The application of EU antitrust law to (dominant) online platforms

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1 Introduction

1.1 General introduction

An introduction to the subject of this dissertation should perhaps best start with the process that led to the current focus on online platforms in the context of competition policy both in and out the EU. This process can be said to have commenced, or in any case intensified with, the rollout of high-speed internet and the advancements made in the production of more efficient and powerful semiconductors in the early 2000's. These developments significantly increased the potential of personal computers that were becoming an accessible commodity among consumers. This combination enabled the creation of more advanced digital products and services as well as the *digitization* of existing real world services and products across all sectors of the economy. Some of these changes can be said to have significantly changed many aspects of our daily life.

Online communication services quickly upgraded from simple email exchanges to direct messaging programs that later led to the launch of mainstream video chat and conferencing software. Newspapers introduced web-based versions of their printed products and as online readership grew, such versions often became the main form of news consumption, causing some to abandon traditional print altogether and focus on the web-based part of the business.[1] The music industry saw the decline in demand for physical formats such as CDs with the arrival of fully digital formats that could be sold and exchanged via downloads, which in turn had to make way for online streaming services.[2] Similarly, retail commerce witnessed an unstoppable shift to the online sphere, which gave birth to the ever-expanding e-commerce sector.[3] Comparable trends were also observed in the travel sector where the rise of online travel agents has significantly changed its character and scope by extending to all the corners of the world

1 See e.g. Neil Thurman and Richard Fletcher, 'are newspapers heading toward post-print obscurity?' (2018) 6(18) Digital Journalism 1003.

2 See e.g. Steve Knopper, 'The end of owning music: How Cd's and Downloads Died' (RollingStone, 14 Jun. 2018) <https://www.rollingstone.com/pro/news/the-end-of-owning-music-how-cds-and-downloads-died-628660/> accessed 21 Mar. 2021.

3 The proportion of online retail sales grew from approx. 5% in 2015 to approx. 20% in 2021. See figures by Statista at <https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/> accessed 21 Mar. 2021.

while making travel planning increasingly accessible for consumers.[4] Alongside these developments social media channels made their debut and have been connecting an increasing number of users around the world ever since.[5]

These developments were further amplified by the advancement of mobile technologies and mobile internet connectivity networks that led to the emergence of smartphones and tablets. This new generation of interconnected computing devices increased the accessibility of consumers and commercial parties to what we currently refer to as the digital economy. The most visible winners of these developments were today's prominent tech companies that launched their respective online platforms in the course of this evolutionary process.[6]

When observing the various market figures and studies on the digital economy one can only conclude that these developments were received with tremendous enthusiasm. The market leaders in these new digital markets witnessed unprecedented market growth and valuations. In the early 2000's, Microsoft and IBM were the only two major technology companies who belonged to the world's largest companies. By 2020 the majority of the top 10 largest companies (based on market cap) consists of the big tech companies behind today's most prominent online platforms.[7] However, despite the phenomenal achievements of these actors and the overall satisfaction with their products and services their unyielding pursuit of constant growth and evolution is gradually fueling growing concerns with regard to their increasing market power and dependence of third parties on their services.

Now, nearly two decades after the above mentioned developments commenced, the euphoric image of digital markets and their principal players started showing its first visible cracks. The fast paced innovation wave brought by big tech companies appears to be primarily self-serving

4 See e.g. Altexsoft, 'History of Flight booking: CRSs, GDS Distribution, Travel Agencies, and Online Reservations' (Altexsoft, 12 Apr. 2019) <https://www.altexsoft.com/blog/travel/history-of-flight-booking-crss-gds-distribution-travel-agencies-and-online-reservations/>; Kevin May, "how 25 years of the Web inspired the travel revolution' (The Guardian, 12 Mar. 2014) < https://www.theguardian.com/travel/2014/mar/12/how-25-years-of-the-web-inspired-travel-revolution> accessed 21 Mar. 2021.

5 Saqib Shah, 'The History of social networking' (Digital Trends, 14 May 2016) <https://www.digitaltrends.com/features/the-history-of-social-networking/> accessed 21 Mar. 2021.

6 E.g. Booking.com launched in 1996, Amazon marketplace launched in 2000, LinkedIn launched in 2003, Facebook launched in 2004, Twitter launched in 2006, Google Android and Apple iOS together with their respective app stores in 2008, Uber launched in 2009 and Instagram launched in 2010.

7 See data on this by Statista at <https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-capitalization/> accessed 25 Mar. 2021.

when observed carefully. Consumers who were once thought to benefit most from the development of such companies are increasingly perceived as part of the service sold to the highest bidder.[8] The aggregation and analysis of big data which was once identified as a vehicle for innovation is now perceived with apprehension by both privacy and competition law experts.[9] The dynamic nature of competition which was once associated with digital markets is now called into question. The intense process of competition and the relative frequent displacement or replacement of leading tech enterprises by small innovative companies appears to be a thing of the past.[10] The dust of such battles seems to have settled long ago and the tales of memorable victories such as the replacement of IBM by Microsoft, MySpace by Facebook, and Yahoo by Google start losing their value as evidence of the fast changing character of digital markets. The victors of the past decade have managed to successfully withstand any attempts to dethrone them as market leaders and even extend their presence across multiple corners of the digital market. Their valuation in capital markets have surpassed most market leaders across the entire spectrum of the economy and continues to reach new heights which have yet to be seen.[11]

Against the backdrop of this shifting view of tech giants and online platforms, competition law was pushed to the forefront of this debate and presented as the panacea to all the competitive and market power concerns that such actors bring. In practice, however, the law is not self-executing and requires a significant degree of consideration when applied to novel situations and actors. Therefore, despite the growing calls for competition law interventions, the European Commission, as well as national competition authorities (NCAs) around the world, did not rush to open investigations against tech giants. In fact, at the time when this project commenced the only major case against a tech giant was that of Microsoft, which at the time was not considered to constitute part of the growing concerns involving digital markets. Rather than direct action, the first step concerning the application of competition policy in digital markets entailed an extensive study of digital markets and online platforms as their main actors. Such studies

8 See e.g. Tim Wu, *The attention merchants* (Alfred A. Knofpt, 2016).

9 Stigler Center for the study of the economy and state, ' Stigler Committee on Digital Platforms (2019), at 10-13, 44-61 < https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> [hereinafter Stigler report] accessed 17 Feb. 2021; Jaques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, ' European Commission- Competition Policy for the Digital Era (2019), at 24-28 < https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> [hereinafter Expert report] accessed 17 Feb. 2021

10 Expert report *supra* (n 9) at 12-15.

11 Apple was the first company to ever cross the 1 trillion dollar market cap in 2018 which it managed to double by 2020. See e.g. Jessica Bursztynsky, 'Apple becomes first U.S company to reach a $2 trillion market cap' (CNBC Tech, 19 Aug. 2020) <https://www.cnbc.com/2020/08/19/apple-reaches-2-trillion-market-cap.html> accessed 6 May 2021.

showed that while significant competitive concerns may arise in such a context, the application of (EU) competition law would be challenging. The challenges identified relate predominantly to the distinctive commercial reality of online platforms and the digital markets in which they are active.

