy interests. People care about their privacy. They want to use a service without a privacy-intrusive data collection. But since in zero-price markets, the level of privacy is closely linked to the profit of the firms, they do not have the incentive to offer a better privacy protection to the detriment of consumers. At the end of the day, despite the consumers' benefits in terms of better services, they suffer from the lack of privacy protection.
- 59.** Furthermore, as in the German Facebook case demonstrated, dominant firms may misuse their market power by imposing unfair terms and conditions to collect even more personal data without the users' voluntary consent. Since users cannot effectively switch to another service due to direct and indirect network effects, high switching costs and consumer inertia, they have no choice but to accept the terms and conditions if they want to stay connected with their network.
- 60.** Even in the absence of privacy breaches, firms can use the so-called "dark patterns"⁹⁰⁹ namely "*users interfaces that make it difficult for user to express their actual preferences*"

⁹⁰⁸ AT.40099-*Google Android*, 18 July 2018.

⁹⁰⁹ "*Dark patterns*" also refers to "*deliberately misleading users through exploitative nudging*". Nudging is a field of behavioral economics and psychology. It uses psychological biases in order to steer people to make certain choices.

or that manipulate users into taking actions that do not comport with their preferences or expectations”,⁹¹⁰ in order to impede users from exercising their privacy preferences.⁹¹¹ By doing so, users cannot effectively choice and consent to the terms and conditions even if they care about their privacy and without any breaches of data protection by the firms. The notice consent is designed in way that users will end up to “accept” the conditions in the terms of the interests of the firms (privacy intrusive default settings) and not of the users (friendly privacy settings) due to consumer inertia (default bias) and information asymmetries.⁹¹² Dark patterns are not illegal. Thus, the practice enables the firms to lawfully reach the same effect of a data protection violation,⁹¹³ namely the absence of specific, explicit, freely given and informed consent as required by the GDPR.⁹¹⁴ Combined with market power, the firms can collect even more data to the detriment of users and competitors. From a competition law perspective, the practice might be qualified as an exploitative abuse at the expense of consumers since it enables the dominant undertaking to collect, process and use data without the users’ voluntary consent.

Forbrukerrådet, *Deceived by design-How tech companies use dark patterns to discourage us from exercising our rights to privacy*, 27 June 2018, p. 6.

<https://fil.forbrukerradet.no/wp-content/uploads/2018/06/2018-06-27-deceived-by-design-final.pdf>

⁹¹⁰ Zingales, L. and Maria Lancieri, F., *Stigler Committee on Digital Platforms Policy Brief*, September 2019, p. 8.

<https://research.chicagobooth.edu/-/media/research/stigler/pdfs/policy-brief---digital-platforms---stigler-center.pdf?la=en&hash=AC961B3E1410CF08F90E904616ACF3A3398603BF&hash=AC961B3E1410CF08F90E904616ACF3A3398603BF>

⁹¹¹ Ezrachi, A. and Reyna, A., *The Role of Competition Policy in Protecting Consumers’ well being in the digital era*, BEUC, October 2019, pp. 17-18.

https://www.beuc.eu/publications/beuc-x-2019-054_competition_policy_in_digital_markets.pdf

⁹¹² Forbrukerrådet, *Deceived by design-How tech companies use dark patterns to discourage us from exercising our rights to privacy*, 27 June 2018, p. 3.

⁹¹³ *Ibid*, p. 10.

“When service providers employ design tactics to nudge or manipulate consumers toward giving their consent to share personal data, in our opinion, this is at odds with the notion of consent being “freely given”. The use of dark patterns to lead users toward less privacy-friendly options can also contravene the principle of data protection by default and design.”

⁹¹⁴ Art. 4 GDPR: *“consent’ of the data subject means any freely given, specific, informed and unambiguous indication of the data subject’s wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her”*. Article 6(1)(a) GDPR: *Processing shall be lawful only if and to the extent that at least one of the following applies: the data subject has given consent to the processing of his or her personal data for one or more specific purposes;*

- 61.** Therefore, the design of the privacy settings is fundamental to safeguard the privacy interests of users while preserving the commercial interests of firms. Privacy settings must thus be regulated in order to achieve this goal through choice and transparency by involving competition, consumer protection and data protection experts in the design of such settings. From a competition, consumer protection and data protection point of view, privacy settings must be designed in a way that offer specific, explicit, freely given and informed consent to ensure an effective and genuine choice. Since the privacy preferences can vary among users, the designer has to create an interface based on neutral design, namely without nudging people toward making certain actions. The settings must require users to actively click on the choice they prefer. There will be no preselecting options (no default settings) and no visual clues,⁹¹⁵ so as the user will make an affirmative action as required by the GDPR. Moreover, users must not be forced to choose by promoting neutral wordings and the settings must explain the full extent of the choices in a neutral way.⁹¹⁶ Furthermore, to ensure effective choice, rewards (e.g. better services or extra functionalities) and punishments (e.g. denial to access to the services or loss of functionalities) as it is currently the case in many privacy settings like in the Facebook or Google's terms and conditions must strictly depend on what is necessary to perform the service. There will be no "take it or leave it offer", namely users must be free to use the service if they do not accept the terms (no account deletion if they decline the terms as in the Facebook's GDPR update or loss of functionalities if they opt out as in the Google's GDPR update).⁹¹⁷
- 62.** In that way, the designer gives users an explicit (unambiguous), specific, free, informed and genuine choice and consent. The user chooses, according to his or her privacy preferences, which personal data can be collected, processed and used by the firm to provide personalized services. The commercial interests of firms and the consumer

⁹¹⁵ According to the Forbrukerrådet's study, visual clues such as making some buttons or options more salient may affect the user's choice (pp. 19-21)

⁹¹⁶ The Forbrukerrådet's study shows that current privacy settings use positive and negative wording to nudge users towards making certain choice. It finds that "[a]ll three companies [Google, Facebook, Windows] presented the settings that maximise data collection as the positive option. Dark patterns such as skewed wording, focus on positives such as "improve services", glossing over potential negative consequences, and not explaining the full extent of the choices, all serve to nudge users toward allowing wider data collection and use." (pp. 24-25).

⁹¹⁷ Ibid, pp. 25-27.

benefits will now depend on the user's wishes rather than the service provider's wishes. The commercial interests are thus preserved and the user's privacy interests are safeguarded through choice and transparency. Neutral privacy settings will thus enhance competition and consumer welfare. Indeed, thanks to genuine choice and consent, consumer welfare will improve from increased choice and quality (privacy is a parameter of quality). Moreover, by increasing transparency through neutral privacy settings, firms will have the incentive to improve privacy and data protection in order to attract consumers. Firms will then compete over privacy.

63. Now that the goals of a regulation in the digital economy in terms of efficiency and fairness are well-defined, one can build an efficient regulation

4. Building an efficient regulation in the digital economy

64. Regulate or not to regulate is not anymore a Shakespearian issue.⁹¹⁸ The digital economy must be regulated. The question is now about how to regulate it to promote an efficient and fair competition. The question is tricky since the digital economy is dynamic with a high level of innovations including by dominant undertakings such as Google, Facebook or Amazon. In this context, opponents of a regulation will argue that a regulation might chill the dynamism of the economy and the incentive to invest and innovate depriving consumers from beneficial innovations. From a law and economics point of view, it is true that a regulation might reduce the incentive to innovate and therefore care is needed.

65. All over the world, governments have commissioned reports on this issue. Since 2018, not least than six reports have been released in Germany (hereinafter "Schallbruch et

⁹¹⁸ Deffains. B. and Carugati, C., *Internet Platforms: To Regulate, or not to Regulate?*, Essays in Law and Economics in honour of Roger Van den Bergh, Intersentia, 2018.

al report”)⁹¹⁹, the UK (hereinafter “Furman et al report”)⁹²⁰, Australia (hereinafter “ACCC report”)⁹²¹, the European Commission (hereinafter “Crémer et al report”)⁹²² and by the Stigler Center (hereinafter “Stigler report”)⁹²³.⁹²⁴

⁹¹⁹ Schweitzer, H. et al, *Modernising the law on abuse of market power*, Report for the Federal Ministry for Economic Affairs and Energy, September 2018 (only the executive summary is available in English).

https://www.bmwi.de/Redaktion/DE/Downloads/Studien/modernisierung-der-missbrauchsaufsicht-fuer-marktmaechtige-unternehmen-zusammenfassung-englisch.pdf?__blob=publicationFile&v=3

See also, Schallbruch, M. et al, *A new competition framework for the digital economy*, Report by the Commission ‘Competition Law 4.0’, September 2019. Only this report will be analyzed since it is the most recent one.

https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=2

⁹²⁰ Furman, J. et al, *Unlocking digital competition*. Report of the Digital Competition Expert Panel, March 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

⁹²¹ Australian Competition and Consumer Commission (ACCC), *Digital Platforms Inquiry-Final Report*, June 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

See also, ACCC, Press release, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 December 2019. The ACCC will start a new inquiry into the digital advertising tech supply chain and especially on digital displays ads. (accessed 4 February 2020).

<https://www.accc.gov.au/media-release/accc-welcomes-comprehensive-response-to-digital-platforms-inquiry>

⁹²² Crémer, J. et al, *Competition policy for the digital era*, April 2019.

<https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>

⁹²³ Morton, F. S. et al, *Stigler Committee on Digital Platforms-Final Report*, September 2019. This report was not commissioned by the government.

<https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E>

⁹²⁴ Other recent reports will not be analyzed in the section.

Trésor-éco, *Plateformes numériques et concurrence*, N° 250, November 2019 (only in French). In this report, the French Ministry for the Economy and Finance recommends to adapt competition law to the digital economy and to regulate digital platforms by adopting ex-ante symmetric and asymmetric regulation.

<https://www.tresor.economie.gouv.fr/Articles/7690058a-00e4-44a7-8aed-9a2ee5a04d51/files/c888861f-5516-4e4e-b3ce-a96af66b3c34>

See also, @Echelle event with Cédric O, 28 November 2019. In his intervention before the *Autorité de la concurrence*, the French Secretary of State in charge of the digital economy, Cédric O, supports the findings of the previous report.

66. Moreover, It is worth recalling that the Commission⁹²⁵ and some Member States, including France⁹²⁶ and Germany⁹²⁷ are considering an *ex-ante* asymmetric regulation in the digital economy concerning digital platforms acting as gatekeepers (also called structural platforms). The debate is still ongoing on whether an asymmetric regulation is appropriate as opposed to a symmetric regulation that will promote and protect consumer choice from the behavior of all firms. Furthermore, neither the criteria to identify which digital platforms will be subject to it, nor the content of the regulation

<https://www.autoritedelaconurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019. In this interim report, the CMA supports the proposals made by the Furman et al report and the Stigler report as regards the regulation of the digital economy and proposes specific measures to promote competition in search, social media and digital advertising markets.

https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf

See also, CMA, Press release, *CMA lifts the lid on digital giants*, 18 December 2019 (accessed 4 February 2020)

<https://www.gov.uk/government/news/cma-lifts-the-lid-on-digital-giants>

Akman, P., *Competition Policy in a Globalized, Digitalized Economy*, World Economic Forum (WEF), White paper, 11 December 2019. In this report, the author proposes a mix of market-driven solutions and regulatory solutions such as predictability and transparency.

<https://www.weforum.org/whitepapers/competition-policy-in-a-globalized-digitalized-economy>

Lianos, I. et al, *Digital Era Competition: A BRICS View-Report by the BRICS Competition Law and Policy Centre*, 2019.

<http://bricscompetition.org/upload/iblock/6a1/brics%20book%20full.pdf>

⁹²⁵ EC, Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 10.

⁹²⁶ French Ministry of Economic Affairs and Finance, Press release, *Bruno Le Maire et Cédric O lancent un groupe de travail dédié à la régulation des plateformes numériques au niveau européen*, 24 February 2020 (accessed 15 May 2020).

https://minefi.hosting.augure.com/Augure_Minefi/r/ContenuEnLigne/Download?id=5FA62C31-70A4-4392-8526-EFC6F85FD8AD&filename=2043%20CP%20groupe%20de%20travail%20numérique.pdf

⁹²⁷ Referentenentwurf des Bundesministeriums für Wirtschaft und Energie, Entwurf eines Zehnten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen für ein fokussiertes, proaktives und digitales Wettbewerbsrecht 4.0 (GWB-Digitalisierungsgesetz), 24 January 2020 (accessed 15 May 2020)

https://www.bmwi.de/Redaktion/DE/Downloads/G/gwb-digitalisierungsgesetz-referentenentwurf.pdf?__blob=publicationFile&v=10

have been released, but both the Commission⁹²⁸ and France⁹²⁹ are currently seeking views and are working on it.

- 67.** However, an asymmetric regulation may not be the right answer to curb the market failures in the digital economy for three main reasons.
- 68.** Firstly, market power is not the only market failure. Asymmetric information is also predominant as users (consumers and businesses) are not fully aware about the terms and conditions provided by all firms to use the service causing consumer welfare loss.
- 69.** Secondly, it is doubtful whether an asymmetric regulation will promote competition as non-dominant firms may gain market power without being subject to the regulation and therefore replicate lawfully the same behavior that is deemed to have allowed big tech to become dominant. In other words, an asymmetric regulation will prevent the *behavior of a dominant firm* but not *the (same) behavior that enables to achieve a dominant position*.
- 70.** Thirdly, defining objective criteria to circumscribe the asymmetric legislation may be challenging and they are likely to be contested during and after the legislative process before the Court by big tech companies.
- 71.** Fourthly, it is questionable that an asymmetric regulation fits with the principle of competition laws to protect *competition*, not *competitors*, as an asymmetric regulation will put firms subject to it at a competitive disadvantage.

⁹²⁸ Competition Policy International, *EU To Contract €600,000 Study On Gatekeeping Power Of Digital Platforms*, 12 May 2020 (accessed 15 May 2020).

<https://www.competitionpolicyinternational.com/eu-to-contract-e600000-study-on-gatekeeping-power-of-digital-platforms/>

⁹²⁹ French Ministry of Economic Affairs and Finance, Press release, *Bruno Le Maire et Cédric O lancent un groupe de travail dédié à la régulation des plateformes numériques au niveau européen*, 24 February 2020 (accessed 15 May 2020).

See also, Adlc, *The Autorité de la concurrence's contribution to the debate on competition policy and digital challenges*, 19 February 2020, pp. 6-8.

https://www.autoritedelaconcurrence.fr/sites/default/files/2020-03/2020.03.02_contribution_adlc_enjeux_numeriques_vf_en.pdf

72. As the result, an *ex-ante* asymmetric regulation is not expected to be effectively enforced in the near future.

73. As for now, as a regulation is likely to be based on these above mentioned reports, this section will first (i) present a brief overview of the main proposals about a regulation, then (ii) we will analyze these recommendations, and (iii) we will finally propose some policy recommendations that are not included in these reports.

4.1. A brief overview of the reports

74. All the reports contribute to the ongoing debate on how to adapt competition law to the digital economy. There is consensus about the key features of concentration in this economy, namely economies of scale and scope, network effects and data. Based on these findings, they all underline that the economy is entrenched in the hand of just a few dominant firms with a “*strategic market status*”⁹³⁰, a “*bottleneck power*”⁹³¹, or a “*gatekeeper*”⁹³² position. Regardless of the terminology, these firms are indispensable to access to the market or a customer group. The high level of market power and the high entry barriers justify intervention in order to restore a well-functioning market that were subject to under-enforcement and some “*false negatives*”.⁹³³ To do so, the reports agree that a mix of competition enforcement and regulation is urgently needed. However, they diverge to the means to achieve this goal including from a regulatory perspective.

75. First, the creation of a digital agency or a special unit inside the competition authority in charge of the digital economy is stressed out in four reports. Based on the observation that antitrust does not allow business certainty due to slow and case-specific enforcement, in the Furman et al report, the panel recommends a “*digital*

⁹³⁰ In the Furman et al report, “*strategic market status*” identifies firms with a gateway position, namely that control over others parties’ market access. Furman, J. et al report, p. 59.

⁹³¹ In the Stigler report, “*bottleneck power*” refers to a “*situation whether consumers primarily single-home and rely upon a single service provider (a “bottleneck”), which makes obtaining access to those consumers for the relevant activity by other service providers prohibitively costly*”. Stigler report, p. 105.

⁹³² In the Schallbruch et al report and Crémer et al report, dominant platforms are “*gatekeepers*” and “*rule-markers*” acting as “*regulators*”. Schallbruch, M. et al report, p. 47; Crémer, J. et al report, p. 60.

⁹³³ Furman, J. et al report, p. 91 ; Crémer, J. et al, p. 3.

markets unit” that will design and implement pro-competition rules in cooperation with platforms, businesses and stakeholders. The unit will spur competition and innovation and offer more certainty. Its enforcement power should however be focused on firms with “*strategic market status*”. The institution will design a binding pro-competitive code of conduct and promote data mobility, open standards and data openness.⁹³⁴ This unit has been approved by the CMA⁹³⁵ and the UK government⁹³⁶ and has been recently established within the CMA for a temporary period.⁹³⁷ In the ACCC report, a “*digital platforms branch*” is recommended within the ACCC. This special unit will be in charge to monitor conducts by digital platforms that might harm consumers and businesses, to enforce competition and consumer laws, and to conduct market inquiries and recommendations to the government to correct market failure.⁹³⁸ The Australian government has committed to adopt the key recommendations of the report, and as a result the ACCC will establish a permanent digital platforms branch.⁹³⁹ The Schallbruch et al report highlights that the digitalization also entails changes of other policies including contract law, consumer protection law or data protection law and that a new “*Digital Markets Board*” located in the General Secretariat of the European Commission as well as a temporary “*Digital Markets Transformation Agency*” are required to improve cooperation amongst these policies. The Board will be in charge to enable a coherent European digital policy thanks to cooperation and harmonization of the various policies while the Agency will be in charge to gather cross-cutting information about market developments and technical developments and will support the specialized authorities (e.g. competition authority) at EU level and the

⁹³⁴ Furman, J. et al report, p. 55.

⁹³⁵ CMA, *Digital Competition Expert Panel recommendations-CMA view*, 21 March 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/788480/CMA_letter_to_BEIS_-_DCEP_report_and_recommendations_Redacted.pdf

⁹³⁶ The UK government, Speech, Theresa May, *PM speech opening London Tech Week*, 10 June 2019, 10 June 2019 (accessed 4 February 2020).

<https://www.gov.uk/government/speeches/pm-speech-opening-london-tech-week-10-june-2019>

⁹³⁷ The UK government, Press release, *Digital markets taskforce: terms of reference*, 11 March 2020 (accessed 15 May 2020).

<https://www.gov.uk/government/publications/digital-markets-taskforce-terms-of-reference/digital-markets-taskforce-terms-of-reference--3>

⁹³⁸ ACCC report, p. 31.

⁹³⁹ ACCC, Press release, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 December 2019.

Board.⁹⁴⁰ The Stigler report recommends the creation of a “*Digital Authority*” (DA) in the US. The DA will be tasked with competition and non-competition goals (privacy, media, data-use restrictions, and consumer protection). It will be in charge to support the antitrust authority by carrying out remedies that require ongoing monitoring and to implement forward-looking regulations that will apply to all market participants that have a digital business model while others will only apply to firms with bottleneck power.⁹⁴¹ The Crémer et al report does not consider the creation of a special authority but outlines the need for regulatory agencies to develop internal technological capabilities.⁹⁴² These kinds of proposals are already established in some States. In the US, the FTC has launched in February 2019 the “*Technology Task Force*” to monitor competition in US technology markets, investigating any potential anti-competitive conduct, and taking enforcement actions when warranted.⁹⁴³ A similar unit has also been implemented within the CMA, The Data, Technology and Analytics (DaTA) unit,⁹⁴⁴ the *Bundeskartellamt*, the Digital Economy Unit,⁹⁴⁵ the DG COMP, the C/6 Antitrust: E-commerce and Data economy Unit,⁹⁴⁶ the Competition Bureau of Canada, the Chief Digital Enforcement Officer,⁹⁴⁷ and recently the *Autorité de la concurrence*, the Digital Economy Unit.⁹⁴⁸ Moreover, the Danish Competition and Consumer Agency (DDCA) has

⁹⁴⁰ Schallbruch, M. et al report, pp. 77-80.