The source of this special commercial reality was found to derive greatly from the distinguishing characteristics of online platforms. These characteristics, originating from economic research on two and multisided markets or platforms, were found to have implications for the application of competition policy.[12] In the OECD roundtable on two sided platforms, of 2009, where this topic was discussed in a global setting for the first time, three fundamental attributes of platforms were addressed in the context of competition policy. These attributes, which remain principal in the current debate on the application of competition policy to online platforms a decade later, are the following:

1. Platforms inherently serve at least two separate groups of customers. Such groups need to interact with each other in some way and rely on the platform to facilitate this. The platform meets the demand of such customers by providing them with one or more products or services simultaneously.

For example, (online or offline) payment platforms provide merchants and consumers with a payment processing service that allows them to offer and acquire services and products.

2. Platforms display indirect network effects across their customer groups. This means that the value of the platform for members of one customer group increases with the number of members of another customer group served by the platform. The strength of such effects then determines whether and to what extent this platform attribute will have an impact on the legal and economic analysis of the platforms' behavior.

In the case of a payment platform, such as PayPal, the presence of indirect network effects means the more merchants accept the respective platform the more appealing such platform will become for consumers (and vice versa).

3. Platforms have a non-neutral price structure. This means that a platform can affect the volume of the services that is obtained by its customers through charging its customer groups different prices for the service(s) it provides to such customers simultaneously.

12 OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at 24; Julian Wright,'One-Sided Logic in Two-Sided Markets '(2003). AEI-Brookings Joint Center Working Paper No. 03-10 < https://ssrn.com/abstract=459362> accessed 8 Mar. 2021.

In the case of a payment platform, the platform can choose for example to impose a transaction fee of 0.5% from both consumers and merchants using the platform or alternatively charge the sum of both fees from the merchants alone. The profit per transaction will be identical in both cases, however, the manner in which the platform fees are divided between its customer groups will impact the number of transactions for which the platform is used.

These three attributes were found to impact the commercial reality of (online) platforms significantly. Accordingly, they were found to affect the manner in which platforms maximize their profits, price their services, compete with other platform and non-platform undertakings as well as create a tendency for concentration in the markets in which platforms operate.[13] These circumstances in turn were found to have meaningful implications for the legal and economic analysis performed in the application process of competition policy.[14] Over time, similar studies were also performed by the European Commission and various NCAs within the EU and outside of it.[15] Such studies echoed almost unanimously a myriad of challenges posed by platforms, later specifically addressed as online platforms, for competition policy. The challenges mentioned concerned almost all corners of the legal framework of competition law. Such challenges included the definition of relevant market(s), the assessment of market power, the assessment of anti-competitive pricing, the assessment of exclusionary non-pricing practices and the assessment of coordination or collusion in platform markets.[16] Nevertheless, overtime it became evident that the primary concerns raised by platforms were most acute in the context of unilateral behavior by players with significant market power.[17]

First, the fact that platforms offer their products or services to two or more customer groups means in practice they will be competing with other platform and non-platform entities with respect to such customers. Accordingly, when defining the relevant market, this multisided nature of platforms means that multiple related relevant markets may need to be defined and assessed simultaneously. This also means that the tools used for this purpose, such as the SSNIP test, may need to be applied with respect to

13 Ibid, at 30-34.

14 Ibid, at 35-44.

15 See e.g. an extensive list of reports on the digital economy, online platforms and the role of competition policy made by numerous competition authorities across the world < https://www.chicagobooth.edu/research/stigler/events/antitrust-competition-conference/world-reports-on-digital-markets > accessed 20 Mar. 2021.

16 OECD Round table on two-sided markets [2009] *supra* (n 12) at 30-44.

17 Supra (n. 15). A reading of all such reports displays an almost unanimous focus on the concerns posed by online platforms with significant market power. The nature of this focus is further addressed in sections 1.5.2 and 1.5.4 that elaborate on the topic of research and the respective choices made with regard to its scope in the context of this dissertation.

multiple markets with different price settings at a time.[18] When assessing market power, dealing with multiple markets will require taking into account the competitive pressure experienced by the respective platform with regard to all its separate customer groups.

Second, the (indirect) network effects displayed across the separate customer groups of platforms will have to be taken into account in the scope of the legal analysis in order to make it complete. When assessing the potentially exclusionary behavior by platforms, the multisided nature of platforms will require observing the effects of such behavior across their various customer groups depending on the nature of the network effects at play.[19] For example, an exclusive dealing agreement by an online marketplace with its merchants may not only make it more difficult for other online marketplaces to compete for merchants but also for consumers since consumers commonly find marketplaces with more merchants and offers more appealing.[20] Similarly, in the context of coordination or collusion, such behavior with respect to one customer group may have implications for the state of competition with respect to other customer groups.[21] This cross-group effect is equally observable with respect to the pro-competitive effects and efficiencies that can be generated by platforms and require an assessment that extends across multiple markets.[22]

Third, the need to attract at least two separate customer groups requires platforms to adopt skewed price structures that correspond with the different demand that such customers may have for the service provided by them. In practice this means that members of the various platform customer groups pay different fees for the service or products provided to them. Such price settings may, when viewed in isolation of the platform price structure, appear suspicious from the perspective of competition policy. This is particularly so where the skewness of the prices structure results in a division where members of some customer groups pay nothing for the platform services as the respective costs are levied from members of

18 OECD, 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018) at 37-55; Directorate General for Internal Policies, 'Challenges for Competition Policy in a Digitalized Economy' (2015) IP/A/ECON/2014-12, PE 542.235, at 52-57.

19 Ibid; OECD, 'Abuse of dominance in digital markets' (2020) at 23-57<www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets-2020.pdf > accessed 7 Apr. 2021.

20 Commission, Staff Working Document Accompanying the document Report from the Commission to the Council and the European Parliament Final report on the E-commerce Sector Inquiry, COM (2017) 229 final, at. 44-50.

21 OECD, 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018) at 201-219.

22 OECD, Network Effects and Efficiencies in Multisided Markets - Note by H. Shelanski, S. Knox and A. Dhilla, DAF/COMP/WD(2017)40/FINAL, at 1-9. <https://one.oecd.org/document/DAF/COMP/WD(2017)40/FINAL/en/pdf?_ga=2.139424432.203012038.1621959056-401108414.1607942357> accessed 16 Apr. 2021.

other customer groups. For example, on platforms of online travel agents like Expedia, consumers do not pay any reservation or booking fees while airlines, hotels or airport taxis are subject to different commission fees for each transaction made via the platform. Such price settings, when viewed outside of the context of platforms can give rise to concerns of predation with respect to the non-paying customer group(s) and well as concerns of discrimination and unfairness with respect to the customer group(s) that are subject to platform fees.[23] Providing a customer group with services free of charge is instantly suspicious as it commonly means the respective undertaking is operating at a loss with regard to such customers. At the same time charging fees for this same service from other customer groups may raise concerns of unfair prices since such groups will pay significantly more than the non-paying group(s). Alternatively, discrimination concerns can also arise as it can be argued that platforms provide various customer groups with essentially the same service(s) simultaneously but charge them different prices that do not relate to quality or quantity considerations. However, within the context of platforms such price settings may be very common, legitimate and even pro-competitive.[24] The use of skewed price structures is considered imperative for such undertakings to operate viably and compete effectively. Without this possibility, platforms would not be able to effectively attract and coordinate multiple separate customer groups with diverging degrees of demand for their services.[25]

Overtime, as the focus of the inquiry into multisided platforms turned to the specific case of online platforms, additional challenges stemming from the commercial traits of such players were identified. Such challenges concerned primarily the collection of (big) data and its use for commercial purposes. It was found that the capabilities of online platforms to collect and analyze significant amounts of data allowed them to improve existing products and services as well as to invent new ones and thereby potentially create new markets, to the benefit of both consumers and competition.[26] This positive synergy between data collection and innovation is often further strengthened by the indirect network effects at play on such platforms. For example, in the case of online marketplaces the creation and improvement of services helps attract more consumers which in turn attracts more merchants and vice versa. The increase in volume of these

23 See e.g. Julian Wright (2003) supra (n 12); Amelia Fletcher,' Predatory pricing in two-sided markets: a brief comment', (2007) 3(1) Competition Policy International 1.

24 Jean-Charles Rochet and Jean Tirole 'Platform Competition in Two-Sided Markets' (2003) 1(4) Journal of the European Economic Association 990.

25 Bernard Caillaud and Bruno Jullien,'Chicken & Egg: Competition among Intermediation Service Providers' (2003) 34(3) The RAND Journal of Economics 309.

26 MonopolKommission, Competition Policy: The Challenge of Digital Markets, special Report No. 68, at 27-36. < http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf> accessed 7 Apr. 2021.

customer groups in turn increases the amount of data generated by the respective marketplace which further allows it to improve its services or create new ones.

Given the commercial importance of (big) data collection and analysis, such capabilities could also be seen as a new source of market power and potential anti-competitive concerns.[27] In certain markets, like the market of general search (engines), the possession and ability to collect and analyze large volumes of data was found to be important for the ability of undertakings to compete effectively.[28] Accordingly, undertakings that possess such capabilities may enjoy a significant competitive advantage over those who do not. This commercial dependency on data means that undertakings which do not have access to such data facilities may depend greatly on the getting access to such data from other sources, which may often consist of (potentially) competing undertakings that will likely be reluctant to share such assets with them. Despite this commercial importance of data for online platforms (and other non-platform undertakings), the fact that data is commonly non- rivalrous, non-exhaustive and non-exclusive and subject to diminishing returns makes it difficult to assess its competitive value and to subject the aggregation and utilisation thereof to competition law scrutiny. If data can be recollected, reproduced and analyzed at relative low cost, its status of an asset representing market power is unclear. Furthermore, when undertakings that possess such data refuse to share it with third parties it is hard to see how competition law could be used to resolve such conflict of interests. Despite the competitive value that such data may have in practice for various third parties, its trade can hardly be mandated by competition policy if it cannot be considered an indispensable input.[29] These difficulties are further complicated by the fact that the collection, processing and sharing of data may at times be covered by privacy regulations that do not take into account the potential competitive concerns associated with such practices.[30]

27 See e.g. Bundeskartellamt and Autorite de la concurrence, Competition Law and Data 11–25 (10 May 2016) < https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2> accessed 5 Apr. 2021.

28 Ibid, at 8-11. Admittedly, the sheer volume of data possessed by a certain undertaking will often not in itself be sufficient to guaranty competitive advantage. However, the absence thereof will often translate into a competitive disadvantage.

29 Expert report (2018) *supra* (n 9) at 101-109.

30 Ibid, at 73-100; Preliminary Opinion of the European Data Protection Supervisor Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy (March 2014), at 26-38 <https://edps.europa.eu/sites/edp/files/publication/14-03-26_competitition_law_big_data_en.pdf > accessed 4 Apr. 2021.

The above-mentioned challenges inspired me to look into the frictions that may arise between online platforms and EU competition policy in practice. The EU legal framework is full of well-established legal tests developed and fine-tuned throughout years of practice for the purpose of adequately addressing an ever-evolving scope of anti-competitive practices. I was therefore keen on exploring how online platforms, which rely on fundamentally different economic characteristics, may hamper the applicability of such tests and require adjustment. This is particularly so given that addressing such a topic allows for revisiting the boundaries and existing tests of current EU antitrust law and art. 102 TFEU in particular, which would commonly not be called upon in the absence of fundamentally different insights from economics.

As the list of challenges became longer over the past few years, doubt started to form with regard to the ability of the current competition law framework to deal with this new reality. Instead of revisiting the boundaries of such a framework and initiating reforms and adjustments, which are considered necessary,[31] calls for specific regulation grew in momentum. In the EU these calls eventually led to the recent proposal of the Digital Markets Act (DMA),[32] which deals specifically with some of the competitive concerns identified with respect to online platforms while bypassing (some of) the challenges identified in the context of competition policy.[33] Legal intervention in the commercial practices of platforms is done ex-ante based on a predefined list of obligations imposed on platforms rather than ex-post as is common in the case of competition law. When it comes to application, the jurisdictional scope of the DMA does not appear to require the definition of relevant markets and assessment of (relative) market power. Although the DMA targets platforms with substantial market power, the decisive matter in this regard is whether the respective platform constitutes a *gatekeeper* in the sense of the DMA.[34] This qualification requires firstly that the respective platform provides one of core platform services indicated in the non-exhaustive list of services found in art. 2 of the DMA. A platform that provides such a *core platform service* may qualify as a gatekeeper when it (i) has a significant impact on the internal market, (ii) constitutes an important gateway for consumers and commercial users to interact with each

31 Two noticeable exceptions in this regard can be observed in the case of the OECD and Bundeskartelleamt who provided concrete suggestions for resolving some of the challenges posed by online platforms. See Bundeskartellamt, Working Paper – The Market Power of Platforms and Networks, Ref. B6-113/15, June 2016; OECD 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018).