⁹⁴¹ Stigler report, pp. 104-106.

⁹⁴² Crémer, J. et al report, p. 127.

⁹⁴³ FTC, Press release, *FTC’s Bureau of Competition Launches Task Force to Monitor Technology Markets*, 26 February 2019 (accessed 12 November 2019).

<https://www.ftc.gov/news-events/press-releases/2019/02/ftcs-bureau-competition-launches-task-force-monitor-technology>

⁹⁴⁴ CMA, policy paper, *The CMA’s Digital Markets Strategy*, 3 July 2019 (accessed 12 November 2019).

<https://www.gov.uk/government/publications/competition-and-markets-authoritys-digital-markets-strategy/the-cmas-digital-markets-strategy>

⁹⁴⁵ BKartA, *Organisation Chart of the Bundeskartellamt*, 1st October 2019 (accessed 12 November 2019).

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/OrganizationalChart/Organisation%20Chart.pdf?__blob=publicationFile&v=47

⁹⁴⁶ European Commission, *Organisation Chart of the DG COMP*, 16 September 2019 (accessed 12 November 2019).

https://ec.europa.eu/dgs/competition/directory/organi_en.pdf

⁹⁴⁷ Competition Bureau, *Building Trust to Advance Competition in the Marketplace*, 30 May 2018 (Accessed 12 November 2019).

<https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04371.html>

⁹⁴⁸ Adic, Press release, *The Autorité creates a digital economy unit*, 9 January 2020 (accessed 9 January 2020).

created the Center for Digital Platforms in order to enforce competition rules and to develop new analysis vis-à-vis digital platforms.⁹⁴⁹

76. Second, the majority of the reports stresses out the need to rely on a code of conduct to regulate the digital economy by clarifying the conducts that can be or not be undertaken by digital platforms. The code will be applied only by dominant firms with a “*strategic market status*” (Furman et al report) or with “*certain minimum revenues or user numbers*” (Schallbruch et al report).⁹⁵⁰ In the Furman et al report, the code will be elaborated with market participants and the digital markets unit. It will complement the Platform to Business (P2B) Regulation that promotes transparency and fairness for business users of online intermediation services.⁹⁵¹ The unit will be in charge to monitor the effective application of the code and, in case of contraventions, to achieve fast resolutions through cooperation with affected parties or legally binding decisions and penalties where the cooperation is not effective.⁹⁵² In the Schallbruch et al report, the code will include clear-cut prohibitions rules with the possibility of an exception if the firm proves that its practice is objectively justified. It will take the form of an “EU Platform Regulation” in complement to the P2B Regulation and will include rules such as ban on self-preferencing and the obligation to ensure data portability in real time and in an interoperable format and interoperability with complementary services.⁹⁵³ Both codes of conduct will be based on principles that are flexible enough to take into account market change in the economy.⁹⁵⁴ The Crémer et al report does not mention a code of conduct but considers some guidance provided by competition authorities (e.g. guidance on the definition of dominance in the digital environment, guidance on data sharing and data pooling, guidance on data access and interoperability

<https://www.autoritedelaconurrence.fr/en/press-release/autorite-creates-digital-economy-unit>

⁹⁴⁹ Danish Competition and Consumer Agency, Press release, *Konkurrence- og Forbrugerstyrelsen øger fokus på digitale platforme*, 1st May 2019 (Accessed 12 November 2019).

<https://www.kfst.dk/pressemeddelelser/kfst/2019/20190501-konkurrence-og-forbrugerstyrelsen-oeger-fokus-paa-digitale-platforme/>

⁹⁵⁰ Furman, J. et al report, pp. 58-64; Schallbruch, M. et al report, pp. 47-50.

⁹⁵¹ Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services, 11 July 2019.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1150&from=EN>

⁹⁵² Furman, J. et al report, p. 63.

⁹⁵³ Schallbruch, M. et al report, p. 49.

⁹⁵⁴ Furman, J. et al report, p. 60 ; Schallbruch, M. et al report, p. 49.

requirements) that will be updated with some frequency.⁹⁵⁵ This latter proposal is included in the “*Joint memorandum of the Belgian, Dutch and Luxembourg competition authorities on challenges faced by competition authorities in a digital world*”.⁹⁵⁶ They outline that competition authorities must develop ex ante guidance on specific issues before the relevant case law has been established by them or the courts.⁹⁵⁷ They also consider case-by-case guidance letters based on article 10 of Regulation 1/2003 (Finding of inapplicability) or in line with the Commission Notice on informal guidance.⁹⁵⁸ Moreover, it is worth noting that the Commission is willing to provide individual project-related guidance on data-sharing and pooling arrangements, if needed.⁹⁵⁹

77. Third, all the reports agree that access to data and greater users’ control over their personal data are key in order to promote effective competition and innovation and the development of complementary products in three different contexts: the entrenched market position of dominant platforms; the Internet of Things (IoT); and artificial intelligence where data is needed to train the algorithms. They propose different means to achieve this goal. Excepted in the ACCC report, data portability and open standard (or interoperability) are considered as solutions to fight against the market power of dominant platforms by decreasing switching costs, facilitating multi-homing and new entries, thus increasing competition and innovation to the benefit of consumers.⁹⁶⁰ The ACCC recognizes these benefits but does not currently recommend such solutions because they are “*unlikely*” to address the issues of market power and competition in the short term for many reasons in relation to Facebook and Google: (i) it not clear that

⁹⁵⁵ Crémer, J. et al report, p. 126.

⁹⁵⁶ Belgian Competition Authority, *Joint memorandum of the Belgian, Dutch and Luxembourg competition authorities on challenges faced by competition authorities in a digital world*, 10 October 2019 (accessed 12 November 2019).

<https://www.belgiancompetition.be/en/about-us/publications/joint-memorandum-belgian-dutch-and-luxembourg-competition-authorities>

⁹⁵⁷ *Ibid*, p. 4.

⁹⁵⁸ *Ibid*, p. 5.

⁹⁵⁹ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020, p. 14.

⁹⁶⁰ Furman, J. et al report, pp. 65-74; Crémer, J. et al report, pp. 58-60; Schallbruch, M. et al report, pp. 37-41; Stigler report, p. 109.

data portability would generate new entry or facilitate switching due to the absence of competing platforms where consumers can port their data and switch and the absence of consumers incentive to switch since services are offered for free; and (ii) data portability would not reduce network effects and may not have a significant effect on barriers to entry and expansion since as for example a Facebook's user would not switch if none of its contact are also moving to the competing provider. However, the ACCC is considering data portability, under its role in the Consumer Data Right, with regard to the benefits arising from the development of new products/services and innovative offerings. Moreover, it does not exclude to recommend data portability or interoperability if, as part of the tasks of the digital platforms branch, there were identified to be beneficial to overcome the issue of market power.⁹⁶¹ In addition, data openness (or data sharing) is also recommended despite the potential adverse effects on innovation and the incentive to invest, as well as the risk of collusive agreements.⁹⁶² To do so, the use of the "essential facilities doctrine" (EFD) under article 102 TFEU, namely in case of refusal of access to a resource (e.g. data), is not an appropriate tool. Rather data openness should be allowed with cautions under a regulation.⁹⁶³

78. However, the reports differ with regard to the extent of data portability and interoperability as well as data openness. They all offer an in-depth analysis of these proposals on competition and innovation which can be summarized here.

79. Data portability is commonly defined as the right of the data subject to obtain and transfer its personal data from one provider to another or directly from one controller

⁹⁶¹ ACCC report, pp. 115-116.

⁹⁶² Furman, J. et al report, pp. 74-76; Crémer, J. et al report, pp. 92-98; ACCC report, p. 11 ; Schallbruch, M. et al report, pp. 35-37; Stigler report, p. 117.

⁹⁶³ Crémer, J. et al report, p. 98.

"The debate is mostly framed as a debate on whether the criteria of the so-called "essential facilities" doctrine (EFD) are met. We argue that the "classical" EFD may not be the right framework to handle refusal of access to data cases, as the doctrine has been developed with a view to access to "classical" infrastructures and later expanded to essential IPRs"

See also, Schallbruch, M. et al report, p. 37.

"These aspects suggest that, in sectors with entrenched market positions in which a widespread denial of access to data results in structural competition problems, a general regulatory regime for data access is called for, e.g. in the form of an EU regulation."

to another on behalf of the data subject.⁹⁶⁴ To sum, data portability grants the consumer greater control over its personal data. In Europe, the right of data portability, which the Commission recommends to enhance,⁹⁶⁵ is already entered into force under article 20 GDPR which is defined as:

“The data subject shall have the right to receive the personal data concerning him or her, which he or she has provided to a controller, in a structured, commonly used and machine-readable format and have the right to transmit those data to another controller without hindrance from the controller to which the personal data have been provided, where”

80. However, this right is unanimously criticized by the reports as ill-adapted to promote competition in the digital economy for many reasons: (i) it is still unclear which data are covered by the article.⁹⁶⁶ The right refers to data that the data subject “*has provided*”, therefore the right should cover “volunteered” data, perhaps “observed” data but certainly not “inferred” data;⁹⁶⁷ (ii) the scope of the right to data portability is controversial. According to article 20(4) GDPR the right “*shall not adversely affect the rights and freedoms of others*”. Accordingly, it will not be possible to transfer its personal data when they are linked with others’ personal data (e.g. photographs);⁹⁶⁸ (iii) the GDPR does not enable for real-time data to be shared. Only the data at the time of the use of the right will be transferred whereas ongoing data sharing is necessary for competing or complementary services;⁹⁶⁹ (iv) rudimentary definition of the technical

⁹⁶⁴ Furman, J. et al report, p. 65; Crémer, J. et al report, p. 58; Schallbruch, M. et al report, pp. 37-38; Stigler report, p. 109.

⁹⁶⁵ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020, pp. 20-21.

⁹⁶⁶ Furman, J. et al report, p. 69; Crémer, J. et al report, p. 81; Schallbruch, M. et al report, p. 38.

⁹⁶⁷ Volunteered data refers to data that the data subject has intentionally provided to a controller (e.g. name, email, phone number). Observed data refers to data obtained automatically by a controller from a user’s or a machine’s activity (e.g. web activity thanks to cookies). Inferred data refers to data that is transformed in a non-trivial manner by a controller from volunteered and/or observed data in order to derive some predictions about a data subject (e.g. shopper’s profile). Crémer, J. et al, pp. 24-25.

⁹⁶⁸ Crémer, J. et al report, pp. 81-82; Schallbruch, M. et al report, p. 38.

⁹⁶⁹ Furman, J. et al report, p. 69; Crémer, J. et al report, pp. 81-82; Schallbruch, M. et al report, p. 38.

format. Data are transferred in a structured, commonly-used and machine-readable format but, in the absence of obligation for technical standards to facilitate the sharing, this includes formats that make further processing difficult or impossible (e.g. in PDF)⁹⁷⁰; and (v) data transfer from one provider to another is not mandatory but only “*where technically feasible*” (art. 20(2) GDPR).⁹⁷¹ Therefore, they agree that the right has not been designed to promote competition but rather to give more data protection option to the data subject and thus the right to data portability needs to be developed with competition objective.⁹⁷²

81. The reports propose an extension of the right to data portability by ensuring “*data mobility*” (Furman et al report and Stigler report)⁹⁷³ or “*data interoperability*” (Crémer et al report and Schallbruch et al report)⁹⁷⁴. This refers as the right of the data subject to obtain and transfer real-time data from one provider to another or directly from one controller to another on behalf of the data subject in an interoperable data format. Excepted in the Stigler report,⁹⁷⁵ the right should apply only to dominant firms.⁹⁷⁶ Indeed, they argue that broader data portability could increase the market entry costs for smaller providers and diminish the incentive to invest in the collection and processing of data as a lock-in of consumers is desirable to foster this investment and that consumers may have the incentive to transfer their data from a small firm to a dominant one due to better products/services.⁹⁷⁷ There is no unanimity about the scope of data. While the Furman et al report argues that the right “*could involve any such type of data, depending on the particular case*”,⁹⁷⁸ the Crémer et al report and Schallbruch

⁹⁷⁰ Furman, J. et al report, p. 69; Crémer J. et al report, pp. 81-82; Schallbruch, M. et al report, p. 39.

⁹⁷¹ Schallbruch, M. et al report, p. 39.

⁹⁷² Furman, J. et al report, p. 69; Schallbruch, M. et al report, p. 39.

⁹⁷³ Furman, J. et al report, p. 65.

⁹⁷⁴ Crémer, J. et al report, p. 82; Schallbruch, M. et al report, p. 39.

⁹⁷⁵ Stigler report, p. 109. The Stigler report lays out a menu of regulations that applies either to all firms or only to bottleneck firms. Nevertheless, it argues that “[i]t would be appropriate, however, to include a small business exception and perhaps even a new business exception, to allow very small entrants, who may benefit competition, time to ramp up against larger established companies.”. Data portability is developed under the section “*broadly applicable regulations*” (p. 107).

⁹⁷⁶ Furman, J. et al report, p. 70; Crémer, J. et al report, p. 82; Schallbruch, M. et al report, p. 39 and p. 52.

⁹⁷⁷ Furman, J. et al report, pp. 70-71; Crémer, J. et al report, p. 59; Schallbruch, M. et al report, p. 39.

⁹⁷⁸ Furman, J. et al report, p. 66.

et al report plead that the right should cover only user and usage (machine user) data.⁹⁷⁹ The Stigler report does not mention the scope of data. The European's reports evoke the Second Payment Services Directive (hereinafter "PSD2 Directive")⁹⁸⁰ as a model to this new right.⁹⁸¹ In the field of payment services, the directive enables customers to grant third-party payment service providers access to their payment accounts at the customer's request. The right applies to all payment account providers, third parties must be authorized by the Financial Supervisory Authority and data are shared based on market defined standards. The Furman et al report also mentions the UK's Open Banking initiative.⁹⁸² The latter is similar to the PSD2 Directive but only applies to the nine largest providers and data are transferred based on a common standard, namely a common Application Programming Interface (API). It also refers to other initiatives such as the Data Transfer Project (hereinafter "DTP").⁹⁸³ This project was launched in 2018 by digital companies and includes currently Apple, Facebook, Google, Microsoft, and Twitter. The goal of the project is to create an open-source, service-to-service data portability so that a user can move its personal data directly from one provider to another participating provider, at any given time.⁹⁸⁴ Such project develops a standard to enable data mobility or data interoperability. The UK's smart Data Review is also cited in the Furman et al report as a potential model for data mobility.⁹⁸⁵ The main proposal is to require communications firms to share consumers' data to third party providers at the consumer's request in order to improve the consumer experience in regulated markets.⁹⁸⁶

⁹⁷⁹ Crémer, J. et al report, p. 58; Schallbruch, M. et al report, p. 52.

⁹⁸⁰ Directive (EU) 2015/2366 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC, 25 November 2015. See articles 66 and seq.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L2366&from=FR>

⁹⁸¹ Furman, J. et al report, p. 70; Crémer, J. et al report, p. 82; Schallbruch, M. et al report, pp. 40-41.

⁹⁸² Furman, J. et al report, p. 70.

⁹⁸³ Furman, J. et al report, p. 69.

⁹⁸⁴ Data Transfer Project (DTP) (accessed 18 November 2019).

<https://datatransferproject.dev>

⁹⁸⁵ Furman, J. et al report, p. 70.

⁹⁸⁶ Smart Data Review, *policy paper* (Accessed 19 November 2019).

<https://www.gov.uk/government/publications/smart-data-review>

82. In sum, data interoperability will significantly reduce switching costs and promote the development of complementary services but it may lessen the incentive to invest in the collection and processing of data as well as might result in a collusive behavior (anti-competitive information exchange).⁹⁸⁷ Table 1 below summarizes the differences between the right to data portability under article 20 GDPR and the right to data interoperability or data mobility.

Table 1: Differences between data portability under article 20 GDPR and Data interoperability or data mobility

	Data portability	Data interoperability or data mobility
Definition	the right of the data subject to obtain and transfer its personal data from one provider to another or directly from one controller to another on behalf of the data subject	the right of the data subject to obtain and transfer real-time data from one provider to another or directly from one controller to another on behalf of the data subject in an interoperable data format
Scope of data	Volunteered data (perhaps observed data)	All type of data (Furman et al report) User and usage data (Crémer et al report and Schallbruch et al report)
Type of data shared	Only data at the time of the initiative	Real-time data
Mean to transfer data	Data are transferred in a structured, commonly-used and machine-readable format	Data will be transferred in an interoperable data format

⁹⁸⁷ Crémer, J. et al report, pp. 84-85.

- 83.** Interoperability or open standards is recommended as a mean to facilitate switching between providers. This is commonly referred as the ability of various products/services to interconnect together (e.g. an iPhone with an Apple watch).⁹⁸⁸ Technically, providers agree on a common standard, namely an open standard, and implement this standard to work together. Services are thus able to interoperate with each other. Interoperability goes beyond data interoperability or data mobility as it is the entire service that can interconnect with other third-party providers and not only data.⁹⁸⁹ The Crémer et al report distinguishes different types of interoperability: protocol interoperability, data interoperability and full protocol interoperability. Protocol interoperability refers to the usual definition of interoperability, namely *“the ability of two services or products to interconnect, technically with one another”*. Data interoperability has already been defined previously in this section as the ability to transfer in real-time personal and usage (machine user) data from one provider to another. Full protocol interoperability refers *“to standard that allow substitute services to interoperate”* (e.g. in the field of consumer communications services, a WhatsApp’s user will be able to send messages to a Telegram’s user).⁹⁹⁰ Beyond this distinction, interoperability enables significant benefits but with some drawbacks.
- 84.** Interoperability allows firms to create products and services that can work together without hindrance based on a common standard. From a competition perspective, consumers will be thus able to switch between providers and complementary products will emerge. Consumers will be no longer locked-in in one provider, they will be able to try new products and services without significant costs and losses. Accordingly, this will spur innovation and competition.⁹⁹¹
- 85.** However, interoperability requires, as already noticed, an open standard. This may have two adverse effects in terms of competition and innovation. Indeed, open standard means the need for coordination between firms. This will in turn increase the risk of collusive agreements to limit product features or even innovation. Moreover,

⁹⁸⁸ Furman, J. et al report, p. 71; Crémer, J. et al report, pp. 58-59; Schallbruch, M. et al report, p. 38; Stigler report, p. 113.

⁹⁸⁹ Furman J. et al report, p. 72.

⁹⁹⁰ Crémer, J. et al report, pp. 58-59.

⁹⁹¹ Furman, J. et al report, p. 72; Crémer, J. et al report, pp. 58-59; Stigler report, p. 113.

innovation can slow down as products/services should not differ significantly (e.g. the interface).⁹⁹²

86. Open standards will apply to all participants or only to dominant firms (Schallbruch et al report)⁹⁹³ and particular attention must be granted to full protocol interoperability. Indeed, as mentioned by the Crémer et al report, even though network effects will be shared among competitors and thus the dominant firms would no longer be protected from this barrier to entry, this kind of interoperability requires “*strong standardisation across several competing platforms*” and could thus in turn “*significantly dampen their ability to innovate and to differentiate the type(s) of service(s) they provide*”.⁹⁹⁴ Accordingly, full protocol interoperability should be “*handled with great caution*” (Crémer et al report)⁹⁹⁵ or imposed as a remedy for antitrust violations to restore the lost competition (Stigler report).⁹⁹⁶

87. Finally, data openness or data-sharing is another possibility to overcome the issue of market power in the digital economy. It refers to the ability of a third-party to access real-time data held by a provider.⁹⁹⁷ Contrary to data interoperability or data mobility, it is third parties (including potential competitors), not consumers, that are granted access to data held by a private provider. Since data are key to compete in the digital economy, data openness may thereby be key to effective competition.⁹⁹⁸ In Europe, a guidance on “*sharing private sector data in the European data economy*” has recently been published without binding the Commission as regards the application of EU competition law.⁹⁹⁹ It gives advices on how firms can share their data in business-to-business (B2B) data-sharing and business-to-government (B2G) data sharing. It is worth

⁹⁹² Furman, J. et al report, p. 73; Crémer, J. et al report, pp. 58-59; Stigler report, p. 113.