32 European Commission, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final.

33 Ibid, see preliminary text of the DMA where the difficulties associated with the market definition process under art. 102 TFEU is mentioned at pp. 7-8.

34 Art. 1(2) of the DMA.

other, and (iii) enjoys an entrenched and durable position in its operations or it is foreseeable that it may reach such a position in the near future.[35] In order to establish if such circumstances are present the DMA provides several quantitative criteria concerning the territorial scope of the platform service, the volume of its customers and its turnover or market value.[36] If these criteria are met, it can be presumed that the respective platform is a gatekeeper and thus subject to the ex-ante obligations included in art. 5 and 6 of the DMA.

Although the DMA was aimed at avoiding many of the challenges involved in the application of art. 101 and even more so art. 102 TFEU to online platforms its practical contribution, even if implemented, will likely be very limited. Firstly, the term core platform service that is defined in art. 2 of the DMA restricts the jurisdictional scope of the DMA to a set of specific commercial services which inevitably will not cover all types of platforms that currently exist or could be created in the future. This can admittedly be extended at later stages by the Commission, however that will likely entail a rather time consuming legislative process.[37] Secondly, the benchmark of gatekeeper will narrow such scope of application even further as the quantitative benchmarks included in art. 3 of the DMA are extremely high and thus will only be met by a handful of players in practice. This can also occur with respect to undertakings that could be considered dominant under art. 102 TFEU.[38] Admittedly, the status of gatekeeper can be reached even when the quantitative criteria of art. 3 of the DMA are not entirely met.[39] However, such an assessment would inevitably entail some form of market definition as common under art. 102 TFEU which still requires tackling this challenge in the context of platforms. Thirdly, even in the event that the jurisdictional thresholds of the DMA are met the ex-ante obligations listed in art. 5 and 6 cover only a limited number of competitive concerns associated with the commercial practices of platforms. Accordingly, many other concerns relating to price and non-price based practices by platforms with significant market power will remain to be addressed under the scope of art. 102 TFEU.

35 Art. 3(1) of the DMA.

36 According to art. 3 (3) of the DMA the undertaking must provide its core service in at least three member states; (ii) has more that 45 million monthly active end users and more that 10,000 yearly active business users; (iii) it must have an EEA annual turnover of EUR 6.5 billion or a market value of at least EUR 65 billion, and (iv) fulfills the previous points for the past three financial years.

37 The possibility to update the DMA is found in art. 10 of the DMA.

38 This could happen for example, when the turnover or market value are not high enough, when the number of customer groups is not high enough or when the core platform service is provided in only two member states.

39 Art. 3 (6) of the DMA.

Against this backdrop, the considerations mentioned above, which formed the background to my interest in the topic of research addressed by this dissertation remain relevant to both practice and academia. Although the DMA may alleviate some of the challenges faced by the Commission, NCAs as well as EU and national courts when dealing with online platforms with significant market power, the majority of such cases will remain to be dealt with predominantly under art. 102 TFEU. Therefore, addressing the legal challenges in such cases remains principal for adequately tackling the anti-competitive behavior of online platforms with significant market power. This dissertation covers a compilation of the work I have written and published with this aim in mind.

The following sections of the introduction will cover the research process performed in the context of this dissertation in a more detailed manner. Section *1.2 Research focus and dissertation structure* will set out the research questions covered in this dissertation, describe the manner in which these were fitted into its structure and provide a short overview of how the respective research questions were addressed in each of the chapters. Section *1.3 Relevance of the research*, explains how and why the conducted research is relevant for a variety of legal professionals and academics active in the field of EU competition law enforcement and policy making. Section *1.4 Explanation of key terms* provides definitions for several key terms in the body of the dissertation. Section *1.5 Methodology and limitations* clarifies the theoretical and methodological approach that I have applied in conducting my research, and provides an overview of the choices that I have made in limiting the scope of this research as well as the justification for such choices.

1.2 Research focus and dissertation structure

1.2.1 Research focus

The primary aim of this dissertation is to explore the challenges involved in the application of the current EU antitrust law, and specifically art. 102 TFEU, to online platforms and offer possible solutions for such challenges in order to maintain the relevance also with respect to such actors.[40] In order to achieve this aim, the research performed in the context of this dissertation includes descriptive, analytical and normative elements.

40 For the purpose of this dissertation the terms EU antitrust law and EU competition law and used interchangeably and are meant to refer to art. 101 and/or 102 TFEU unless specified otherwise.

The main research covers several distinct aspects involved in the challenging application of art. 102 TFEU to online platforms:

a. First, the different economic notions that underpin the business models of online platforms;
b. Second, the unconventional commercial behavior of online platforms that stems from their multisided nature and that manner in which such behavior may manifest in practical-technological terms;
c. Third, the potential misalignment between the legal tests and requirements encapsulated in the framework of art. 102 TFEU and the inherent characteristics of online platforms as well as their commercial reality.

1.2.2 Main research question and sub-questions

The Main research question addressed in this dissertation is the following:

To what extent can the current framework of EU antitrust law, and in particular art. 102 TFEU, account for the multisided nature of online platforms and accommodate an application capable of attaining a similar level of enforceability as in non-platform market settings?

Answering this question requires the exploration of several elements that are inherent to the existence of online platforms and the assessment of their relevance and impact on the application process of art. 102 TFEU. These were addressed in the research sub-questions of this dissertation which are the following:

1. What are the challenges posed by the inherent characteristics of online platforms for the application of the current EU antitrust law to these actors and what is the nature of the adjustments required in order to tackle them?

2. How should the definition of the relevant market be performed in the case of online platforms in light of their multisided nature?

3. To what extent is the current framework of non-price related abuses suitable for distinguishing between legitimate expansions and anti-competitive leveraging of market power by online platforms?

4. How can abusive pricing practices by online platforms be assessed under art. 102 TFEU in light of their inherent reliance on unconventional price settings resulting from their multisided nature?

5. How does the multisided nature of online platforms need to be accounted for when making remedy design choices for price and non-price related abuses of dominance and does the European Commission have the legal tools to design effective and proportionate remedies in such cases?

1.2.3 The structure of this article-based dissertation

This dissertation consists of a "collection of separate scientific treatises" as referred to in Article 13(2) of the Leiden University Doctorate (PhD) Regulations 2018. Its content comprises six published articles and one chapter that remains to be published.

1. Applying EU competition law to online platforms: the road ahead – Part 1 (2017) 38(8) European Competition Law Review 353.

2. Applying EU competition law to online platforms: the road ahead – Part 2 (2017) 38(9) European Competition Law Review 410.

3. Applying (EU) Competition Law to Online Platforms: Reflections on the Definition of the Relevant Market(s) (2018) 41(3) World Competition (2018) 453.

4. The SSNIP Test and Zero-pricing Strategies: Considerations for Online Platforms (2018) 2(4) CoRe: European Competition and Regulatory Review 244.

5. Tying and Bundling by online platforms- Distinguishing between lawful expansion strategies and anti-competitive practices (2021) 40 Computer Law and Security Review.

6. Abusive pricing practices by online platforms: a framework review of art. 102 TFEU for future cases (2022) Journal of Antitrust Enforcement.

7. Designing remedies for abuses of dominance by online platforms (2021).

The articles published in European Competition Law Review (ECLR) entail the two parts of chapter 2 of this dissertation and have been published following a review of the journals' editorial board. The other articles that have been published in: World Competition (chapter 3), CoRe: European Competition and Regulatory Review (chapter 3), Computer Law and Security Review (chapter 4) and Journal of Antitrust Enforcement (chapter 5) have been subject to a (double-blinded) peer-review process of the relevant journal before being admitted for publication. These publications as well as the sixth contribution that is pending publication have all been presented at the yearly ASCOLA conferences,[41] and benefited from the (double-blinded) peer-review and commentary process that forms part of the acceptance

41 Ascola is the Academic Society for Competition Law, for more see < https://ascola.org/>.

procedure. The respective journals prescribe different citation styles, which have been modified in the scope of this dissertation to OSCOLA for uniformity purposes.[42]

Minimal changes have been made to the published articles when incorporating them as chapters in this dissertation. First, I have re-joined the two publications in the ECLR into one contribution that constitutes chapter 2. The two publications were originally written as a single article that was split into two parts for the purpose of publication. Second, I have compiled the third and fourth publications on the market definition market definition into chapter 3. Their introductions were merged and slightly modified for consistency purposes. Third, the introductions and conclusions of all chapters were slightly supplemented to better explain how each fits within the broader research and how it responds to one or more of the above mentioned research sub-questions. To the extent needed, the introductory and concluding chapters of this dissertation touch upon some recent developments that were not present at the time when the published articles were submitted for publication.

Writing an article-based dissertation has been acknowledged to have several advantages. As a PhD candidate one of the main advantages of such an approach is that it allowed me to select and focus on the most relevant aspects of the research that have the most value for academia and practice. When dealing with a research topic that is highly dynamic and quickly evolving as the topic of this dissertation has proved to be, having the ability to focus and work specifically on stand-alone legal challenges within an overarching context of a greater legal debate has had tremendous value for me. This approach allowed me to focus on the topics that do not only have academic relevance, but also practical relevance. While academic relevance can at times be assessed in advance, practical relevance is constantly evolving. Thus, by being able to tackle the various challenges explored in this dissertation on a stand-alone basis, I was better able to ensure the academic and practical relevance of the dissertation throughout the entire writing process. This ability also allowed me to actively take part and contribute to the ongoing and constantly evolving debate around the topic of research of this dissertation in academic and practice oriented circles.

Nevertheless, the mentioned advantages of an article-based dissertation do not mean this approach has no drawbacks. The freedom and ability to pick specific standalone legal problems also means that the author must be

42 OSCOLA was accepted as the reference method for the articles published in the European Competition Law Review, CoRe: European Competition and Regulatory Review and Computer Law and Security Review used in chapters 2, 3 and 5 of this dissertation. World Competition uses the Association of Legal Writing Directors citation style, which concerns the article that forms the first part of chapter 3.

careful with the choice he or she makes as writing an article based dissertation requires more than writing a collection of published articles. The publications must entail a collection of selected topics that, when brought together, form one comprehensive and cohesive dissertation. This in turn means that throughout the process the author must constantly ensure that the selected topics are not only suitable to serve as standalone publications but also that such topics interact with each other in a manner that produces a valuable contribution to both academia and practice as a whole. Consequently, at times, one must be able to exclude topics and articles that, although related to the topic of research, do not fit in well with the story covered by the dissertation or its aim while selecting and adding articles that would otherwise make the entire selection appear incomplete. In the case of this dissertation, this selection has been done throughout the entire writing process. The first two publications focus on the myriad of challenges posed by the application of EU competition law to online platforms while the subsequent articles, as will be explained, focus on the most pressing and relevant ones.

Against this backdrop, I believe the seven contributions written as the main body of this dissertation all directly relate to the main research focus described above. Each of these articles covers a key aspect of the legal challenges involved in the application of EU competition law, and specifically art. 102 TFEU to online platforms that justifies their inclusion in this dissertation. The insights and findings produced by these articles in combination with this introduction and overall conclusion chapter of this dissertation are therefore able to offer a comprehensive and well-reasoned answer to the main research question. Although the research performed for this dissertation could have avoided some of its current limitations (see section 1.5 on Methodology and limitations) by adding supplementary articles, I believe that their omission does not render the dissertation incomplete nor does it risk the possibility that the overall final findings and conclusions would have been meaningfully different with their inclusion.

Although the seven contributions all entail independent yet related works, some overlap between them certainly exists. The overlap concerns two elements of each contribution. First, all the general introductions start off by mentioning the growing importance of online platforms in the constantly evolving digital markets, which makes potential frictions with competition policy increasingly visible in practice. Therefore, upon a complete reading of this dissertation a reader would notice that this scene setting, which emphasizes the growing tension between competition policy and prominent online platforms, serves as the backdrop for all contributions to different extents. Second, all contributions include a description of the key characteristics of online platforms and their commercial reality which is required to different extents in each of the pieces. These descriptions were required in order to present the source of friction between online platforms and the

existing framework of EU antitrust law and specifically art. 102 TFEU, and motivate the eventual need or lack thereof for adjustments to current practice. As these descriptions concern predominantly the same characteristics and circumstances it is inevitable that these sections of the respective contributions will display a noticeable degree of overlap. Nevertheless, such overlap is predominantly limited to a general description of the core characteristics of online platforms and their commercial reality. Beyond such general description, each contribution focuses on a different perspective of the characteristics of online platforms and the respective effects these are expected to have on a specific element of the application process of EU antitrust law to them. Accordingly, despite the overlap described here each contribution is the result of a well thought through selection of independent topics that each contribute an important insight for the purpose of answering the main research question of this dissertation. The relevance and complementary value of each of the works included in the chapters of this dissertation is laid out in the bellow:

Chapter 2: The challenges of applying EU antitrust law to online platforms

This chapter presents the various practical and substantive challenges involved in the application process of art. 101 and 102 TFEU (EU antitrust law) to online platforms due to their multisided nature and corresponding special characteristics. The chapter identifies multiple challenges throughout the entire application process of these articles covering: their jurisdictional thresholds for legal intervention, the qualification of business practices as prohibited under their scope and the possibility of applying justifications and derogations under these provisions.