⁹⁹³ Schallbruch, M. et al report, pp. 51-52.

⁹⁹⁴ Crémer, J. et al report, p. 59.

⁹⁹⁵ Crémer, J. et al report, p. 60.

⁹⁹⁶ Stigler report, pp. 117-118.

⁹⁹⁷ Schallbruch, M. et al report, p. 38.

⁹⁹⁸ Furman, J. et al report, p. 74.

⁹⁹⁹ EC, *Commission staff working document Guidance on sharing private sector data in the European data economy-Accompanying the document Communication from the Commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the Regions "Towards a common European data space"* SWD/2018/125 final, 25 April 2018.

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2018%3A125%3AFIN>

noting that the EU will create a “*single market for data*” that promotes data-sharing.¹⁰⁰⁰ Accordingly, the Commission will update the Horizontal Co-operation Guidelines in order to provide more guidance on data sharing and pooling agreements.¹⁰⁰¹ Furthermore, in merger control, the Commission will consider data-access or data-sharing as remedies in case of competition concerns.¹⁰⁰²

88. Data openness is unanimously seen as a mean to promote competition and innovation, new entrants and products and services, to solve market power issues and to train algorithms, as well as to restore the lost competition.¹⁰⁰³ However, the benefits do not come without drawbacks that have to be carefully considered before implementing such solution. Indeed, open data raises serious security and data protection issues notably as regards the sharing of personal data.¹⁰⁰⁴ To overcome this issue the Furman et al report considers that personal data will be excluded, unless aggregated or anonymized to be in line with the GDPR,¹⁰⁰⁵ and the Schallbruch et al report recalls that user consent will be needed where access to personal is involved.¹⁰⁰⁶ Other important issues are related to competition concerns. Open data might have a negative impact on the incentive to invest in data collection and processing¹⁰⁰⁷ and notably when the exclusive control of a customer account is the driving force that enables non-dominant firms to invest in a product or service.¹⁰⁰⁸ Data sharing may also increase the risk of anti-competitive practices (exclusionary practices by denying access to a competitor and collusive agreements by sharing sensitive information).¹⁰⁰⁹

¹⁰⁰⁰ EC, Press release, *Shaping Europe’s digital future: Commission presents strategies for data and Artificial Intelligence*, 19 February 2020 (accessed 19 February 2020).

¹⁰⁰¹ Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020, p. 14.

¹⁰⁰² Ibid.

¹⁰⁰³ Furman, J. et al report, p. 75; Crémer, J. et al report, pp. 92-93; ACCC report, p. 11; Stigler report, p. 117.

¹⁰⁰⁴ Schallbruch, M. et al report, p. 40; ACCC report, p. 11.

¹⁰⁰⁵ Furman, J. et al report, p. 74.

¹⁰⁰⁶ Schallbruch et al report, p. 37.

¹⁰⁰⁷ Furman, J. et al report, p. 75; Crémer, J. et al report, p. 105.

¹⁰⁰⁸ Schallbruch, M. et al report, p. 41.

¹⁰⁰⁹ Crémer, J. et al report, pp. 92-93 and pp. 96-98.

- 89.** Therefore, while the Stigler report suggests mandate open access only as a remedy for antitrust violations,¹⁰¹⁰ the other reports recommend that it should only be used when is necessary, namely *“the benefits of its use outweigh the costs”*¹⁰¹¹ and proportionate, on a sector-specific regime.¹⁰¹² The scope of data to be shared remains to be defined.¹⁰¹³ The Crémer et al report outlines the need to provide more guidance on data sharing.¹⁰¹⁴
- 90.** To sum up, the reports expose five main propositions to regulate the digital economy: (i) the creation of a digital authority or digital unit; (ii) the implementation of a code of conduct; (iii) data interoperability or data mobility; (iv) interoperability; and (v) data openness or data sharing. Before suggesting some proposals, we will analyze these above recommendations.

4.2. Analysis of the recommendations

- 91.** The proposals expose various ways to regulate the digital economy from the less interventionist measures (digital authority or digital unit, code of conduct) to the extreme ones (data interoperability, interoperability and data openness).
- 92.** The digital economy is complex and fast-moving. As the economy is likely to be fully digitalized in the future, a digital authority (DA) or at least a digital unit within the competition authority is welcome. The authority or the digital unit will have to collaborate with other relevant policies and agencies (e.g. in particular consumer protection and data protection authorities) to examine in-depth competition and non-competition concerns (e.g. privacy). A competition authority must not work anymore in isolation.

¹⁰¹⁰ Stigler report, 117.

¹⁰¹¹ Furman, J. et al report, pp. 75-76.

¹⁰¹² Crémer, J. et al report, p. 109.

¹⁰¹³ But as noted by the Furman et al report, p. 76: *“Any data openness remedy should also keep intervention to a minimum to achieve its aim. Opening up raw, underlying data that is an input to the service is more likely to be proportionate than requiring access to processed information where companies have invested further in deriving insights and inferences from the original data.”*

¹⁰¹⁴ Crémer, J. et al report, pp. 93-94 and p. 126.

93. In the digital economy, dominant firms are already acting as a regulator or a gatekeeper. Neither consumers nor businesses can access to the digital world without them. A change in the rules will thereby have an important impact on consumers and businesses. Care is needed. Considering this fact and the complexity of the economy, only a participative regulation will enable the right regulation while ensuring legal certainty to stakeholders and minimizing the regulatory costs.¹⁰¹⁵ A participative code of conduct with businesses and market participants is thus an appropriate tool in this context and might well be the most efficient one. Rules must be designed under the supervision of the DA or the digital unit in line with other relevant policies (e.g. consumer protection and data protection) to ensure a coherent digital policy. The DA or the digital unit will have to be in charge to monitor and, in case of non-compliance, to impose fines and measures through a fast track resolution mechanism to avoid irremediable damages and to restore the lost competition as quickly as possible. However, contrary to the proposals, the code should not apply only to dominant firms with a “*strategic market status*” (Furman et al report) or with “*certain minimum revenues or user numbers*” (Schallbruch et al report), but to all market participants. Indeed, the purpose of the code of conduct is to protect consumers and businesses from harmful behaviors in the digital economy. Therefore, the code must ensure the same protection irrespective of the market power of the company used by consumers and businesses. Moreover, as the market is fast-moving, the code should not include only clear-cut prohibitions rules with the possibility of an exception if the firm proves that its practice is objectively justified (Schallbruch et al report) but also clear guidance on specific issues to be in line with the prohibition rules (Crémer et al report, Joint Memorandum of the Belgian Dutch and Luxembourg competition authorities). Both rules and guidelines must be updated with some frequency to consider market change in the economy. We will propose some rules in the next section.

¹⁰¹⁵ Quartz, *A Nobel-winning economist’s guide to taming tech monopolies*, 27 June 2018. (accessed 4 February 2020). According to Professor Jean Tirole, “[f]inally, we must make heavier use of more reactive processes. Drawbacks of classical approaches are well-known: self-regulation tends to be self-serving; competition policy is often too slow; public utility regulation, as we discussed, is mostly infeasible (and it is sometimes captured). We must develop what I would call “participative antitrust,” in which the industry or other parties propose possible regulations and the antitrust authorities issue some opinion, creating some legal certainty without casting the rules in stone.”

<https://qz.com/1310266/nobel-winning-economist-jean-tirole-on-how-to-regulate-tech-monopolies/>

See also, Bethell, O., *Competition Law & Tech-A New Approach*, 7 March 2019, p. 7.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3348636

- 94.** The other recommendations concern access to data either on behalf of the consumer (data interoperability or data mobility) or directly by third parties (data openness or data sharing). Data is a substantial feature of market power in the digital economy. From a business perspective, control over data is important to maintain or expand its dominant position and to have the incentive to invest in the collection and processing of data. From a consumer perspective, control over data is important to have the ability and incentive to move from one provider to another. In this way, giving consumers greater control over their personal data will promote effective competition and innovation but might have an adverse effect on the incentive to invest in data collection and processing by either dominant or non-dominant firms. Indeed, the classical law and economics “free-riding” problem is likely to arise. A firm will use the investment of a rival to attract users without making any contribution to it. As a consequence, neither the firm nor the rival will have the incentive to invest in data collection and processing. The problem is even exacerbated as data are non-rivalrous goods. As a result, the digital economy will be characterized by less investment and innovation in data and in disruptive technologies. At the same time, data are needed to promote new rivals and complementary products or services. Moreover, from a total welfare perspective, it will be inefficient to invest in the same collection and processing of data. Last but not least, any type of data access to personal data will have to comply with the data protection law and, in particular, users’ voluntary consent will be required. Accordingly, one can draw some general observations.
- 95.** First, data access must be required only when is necessary and proportionate to achieve more competition and innovation.
- 96.** Second, contrary to the reports, data access should not apply only to dominant firms but to all firms. Limiting to dominant firms the obligation of data interoperability or data openness will give an undue competitive advantage to non-dominant firms who could expand their position without making any contribution to the collection and processing of data whereas dominant firms have significantly invested to achieve their position. Furthermore, consumers would like to port their data from one provider, irrespective of its size, to another. It would be then particularly unjust to deprive a consumer from this control over its data.

- 97.** Third, the scope of data has to be defined with great caution. In this respect, it must be limited only to volunteered or raw data, since the collection of this data requires low investments compared to the collection of observed and inferred data that requires heavy investments in expertise and technology and volunteered data are by definition easily replicable by the consumer. Accordingly, limiting data portability or mandatory data openness to volunteered data will promote effective competition while minimizing the ability and incentive to free-ride on other firms since they will still have to invest to derive insights and inferences from volunteered or raw data.
- 98.** Considering these observations, one can now analyze each proposal.
- 99.** Data interoperability or data mobility based on the PSD2 directive is an appropriate tool to promote effective and fair competition. At the consumer's request, third-party providers will be granted access to the user's account and only to volunteered data. Data will be transferred based on a common standard developed by market participants under the supervision of the DA or the digital unit to ensure undistorted competition (e.g. anti-competitive information exchange).
- 100.** Interoperability will be indispensable with the development of IoT devices. It makes sense that connected devices will have to interconnect with each other in order to avoid the lock-in in one provider. A consumer will be thus able to change a device without incurring the cost of changing the others. Entrants will thus have the ability and incentive to enter into the market, and as a result new products and services will emerge to the benefit of consumers. Open standard has to be developed by market participants under the supervision of the DA or the digital unit to prevent any anti-competitive practices. The adverse effect on innovation due to standardization might well be outweighed by the development of new products and services that will not emerge in the absence of interoperability.
- 101.** Open data or data-sharing is, from a law and economics point of view, an efficient tool as it will enable firms to develop new products and services without the need to invest in the same collection of data, namely open data or data sharing will avoid over-investment in the collection of data. Similar to the cooperation in Research and Development (R&D), competition authorities should authorize cooperation in data collection in order to avoid the lost surplus for the society due to this over-

investment.¹⁰¹⁶ However, data-sharing raises competition concerns as regards the possibility of collusive agreements through the exchange of sensitive information. The problem is even exacerbated by the ability to share data via a technical enabler. The latter allows the data supplier to control the use made of the data shared with data users. It can monitor whether data users respect the provisions of the data transfer agreement by tracking the data usage made by using a blockchain. It can even sanction data users in case of violations of the data transfer agreement.¹⁰¹⁷ As it will be possible to monitor the collusive agreement in real time with the possibility of immediate punishment in case of deviation, the collusion will be perfect. There will be no incentive to deviate from the anti-competitive agreement. Moreover, as the collusion will be implemented through a blockchain, probably a private blockchain, competition authorities will not be able to detect the practice.¹⁰¹⁸ In sum, in the absence of incentive to apply for a leniency, the collusion will be sustainable and undetectable by competition authorities. In this regard, the guidance on data sharing proposed by Crémer et al is welcome. When an incumbent declines access to data, mandatory access should be required only and only if the three conditions in *Magill* and *IMS Health* are fulfilled, namely (i) the access to the database is indispensable to compete; (ii) the refusal is not objectively justified causing the elimination of all competition on a secondary downstream market; and (iii) the refusal prevents the development of new products and services not offered by the data holder and for which there is a potential

¹⁰¹⁶ In EU competition law, agreements in research and development benefit from a block exemption. EC, *Commission regulation (EU) No 1217/2010 of 14 December 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to certain categories of research and development agreements*, 18 December 2010.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R1217&from=EN>

See also, EC, *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements*, 14 January 2011.

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114\(04\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114(04)&from=EN)

¹⁰¹⁷ EC, *Commission staff working document Guidance on sharing private sector data in the European data economy-Accompanying the document Communication from the Commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the Regions "Towards a common European data space" SWD/2018/125 final*, 25 April 2018, p. 11.

¹⁰¹⁸ OECD, *Blockchain Technology and Competition Policy-Issues paper by the Secretariat*, 26 April 2018.

[https://one.oecd.org/document/DAF/COMP/WD\(2018\)47/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)47/en/pdf)

See also, Schrepel, T., *Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox*, *Georgetown Law Technology Review* / 3 *Geo. L. Tech. Rev.* 281 (2019), 11 June 2018.

<https://ssrn.com/abstract=3193576>

demand.¹⁰¹⁹ If one of these conditions does not hold the cost of mandatory data access will be greater than the potential benefits since neither the incumbent nor the entrant will have the incentive to invest and innovate. Even though the incumbent will still have the incentive to invest and innovate in order to maintain its competitive advantage, mandatory data access will still have profound negative effects: (i) entrants will be discouraged from innovating, thus reducing the level of competitive pressure from disruptive and alternative data collection and processing; (ii) entrants will be discouraged from developing products and services based on data that are different from the data holder, thus reducing the level of products and services variety; and (iii) mandatory data access will unnecessarily increase the risk of collusion amongst the data holder (or data supplier) and data users in a way that it will be sustainable and undetectable by competition authorities. Indeed, the data supplier will have the ability and incentive to share the data via a technical enabler to monitor whether data users respect the data transfer agreement to avoid scandal like the Cambridge Analytica but it will also enable it to implement anti-competitive agreements (e.g. to limit the data usage). Accordingly, mandatory data access will provide less investment, less innovation, less competition and less consumer choice. This is why, compulsory data access should be required only if the three above conditions are met. In this latter case, access to data should be granted through licensing. In this respect, mandatory data access faces the same problem as mandatory licensing as regards the terms of the contract which has to be defined on a case-by-case basis.¹⁰²⁰ It is worth noting that the BKartA is currently investigating a case of mandatory data sharing concerning the access by mobility platforms to current Deutsche Bahn AG's departure and delay data

¹⁰¹⁹ Joined cases C-241/91 P and C-242/91 P, *Radio Telefís Éireann (RTE) and Independent Television Publications Ltd (ITP) v Commission of the European Communities ("Magill")*, ECLI:EU:C:1995:98, 6 April 1995, paras. 51-57.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:61991CJ0241&from=EN>

See also Case C-418/01-*IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG ("IMS Health")*, ECLI:EU:C:2004:257, 29 April 2004, para. 52.

<http://curia.europa.eu/juris/document/document.jsf?text=&docid=49104&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=5311412>

¹⁰²⁰ Padilla, J. et al, *Antitrust Analysis Involving Intellectual Property and Standards: Implications from Economics*, *Harvard Journal of Law & Technology*, 2019 Forthcoming, 10 January 2019, pp. 13-14.

<https://ssrn.com/abstract=3119034>

in order to be able to offer new mobility concepts such as end-to-end intermodal mobility chains.¹⁰²¹

- 102.** In sum, the proposals are pro-competitive and are able to promote efficient and fair competition in the digital economy. However, they need to be complemented by other recommendations to ensure a perfect regulation in a globalized world with different policies.

4.3. Recommendations to regulate the digital economy

- 103.** The digital economy is complex, global and linked with various policies including competition, data protection and consumer protection policies. The following proposals complement the above recommendations. Departures from an asymmetric regulation for the above reasons (difficulty to identify criteria, inability to solve the root causes of market power and asymmetric information, inability to protect competition (the regulation protects competitors, but not competition)), we will instead propose a participative regulation in the form of a pro-competitive code of conduct applicable to all firms in the context of an international organization.
- 104.** As a starting point, international cooperation and consensus is needed. Given the fact that many antitrust challenges in the digital economy are global in nature, an international cooperation is crucial to ensure convergence and to avoid over-scrutiny. The G7 competition authorities agree on this view through existing international and multilateral fora (e.g. within the G7, the OECD and the ICN), including a long-term project of cooperation between them.¹⁰²² An international cooperation will ensure a

¹⁰²¹ BKartA, Press release, *Proceeding against Deutsche Bahn AG - Bundeskartellamt examines possible anticompetitive impediment of mobility platforms*, 28 November 2019 (accessed 5 February 2020).

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Pressemitteilungen/2019/28_11_2019_DB_Mobilitaet.pdf;jsessionid=C82B291C7A504289FD8405A4E3F4D492.2_cid378?_blob=publicationFile&v=2

¹⁰²² G7 Competition Authorities, *Common Understanding of G7 Competition Authorities on "Competition and the Digital Economy"*, 5 June 2019, pp. 8-9.

https://www.autoritedelaconurrence.fr/sites/default/files/2019-11/g7_common_understanding.pdf

G7 competition authorities are: Autorità Garante della Concorrenza e del Mercato (Italy), Autorité de la Concurrence (France), Bundeskartellamt (Germany), Competition Bureau (Canada), Competition and Markets Authority (United Kingdom), Department of Justice (United States of America), Directorate General for

coherent competition landscape to businesses while minimizing the regulatory costs of private and public resources. Competition authorities are already engaged in international cooperation to deepen their expertise and knowledge notably through joint studies (e.g. the joint studies by the *Autorité de la concurrence* and the *Bundeskartellamt* on competition law and data,¹⁰²³ and on algorithms and competition¹⁰²⁴), market studies (e.g. on online advertising¹⁰²⁵) or international discussions in the context of roundtables at the OECD (e.g. on quality considerations in the zero-price economy¹⁰²⁶). However, the regulatory costs faced by public and private parties are still high notably when multiple competition authorities undertake a market study in the same specific sector. For example, the online advertising sector has been

Competition (European Commission), Federal Trade Commission (United States of America) and Japan Fair Trade Commission (Japan).

See also, Adlc, Press release, *The Autorité de la concurrence announces its priorities for 2020*, 9 January 2020 (accessed 10 January 2020). The G7 competition authorities approved a long-term project of cooperation to find common approaches to the competitive assessment of digital issues.

“The Autorité considers that the continued efforts of the G7 competition authorities to find common approaches to the competitive assessment of digital subjects is crucial. It has consequently proposed that this specific cooperation between authorities in the G7 countries should be a long-term project. The G7 partner authorities have approved, by the end of 2019, this proposal and have decided to pursue high-level discussions this year. This will involve in particular, besides the substantive exchanges, a conference being held in Paris in the second half of 2020 and a deeper exploration of some of the issues addressed in the July 2019 agreement.”

<https://www.autoritedelaconcurrence.fr/en/press-release/autorite-de-la-concurrence-announces-its-priorities-2020>

See also, OECD, *Conference on Competition and the Digital Economy Co-chairs' summary*, 3 June 2019, p. 5.

<http://www.oecd.org/daf/competition/Co-chairs'%20Summary%20-%20Conference%20on%20Competition%20and%20the%20Digital%20Economy.pdf>.

¹⁰²³ Adlc and BKartA, *Competition law and data*, 10 May 2016.

https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf;jsessionid=6C39298B7F0949FD71D5BC4259E1C0A0.1_cid378?_blob=publicationFile&v=2

¹⁰²⁴ Adlc and BKartA, *algorithms and competition*, 6 November 2019.

<https://www.autoritedelaconcurrence.fr/sites/default/files/algorithms-and-competition.pdf>

¹⁰²⁵ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 231.

¹⁰²⁶ OECD, *Quality considerations in the zero-price economy*, 28 November 2018.

<http://www.oecd.org/daf/competition/quality-considerations-in-the-zero-price-economy.htm>

Other topics can be founded on the OECD website.