This chapter primarily addresses the first research (sub)question, namely '*What are the challenges posed by the inherent characteristics of online platforms for the application of the current EU antitrust law to these actors and what is the nature of the adjustments required in order to tackle them?'*.

The subsequent chapters address a more focused selection of challenges covered in the scope of the dissertation. The scope of challenges was narrowed down to those falling under art. 102 TFEU in light of ongoing developments in practice and the evolving focus of the European Commission and academia in this regard so as to ensure that the addressed topics have both theoretical and practical relevance. This selection of challenges was further narrowed down based on personal insights gained in the process of research. This gradual filtering was made based on whether the selected challenges involve an inevitable friction between the characteristics and commercial practices inherent to online platforms and the current framework of art. 102 TFEU. This final selection of challenges is specifically suited for providing a comprehensive answer to the main research question of this dissertation.

Chapter 3: The definition of the relevant market for online platforms

This chapter addresses the market definition process which entails a mandatory legal step in the process of applying art. 102 TFEU to the business practices of undertakings as well as an indispensable element for multiple procedures involved in the application of both art. 101 and 102 TFEU including but not limited to: the assessment of anticompetitive effects and efficiencies, the setting of fines and the design of remedies.

The chapter covers the difficulties associated with the market definition process in the case of online platforms from both a theoretical as well as practical perspective. These difficulties are explored with respect to the process on the market definition as such, as well as with respect to the SSNIP test which constitutes the main legal tool that the EU Commission (and often national competition authorities) uses for defining markets. Accordingly, this chapter consists of the third and fourth published articles previously mentioned and answers primarily the second research (sub) question, namely '*How should the definition of the relevant market be performed in the case of online platforms in light of their multisided nature?*'.

Chapter 4: Platform expansions and anti-competitive market power leveraging

The fourth chapter covers the matter of expansions by online platforms where such actors choose to increase the number of services they provide on a single platform or otherwise launch an additional platform that is then connected to the initial one. This expansion process has been found to be imperative for platforms in order to remain viable in the long term. Successful expansions in practice entail, however, some type of market power leveraging to the detriment of competitors even in the absence of any anticompetitive intentions or motives. In this regard the implementation of various kinds of tying or bundling practices by platforms can serve as some of the most effective strategies to deploy a successful expansion. At the same time the use of tying and bundling practices may give rise to numerous competitive concerns, which the enforcement of art. 102 TFEU aims to prevent.

Accordingly, the fourth chapter seeks to explore to what extent the existing framework of art. 102 TFEU is capable of applying to the expansion strategies of online platforms that are implemented through the use of tying and bundling practices when such practices display anti-competitive effects. This chapter consists of the fifth article mentioned above and answers the third research (sub) question: '*To what extent is the current framework of non-price related abuses suitable for distinguishing between legitimate expansions and anti-competitive leveraging of market power by online platforms?*'

Chapter 5: Platform pricing and the identification of potential price-related abuses

The fifth chapter covers the manner in which platforms implement their respective pricing schemes, which are often significantly different from pricing schemes commonly adopted by non-platform undertakings in conventional markets. Nevertheless, as in the case of any type of undertaking, abusive pricing practices can also occur in the case of online platforms. Therefore, the fifth chapter seeks to assess how the legal tests of price-related abuses of dominance could be applied to the unconventional price setting of online platforms. In this regard the chapter covers three specific abuses, namely predatory pricing, discriminatory pricing and abusive pricing. These three abuses cover the three main forms of harm that dominant undertakings can produce with their price setting strategies, namely (i) the exclusion of competitors, (ii) the exploitation of consumers and commercial customers and (iii) the distortion of competition between commercial customers. The insights from the assessment performed in this chapter can later extend to the remaining forms of price related abuses under art. 102 TFEU as all such forms share the same core theories of harm as the three abuses selected for this chapter.

This chapter consists of the sixth contribution mentioned above and answers the fourth research (sub) question: '*How can abusive pricing practices by online platforms be assessed under art. 102 TFEU in light of their inherent reliance on unconventional price settings resulting from their multisided nature?*'.

Chapter 6: Designing remedies for abuses of dominance by online platforms

The sixth chapter covers the challenges involved in the design of legal remedies in cases where abuses of dominance are established in the case of online platforms. This chapter is a fundamental part of the research that deals with the second part of the application process of art. 102 TFEU, namely bringing the abusive behavior of the respective online platform to an end and tackling the harm caused by its prohibited practices. The focus of this chapter is on the possibilities that the Commission has, within the current legal framework of EU competition law, to deal with abuses of dominance by online platforms, which may require more elaborate forms of intervention due to their multi sided nature. Such nature will often mean that the harm caused by the abusive practices of online platforms will extend across multiple interrelated markets, which may require that the corresponding remedies do so as well. By exploring the suitability of the current legal framework to accommodate the type of remedies that would be required in the case of platforms, the chapter delves into the legal objectives of competition law remedies and the legal boundaries involved in the implementation of such remedies such as the principles of effectiveness and proportionality. Furthermore, this chapter also explores the potential relevance of the recently proposed Digital Markets Act, which specifi-

cally addresses the business practices of online platforms for the purpose of remedy design in abuse of dominance cases concerning these actors. The abuses selected for the purpose of the discussion in this chapter concern the price and non-price related abuses covered in the fourth and fifth chapters.

This chapter consists of the seventh contribution mentioned above and addresses the fifth research (sub) question: '*How does the multisided nature of online platforms need to be accounted for when making remedy design choices for price and non-price related abuses of dominance and does the European Commission have the legal tools to design effective and proportionate remedies in such cases?*'.

Following these substantive chapters, chapter 7 of this dissertation will provide the final findings and remarks that conclude this research project. This final chapter will provide the findings and conclusions reached in each of the chapters with respect to the research (sub) questions that are then brought together to provide a comprehensive answer to the main research question of this dissertation.