<http://www.oecd.org/competition/roundtables.htm>

or is being under scrutiny in France,¹⁰²⁷ in Spain,¹⁰²⁸ in Germany,¹⁰²⁹ in Sweden,¹⁰³⁰ in the UK,¹⁰³¹ in the US,¹⁰³² in Australia,¹⁰³³ and may be in Europe.¹⁰³⁴ It is worth noting

¹⁰²⁷ Adlc, *Avis n° 10-A-29 du 14 décembre 2010 sur le fonctionnement concurrentiel de la publicité en ligne*, 14 December 2010.

<https://www.autoritedelaconurrence.fr/sites/default/files/commitments//10a29.pdf>

See also, Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018.

https://www.autoritedelaconurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en.pdf

¹⁰²⁸ Comisión Nacional de los Mercados y la Competencia (CNMC), Press release, *The CNMC launches a public consultation on online advertising in Spain*, 25 April 2019 (accessed 4 February 2020).

https://www.cnmc.es/sites/default/files/editor_contenidos/Notas%20de%20prensa/2019/20190425_NP%20Inicio%20Estudio%20Publicidad%20Online_EN.pdf

¹⁰²⁹ BKartA, Press release, *Bundeskartellamt launches sector inquiry into market conditions in online advertising sector*, 1st February 2018 (accessed 4 February 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2018/01_02_2018_SU_Online_Werbung.html;jsessionid=093716A034306C399E586AEBD2BAC9E7.1_cid362?nn=10321672

See also, BKartA, *“Competition and Consumer Protection in the Digital Economy “: Online advertising*, 1st February 2018.

https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Schriftenreihe_Digitales_III.pdf?__blob=publicationFile&v=5

¹⁰³⁰ Konkurrentsverket, Press release, *Market study of digital platforms*, 11 November 2019 (accessed 4 February 2020).

<http://www.konkurrentsverket.se/en/Competition/--ovrigt--/market-study-of-digital-platforms/>

¹⁰³¹ OFT, *Online Targeting of Advertising and Prices-A market study*, May 2010.

https://webarchive.nationalarchives.gov.uk/20140402182803/http://oft.gov.uk/shared_oft/business_leaflets/659703/OFT1231.pdf

CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019.

<https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

See also, CMA, *Online platforms and digital advertising market study* (accessed 4 February 2020).

¹⁰³² FTC, *FTC Hearing 6-Nov. 7 Session 3 - Economics of Online Advertising; Competition and Consumer Protection Issues in Online Advertising*, 7 November 2018 (accessed 4 February 2020).

<https://www.ftc.gov/news-events/audio-video/video/ftc-hearing-6-nov-7-session-3-economics-online-advertising-competition>

¹⁰³³ ACCC, *Digital Platforms Inquiry-final report*, 26 July 2019.

<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>

See also, ACCC, Press release, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 December 2019 (accessed 4 February 2020). The ACCC will launch a sector inquiry into the digital advertising tech supply chain, focusing on digital display ads.

¹⁰³⁴ European Parliament, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 January 2019, para. 19.

that the Commission announced a sector inquiry in 2020 in the digital economy but without mentioning in which sector.¹⁰³⁵

105. The sector is at the heart of the business model of platforms funded by advertising and attention such as Google and Facebook but this business model is not the only one and not the only issue in the digital economy. Market studies are essential to understand a market and the potential competition problems. However, they are costly in terms of time and resources for both public (time and workforce to write the study) and private parties (time and workforce to respond to the inquiry). Therefore, in order to avoid under-scrutiny of a specific sector due to over-scrutiny in another one while minimizing the regulatory costs, it would be preferable to share the work amongst agencies. One agency should be in charge to analyze in-depth one specific sector of the digital economy. Given the borderless nature of the economy, the analysis of country-specific features is unnecessary and thus only one market study will be enough to understand the sector. Recommendations will then be discussed in the context of international fora. This will enable a coherent competition landscape by avoiding divergence from multiple studies and to analyze more digital sectors. Beyond market studies, an international competition enforcement is needed to ensure that the same remedies will be applied globally. This is particularly important in a period where the practices of leading online

“asks the Commission to carry out a sectoral inquiry into the advertising market in order to better understand the dynamics of online advertising and identify anti-competitive practices that need to be addressed under competition law enforcement, as has been done by some national authorities;”

¹⁰³⁵ EC, Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 10.

“The Commission is also planning to launch a sector inquiry with a strong focus on these new and emerging markets that are shaping our economy and society.” (p. 9)

platforms are currently under investigations both in the US¹⁰³⁶ and in Europe.¹⁰³⁷ The cooperation must also be undertaken between policy makers around the world to

¹⁰³⁶ Financial Times, *Which antitrust investigations should Big Tech worry about?*, 28 October 2019 (accessed 3 January 2020). In the US, the practices of Google, Facebook, Apple and Amazon are under investigations by the Department of Justice (DOJ), the Federal Trade Commission (FTC), the Congress (the House Judiciary Committee), and by 50 state attorneys-general.

<https://www.ft.com/content/abcc5070-f68f-11e9-a79c-bc9acae3b654>

See for more details:

House Judiciary Committee, Press release, *House Judiciary Committee Launches Bipartisan Investigation into Competition in Digital Markets*, 3 June 2019 (accessed 3 January 2020).

<https://judiciary.house.gov/news/documentsingle.aspx?DocumentID=2051>

DOJ, Press release, *Justice Department Reviewing the Practices of Market-Leading Online Platforms*, 23 July 2019 (accessed 3 January 2020).

<https://www.justice.gov/opa/pr/justice-department-reviewing-practices-market-leading-online-platforms>

See also, Competition Policy International, *US: Delrahim says Big Tech probe focused on abuse of data*, 26 November 2019 (accessed 3 January 2020). According to Delrahim, the investigation by the DOJ is focused on “the potential abuse of data by online platforms”.

<https://www.competitionpolicyinternational.com/us-delrahim-says-big-tech-probe-focused-on-abuse-of-data/>

Competition Policy International, *US: FTC chair aims to resolve Big Tech antitrust probes this year*, 8 January 2020 (accessed 5 February 2020).

<https://www.competitionpolicyinternational.com/us-ftc-chair-aims-to-resolve-big-tech-antitrust-probes-this-year/>

Competition Policy International, *US: Google target of new antitrust probe by state AGs*, 3 September 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/us-google-target-of-new-antitrust-probe-by-state-ags/>

Competition Policy International, *US: 47 AGs to probe Facebook for antitrust violations*, 22 October 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/us-47-ags-to-probe-facebook-for-antitrust-violations/>

¹⁰³⁷ In Europe, the European Commission is currently investigating the practices of Amazon, Google, Facebook and Apple.

See for more details:

Amazon: EC, Press release, *Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon*, 17 July 2019 (accessed 3 January 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291

Google: Reuters, *Exclusive: EU antitrust regulators say they are investigating Google's data collection*, 30 November 2019 (accessed 3 January 2020).

<https://www.reuters.com/article/us-eu-alphabet-antitrust-exclusive/exclusive-eu-antitrust-regulators-say-they-are-investigating-googles-data-collection-idUSKBN1Y40NX>

safeguard a global level-playing. In sum, as the digital economy is global by nature, a global market for digital platforms has to be established. To do so, the discussions in existing international fora should agree on common international data protection, consumer protection and competition rules.

- 106.** To reach these common international rules, an international organization has to be established. On the model proposed by Professor Annabelle Gawer, who recommends a Global Digital and Data Regulator as well as a Global Competition Authority,¹⁰³⁸ the model of the existing Digital Clearinghouse, which is “*a voluntary network of regulators involved in the enforcement of legal regimes in digital markets, with a focus on data protection, consumer and competition law*”,¹⁰³⁹ and of the World Trade Organization (WTO), an independent World Digital Organization (WDO) has to be created. The aim of the WDO will be to ensure a coherent digital economy landscape for the benefit of consumers and businesses. The WDO will be in charge to implement and monitor the correct application of WDO agreements among member countries. The WDO agreements will be fundamental principles of data protection, consumer protection,

Facebook: Competition Policy International, *EU: Facebook marketplace now under scrutiny*, 31 October 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/eu-facebook-marketplace-now-under-scrutiny/>

See also, Competition Policy International, *EU: Facebook tells regulators ‘data is complicated’*, 2 December 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/eu-facebook-tells-regulators-data-is-complicated/>

Apple: Competition Policy International, *EU: Spotify files antitrust complaint against Apple*, 13 March 2019 (accessed 3 January 2020).

<https://www.competitionpolicyinternational.com/eu-spotify-files-antitrust-complaint-against-apple/>

See also, CNBC, *Google is facing another EU antitrust probe-this time over its jobs search tool*, 28 August 2019 (accessed 3 January 2020).

<https://www.cnn.com/2019/08/28/google-faces-eu-antitrust-probe-over-jobs-search-tool.html>

See also, Reuters, *EU antitrust regulators plan broad enquiry into tech sector*, 12 February 2020 (accessed 17 February 2020).

<https://www.reuters.com/article/us-eu-antitrust/eu-antitrust-regulators-plan-broad-enquiry-into-tech-sector-idUSKBN2062GA>

¹⁰³⁸ OECD, *Big Data: Bringing competition policy to the digital era-Note by Annabelle Gawer*, 16 December 2016, p. 16.

[https://one.oecd.org/document/DAF/COMP/WD\(2016\)74/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2016)74/en/pdf)

¹⁰³⁹ The Digital Clearinghouse (accessed 3 January 2020).

<https://www.digitalclearinghouse.org>

competition rules and other various policies related to the digital economy. Principles will be developed in the next recommendation. Decisions made by WDO's member countries will ensure a coherent global regulation of the digital economy. In addition, the WDO will supervise the elaboration of a participative pro-competitive code of conduct with member countries and stakeholders (participative regulation). The code will be in line with WDO agreements. In this context, the WDO will monitor and, in case of non-compliance of the code, impose fines and measures through a fast track resolution mechanism. A Data Standards Committee (DSC) within the WDO will be responsible to elaborate technical standards with stakeholders to ensure that data interoperability and interoperability will be built on a unique standard. Moreover, to support the WDO's activities, a Digital Observatory Committee (DOC) will conduct law and economics research and collect and analyze data in the digital economy, as the existing EU observatory on the Online Platform Economy.¹⁰⁴⁰ In this way, the WDO will guarantee that the same rules will apply and enforce around the world, thus ensuring a global level playing level.

107. The WOD agreements will be based on the three fundamental goals and means (hereinafter "the principles") developed in section 3: (i) efficient competition, which would ensure that companies face enough pressure to offer the best products and services, and that trust is protected; (ii) fair competition, which would require that digital platforms compete fairly, namely on fair, reasonable and non-discriminatory terms and conditions that not lead to the exclusion or exploitation of customers on both sides of the market; and (iii) transparency and choice, which would require that digital platforms provide meaningful information to users and businesses as regards notably the collection and processing of data, and that customers can freely choose and consent to the terms and conditions.

108. A participative pro-competitive code of conduct must be elaborated with member countries and stakeholders under the supervision of the WDO. The code will be found on the previous principles and will include clear-cut prohibitions rules with the possibility of an exception if the practice is objectively justified and also clear guidance

¹⁰⁴⁰ EC, *EU Observatory on the Online Platform Economy* (accessed 5 January 2020).

<https://ec.europa.eu/digital-single-market/en/eu-observatory-online-platform-economy>

See also the dedicated website.

<https://platformobservatory.eu>

on specific issues to be in line with the prohibition rules. Both rules and guidelines will be updated with some frequency to take into account market change in the economy. Given the broad nature of the digital economy, the following rules cannot address competition concerns related to a specific sector such as the online advertising sector.¹⁰⁴¹ Rather a sub-committee specialized in one specific sector will be in charge to elaborate those rules. In the EU, the recent EU P2B regulation, which is entered into force on 31 July 2019 and will apply from 12 July 2020 (art. 19), already addresses a number of competition (e.g. favoring of online platforms' own services) and non-competition concerns (e.g. unclear contract terms). The main goal of the Regulation is to promote fairness and transparency for business users of online intermediation services, including e-commerce, application stores, online search engines and online social media services. It thus promotes a set of transparency rules that requires providers of online intermediation services to provide meaningful terms and conditions in a plain and intelligible language (art. 3) as regards the main parameters determining ranking (art. 5)¹⁰⁴², ancillary goods and services (art. 6), differentiated treatment concerning their own offerings and those of their business users or corporate website users (art. 7), the access to personal data or other data, or both, by business users (art. 9), restrictions to offer the same goods and services to consumers under different conditions through other means than through those provided by the online intermediation services, including in particular Most-favored nation (MFN) clauses (art. 10), and the mediators in case of complaint by business users (art. 12). In addition, providers, unless exempted, must set up an internal system for handling the complaints of business users (art. 11). It encourages the elaborations of codes of conduct to the proper application of this Regulation and in particular vis-à-vis the ranking by providers of online search engines (art. 17). The Regulation only concerns the relation between online intermediation services/online search engines and business users/corporate

¹⁰⁴¹ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, pp. 237-243. In its interim report on online platforms and digital advertising, the CMA proposes some rules to address concerns related to the digital advertising sector.

¹⁰⁴² Observatory on the Online Platform Economy, *Press release, European Commission launches online survey on the ranking transparency guidelines*, 18 November 2019 (accessed 5 January 2020). The Commission will provide ranking transparency guidelines before 12 July 2020. In this context, the Commission has recently launched an online survey.

<https://platformobservatory.eu/news/commission-launches-online-survey-on-the-ranking-transparency-guidelines/>

website users but not the relation between online intermediation services/online search engines and consumers (art. 1). However, in the EU, the recent EU Directive as regards the better enforcement and modernization of Union consumer protection rules,¹⁰⁴³ which is entered into force on 7 January 2020 and will apply from 28 May 2022 by Member States (art. 7), provides some similar transparency rules in the relationship between traders of online services and consumers. These rules amend the EU directive on consumer rights and include clear and comprehensible information about notably the main parameters determining ranking of offers by providers of an online marketplace (art. 4(5)), and personalized pricing on the basis of automated decision-making by a trader (art. 4(4)). It gives the same consumer rights for consumers of “free” digital services in exchange of their personal data (art. 4(2)(b)). This directive should extend the transparency requirements as regards the ranking to all providers of online intermediation services (e.g. the ranking of a search result on an online search engine, of an application on an application store, or the ranking of users on a dating application or social media). Nevertheless, both the EU Regulation and the EU directive do not provide enough transparency and choice rules to both businesses and consumers. It is worth noting that the Commission will propose a new Consumer Agenda that “will empower consumers to make informed choices and play an active role in the digital transformation” by the end of 2020 (Q4 2020).¹⁰⁴⁴ The following rules of a code of conduct can fill the gap.

109. First, privacy standards terms and conditions. Online service providers must draft the terms in a plain, intelligible and neutral manner with the possibility for users to select their privacy preference among different choices.¹⁰⁴⁵ The terms will be standardized in a unique manner as to the extent the provider can collect and process personal data.

¹⁰⁴³ Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules, 18 December 2019.

<https://eur-lex.europa.eu/eli/dir/2019/2161/oj>

¹⁰⁴⁴ EC, Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 10.

¹⁰⁴⁵ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 241. In its interim report on online platforms and digital advertising, the CMA found “concerns that platforms do not make it easy enough for consumers to understand and control what data they are agreeing to share.”

To ensure that consumers freely consent, nudges will be forbidden. The privacy setting shall be designed as recommended in section 3.2. Thanks to standardization, consumers will be able to compare in a user-friendly way privacy terms among providers and freely choose the one that offers the product or service according to their privacy preference. By increasing transparency, providers will have the incentive to improve privacy and data protection in order to attract users, leading to competition over privacy. In this way, a consumer will have a genuine choice and control over its personal data. This will in turn improve consumer welfare due to better choice and quality (privacy is a parameter of quality). The business model of providers of free services funded by advertising may be affected by such intervention but it will not significantly change as they will still have the opportunity to monetize the service with non-personalized advertising (e.g. contextual advertising) if the consumer does not authorize the collection and processing of personal data for personalized advertising while still offering the core service to consumers.¹⁰⁴⁶ The CMA is currently seeking evidence of the financial impact that will depend on the proportion of consumers who would choose to receive personalized advertising.¹⁰⁴⁷ The privacy setting must be seen on a periodic basis (e.g. every 6 months) to avoid consumer inertia (default bias). Figure 9 below shows an example of privacy standards proposed by the OECD.¹⁰⁴⁸

¹⁰⁴⁶ Ibid, p. 253.

¹⁰⁴⁷ Ibid, pp. 253-254.

¹⁰⁴⁸ OECD, *Big data: Bringing competition policy to the digital era-Background note by the Secretariat*, 27 October 2016, p. 26.

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

Figure 9: Example of privacy standards proposed by the OECD

Terms of Services

- I do not authorize the collection of my personal data.
- I authorize the collection of my personal data for internal purposes that are solely needed and used to provide the particular product or service in question.
- I authorize the collection of my personal data for the creation of aggregate databases that may be shared with third parties.
- I authorize my personal data to be collected and shared with third parties without any restrictions.

110. Second, common metrics on the value of data. It is now well-recognized that consumers use “free” digital services in exchange of their personal data.¹⁰⁴⁹ However, in the absence of common metrics on the value of data, a consumer cannot assess her/his value and thus cannot determine the price of the service and her/his willingness to pay to use it.¹⁰⁵⁰ This prevents consumers to make a genuine choice according to their willingness to pay with their personal data. The valuation of personal data is

¹⁰⁴⁹ EC, Speech, Margrethe Vestager, *Internets of the World Conference*, Copenhagen, 5 December 2019 (accessed 5 February 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/internets-world-conference-copenhagen-5-december-2019_en

“We can get a lot of valuable online services free of charge. But there’s no such as a free lunch. We still pay for these services – not in cash, perhaps, but with our data.”

¹⁰⁵⁰ CMA, *The commercial use of consumer data Report on the CMA’s call for information*, June 2015, pp. 79-80.

“One implication of this is that, without knowing the value of the data they are sharing and how much of their data is being used, consumers are unable to understand the price for the data-funded transactions they engage in. This may mean that firms have limited incentives to compete over the privacy protection they afford to consumer data, that is the minimum amount of data they need to collect to generate sufficient revenue to fund the service to consumers.”

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/435817/The_commercial_use_of_consumer_data.pdf

“sensitive to contextual effects”,¹⁰⁵¹ then it will not be possible to set a precise price. However, online service providers must provide clear and comprehensible information on the manner in which personal data are to be calculated to set ads price to advertisers (as the advertising side subsidizes the consumer side), or other reliable metrics. In this way, a consumer will be able to understand the value of her/his data and to choose the best product or service according to her/his willingness to pay with its data. Moreover, since consumers will be able to compare more easily, providers will have the incentive to compete and innovate in order to offer a better product with a better privacy protection.

- 111.** Third, a single personal online identity. To the extent that volunteered data are intentionally provided by the user to the online service provider, they are owned by the user, not the provider. In 2015, an internet user had in average 90 user accounts and might have 200 accounts by 2020.¹⁰⁵² As the phone number, in order to lower transaction and switching costs, a unique personal online identity must be created in which consumers will be able to seamlessly access automatically and in a secure way to all volunteered data shared with online service providers. This proposal has been recently welcomed by a large majority of respondents (63%) to a Eurobarometer survey.¹⁰⁵³ Access will be granted either through a unique website developed by the WDO or Personal Information Management Systems (PIMS) (e.g. cozy cloud, digi.me), namely intermediaries for consumer data between consumers and online service providers in which a consumer can already access and manage from a unique interface all its data shared with providers such as bank, insurance, energy or internet and mobile providers. Once the consumer will provide a data to a provider, this data will

¹⁰⁵¹ OECD, *Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value*, 2 April 2013, p. 5.

[https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/REG\(2011\)2/FINAL&docLanguage=EN](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/REG(2011)2/FINAL&docLanguage=EN)

¹⁰⁵² Schallbruch, M. et al report, p. 38.

¹⁰⁵³ EC, Press release, *Shaping Europe's digital future: Eurobarometer survey shows support for sustainability and data sharing*, 5 March 2020 (accessed 15 May 2020).

https://ec.europa.eu/commission/presscorner/detail/en/ip_20_383

See also, Special Eurobarometer 503, *Attitudes towards the impact of digitalisation on daily lives*, March 2020, pp. 92-95.