1.3 Relevance of the research

My interest and research into online platforms was triggered by an article I read back in 2015, by Ariel Ezrachi and Maurice Stucke, who had just published their article on algorithmic collusion.[43] In their work the authors explored how the evolution of algorithms and their utilization in the context of digital markets, such as e-commerce, may lead to anti-competitive outcomes that cannot be tackled by present day competition policy. The idea that certain types of practices would simply escape competition law liability due to the technology supporting such practices was intriguing for me. During my LLM studies on EU competition law I had seen time and time again how EU competition law was adaptable enough to deal with novel and unforeseen commercial constructions. Therefore, stumbling across an example that might challenge the adaptable character of competition policy made me want to further look into commercial developments in high technology industries and the challenges such developments may pose for competition law enforcement. This inquiry eventually led me to the case of online platforms that I found to be a suitable topic for extensive research given their growing societal and economic role in today's world. My motivation for picking this topic relates to its multi facet character that combines legal, economic and technological components. This combination made the topic of online platforms interesting for me from a theoretical and

43 Ariel Ezrachi and Maurice E. Stucke, 'Artificial Intelligence & Collusion: When Computers Inhibit Competition' Oxford Legal research paper No. 18/2015 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2591874#> accessed 10 May 2021.

practical perspective. From a theoretical perspective, I wanted to explore the boundaries of current competition policy and its ability to accommodate cases that rely on different economic insights than the ones forming the fundament of such policy. From a practical perspective, I wanted to explore whether some of the shortcomings of the existing competition policy rules in the case of online platforms can be alleviated through a more strategic and flexible application of such rules as an alternative to their reformulation. In this regard, I wanted to explore to what extent the technological characteristics of commercial practices may impact their legal assessment in practice.

At the time when I came across the topic of online platforms, there were only a handful of authors that looked into this topic, most of them from the fields of economics, industrial organization and business management. The legal literature in the field of (EU) competition law or antitrust policy was extremely scarce and considered to concern a rather niche specialist topic. Since then it is safe to say that the debate on the relationship between online platforms and (EU) competition policy has grown exponentially and extended from academia to practice. In the past five years a sharp increase in academic publications as well as regulatory assessment reports and debates has been observed. What started as a rather niche topic has now become one of the core areas of focus of numerous competition authorities around the globe. The magnitude of this growing interest is, however, perhaps best displayed by the recent Platform-to-Business Regulation and the Commission's proposal of the Digital Markets Act which both seek to address some of the competitive concerns posed by online platforms. Such regulatory developments were quite unthinkable at the time when the research for this dissertation first commenced as competition law was considered to be either capable of dealing with any commercial matter including online platforms or simply not applicable or relevant to such actors as the operated in zero priced markets. Nevertheless, over time it has become clear that the challenges posed by online platforms to competition law policy are quite substantial and the adaptability of the existing framework can no longer simply be assumed to exist. Furthermore, the growing importance of platforms across the various corners of the economy and the raising dependency of third parties on the services of such platforms amplified the need to resolve any related legal challenge in the short rather than long term.

I believe that the relevance of my research stems from the theoretical and practical insights provided with regard to the challenges posed by online platforms as well as from the observations and suggestions made in this dissertation for resolving some of these challenges in practice. By doing so, this research project does not only contribute to the advancement of the academic and practical knowledge of this topic but also further advances the debate on this topic by providing concrete recommendations for poten-

tial solutions or guidelines for reaching feasible solutions. The relevance of this dissertation is to some extent supported by the fact that some of the publications included in this dissertation have been used as reference points for the challenges involved in the application of competition policy to online platforms by various international organizations,[44] national bar associations,[45] and regulatory bodies.[46]

In addition to the direct relevance of this research to the ongoing debate concerning the role of online platforms in the EU, this project is also relevant to the greater context of this debate which concerns the application of competition policy to online platforms across a multitude of jurisdictions around the world. Despite the differences in the legal frameworks outside of the EU, competition policy as such relies on similar economic fundamentals. Therefore, many of the insights and suggestions included in this dissertation are relevant for this debate also in the context of non-EU legal frameworks. Furthermore, the relevance of the research also extends to the greater debate concerning the challenges posed to competition policy by current technological developments in the field of artificial intelligence (AI) and the roll out of the Internet of Things (IoT) products and networks. The use of AI for commercial purposes is, for a great deal, done by various kinds of online platforms and often those currently subject to competition law investigations.[47] Accordingly the insights and suggestions offered in this dissertation will also be relevant for instances where the utilization of AI technologies by such platforms can lead to anti-competitive effects. The implementation of IoT technology and products will in essence entail the creation of new online platforms that are also supported by dedicated compatible hardware for a wider range than we see today. In essence, the roll out of IoT will concern providing all electronic devices and machinery with the same level of (internet) connectivity that smartphones have. Therefore, this research will also be directly relevant to this new kind of platforms that will share most if not all of the characteristics of online platforms as discussed in the scope of this dissertation.

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44 E.g. OECD Roundtable, Implications of E-Commerce on competition policy DAF/COMP(2018)3, at 28, 33, 35 and 38.

45 Bundesrechtswaltkammer, Position Paper on a new competition tool („NCT"), Sep. 2020, at 5-6 <https://brak.de/zur-rechtspolitik/stellungnahmen-pdf/stellungnahmen-europa/2020/september/stellungnahme-der-brak-2020-50.pdf> accessed 7 May 2021.

46 Kamerstuk 35134, nr. 4, Initiatiefnota van het lid Verhoeven over mededinging in de digitale economie (17 Sep. 2019); European Commission, ' Support study accompanying the evaluation of the Commission Notice on the definition of relevant market for the purpose of Community competition law' (2021) at 64, 96 < https://ec.europa.eu/competition-policy/system/files/2021-06/kd0221712enn_market_definition_notice_2021_1.pdf>.

47 Expert report (2018) *supra* (n 9) at 36; For this reason the EU Commission has launched a sector inquiry into IoT. See Commission press release 'Antitrust: Commission launches sector inquiry into the consumer Internet of Things (IoT)' (16 Jul. 2020) <https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1326> accessed 10 Apr. 2021.

In terms of audience, this dissertation is relevant for a wide scope of readers. First, the dissertation is aimed at the legal professionals that are involved in the enforcement process of EU competition policy. This includes the competition authorities at the EU and national level, EU as well as national courts and competition lawyers (private practitioners and in-house counsels). Secondly, this dissertation is relevant for academics that are active in the field of (EU) competition law and focus on the myriad of challenges posed by digitization. Thirdly, this dissertation is also relevant for the professionals and officials working at the various international organizations involved in the enforcement or study of (EU) competition law such as the OECD, UNCTAD, ICN, ECN as well as members of various think-tanks associated with enforcement and regulatory instances such as CEPS and Bruegel.