<https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/special/surveyky/2228>

automatically be registered by using the blockchain technology (e.g. Tide's blockchain based model)¹⁰⁵⁴ in her/his personal online identity and she/he will not need to provide again this data to others. On the WDO website, the consumer will only be able to access to her/his personal data. PIMS offer more functionalities to manage data such as the sharing of pictures with friends. In sum, via his/her personal online identity, the consumer can grant access to his/her data to third-party providers (data interoperability) and monitor the usage of his/her data thanks to the blockchain. In this way, the consumer can exercise a complete control over his/her personal data and can even receive a monetary reward for having consented to share his/her data with third-parties. Data will be transferred based on the standard developed by the WDO. Online service providers will still keep observed and inferred data on an internal account not accessible by consumers and third-parties. In this way, consumers will be able to switch or multi-home seamlessly without incurring significant costs in terms of time and loss of personal data. This will in turn spur competition and promote new entrants without reducing the incentive to invest and innovate as only volunteered data will be transferred.

- 112.** Fourth, fair, reasonable and non-discriminatory terms and conditions. Consumers (German Facebook case) and businesses (Amazon case) can be exploited from abusive contract terms and conditions by dominant online providers in order to collect even more data on them and thus to maintain or expand a dominant position. To overcome this issue, terms and conditions must be drafted in a clear, plain, intelligible, fair and reasonable manner and must explain how the service works (e.g. algorithms, the ranking), namely for example, if a consumer consents to the collection and processing of her/his data, the provider cannot require data that are unnecessary to perform the service as mandated by the principle of data minimization (art. 5(1)(c) GDPR). Both businesses and consumers must be notified of any changes to the terms and conditions,

¹⁰⁵⁴ For a complete description of the Tide's blockchain based model, see CMA, *Appendix L: Potential approaches to improving personal data mobility*, 18 December 2019, pp. 10-12.

https://assets.publishing.service.gov.uk/media/5df9efa2ed915d093f742872/Appendix_L_Potential_approaches_to_improving_personal_data_mobility_FINAL.pdf

See also, Tide website (accessed 9 January 2020).

<https://tide.org>

including changes to the functioning of the service,¹⁰⁵⁵ and they cannot be implemented before the expiry of a notice period which is reasonable and proportionate as required by the P2B regulation (art. 3). Furthermore, online service providers might have the ability and incentive to promote their own services at the expense of rivals. It might even pay to be the default service. The practice is not illegal *per se* but can have significant adverse effects on competition and consumers (e.g. see *Google Search (Shopping)* and *Google Android*). To promote an effective competition and a genuine choice to consumers, terms and conditions must require that consumers will choose the service they want via a choice screen as implemented by Google following the Google Android Decision in EU¹⁰⁵⁶ and in Russia.¹⁰⁵⁷ However contrary to the proposal made by Google, that will show the choice screen only during the initial setup of the Android device, it must be seen on a periodic basis (e.g. every 6 months) to avoid consumer inertia (default bias). This will again spur competition and innovation while giving more choice to consumers. In addition, terms and conditions cannot promote any forms of self-preferencing behavior unless objectively justified by economic, commercial or legal grounds for such differentiation.¹⁰⁵⁸

¹⁰⁵⁵ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 241. In its interim report on online platforms and digital advertising, the CMA found “concerns that platforms change their algorithms without warning in a way that can materially affect publishers and retailers that rely on the platforms”

¹⁰⁵⁶ Android, Press release, *About the choice screen* (accessed 9 January 2020).

<https://www.android.com/choicescreen/>

¹⁰⁵⁷ Federal Antimonopoly Service of the Russian Federation (FAS Russia), Press release, *FAS Russia Reaches Settlement with Google*, 17 April 2017 (accessed 10 January 2020).

<https://en.fas.gov.ru/press-center/news/detail.html?id=49774>

¹⁰⁵⁸ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 241. In its interim report on online platforms and digital advertising, the CMA found concerns that, in the open display market, “Google sets the rules for the auction in Ad Manager in a way that favours its own sources of advertising demand.”

See also, Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services, 11 July 2019, art. 18. In its first evaluation of the P2B Regulation, the Commission will focus in particular on “investigating whether the competition between goods or services offered by a business user and goods or services offered or controlled by a provider of online intermediation services constitutes fair competition and whether providers of online intermediation services misuse privileged data in this regard.”

- 113.** Fifth, access to data by business users. Data is crucial to compete in the digital economy. In a platform-to-business relationship (P2B), the online service provider can collect and use sensitive data from business users for potential anti-competitive practices (collusion or abuse of a dominant position) as illustrated by the current EU Amazon’s investigation. The P2B regulation only requires the provider to include in its terms and conditions *“a description of the technical and contractual access, or absence thereof, of business users to any personal data or other data, or both, which business users or consumers provide for the use of the online intermediation services concerned or which are generated through the provision of those services.”* (art. 9). The regulation thus does not require the provider to share data with business users. To the extent that the data concern the activities of the business user (e.g. about its products, transactions), the provider must share in real time these data with the business. Indeed, they are valuable to businesses to improve their own products and services offered to consumers and thus to compete on a fair way with the products or services supplied by the online service provider. The data-sharing requirement only concerns the data provided and generated from the business user and its consumers (under the condition of users ‘voluntary consent) and not the data from other businesses and consumers even in an aggregated form to avoid collusion. In this way, competitors of the provider will compete on a level-playing field to the benefit of consumers as a result of better products and services thanks to the use and analyze of such data by business users.
- 114.** Now the rules are well defined, the code must be enforced. The question is tricky as the digital economy is fast-moving. Any decisions made by an online service provider can have significant adverse effects in the short-term on competition and consumers. The code will be enforced by both national competition authorities and the WDO in case of a global issue. They must have the power to investigate either as a result of a complaint or by their own-initiative. In case of non-compliance of the code, they have to impose fines (deterrence effect) and measures through a fast track resolution mechanism (including settlements and interim measures¹⁰⁵⁹). However, the time of the

¹⁰⁵⁹ EC, Speech, Margrethe Vestager, *Global markets and a fair deal for consumers*, Conference of Nordic Competition Authorities, Bergen, 4 September 2019 (accessed 10 January 2020). the Commission is considering to adopt more interim measures in fast-moving markets.

legal proceeding is likely to be slower than the time of the digital economy notably in case of appeal. In this context, the code will not be enforced in due time. A first-best solution could be then to reward (positive incentive) providers subject to compliance with the code through legal incentives (e.g. exemption of antitrust investigations) and economic incentives (e.g. tax reductions). This will have exactly the same effect as a fine (negative incentive) but the measure will ensure the respect of the code in due time while minimizing the legal costs for both public and private parties. Another solution could be to impose mandatory reporting to the regulator of the proper respect of the code on a periodic basis (e.g. every year). The provider will have the incentive to respect the code to avoid a fine. However, this solution is costly for both public and private parties in terms of time and resources. Moreover, the time of the proceeding might not be enough fast and the regulator is likely to review a substantial number of non-problematic reporting. This will impede the regulator to monitor in-depth the problematic ones. From a law and economics standpoint, the notification regime should minimize the expenditure of public (regulators) and private parties (online service providers) while minimizing the notification of potential non-problematic reporting. Mandatory reporting for all firms is thus not an effective and efficient solution. As in merger control, the duty should concern only firms that fall above the “reporting control notification” thresholds. They can be based, as in merger control, on turnover, the number of users or the dominant position of the firm.¹⁰⁶⁰ The regulators

https://wayback.archive-it.org/12090/20191130061303/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/global-markets-and-fair-deal-consumers_en

See for a recent adoption, EC, Press release, *Antitrust: Commission imposes interim measures on Broadcom in TV and modem chipset markets*, 16 October 2019 (accessed 10 January 2020).

https://ec.europa.eu/commission/presscorner/detail/en/IP_19_6109

See also, Adlc, *The Autorité de la concurrence’s contribution to the debate on competition policy and digital challenges*, 19 February 2020, p. 2. The French competition authority recommends the use of interim measures in the digital economy.

https://www.autoritedelaconcurrence.fr/sites/default/files/2020-02/2020.02.19_contribution_adlc_enjeux_numeriques_vf.pdf

¹⁰⁶⁰ See in merger control, Carugati, C. *Reforming merger control notification thresholds*, May 2019, *Concurrences Review*, N° 2-2019, Art. N° 89872.

<https://www.concurrences.com/fr/revue/issues/no-2-2019/pratiques/reforming-merger-control-notification-thresholds>

and the WDO will still have the ability to investigate firms that fall below the thresholds by requiring a reporting.

115. In addition to the code of conduct, data interoperability, interoperability and data openness are needed subject to the respect of data protection laws and intellectual property rights.
116. Data interoperability must be developed on the model proposed by the PSD2 Directive. At the consumer's request, third-party providers will be granted access to the user's account and only to volunteered data. Data will be transferred based on a common standard developed by the WDO.
117. Interoperability is key in the digital economy. Indeed, it enables two or more products or services to communicate with each other seamlessly without the need to change for another provider. This will overcome the market power of dominant firms with strong network effects as the latter will be spread to other (non-dominant) firms. For example, a Facebook's user will be able to communicate with users from another social media or a user will be able to connect its Apple Watch with an Android device. However, as underlined by the CMA in its interim report on online platforms and digital advertising in relation to Facebook, the social media may have the ability and incentive to restrict competitors' ability to develop services that compete directly with him.¹⁰⁶¹ The CMA is thus currently seeking views on "*whether there should be limits on Facebook's ability to impose restrictions on competitors' use of the interoperable features*".¹⁰⁶² The restrictions will impede the development of directly competing services and thus will distort competition. Therefore, to promote effective competition, such contractual or technical restrictions must be forbidden.
118. Data openness is welcome as recommended in section 4.2.

¹⁰⁶¹ CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 250.

¹⁰⁶² Ibid.

- 119.** Finally, the cooperation is also urgently needed at the local level between agencies. As called by many competition experts¹⁰⁶³ and regulators,¹⁰⁶⁴ data protection, consumer protection and competition authorities must collaborate together on digital cases to “achieve common goals using most efficient tools”, “manage conflicting objectives” and “avoid overlap of resources”¹⁰⁶⁵ since data protection, consumer protection and competition concerns (e.g. privacy) are closely related in the digital economy. As a first example, during its Facebook’s investigation, the Bkarta “closely cooperated with leading data protection authorities in clarifying the data protection issues involved.”¹⁰⁶⁶
- 120.** To conclude, the recommendations tend to address in the most cost-benefit way the challenges raised by the digital economy in a globalized world. The World Digital Organization (WDO) will ensure a coherent digital economy landscape to promote a global level-playing field through WDO agreements and a participative pro-competitive code of conduct subject to three principles: efficient competition; fair competition; and transparency and choice. In complement to the EU P2B Regulation and the EU consumer protection rules Directive, the rules of the code of conduct shall be the following: (i) privacy standards terms and conditions; (ii) common metrics on the value of data; (iii) a single personal online identity; (iv) fair, reasonable and non-discriminatory terms and conditions; and (v) access to data by business users. The code

¹⁰⁶³ Stucke, M. E. and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016, pp. 325-334.

¹⁰⁶⁴ European Data Protection Supervisor (EDPS), *Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy*, March 2014, pp. 37-38.

https://edps.europa.eu/sites/edp/files/publication/14-03-26_competition_law_big_data_en.pdf

See also, OECD, *Big data: Bringing competition policy to the digital era-OECD Competition Division-November 2016 OECD discussion*, 23 March 2017, p. 30.

<https://www.slideshare.net/OECD-DAF/big-data-bringing-competition-policy-to-the-digital-era-oecd-competition-division-november-2016-oecd-discussion>

See also, CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019, p. 259.

¹⁰⁶⁵ OECD, *Big data: Bringing competition policy to the digital era-OECD Competition Division-November 2016 OECD discussion*, 23 March 2017, p. 30.

¹⁰⁶⁶ BkArtA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019 (accessed 13 January 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html

must be enforced properly. In addition, data interoperability, interoperability and data openness are required subject to the respect of data protection laws and intellectual property rights. Finally, competition, consumer protection and data protection authorities must closely collaborate together as they share the same concerns in the digital economy.

5. Conclusion

- 121.** The digital economy is one of the most important issues in 2020 around the world among competition experts, regulators and governments. In the US ahead of the 2020 election, breaking up big tech companies is even a campaign promise from Democratic candidates Elizabeth Warren and Bernie Sanders.¹⁰⁶⁷ They launch the race to regulate the digital economy around big tech such as Google, Facebook, Amazon and Apple.
- 122.** But it is not just a promise. A flood of antitrust actions in the US and in Europe is ongoing against those Big tech. They are currently under a global antitrust and a regulatory war for having allegedly misused their market power in highly concentrated markets. Probes focus notably on abuse of data, the blood of the digital economy and the most critical competitive parameter.
- 123.** The competition landscape is thus likely to change in the next years. Antitrust will shape the future of the economy but regulation will play also an important role. Governments around the globe have commissioned reports to define a new competition framework and policy that fit for the digital age. The outcome of the reports is that competition law must be modernized. The proposals are not just ideas on a paper that nobody will read. Some of them are already or will be implemented in the near future. Following the recommendations on the necessity to create a digital agency or a special unit within the competition authority, both the Australian and the French competition authorities

¹⁰⁶⁷ Business insider, *Regulating big tech has become a hot topic ahead of the 2020 election-here's where the Democratic candidates stand*, 14 November 2019 (accessed 14 January 2020).

<https://www.businessinsider.fr/us/elizabeth-warren-bernie-sanders-democrat-candidates-stance-breaking-up-tech-2019-10>

See also, Medium Business, Elizabeth Warren, *Here's how we can break up Big Tech*, 8 March 2010 (accessed 14 January 2020).

<https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>

have recently created a digital economy unit. The Schallbruch et al report has proposed to revise the Commission Notice on the definition of relevant market (recommendation n°1) and the Commission has announced its modernization.¹⁰⁶⁸

- 124.** However, care is needed as any interventions will have a significant impact. Not only an impact on the economy, but also an impact on the way people are living. That is a big challenge for regulators. The number of reports, studies and market investigations especially in the online advertising sector show their desire to understand the digital economy before intervening. But even with these works, they have only an imperfect picture. As argued by the Furman et al report, “*[g]overnment and regulators are at an enormous informational disadvantage relative to technology companies.*”¹⁰⁶⁹ Although regulation is primarily in the hand of governments and regulators, it would thus be a grave mistake to not include stakeholders in the process of regulation. The time where public authorities impose rules is over, a “*participative antitrust*” or a “*participative regulation*”, as promoted by Professor Jean Tirole, is needed.
- 125.** The reports recommend, among other things, a code of conduct. In this context a participative pro-competitive code with businesses and stakeholders might well be the most efficient tool. In addition to the code, the other recommendations concern access to data (data interoperability and data openness) as well as more interoperability.
- 126.** Again, data are the main asset. Requirements on access to data and interoperability will significantly impact the economy. The digital economy is a paradox, it is highly concentrated in the hand of just a few firms and at the same time highly innovative. Access to data will promote competition but may have an adverse effect on the incentive to invest and innovate due to the free-riding problem whereas innovation and investment are the driving forces in data-driven markets. Access must thus be limited to volunteered or raw data. As regards interoperability, in 2018, there were around 22 billion Internet of Things (IoT) connected devices in the world. By 2030, there

¹⁰⁶⁸ EC, Speech, Margrethe Vestager, *Defining markets in a new age*, Chillin’ Competition Conference, Brussels, 9 December 2019 (accessed 14 January 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en

¹⁰⁶⁹ Furman, J. et al report, pp. 4-5.

will be an estimated 50 billion devices.¹⁰⁷⁰ Interoperability will be thus indispensable to enable those devices to interconnect with each other without incurring significant switching costs.

- 127.** Nevertheless, these solutions are not enough and must be complemented by other recommendations. As the digital economy is global and borderless, antitrust challenges are global and thus a coherent global response is key. In addition to the existing international and multilateral fora (e.g. within the G7, the OECD and the ICN), a World Digital Organization (WDO) has to be created. It will ensure a coherent digital economy landscape through WDO agreements and a participative pro-competitive code of conduct subject to three principles: efficient competition; fair competition; and transparency and choice. Rules include: (i) privacy standards terms and conditions; (ii) common metrics on the value of data; (iii) a single personal online identity; (iv) fair, reasonable and non-discriminatory terms and conditions; and (v) access to data by business users. In addition, data interoperability, interoperability and data openness are required subject to the respect of data protection laws and intellectual property rights. Furthermore, competition, consumer protection and data protection authorities must closely collaborate together as they share the same concerns in the digital economy.
- 128.** As a final word, regulating the digital economy is not just a trend, it is a necessity for everyone, even for big tech companies. As noted by the ACCC report, “[t]he future of the digital economy relies on trust, by both consumers and business users.”¹⁰⁷¹ Indeed, trust is the main driving-force for users to continue to share data with online service providers. If people simply do not trust on how their data are collected, processed, stored and secured, they will stop sharing data and the whole data-driven economy will collapse. People thus need to trust in big tech. As stated by Olivier Bethell, the legal director for competition at Google, “[w]e think that if people don’t trust us, they’ll be less likely to try out new products, less likely to look for answers or recommendations,

¹⁰⁷⁰ Statista, *Number of internet of things (IoT) connected devices worldwide in 2018, 2025 and 2030 (in billions)*, 29 November 2019 (accessed 14 January 2020).

<https://www.statista.com/statistics/802690/worldwide-connected-devices-by-access-technology/>

¹⁰⁷¹ ACCC report, p. 22.

*or less likely to buy stuff. That's our commercial incentive to do the right thing.*¹⁰⁷²
Regulation will help people to trust in the digital economy to the benefit of all.

¹⁰⁷² Bethell, O. and Waksman, A., *Applying Economics to the Internet: Can Regulators and Competition Authorities Keep Pace?*, 25 November 2019, p. 1.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3492966

Conclusion

1. The digital economy is impacting not only the traditional economy but also the society and the way people are living and communicate with each other. Back in the 1990s, all the leading online platforms and their products and services were not part of our daily lives for a simple reason, there were not created. The digital economy was at its infancy and faced its first internet bubble in 2000. People used books instead of applications, libraries instead of search engines, bought in town and not on a website, met in real life instead of texting behind a computer or a smartphone, to name a few. In only twenty years, digitalization has changed the world and its structure. From national firms with borders to global firms without frontiers. It brought lots of innovations, new products and services and reduced transaction costs to the benefit of consumers in all sectors of the economy, from healthcare to education, but not without drawbacks. People care about their privacy but lost control over their data. People want choice but the economy is entrenched in the hand of just a few firms.
2. In that situation, when the rules of the game dated back to the 1950s at least in Europe, rules have to change. We need a whole new competition rulebook for the big data world. Five years ago, the topic on Big Data and competition law was at its beginning because as noted in 2016 by Margrethe Vestager in a public statement on “*competition in a big data world*”, “*we haven't found a competition problem yet.*”¹⁰⁷³ Since then a lot has been written on big data by academics and regulators. It is becoming a hot topic in the antitrust sphere.
3. All over the world, the digital economy is now a priority for competition authorities not because the number of antitrust and merger cases has dramatically increased but because they are now conscious that Big Data poses serious issues in terms of competition and privacy in fast-growing sectors characterized by short innovation cycles. They have to react much faster than before and take risks of over (type I error) or under-enforcement (type II error). This is very challenging as the philosophy of most competition authorities is, in free markets, not to intervene excepted in case of a

¹⁰⁷³ EC, Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016 (accessed 11 February 2020).

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

competition problem. Regulators and governments wrote or commissioned reports from academia to deepen their knowledge, especially in the online advertising sector, and created within the competition authority a digital economy unit to be ready to challenge a case in this economy. They did a lot in only three years, the time of this thesis. Quoting Winston Churchill, "*[n]ow this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.*"

4. At the end of 2019, the Commission announced that it will review the 1997 Commission Notice on the definition of relevant market¹⁰⁷⁴. It also announced the evaluation and review of EU competition rules to adapt them to the digital economy (2020-2023).¹⁰⁷⁵ It is currently under political pressure from France, Germany, Italy and Poland to reform EU competition law in order to promote European champions to fight against Chinese and US companies¹⁰⁷⁶ after the blocking of the merger *Siemens/Alstom*.¹⁰⁷⁷ In their letter to the Commissioner for Competition and Executive Vice-President, Margrethe Vestager, they urge the Commission to modernize the current guidelines on the assessment of horizontal mergers and the Commission Notice on the definition of relevant market "*in order to ensure fair and undistorted competition and introduce more justified and reasonable flexibility*"¹⁰⁷⁸ by better considering third countries' state intervention, potential competition and, on a case-by-case basis, behavioral remedies. They also call for a revised version of the guidelines of merger control within weeks to

¹⁰⁷⁴ EC, Speech, Margrethe Vestager, *Defining markets in a new age*, Chillin' Competition Conference, Brussels, 9 December 2019 (accessed 11 February 2020).

https://ec.europa.eu/commission/commissioners/2019-2024/vestager/announcements/defining-markets-new-age_en

¹⁰⁷⁵ EC, Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020, p. 10.

¹⁰⁷⁶ Competition policy international, *France, Germany, Italy and Poland Urge Vestager To Form Path For EU Champions*, 6 February 2020 (accessed 11 February 2020).

<https://www.competitionpolicyinternational.com/france-germany-italy-and-poland-urge-vestager-to-form-path-for-eu-champions/>

¹⁰⁷⁷ M.8677-*Siemens/Alstom*, 6 February 2019.

https://ec.europa.eu/competition/mergers/cases/decisions/m8677_9376_3.pdf

¹⁰⁷⁸ The Finance and Economy Ministers of France, Germany, Italy and Poland, *letter to the Commissioner Executive Vice-President Margrethe Vestager*, Paris, 4 February 2020 (accessed 11 February 2020).

<https://g8fip1kplyr33r3krz5b97d1-wpengine.netdna-ssl.com/wp-content/uploads/2020/02/Letter-to-Vestager.pdf>

provide guidance on the range of efficiencies considered in the competitive assessment. They also recommend a guidance on cooperation between firms of all sizes.¹⁰⁷⁹ As regards the digital economy in particular, they encourage the use of interim measures “in order to avoid irreversible distortions in competition on digital markets”.¹⁰⁸⁰ The Finance and Economy Ministers ask the Commission to identify “systemic actors against objective criteria”¹⁰⁸¹ (but without mentioning those criteria), that will be subject to specific scrutiny and regulation. They thus hurry the Commission to draft, by the end of the second quarter of 2020, “a framework for the definition and the regulation of “digital platform with paramount importance for competition” at European level”.¹⁰⁸² Moreover, they suggest to explore the establishment of “a specialised Commission unit or an independent scientific expert body” to support the authority¹⁰⁸³ and to reinforce the role of the Advisory Committee in merger control.¹⁰⁸⁴ It is not the first time that they urge the Commission to reform EU competition rules. In July 2019, France, Germany and Poland already called for a modernization of EU competition policy.¹⁰⁸⁵ The push comes few weeks before the Commission launched its own industrial policy agenda on 10 March 2020¹⁰⁸⁶ and only few days after Germany officially presented its draft bill for the 10th amendment to the German Act against

¹⁰⁷⁹ Ibid.

¹⁰⁸⁰ Ibid.

¹⁰⁸¹ Ibid.

See also Adlc, @Echelle event with Cédric O, November 2019.

<https://www.autoritedelaconcurrence.fr/sites/default/files/2019-12/syntheseechellecedricofinal.pdf>

¹⁰⁸² The Finance and Economy Ministers of France, Germany, Italy and Poland, *letter to the Commissioner Executive Vice-President Margrethe Vestager*, Paris, 4 February 2020 (accessed 11 February 2020).

¹⁰⁸³ Ibid.

¹⁰⁸⁴ Ibid.

¹⁰⁸⁵ The Finance and Economy Ministers of France, Germany and Poland, *Modernising EU Competition Policy*, July 2019 (accessed 11 February 2020).

https://www.bmwi.de/Redaktion/DE/Downloads/M-O/modernising-eu-competition-policy.pdf?__blob=publicationFile&v=4

¹⁰⁸⁶ Competition policy international, *France, Germany, Italy and Poland Urge Vestager To Form Path For EU Champions*, 6 February 2020 (accessed 11 February 2020).

See also, Communication from the commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions, *A New Industrial Strategy for Europe*, 10 March 2020.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0102&from=EN>

Restraints of Competition, the ARC Digitization Act, on 24 January 2020.¹⁰⁸⁷ The bill adapts German competition law to the digital economy by, among other things, introducing the concept of “*intermediary power*”, and by extending the refusal of access to data. Moreover, it authorizes legal actions against platforms identified by the BKartA as “*paramount significance for competition across markets*”. It introduces a right to data access and creates a new provision to prevent the tipping of markets at an early stage. Finally, it simplifies the use of interim measures.¹⁰⁸⁸ The BKartA welcomed this bill.¹⁰⁸⁹ In France, a bill has been recently adopted by the Senate to also adapt French competition law to the digital economy. In merger control, to tackle killer acquisitions, “*systemic firms*” identified by the Adlc will have to notify all their acquisitions a month before their realization and show that the acquisition is not harmful to competition. The bill does not define “*systemic firms*” but provides a list of indicia that must be considered by the Adlc (art. 7). The agents of the *Autorité* will have access to the algorithms and their data. Moreover, interoperability between online platforms can be required by the Secretary of State for the digital economy and the French Postal and Electronic Telecommunications regulator (art. 4).¹⁰⁹⁰ Finally, nudges will be forbidden (art. 8). The French competition authority supports the previous recommendations. In a recent contribution, the FCA recommends that “*structuring businesses*” will be subject to specific scrutiny, notably in merger control, and regulation. It defines these firms against three criteria that could be completed with guidelines.¹⁰⁹¹ It identifies a non-exhaustive list of practices that may pose competition

¹⁰⁸⁷ Raue, *Competition law 4.0: draft bill for the 10th amendment to the ARC*, 28 January 2020 (accessed 11 February 2020). The draft bill is only available in German.

<https://raue.com/en/practices/antitrust-en/competition-law-4-0-draft-bill-for-the-10th-amendment-to-the-arc/>

¹⁰⁸⁸ Ibid.

¹⁰⁸⁹ BkartA, Press release, *Bundeskartellamt welcomes Economic Affairs Ministry’s plans to modernise competition law*, 25 February 2020 (accessed 15 May 2020).

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2020/25_02_2020_Stellungnahme_10_GWB_Novelle.html

¹⁰⁹⁰ Assemblée nationale, *proposition de loi visant à garantir le libre choix du consommateur dans le cyberspace*, 10 October 2019 (accessed 15 May 2020). The bill has been adopted by the Senate on 19 February 2020. It is now in the hand of the French National Assembly.

http://www.assemblee-nationale.fr/dyn/15/dossiers/alt/garantie_libre_choix_consommateur_cyberspace

¹⁰⁹¹ Adlc, *The Autorité de la concurrence’s contribution to the debate on competition policy and digital challenges*, 19 February 2020, pp. 6-8.

concerns. The practice may be forbidden unless objectively justified by efficiency gains.¹⁰⁹² Accordingly, a modernization of EU competition rules is expected in the near future. On the other side of the Atlantic, a similar reform is conceivable in the US as the Congress is investigating the practices of leading online platforms.¹⁰⁹³

5. This thesis also underlines the need to modernize competition law to the digital economy. I call for a reform of the relevant market, market power and merger control. Competition authorities must consider privacy as a non-price parameter of competition in their competitive assessment of data-driven antitrust and merger practices. Most importantly, competition authorities must collaborate with data protection and consumer protection authorities. Finally, in complement to the implementation of new competition rules, a regulation at the global level is unavoidable. To tackle digital issues, only a mix of competition and participative regulation will ensure a global level-playing field in the digital economy. In particular, a pro-competitive code of conduct enacted with stakeholders and regulators will be the most efficient tool.
6. This thesis thus proposes a new competition rulebook for the Big Data world. However, as it cannot address all the issues raised by the data-driven economy, it is not intended to design a whole new rulebook. Rather, it contributes on the principal debated topics around the world on how to shape competition policy for the digital era to the benefit of all.

“The Autorité proposes defining ‘structuring’ platforms in three stages. The first part of the definition aims to recognise the companies providing online intermediation services. The second part defines the strategic nature of their conduct in the market that they dominate as well as in other markets. This section refers to the factors that characterise their market power and that enable them to play a role in access to certain markets (‘gatekeeper’ role) and in the functioning of certain markets (‘regulator’ role). The third part refers to the importance of these platforms for market players (in particular the indispensable nature of these players for access to certain markets), whether they are competitors, users of their services, or third parties who need access to the services offered by these structuring platforms in order to develop their own activities.”

¹⁰⁹² Ibid.

¹⁰⁹³ House Judiciary Committee, *Digital Markets Investigation* (accessed 3 February 2020).

<https://judiciary.house.gov/issues/issue/?IssueID=14921>

Bibliography

Papers and books

Akman, P., *Competition Policy in a Globalized, Digitalized Economy*, World Economic Forum, December 2019.

Akman, P., *To Abuse, or not to Abuse: Discrimination between Consumers*, CCP Working Paper No. 06-18; CCP Working Paper No. 06-18, 1st November 2006.

Armstrong, M., *Price Discrimination*, October 2006.

Arrow, K., *Economic Welfare and the Allocation of Resources to Invention*, in *The Rate and Direction of Inventive Activity: Economic and Social Factors*, 1962.

Arrow, K., *Gifts and Exchanges*, *Philosophy & Public Affairs*, Vol. 1, No. 4, Summer 1972.

Azevedo, J., *Geographic market definition in EC merger control*.

Barth, S. and De Jong, M. D. T., *The privacy paradox-Investigating discrepancies between expressed privacy concerns and actual online behavior-A systematic literature review*, *Telematics and Informatics* Volume 34, Issue 7, November 2017.

Bethell, O. and Waksman, A., *Applying Economics to the Internet: Can Regulators and Competition Authorities Keep Pace?*, 25 November 2019.

Bethell, O., *Competition Law & Tech-A New Approach*, 7 March 2019.

Bonakele, T. et al, *Competition Policy for the New Era: Insights from the BRICS Countries*, *OUP Oxford*, 2017.

Botta, M. and Wiedemann, K., *EU Competition Law Enforcement vis-à-vis Exploitative Conducts in the Data Economy Exploring the Terra Incognita*, Max Planck Institute for Innovation and Competition Research Paper No. 18-08, 2018.

Bourreau, M. et al, *Big Data and Competition Policy: Market power, personalised pricing and advertising*, Cerre Project Report, 16 February 2017.

Boutin, X. and Clemens, G., *Big But Not Insurmountable? How The Definition Of 'Big Data' Can Help In The Assessment Of Entry, Expert Opinion*, Compass Lexecon, January 2018.

Calvano, E. et al, *Algorithmic Pricing: What Implications for Competition Policy?*, 7 July 2018.

Calvano, E. et al, *Artificial Intelligence, Algorithmic Pricing and Collusion*, 1st April 2019.

Carugati C., *The 2017 Facebook Saga: A Competition, Consumer and Data Protection Story*, European Competition and Regulatory Law Review Volume 2, Issue 1 (2018).

Carugati, C., *Reforming merger control notification thresholds*, Concurrences Review, N° 2-2019, Art. N° 89872, May 2019.

Chami, R. and Fullenkamp, C., *Trust and Efficiency*, July 2001.

Colangelo G., *Facebook and the Bundeskartellamt's Winter of Discontent*, Competition Policy international, 23 September 2019.

Cooper, J. C., *Privacy And Antitrust: Underpants Gnomes, The First Amendment, And Subjectivity*, George Mason Law Review, Forthcoming, George Mason Law & Economics Research Paper No. 13-39, June 2013.

Copenhagen Economics, *Digital Competition And Price Differentiation, Summary*, A conference hosted by the Danish Competition and Consumer Authority and Copenhagen Economics, 19 June 2017.

Cormen et al, *Introduction to Algorithms (Second Edition)*, MIT Press, 2001.

Costa-Cabral, F. and Lynskey, O., *The internal and external constraints of data protection on competition law in the EU*, LSE Law, Society and Economy Working Papers, 2015.

Cunningham, C., et al., *Killer Acquisitions*, 22 March 2019.

Deffains, B. and Carugati, C., *Internet Platforms: To Regulate, or not to Regulate?*, Essays in Law and Economics in honour of Roger Van den Bergh, Intersentia, 2018.

Evans, D. S. and Schmalensee, R., *The Antitrust Analysis of Multi-Sided Platform Businesses*, Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Olin Research Paper No. 623, 30 January 2013.

Evans, D. S., *Antitrust Economics of Free*, April 2011.

Evans, D. S., *Multisided Platforms, Dynamic Competition and the Assessment of Market Power for Internet-Based Firms*, 10 March 2016.

Ezrachi, A. and Reyna, A., *The Role of Competition Policy in Protecting Consumers' well being in the digital era*, BEUC, October 2019.

Ezrachi, A. and Stucke, M. E., *Artificial Intelligence & Collusion: When Computers Inhibit Competition*, University of Illinois Law Review, Vol. 2017, 2017; Oxford Legal Studies Research Paper No. 18/2015; University of Tennessee Legal Studies Research Paper No. 267, 8 April 2015.

Ezrachi, A. and Stucke, M. E., *Written evidence (OPL0043)*.

Filistrucchi, L. et al, *Identifying Two-Sided Markets*, TILEC Discussion Paper No. 2012-008, 21 February 2012.

Filistrucchi, L. et al, *Market Definition in Two-Sided Markets: Theory and Practice*, TILEC Discussion Paper No. 2013-009; Tilburg Law School Research Paper No. 09/2013, 16 March 2013.

Filistrucchi, L., *A SSNIP Test for Two-Sided Markets: The Case of Media*, NET Institute Working Paper No. 08-34, October 2008.

Fox, E. M., *The Battle for the Soul of Antitrust*, 75 Calif. L. Rev. 917, 1987.

Gal, M., *Algorithms as Illegal Agreements*, Berkeley Technology Law Journal, Forthcoming, 2 May 2018.

Gerard, D. and Lianos, I., *Reconciling Efficiency and Equity: A Global Challenge for Competition Policy*, Cambridge University Press, 2019.

Gerard, D., *Fairness in EU Competition Policy: Significance and Implications*, Journal of European Competition Law & Practice, 2018, Vol. 9, No. 4, 2018.

Gilbert, P. and Pepper, R., *Privacy Considerations in European Merger Control: A Square Peg for a Round Hole*, Competition Policy International Antitrust Chronicle, May 2015.

Graef, I., *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, Columbia Journal of European Law, Vol. 24, No. 3, 2018, 19 December 2017.

Graef, I., *Blurring Boundaries of Consumer Welfare: How to Create Synergies between Competition, Consumer and Data Protection Law in Digital Markets*, Forthcoming by Springer as proceedings of the Max Planck Institute Post-Doc conference on 'Personal Data in Competition, Consumer Protection and IP Law: Towards a Holistic Approach?', held on 21 October 2016 in Munich, December 2016.

Holtz, L-E., et al, *Towards Displaying Privacy Information with Icons*, Fischer-Hübner S., Duquenoy P., Hansen M., Leenes R., Zhang G. (eds) Privacy and Identity Management for Life. Privacy and Identity 2010. IFIP Advances in Information and Communication Technology, vol 352. Springer, Berlin, Heidelberg, 2011.

Höppner, T. and Westerhoff, P., *Abrupt End to “Hipster Antitrust”? Tackling Facebook’s Expansion Following the First Court Ruling in Germany*, Hausfeld, 20 November 2019.

Kalimo, H. and Majcher, K., *The Concept of Fairness: Linking EU Competition and Data Protection Law in the Digital Marketplace*, European Law Review, Vol. 42, No. 2, 42, 04.2017, April 2017.

Kerber, W., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, April 2016.

Kuner et al, *When two worlds collide: the interface between competition law and data protection*, International Data Privacy Law, Vol. 4, No. 4, 2014.

Lande, R. H., *The Microsoft-Yahoo Merger: Yes, Privacy is an Antitrust Concern*. FTC: Watch, No. 714, University of Baltimore School of Law Legal Studies Research Paper No. 2008-06, 2008.

Lerner, A. V., *The Role of 'Big Data' in Online Platform Competition*, 26 August 2014.

Lipsey, R. G. and Lancaster, K., *The General Theory of Second Best*, The Review of Economic Studies, Vol. 24, No. 1 (1956 - 1957).

Lynskey, O., *Considering Data Protection in Merger Control Proceedings*, OECD roundtable, Non-price Effects of Mergers, 1st June 2018.

Marco Colino, S., *The Antitrust F Word: Fairness Considerations in Competition Law*, Journal of Business Law, Forthcoming ; The Chinese University of Hong Kong Faculty of Law Research Paper No. 2018-09, 7 September 2018.

McDonald, A. M. and Cranor, L. F., *The Cost of Reading Privacy Policies*, 2008.

Newman, J. M., *Antitrust in Zero-Price Markets: Foundations*, July 2014.

Ocello, E. et al, *What's Up with Merger Control in the Digital Sector? Lessons from the Facebook/WhatsApp EU Merger Case*, Competition merger brief 1/2015 – Article 1, February 2015.

Ohlhausen, M. K. and Okuliar, A., *Competition, Consumer Protection, and the Right (Approach) to Privacy*, Antitrust Law Journal, Forthcoming, February 2015.

Paccès, M. A. and Visscher, T. L., *Law and Economics – Methodology*, Bart van Klink and Sanne Taekema (Eds.), *Law and Method. Interdisciplinary research into Law* (Series Politika, nr 4), Tübingen: Mohr Siebeck, 2011.

Padilla, J. et al, *Antitrust Analysis Involving Intellectual Property and Standards: Implications from Economics*, *Harvard Journal of Law & Technology*, 2019 Forthcoming, 10 January 2019.

Pasquale, F. A., *Privacy, Antitrust, and Power*, *George Mason Law Review*, Vol. 20, No. 4, pp. 1009-1024, 2013.

Pigou, A. C., *The Economics of Welfare*, 1920.

Rochet, J-C. and Tirole, J., *Two-Sided Markets: A Progress Report*, *The RAND Journal of Economics*, vol. 35, n° 3, 2006.

Rochet, J. C. and Tirole, J., *Platform Competition in Two-Sided Markets*, *Journal of the European Economic Association*, vol. 1, n. 4, June 2003.

Rysman, M. *The Economics of Two-Sided Markets*, *Journal of Economic Perspectives*, 23(3), 2009.

Schrepel, T., *Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox*, *Georgetown Law Technology Review / 3 Geo. L. Tech. Rev.* 281 (2019), 11 June 2018.

Schumpeter, J. A., *Capitalism, Socialism and Democracy*, *New York : Harper & Brothers*, 1942.

Shampan'er, K. and Ariely, D., *How Small is Zero Price? The True Value of Free Products*, *Federal Reserve Bank of Boston Working Papers n°06-16*, October 2006.

Shapiro, C., *Competition and Innovation: Did Arrow Hit the Bull's Eye?*, A chapter in *The Rate and Direction of Inventive Activity Revisited*, *National Bureau of Economic Research, Inc*, 2011.

Stucke, M. E and Grunes, A. P., *Big Data and Competition policy*, Oxford University Press, 2016.

Stucke, M. E. and Ezrachi, A., *Competition Overdose How Free Market Mythology Transformed Us from Citizen Kings to Market Servants*, Harper business, 2020.

Swire, P. P., *Submitted Testimony to the Federal Trade Commission Behavioral Advertising Town Hall*, 18 October 2007.

Townley, C. et al, *Big Data and Personalised Price Discrimination in EU Competition Law*, King's College London Law School Research Paper No. 2017-38, 6 October 2017.

Tucker, D. S. and Wellford, H. B., *Big Mistakes Regarding Big Data*, the Antitrust Source, December 2014.

Varian, H. et al, *Digital challenges for competition policy* (contribution to the European Commission's call for contribution on "*shaping competition policy in the era of digitization*"), September 2018.

Wils, W., *The obligation for the competition authorities of the EU Member States to apply EU antitrust law and the Facebook decision of the Bundeskartellamt*, Concurrences Review N° 3-2019, Art. N° 91034, September 2019.

Wolfgang, K., *Digital Markets, Data, and Privacy: Competition Law, Consumer Law, and Data Protection*, April 2016, Gewerblicher Rechtsschutz und Urheberrecht. Internationaler Teil (GRUR Int) 2016, 639-647, 26 April 2016.

Wood, D. and Healy, M., *Information Exchange Europe Union*, GCR, 21 March 2018.

Zingales, N., *Between a Rock and Two Hard Places: WhatsApp at the Crossroad of Competition, Data Protection and Consumer Law*, Computer Law and Security Review (2017), 22 June 2017.

Zuiderveen Borgesius, F. and Poort, J., *Online Price Discrimination and EU Data Privacy Law*, Zuiderveen Borgesius, F.J. & Poort, J. J Consum Policy (2017), July 2017.

Reports

ACCC, *Digital Platforms Inquiry-final report*, 26 July 2019.

ACCO, *The Data-Driven Economy. Challenges for Competition*, December 2016.

Adlc and BKartA, *algorithms and competition*, 6 November 2019.

Adlc and BKartA, *Competition Law and Data*, 10 May 2016.

Adlc, *Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector*, 6 March 2018.

Adlc, *The Autorité de la concurrence's contribution to the debate on competition policy and digital challenges*, 19 February 2020.

Argentesi, E. et al, *Ex-post Assessment of Merger Control Decisions in Digital Markets-Final report*, Document prepared by Lear for the Competition and Markets Authority, Lear, 9 May 2019.

Belgian Competition Authority, *Joint memorandum of the Belgian, Dutch and Luxembourg competition authorities on challenges faced by competition authorities in a digital world*, 10 October 2019.

BKartA and BWB, *Guidance on Transaction Value Thresholds for Mandatory Pre-merger Notification (Section 35 (1a) GWB and Section 9 (4) KartG)*, July 2018.

BKartA, *"Competition and Consumer Protection in the Digital Economy": Online advertising*, 1st February 2018.

BKartA, *Working Paper Market Power of Platforms and Networks*, June 2016.

CMA, *Appendix L: Potential approaches to improving personal data mobility*, 18 December 2019.

CMA, *Online platforms and digital advertising market study- Appendix E: The role of data*, 18 December 2019.

CMA, *Online platforms and digital advertising Market study-interim report*, 18 December 2019.

CMA, *Pricing algorithms-Economic working paper on the use of algorithms to facilitate collusion and personalised pricing*, 8 October 2018.

CMA, *The commercial use of consumer data Report on the CMA's call for information*, June 2015.

Competition Bureau, *Big data and Innovation: Implications for competition policy in Canada*, November 2017.

Crémer, J. et al, *Competition policy for the digital era*, April 2019.

EC, Competition policy brief, *Market Definition in a Globalized World*, issue 2015-12, March 2015.

EC, *report from the commission to the council and the european parliament, Final report on the E-commerce Sector Inquiry {SWD(2017) 154 final}*, 10 May 2017.

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

EP, *European Parliament resolution of 31 January 2019 on the Annual Report on Competition Policy (2018/2102(INI))*, 31 January 2019.

Facebook, *Facebook's observations on "Shaping competition policy in the era of digitization"*, 30 September 2018.

Forbrukerrådet, *Deceived by design-How tech companies use dark patterns to discourage us from exercising our rights to privacy*, 27 June 2018.

Furman, J. et al, *Unlocking digital competition Report of the Digital Competition Expert Panel*, Mars 2019.

G7 Competition Authorities, *Common Understanding of G7 Competition Authorities on "Competition and the Digital Economy"*, 5 June 2019.

House of Lords, *Online Platforms and the Digital Single Market*, 20 April 2016.

IBM, *10 Key Marketing Trends for 2017*, 2017.

ICN, *Recommended Practices for Merger Notification and Review Procedures*, 12 September 2018.

Ivaldi, M. et al, Final Report for DG Competition, European Commission, *The Economics of Tacit Collusion*, March 2013.

Lianos, I. et al, *Digital Era Competition: A BRICS View-Report by the BRICS Competition Law and Policy Centre*, 2019.

Morton, F. S. et al, *Stigler Committee on Digital Platforms-Final Report*, September 2019.

OECD, *Algorithmic Collusion: Problems and Counter-Measures - Note by A. Ezrachi & M. E. Stucke*, Roundtable on Algorithms and Collusion, 31 May 2017.

OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 2017.

OECD, *Big data: Bringing competition policy to the digital era-Background paper by the Secretariat*, 27 October 2016.

OECD, *Big Data: Bringing competition policy to the digital era-Note by Annabelle Gawer*, 16 December 2016.

OECD, *Big data: Bringing competition policy to the digital era-OECD Competition Division-November 2016 OECD discussion*, 23 March 2017.

OECD, *Blockchain Technology and Competition Policy-Issues paper by the Secretariat*, 26 April 2018.

OECD, *Conference on Competition and the Digital Economy, Co-chairs' summary*, 3 June 2019.

OECD, *Considering non-price effects in merger control-Background note by the Secretariat*, 4 May 2018.

OECD, *Data-Driven Innovation: Big Data for Growth and Well-Being*, 6 October 2016.

OECD, *Executive Summary of The Roundtable on Jurisdictional Nexus in Merger Control Regimes*, 7 November 2016.

OECD, *Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value*, 2 April 2013.

OECD, *Glossary of Industrial Organisation Economics and Competition Law*, 1993.

OECD, *Information Exchanges between Competitors under Competition Law*, 2010.

OECD, *Lines of Business Restrictions – Background note By the Secretariat*, 4 May 2020.

OECD, *Local Nexus and Jurisdictional Thresholds in Merger Control-Background Paper by the Secretariat*, 27 July 2016.

OECD, *Market definition in multi-sided markets - Note by Sebastian Wismer & Arno Rasek*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets, 21-23 June 2017.

OECD, *Market Definition*, 2012.

OECD, *Measuring market power in multi-sided markets - Note by Kate Collyer, Hugh Mullan and Natalie Timan*, Hearing on Re-thinking the use of traditional antitrust enforcement tools in multi-sided markets 21-23 June 2017, 15 November 2017.

OECD, *Non-price Effects of Mergers - Note by the European Union*, 6 June 2018.

OECD, *Personalised Pricing in the Digital Era – Note by the European Union*, 23 November 2018.

OECD, *Personalised Pricing in the Digital Era Background Note by the Secretariat*, 20 November 2018.

OECD, *Policy Roundtables on ex officio cartel investigations and the use of screens to detect cartels*, 2013.

OECD, *Price discrimination-Background note by the Secretariat*, 13 October 2016.

OECD, *Quality considerations in digital zero-price markets-Background note by the Secretariat*, 9 October 2018.

OECD, *Quality considerations in the zero-price economy – Note by Germany*, 23 November 2018.

OECD, *Quality considerations in the zero-price economy-Note by the European Union*, 23 November 2018.

OECD, *Quality considerations in the zero-price economy-Note by the United Kingdom*, 14 November 2018.

OECD, *Remedies in Merger Cases*, 2011.

OECD, *The digital economy*, February 2013.

OECD, *The regulation of personalised pricing in the digital era-Note by Marc Bourreau and Alexandre de Stree*, 21 November 2018.

OECD, *The Role and Measurement of Quality in Competition Analysis*, 2013.

OECD, *Workshop on cartel screening in the digital era*, 30 January 2018.

OFT, *Online Targeting of Advertising and Prices-A market study*, May 2010.

OFT, *Personalised Pricing Increasing Transparency To Improve Trust*, May 2013.

PwC, *The 2018 Global Innovation 1000 study*.

Schallbruch et al, *A new competition framework for the digital economy*, Report by the Commission 'Competition Law 4.0', September 2019.

Schweitzer, H. et al, *Modernising the law on abuse of market power*, Report for the Federal Ministry for Economic Affairs and Energy, September 2018.

Special Eurobarometer 503, *Attitudes towards the impact of digitalisation on daily lives*, March 2020.

Trésor-éco, *Plateformes numériques et concurrence*, N° 250, November 2019.

Zingales, L. and Maria Lancieri, F., *Stigler Committee on Digital Platforms Policy Brief*, September 2019.

Speeches

ACCC, Speech, Rod Sims, *Gilbert & Tobin seminar: the data economy*, 15 October 2018.

ACCC, Speech, *The ACCC's approach to colluding robots*, 16 November 2017.

DOJ, Speech, Makan Delrahim, *"Blind[ing] Me With Science"*: Antitrust, Data, and Digital Markets*, Challenges to Antitrust in a Changing Economy Harvard Law School, 8 November 2019.

EC, Speech, Johannes Laitenberger, *Accuracy and administrability go hand in hand*, CRA Conference, Brussels, 12 December 2017.

EC, Speech, Johannes Laitenberger, *Competition enforcement in digital markets: using our tools well and a look at the future*, 14th Annual Conference of the GCLC "Remedies in EU Competition Law: Substance, Process & Policy", Brussels, 31 January 2019.

EC, Speech, Johannes Laitenberger, *Enforcing EU competition law-recent developments and a glance to the future*, CMS EU Competition Conference, Brussels, 19 October 2017.

EC, Speech, Johannes Laitenberger, *EU competition law in innovation and digital markets: fairness and the consumer welfare perspective*, MLex / Hogan Lovells event, Brussels, 10 October 2017.

EC, Speech, Johannes Laitenberger, *Le numérique et la concurrence dans une économie et une société en transformation*, Colloque de l'Autorité de la concurrence, Paris, 24 November 2017.

EC, Speech, Johannes Laitenberger, *Level and open markets are good for business*, AMCHAM-EU 34th Annual Competition Policy Conference, Brussels, 27 October 2017.

EC, Speech, Margrethe Vestager, *Algorithms and competition*, Bundeskartellamt 18th Conference on Competition, Berlin, 16 March 2017.

EC, Speech, Margrethe Vestager, *Big Data and Competition*, EDPS-BEUC Conference on Big Data, Brussels, 29 September 2016.

EC, Speech, Margrethe Vestager, *Building a fairer digital world*, Web Summit, Lisbon, 7 November 2018.

EC, Speech, Margrethe Vestager, *Building a positive digital world*, Digital Summit, Dortmund, Germany, 29 October 2019.

EC, Speech, Margrethe Vestager, *Competition and fairness in a digital society*, AmCham EU 35th Competition Policy Conference, Brussels, 22 November 2018.

EC, Speech, Margrethe Vestager, *Competition in a big data world*, DLD 16, Munich, 17 January 2016.

EC, Speech, Margrethe Vestager, *Defining markets in a new age*, Chillin' Competition Conference, Brussels, 9 December 2019.

EC, Speech, Margrethe Vestager, *Global markets and a fair deal for consumers*, Conference of Nordic Competition Authorities, Bergen, 4 September 2019.

EC, Speech, Margrethe Vestager, *How competition can build trust in our societies*, TED Talk, New York, 20 September 2017.

EC, Speech, Margrethe Vestager, *Internets of the World Conference*, Copenhagen, 5 December 2019.

EC, Speech, Margrethe Vestager, *Privacy and competition in an age of data*, IAPP Europe Data Protection Congress, Brussels, 21 November 2019.

EC, Speech, Margrethe Vestager, *Refining the EU merger control system*, Studienvereinigung Kartellrecht, Brussels, 10 March 2016.

The UK government, Speech, Theresa May, *PM speech opening London Tech Week*, 10 June 2019, 10 June 2019.

Press releases

ACCC, Press release, *ACCC welcomes comprehensive response to Digital Platforms Inquiry*, 12 December 2019.

ACCC, Press release, *New competition laws a protection against big data e-collusion*, 16 November 2017.

Adlc, *@Echelle event with Cédric O*, November 2019.

Adlc, Press release, *Gas Market*, 9 September 2014.

Adlc, Press release, *Modernization and simplification of merger control*, 7 June 2018.

Adlc, Press release, *The Autorité creates a digital economy unit*, 9 January 2020.

Adlc, Press release, *The Autorité de la concurrence announces its priorities for 2019*, 11 January 2019.

Adlc, Press release, *The Autorité de la concurrence announces its priorities for 2020*, 9 January 2020.

Adlc, *Reform of merger law and ex-post control*.

AGCM, Press release, *A528 - Amazon: investigation launched on possible abuse of a dominant position in online marketplaces and logistic services*, 16 April 2019.

AGCM, Press release, *Facebook fined 10 million Euros by the ICA for unfair commercial practices for using its subscribers' data for commercial purposes*, 7 December 2018.

AGCM, Press release, *Fact-finding Survey on Big Data*, 8 June 2018.

AGCM, Press release, *Sanzione da 50 mila euro a Whatsapp per inottemperanza a obblighi informativi agli utenti*, 10 January 2018.

AGCM, Press release, *WhatsApp fined for 3 million euro for having forced its users to share their personal data with Facebook*, 12 May 2017.

Android, Press release, *About the choice screen*.

BKartA, *Background information on the Facebook proceeding*, 19 December 2017.

BKartA, Press release, *Bundeskartellamt initiates abuse proceeding against Amazon*, 29 November 2018.

BKartA, Press release, *Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules*, 2 March 2016.

BKartA, Press release, *Bundeskartellamt launches sector inquiry into market conditions in online advertising sector*, 1st February 2018.

BKartA, Press release, *Bundeskartellamt obtains far-reaching improvements in the terms of business for sellers on Amazon's online marketplaces*, 17 July 2019.

BKartA, Press release, *Bundeskartellamt prohibits Facebook from combining user data from different sources*, 7 February 2019.

BKartA, Press release, *Bundeskartellamt welcomes Economic Affairs Ministry's plans to modernise competition law*, 25 February 2020.

BKartA, Press release, *Preliminary assessment in Facebook proceeding: Facebook's collection and use of data from third-party sources is abusive*, 19 December 2017.

BKartA, Press release, *Proceeding against Deutsche Bahn AG - Bundeskartellamt examines possible anticompetitive impediment of mobility platforms*, 28 November 2019.

BWB, Press release, *Austrian Federal Competition Authority initiates investigation proceedings against Amazon*, 14 February 2019.

CMA, policy paper, *The CMA's Digital Markets Strategy*, 3 July 2019.

CMA, Press release, *CMA issues final decision in online cartel case*, 12 August 2016.

CMA, Press release, *CMA lifts the lid on digital giants*, 19 December 2019.

CMA, Press release, *CMA's new DaTA unit: exciting opportunities for data scientists*, 24 October 2018.

CMA, Press release, *Online seller admits breaking competition law*, 21 July 2016.

CNMC, Press release, *The CNMC is investigating potential anti-competitive practices in the real estate brokerage market*, 21 November 2019.

CNMC, Press release, *The CNMC launches a public consultation on online advertising in Spain*, 25 April 2019.

Competition Bureau, *Building Trust to Advance Competition in the Marketplace*, 30 May 2018.

Competition Bureau, Press release, *Facebook to pay \$9 million penalty to settle Competition Bureau concerns about misleading privacy claims*, 19 May 2020.

Danish Competition and Consumer Agency, Press release, *Konkurrence- og Forbrugerstyrelsen øger fokus på digitale platforme*, 1st May 2019.

DOJ, Press release, *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution*, 6 April 2015.

DOJ, Press release, *Justice Department and Bazaarvoice Inc. Agree on Remedy to Address Bazaarvoice's Illegal Acquisition of PowerReviews*, 24 April 2014.

DOJ, Press release, *Justice Department Reviewing the Practices of Market-Leading Online Platforms*, 23 July 2019.

EC, Press release, *Antitrust: Commission fines four consumer electronics manufacturers for fixing online resale prices*, 24 July 2018.

EC, Press release, *Antitrust: Commission fines Google €1.49 billion for abusive practices in online advertising*, 20 March 2019.

EC, Press release, *Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service*, 27 June 2017.

EC, Press release, *Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine*, 18 July 2018.

EC, Press release, *Antitrust: Commission opens investigation into possible anti-competitive conduct of Amazon*, 17 July 2019.

EC, Press release, *Mergers: Commission approves acquisition of LinkedIn by Microsoft, subject to conditions*, 6 December 2016.

EC, Press release, *Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover*, 18 May 2017.

EC, Press release, *Shaping Europe's digital future: Eurobarometer survey shows support for sustainability and data sharing*, 5 March 2020.

EC, Press release, *Shaping Europe's digital future: Commission presents strategies for data and Artificial Intelligence*, 19 February 2020.

FAS Russia, Press release, *FAS Russia Reaches Settlement with Google*, 17 April 2017.

French Ministry of Economic Affairs and Finance, Press release, *Bruno Le Maire et Cédric O lancent un groupe de travail dédié à la régulation des plateformes numériques au niveau européen*, 24 February 2020.

FTC, *Hearings on Competition and Consumer Protection in the 21st Century*.

FTC, Press release, *FTC Imposes \$5 Billion Penalty and Sweeping New Privacy Restrictions on Facebook*, 24 July 2019.

FTC, Press release, *FTC Notifies Facebook, WhatsApp of Privacy Obligations in Light of Proposed Acquisition*, 14 April 2014.

FTC, Press release, *FTC to Examine Past Acquisitions by Large Technology Companies*, 11 February 2020.

FTC, Press release, *FTC's Bureau of Competition Launches Task Force to Monitor Technology Markets*, 26 February 2019.

House Judiciary Committee, *Digital Markets Investigation*.

House Judiciary Committee, Press release, *House Judiciary Committee Launches Bipartisan Investigation into Competition in Digital Markets*, 3 June 2019.

Konkurrensverket, Press release, *Market study of digital platforms*, 11 November 2019.

Observatory on the Online Platform Economy, Press release, *European Commission launches online survey on the ranking transparency guidelines*, 18 November 2019.

The Finance and Economy Ministers of France, Germany and Poland, *Modernising EU Competition Policy*, July 2019.

The Finance and Economy Ministers of France, Germany, Italy and Poland, *letter to the Commissioner Executive Vice-President Margrethe Vestager*, Paris, 4 February 2020.

The UK government, Press release, *Digital markets taskforce: terms of reference*, 11 March 2020.

News

Adweek, *Facebook Reveals WhatsApp's Financial Results; Heavy Net Losses in 2013, First Half of 2014*, 28 October 2014.

Allthingsd, *Maps Are for Mobile What Search Is for the Web, Says Waze CEO Noam Bardin*, 26 April 2013.

Big Law Business, *Big Tech's Purchases of Startups Under Microscope, FTC Chief Says*, 26 September 2018.

Blomberg, *Instagram Is Estimated to Be Worth More than \$100 Billion*, 25 June 2018.

Business insider, *Regulating big tech has become a hot topic ahead of the 2020 election- here's where the Democratic candidates stand*, 14 November 2019.

Business Insider, *Snapchat Rejected A \$3 Billion All-Cash Offer From Facebook*, 13 November 2013.

CNBC, *Google is facing another EU antitrust probe-this time over its jobs search tool*, 28 August 2019.

Competition Policy International, *Australia: Murdoch's News Corp calls for breakup of Google*, 12 March 2019.

Competition Policy International, *CPI talks... with Thomas Kramler [DG Comp, head of the EU's Digital Single Market Task Force]*, 20 September 2018.

Competition Policy International, *EU To Contract €600,000 Study On Gatekeeping Power Of Digital Platforms*, 12 May 2020.

Competition Policy International, *EU: Facebook marketplace now under scrutiny*, 31 October 2019.

Competition Policy International, *EU: Facebook tells regulators 'data is complicated'*, 2 December 2019.

Competition Policy International, *EU: Spotify files antitrust complaint against Apple*, 13 March 2019.

Competition Policy International, *EU: Vestager considers toughening 'burden of proof' for Big Tech*, 30 October 2019.

Competition policy international, *France, Germany, Italy and Poland Urge Vestager To Form Path For EU Champions*, 6 February 2020.

Competition policy international, *Germany: Facebook succeeds in blocking German ban on data collection*, 26 August 2019.

Competition Policy international, *House Antitrust Subcommittee Chairman Wants To Learn From Past Merger Mistakes*, 2 February 2020.

Competition Policy International, *UK: Online platforms need new regulator says parliament report*, 12 March 2019.

Competition Policy International, *US: 47 AGs to probe Facebook for antitrust violations*, 22 October 2019.

Competition Policy International, *US: Bill Gates: Big Tech must be regulated now*, 25 June 2019.

Competition Policy International, *US: Delrahim says Big Tech probe focused on abuse of data*, 26 November 2019.

Competition Policy International, *US: Delrahim says breakup of Big Tech 'on the table'*, 22 October 2019.

Competition Policy International, *US: Facebook prefers more regulation over breakup*, 24 June 2019.

Competition Policy International, *US: FTC chair aims to resolve Big Tech antitrust probes this year*, 8 January 2020.

Competition Policy International, *US: FTC Chief says breaking up big tech is on the table*, 14 August 2019.

Competition Policy International, *US: Google target of new antitrust probe by state AGs*, 3 September 2019.

Competition Policy International, *Zuckerberg Urges Tighter Online Regulation*, 16 February 2020.

Crawford, S., *Calling Facebook a Utility Would Only Make Things Worse*, Wired, 20 April 2020.

Digiday UK, *Giovanni Buttarelli on state of GDPR adoption: "Even ticking a box does not necessarily mean consent is freely given"*, 12 April 2019.

Facebook, Newsroom, *Facebook to Acquire WhatsApp*, 19 February 2014.

Facebook, *Second Quarter 2018 Results Conference Call*, 25 July 2018.

Financial Times, *Which antitrust investigations should Big Tech worry about?*, 28 October 2019.

Forbes, *Google's Strategy Behind The \$3.2 Billion Acquisition Of Nest Labs*, 17 January 2014.

Forbes, *Here's What's Amazing About The Facebook Cambridge Analytica Story*, 27 March 2018.

Getting the Deal Through, *Austria Merger Control*.

Getting the Deal Through, *Ireland Merger Control*.

Global Competition Review, *DG Comp chief economist: Reverse burden of proof to catch killer acquisitions*, 20 November 2018.

Global Competition Review, *France considers mandatory merger notification for digital platforms*, 29 November 2019.

Global Competition Review, *Germany considers new rebuttable presumptions*, 20 March 2018.

Global Competition Review, *Vestager advisor: strong regulation is “unavoidable” for digital platforms*, 29 October 2018.

Google Official Blog, *Google Maps and Waze, outsmarting traffic together*, 11 June 2013.

Medium Business, Elizabeth Warren, *Here’s how we can break up Big Tech*, 8 March 2019.

Mlex, *Digital giants should show deals boost competition or face veto, EU's Valletti says*, 5 December 2018.

Mlex, *Digital markets tough and slow to police, EU's Valletti says*, 14 December 2018.

Mlex, *EU merger reviews could depend on transaction value as officials debate new criteria*, 14 September 2018.

Mlex, *EU privacy rules key to competition analyses, head of France's antitrust watchdog says*, 4 May 2018.

Mlex, *Facebook, Instagram clearance may have been 'naïve,' CMA boss says*, 7 September 2018.

Mlex, *Google's and other tech mergers have been under-enforced, EU's Valletti says*, 7 November 2018.

Mlex, *Tech and data antitrust challenges are being met by enforcers, French regulator says*, 20 November 2018.

Mlex, *Tech-market 'killer acquisitions' could prompt merger-rules rethink, Valletti says*, 20 November 2018.

NBC, *Schmidt on Antitrust: Competition is One Click Away*, 21 September 2019.

Quartz, *A Nobel-winning economist's guide to taming tech monopolies*, 27 June 2018.

Raue, *Competition law 4.0: draft bill for the 10th amendment to the ARC*, 28 January 2020.

Reuters, *EU antitrust regulators plan broad enquiry into tech sector*, 12 February 2020.

Reuters, *EU considers using algorithms to detect anti-competitive acts*, 4 May 2018.

Reuters, *Exclusive: EU antitrust regulators say they are investigating Google's data collection*, 30 November 2019.

Statista, *Instagram's Rise to 1 Billion*, 21 June 2018.

Statista, *Number of daily active Snapchat users from 1st quarter 2014 to 3rd quarter 2017 (in millions)*.

Statista, *Number of internet of things (IoT) connected devices worldwide in 2018, 2025 and 2030 (in billions)*.

Statista, *Number of monthly active Facebook users worldwide as of 3rd quarter 2019 (in millions)*.

Statista, *Number of monthly active Facebook users worldwide as of 2nd quarter 2018 (in millions)*.

Statista, *Number of monthly active Instagram users from January 2013 to June 2018 (in millions)*.

Statista, *Number of monthly active WhatsApp users worldwide from April 2013 to July 2017 (in millions)*.

Statista, *The 100 largest companies in the world by market value in 2019 (in billion U.S. dollars)*.

Techcrunch, *Don't break up big tech-regulate data access, says EU antitrust chief*, 11 March 2019.

The Economist, *The world's most valuable resource is no longer oil, but data*, 6 May 2018.

The Guardian, *Facebook: 10 years of social networking, in numbers*, 4 February 2014.

The Guardian, *Google Home review: the smart speaker that answers almost any question*, 10 May 2017.

The New York Times, *Elizabeth Warren Proposes Breaking Up Tech Giants Like Amazon and Facebook*, 8 March 2019.

The New York Times, *Facebook and Cambridge Analytica: What You Need to Know as Fallout Widens*, 19 March 2018.

The New York Times, *Relaxing Privacy Vow, WhatsApp Will Share Some Data with Facebook*, 25 August 2016.

The New York Times, *Snapchat's New Test: Grow Like Facebook, Without the Baggage*, 15 November 2017.

The Sun, *Facebook is putting ADVERTS in WhatsApp next year – against app founders' wishes*, 1st October 2018.

The Verge, *Facebook launches stories to complete its all-out assault on Snapchat*, 28 March 2017.

Cases

European cases

AT.39740-*Google Search (Shopping)*, 27 June 2017.

AT.40099-*Google Android*, 18 July 2018.

Case 322/81-*NV Nederlandsche Banden Industrie Michelin v Commission of the European Communities*, ECLI:EU:C:1983:313, 9 November 1983.

Case 6/72-*Europemballage and Continental Can v Commission*, ECLI:EU:C:1973:22, 21 February 1973.

Case 85/76-*Hoffmann-La Roche & Co. AG v Commission of the European Communities*, ECLI:EU:C:1979:36, 13 February 1979.

Case C-18/93-*Corsica Ferries Italia Srl contre Corpo dei piloti del porto di Genova*, ECLI:EU:C:1994:195, 17 May 1994.

Case C-238/05-*Asnef-Equifax, Servicios de Información sobre Solvencia y Crédito, SL v Asociación de Usuarios de Servicios Bancarios (Ausbanc)*, ECLI:EU:C:2006:734, 23 November 2006.

Case C-27/76-*United Brands v Commission*, ECLI:EU:C:1978:22, 14 February 1978.

Case C-418/01-*IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG ("IMS Health")*, ECLI:EU:C:2004:257, 29 April 2004.

Case C-525/16-*MEO-Serviços de Comunicações e Multimédia SA v Autoridade da Concorrência*, ECLI:EU:C:2018:270, 19 April 2018.

Case C-62/86-*Akzo v Commission*, EU:C:1991:286, 3 July 1991.

Case C-74/14-*"Eturas" UAB and Others v Lietuvos Respublikos konkurencijos taryba*, ECLI:EU:C:2016:42, 21 January 2016.

Case C-8/08-*T-Mobile Netherlands BV and Others v Raad van bestuur van de Nederlandse Mededingingsautoriteit*, ECLI:EU:C:2009:343, 4 June 2009.

Case T-336/07-*Telefónica SA v Commission*, EU:T:2012:172, 29 March 2012.

Case T-342/07-*Ryanair Holdings plc v European Commission*, ECLI:EU:T:2010:280, 6 July 2010.

Case T-79/12-*Cisco systems and Messagenet v. Commission*, ECLI:EU:T:2013:635, 11 December 2013.

Case T-321/05-*AstraZeneca v Commission*, ECLI:EU:T:2010:266 [2010], 1st July 2010.

COMP/C-1/36.915-*Deutsche Post AG*, 25 July 2001.

COMP/C-3/39.530-*Microsoft (tying)*, 16 December 2009.

COMP/M.2876 -*Newscorp/Telepiuin*, 2 April 2003.

COMP/M.4439-*Ryanair/Aer Lingus*, 27 June 2007.

COMP/M.4731-*Google/DoubleClick*, 11 March 2008.

COMP/M.4854-*TomTom/Tele Atlas*, 14 May 2008.

COMP/M.5727-*Microsoft/Yahoo! Search Business*, 18 February 2010.

COMP/M.5830-*Olympic/Aegean Airlines*, 26 January 2011.

COMP/M.6166 -*Deutsche Börse/NYSE Euronext*, 1st February 2012.

COMP/M.6281-*Microsoft/Skype*, 7 October 2011.

COMP/M.6314-Telefonica UK/Vodafone UK/Everything Everywhere/JV, 4 September 2012.

COMP/M.7217-Facebook/WhatsApp, 3 October 2014.

Joined cases C-241/91 P and C-242/91 P, *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission of the European Communities (“Magill”)*, ECLI:EU:C:1995:98, 6 April 1995.

M.7813-Sanofi/Google/DMI JV, 23 February 2016.

M.8124-Microsoft/LinkedIn, 6 December 2016.

M.8180-Verizon/Yahoo!, 21 December 2016.

M.8788-Apple/ Shazam, 6 September 2018.

French cases

Adlc, *Décision n° 14-MC-02 du 9 septembre 2014 relative à une demande de mesures conservatoires présentée par la société Direct Energie dans les secteurs du gaz et de l’électricité*, 9 September 2014.

German cases

B6-22/16-Facebook, 6 February 2019.

Case Summary B6-22/16, 15 February 2019.

OLG Düsseldorf, *Case VI-Kart 1/14 (V)*, 9 January 2015.

OLG Düsseldorf, *Case VI-Kart 1/19 (V)*, 26 August 2019.

UK cases

ME/5525/12-*Anticipated acquisition by Facebook Inc of Instagram Inc*, 14 August 2012.

ME/6167/13-Completed acquisition by Motorola Mobility Holding (Google, Inc.) of Waze Mobile Limited, 17 December 2013.

US cases

Google Inc.; Nest Labs, Inc, FTC, early termination notice 20140457, 4 February 2014.

United States District Court Northern District of California, *Kinderstart.com, LLC v. Google, Inc.*, 16 March 2007.

United States District Court Northern District of California, *United States of America v. Bazaarvoice, Inc.*, Case n°13-cv-00133-WHO, 8 January 2014.

Legislations

European Legislations

Charter of fundamental rights of the European Union (2012/c 326/02), 26 October 2012.

Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *Shaping Europe's digital future*, 19 February 2020.

Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions, *A European strategy for data*, 19 February 2020.

Communication from the commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions, *A New Industrial Strategy for Europe*, 10 March 2020.

Directive (EU) 2015/2366 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC, 25 November 2015.

Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules, 18 December 2019.

EC, *Best practices on merger control proceedings*, 20 January 2004.

EC, *Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (2008/C 267/01)*, 22 October 2008.

EC, *commission notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03)*, 9 December 1997.

EC, Commission regulation (EU) No 1217/2010 of 14 December 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to certain categories of research and development agreements, 18 December 2010.

EC, Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices, 23 April 2010.

EC, Commission staff working document Guidance on sharing private sector data in the European data economy-Accompanying the document Communication from the Commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the Regions "Towards a common European data space" SWD/2018/125 final, 25 April 2018.

EC, 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, 4 January 2003.

EC, Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation).

EC, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 24 February 2009.

EC, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, 14 January 2011.

EC, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03), 5 February 2004.

EC, Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07), 18 October 2008.

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on

the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) (GDPR), 4 May 2016.

Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services, 11 July 2019.

French legislations

Assemblée nationale, *proposition de loi visant à garantir le libre choix du consommateur dans le cyberspace*, 10 October 2019.

German legislations

Act against Restraints of Competition (Competition Act – GWB).

Referentenentwurf des Bundesministeriums für Wirtschaft und Energie, Entwurf eines Zehnten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen für ein fokussiertes, proaktives und digitales Wettbewerbsrecht 4.0 (GWB-Digitalisierungsgesetz), 24 January 2020.

US legislations

U.S. Horizontal Merger Guidelines, 19 August 2010.

Annex

Summary of recommendations

Recommendation chapter 1. A: The Commission must review its Commission Notice on the definition of relevant market.

Recommendation 1: In multi-sided markets, market definition must take into account:

- Each side of the market
- The demand interdependencies (indirect network effects and feedback effects)
- The competitive pressures on each side of the market
- The type of market (transaction/non-transaction markets; matching/audience providing platforms)
- The role of single or multi-homing

Recommendation 2: In multi-sided markets when one side is free, competition authorities have to:

- Define a market for free product
- Focus on non-price parameters of competition such as quality (including privacy), choice and innovation instead of price parameters

Recommendation 3: Market definition must be viewed in terms of innovation-driven competitive pressure.

Recommendation 4: Competition authorities must forgo the geographic market and instead focus directly on the competitive effects at the global level on consumers and competition.

Recommendation 5: To determine the relevant market in the absence of price and where privacy is an important non-price parameter of competition, competition authorities should use the Small, but Significant, Non-transitory Decrease in Privacy Protection (SSNDPP) test. It is defined as a small, but significant, non-transitory decrease in privacy protection due to the introduction of new terms that are salient and objective for both sides of the market

that reduces significantly, between 25% and 50%, the number of daily (or monthly) active users of both sides for another similar product in a short period of time (one month).

Recommendation 6: Competition authorities must rely more on qualitative methods (surveys and experiments) especially when quantitative methods are not practicable.

Recommendation chapter 1. B: The Commission must update its approach to the market power.

Recommendation 7: In multi-sided markets, market power must consider:

- Each side of the market
- The demand interdependencies (indirect network effects and feedback effects)

Recommendation 8: In the data-driven economy, price is not a reliable indicator of market power. Market power should be computed by shares of control over data.

Recommendation 9: In the digital economy, high market shares may turn out to be ephemeral and thus are not necessarily indicative of market power. Therefore, the market share is not the most relevant factor. Hence, competition authorities have to take into account, on a case-by-case basis, a list of key features relevant to market power in data-driven markets.

Recommendation 10: In assessing the market power, the Commission shall take into account the following features:

- Network effects and data-driven network effects
- Access to competitively relevant data
- Data aggregation
- Shares of control over data
- Single-homing and multi-homing
- Switching costs
- Entry costs and Investment costs
- Economies of scale
- Economies of scope

- The role of velocity
- The role of innovation and dynamic competition
- Legal barriers

Recommendation 11: Where (i) the market shows signs of an established stable hierarchy instead of signs of marked instability during the period at issue; and (ii) a reliable indicator is able to reflect a business' market position in line with market conditions, the Commission should compute market shares on the basis of daily (DAU) or monthly (MAU) active users.

Recommendation 12: Competition authorities should use the Control Over Data Competition (CODC) test when the previous conditions are not fulfilled. The share of control is computed by the scale and scope of data owned by the firm under investigation over the total scale and scope of data in the market.

Recommendation chapter 2. A: To properly assess data-driven antitrust and merger practices, competition authorities must refine their analytical tools.

Recommendation 13: In any data-driven antitrust and merger practices, privacy issues must be analyzed as data imply necessarily privacy and data protection concerns.

Recommendation 14: In data-driven antitrust practices, competition authorities shall use data protection law as a relevant benchmark.

Recommendation 15: In merger cases, competition authorities must analyze potential data concentration to the extent that is likely to strengthen the merged entity's market position in all sides of the market, and analyze potential data concentration to the extent that is likely to leverage the merged entity's market position from one market into another market.

In antitrust cases, agencies must analyze data to the extent that is likely to impede rivals to compete and enter into the market.

Recommendation 16: Competition authorities must review the effect of the potential data concentration to the extent that it is likely to decrease the quality of the product (including privacy) and the consumer choice.

Recommendation 17: the notion of tacit collusion must be revised to address competition concerns related to algorithmic tacit collusion.

Recommendation 18: To detect and prevent algorithmic tacit collusion, competition authorities should use algorithms. In addition, they must audit the data used to train the algorithms.

Recommendation 19: In merger control, a rebuttable presumption against dominant firms must be introduced. The notifying party shall demonstrate that the merger is not likely to significantly impede effective competition and to eliminate a credible competitor in the future.

Recommendation 20: Where privacy is an important non-price parameter of competition and where the merger poses privacy concerns, the deal must be cleared under conditions that consumers must consent explicitly to any changes of privacy policy, and that, in the absence of consent, they will remain free to use the service.

Recommendation chapter 2. B: To review pre-emptive acquisitions, a reform of the merger control notification thresholds is needed.

Recommendation 21: Merger control notification thresholds must be updated. It should be considered:

- Mandatory notification of certain mergers and acquisitions in a specific sector; or
- The introduction of a new criterion based on the number of users or customer base (“the user-based threshold”); or
- Mandatory notification for dominant companies.

Recommendation chapter 3. A: As the digital economy is highly concentrated, a regulation is needed.

Recommendation 22: To ensure a global response, a World Digital Organization (WDO) has to be created.

Recommendation 23: The WDO will ensure a coherent digital economy landscape through WDO agreements and a participative pro-competitive code of conduct subject to three principles: efficient competition; fair competition; and transparency and choice.

Recommendation 24: The participative pro-competitive code of conduct shall include the following rules:

- Privacy standards terms and conditions
- Common metrics on the value of data
- A single personal online identity
- Fair, reasonable and non-discriminatory terms and conditions
- Access to data by business users

Recommendation 25: Data interoperability, interoperability and data openness are required subject to the respect of data protection laws and intellectual property rights.

Recommendation 26: Competition, consumer protection and data protection authorities must closely collaborate together as they share the same concerns in the digital economy.

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Résumé/Abstract

Cette thèse aborde les enjeux du Big Data en droit de la concurrence en trois chapitres. Le chapitre un propose de nouveaux outils économiques pour définir le marché pertinent et le pouvoir de marché dans l'économie axée sur les données. Il soutient la nécessité de réformer le marché pertinent et le pouvoir de marché en considérant de nouveaux outils et un ensemble de facteurs à prendre en compte pour le pouvoir de marché. Le chapitre deux propose de nouvelles analyses économiques et juridiques pour des fusions et pratiques anticoncurrentielles axées sur les données. Il étudie les sujets de premiers plans relatifs à l'intégration de la vie privée dans l'évaluation des fusions et pratiques antitrust, les ententes par algorithmes et les fusions préventives. Il soutient la nécessité d'intégrer la vie privée dans toutes les affaires de fusions et de pratiques anticoncurrentielles liées aux données puisque les données impliquent nécessairement des questions relatives à la vie privée et à la protection des données. Finalement, le chapitre trois propose de réguler l'économie numérique. Il démontre que l'économie est très concentrée et que les marchés ne peuvent pas corriger par eux-mêmes les défaillances du marché. Il analyse les recommandations émanant des rapports commissionnés par les gouvernements (Furman et al, Crémer et al, Schallbruch et al, ACCC report et Stigler report) et il discute et envisage d'autres propositions originales.

Mots-clés : Big Data, économie des données, économie numérique, plateformes en ligne, droit de la concurrence, économie de la concurrence, régulation, antitrust, fusion, entente, entente par algorithmes, GAFAM, économie du gratuit, économie de la vie privée, protection des données

This thesis addresses Big Data issues in competition law in three chapters. Chapter one proposes new economic tools to define the relevant market and the market power in the data-driven economy. It argues the need to reform the relevant market and the market power by considering new tools and a menu of key features relevant to the market power. Chapter two proposes new law and economics analysis for data-driven antitrust and merger practices. It considers debated topics related to the integration of privacy in the assessment of antitrust and merger practices, algorithmic collusion and pre-emptive mergers. It argues the need to integrate privacy in any data-driven antitrust and merger practices as data imply necessarily privacy and data protection issues. Finally, chapter three proposes to regulate the digital economy. It demonstrates that the economy is highly concentrated and that the markets cannot correct themselves market failures. It analyzes recommendations from the government reports (Furman et al, Crémer et al, Schallbruch et al, ACCC report, and Stigler report) and It proposes and discusses other original proposals.

Keywords: Big Data, data economics, digital economy, online platforms, competition law, competition economics, regulation, antitrust, merger, collusion, algorithmic collusion, GAFAM, economics of free, economics of privacy, data protection