Finally, I hope that the efforts made in the context of this dissertation to adjust an existing legal framework to the new (market) settings brought by digitization and technological innovation will encourage academics and/or practitioners from other fields of law to pursue a similar approach. The legal challenges posed by digitization in general and online platforms in particular are not limited to competition law policy. Thus a similar effort in other fields of law would undoubtedly assist in future proofing their respective legal frameworks.

1.4 Definition of key terms

This section provides an explanation of some of the main terms used in this dissertation.

1. Online platforms

The term online platform used throughout the dissertation encompasses an open-ended category of undertakings that meet the main criteria associated with two or multisided markets as defined by economic literature in the seminal work of Rochet and Tirole,[48] which has formed the fundament of most academic work in the field of competition law and platforms. These criteria are: (i) the platform plays an intermediary role between two or more separate customer groups; (ii) such customer groups display positive indirect network effects, (iii) the platform pricing scheme is non-neutral.

The intermediary role played by platforms entails that they brings two or more customer groups together and allows them to interact. The commercial services offered in the context of such a role are not relevant in this

48 Jean-Charles Rochet and Jean Tirole 'Platform Competition in Two-Sided Markets' (2003) 1(4) Journal of the European Economic Association 990.

regard, meaning that platforms can be active in any sector of the economy. In this context, the term platform customers can consist of (end) consumers as well as commercial customers. Such groups display indirect network effects where their demand for the platform by a customer group increases as the number of members of a separate customer group rises. A platform has a non-neutral price scheme when the volume of platform customers is determined not only by the total amount of fees charged for its intermediary service (also referred to as the price level) but also by the manner in which such fees are divided across its customer groups (i.e the price structure).

Due to the synergy between the term online platforms and the economic literature on two- and multisided platforms or markets, these terms are often used interchangeably with the scope of this dissertation.

2. Platform interaction

The term platform interaction used throughout the dissertation refers to the service(s) provided by the platform as part of its intermediary role. A platform interaction can entail any type of service (or combination thereof) used to allow members of the separate customer groups of the platform to interact with each other. For example, an online marketplace allows consumers and merchants to buy and sell goods online. This service constitutes the interaction that such a marketplace facilitates for these two customer groups to interact with each other. In some chapters the term matchmaking interaction is used so as to better accentuate the functional purpose of such services with respect to the platform customer groups. To a limited extent the term platform (matchmaking) interaction is interchangeably used with platform (matchmaking) functionality or service.

In some instances, the dissertation mentions successful interactions or profitable interactions. These terms indicate that the services offered by the platform to its customer group have been used in a manner that generates revenue for the platform. For example, in the case of the marketplace, every time consumers make a purchase that constitutes a profitable or successful interaction since the marketplace platform commonly receives a transaction fee for each purchase made on it.

3. Market tipping

The term market tipping which is used in multiple instances, refers to the situation in which a platform obtains an initial impassible advantage over its competitors that further increases over time as the platform grows. This situation means that in the long term, the customers of the respective platform will no longer switch or consider switching to competing platforms. Accordingly, the markets in which the respective platform archives such an impassible advantage will tip in its favor endowing it with a (near)

monopoly position. This outcome is associated with the process of competition between platforms that is characterized by competition *for* the market rather than competition *in* the market, which in turn leads to winner-takes-all situations once the process of tipping commences.

4. Platform oriented terms

Throughout the dissertation multiple terms originating from economic literature concerning the characteristics of platforms or the markets they operate on were used. These terms include: direct and indirect network effect (both positive and negative), single and multi-homing patterns, skewed pricing schemes and structures, critical mass and others. Such terms that concern the distinguishing characteristics of platforms have been defined and explained in multiple sections of this dissertation. In order to prevent additional repetition these terms have not been defined in this section.

1.5 Methodology and limitations

1.5.1 General research approach

In this dissertation the main research question, as well as sub-research questions, were addressed in a similar manner that combined different insights and perspectives on online platforms from the fields of law, economics, management and to a limited extent software development. The chosen overall methodology is therefore that of doctrinal research, focused on the analysis of existing legal provisions and corresponding legal tests with the use of insights from predominantly the fields of economics and management.

The dissertation has descriptive, comparative, legal analytical and normative elements. Each of the chapters of this dissertation provides a description of the core characteristics of online platforms from an economic perspective and provides a legal analysis of the implication of such characteristics for the application of competition policy to these actors. To the extent relevant insights from the field of business managements are also included to further clarify the rationale behind certain business practices commonly adopted by platform entities. In the context of the legal analysis, a description of various components of the existing framework of art. 102 TFEU was provided depending on the focus of each contribution. Where specific challenges concerning the application of this provision or corresponding remedies were addressed, normative claims were made with respect to the possible solutions for challenges.

The overall research approach and methodology of this dissertation certainly involve some flaws. Some of these are inherent to the methodology of doctrinal legal research. This is perhaps most relevant with regard to the main assumption in doctrinal research that does not always sufficiently account for the myriad of (external) factors that may impact the application of the law as it stands. For example, by focusing on the law as such and less with those who apply it may entail that some of the suggestions or insights reached, even if objectively correct and logical, may nevertheless not transfer into practice due to such actors. When dealing with new insights from economics in the context of competition policy, the overall receptiveness of the enforcement agency (and legislator) to such insights may significantly influence any potential change in the application or modification of existing legal frameworks. Other drawbacks relate to the scope and focus of the research which is primarily focused on. The overall focus of the legal research concerns the EU legal framework. References made with regard to the US legal framework of antitrust as well as the case law or the decision making practice of several Member States jurisdictions are primarily used as examples to support certain claims made in this dissertation. In terms of scope the research is predominantly focused on several specific aspects of art. 102 TFEU and not on the entire framework of this provision.

Nevertheless, despite potential shortcomings I believe the research performed provides a comprehensive and well-substantiated answer to the main research question of this dissertation. Furthermore, the selected approach for this dissertation consisting of doctrinal legal research supported by insights from economics and business management is aligned with the character of competition policy which relies greatly on economic theory. This special relationship between competition law and economics is to a great extent also present in the application of the existing framework in practice as EU courts have repeatedly noted that the application of such a policy must always take account of the legal and economic context of each case. Therefore, the general approach adopted by this dissertation follows in essence a similar process to the one that gave rise to the creation of the existing competition law framework, as well as the behind the application of this framework in practice. Admittedly, however, the dissertation did not revisit the objectives of current competition law policy, but rather attempted to explore how its current functioning could also be adequately extended to online platforms. The uniform application of this research approach also ensures a greater degree of consistency across the various chapters despite these being part of standalone publications or research papers.

A detailed description of the applied research approach and its application in each chapter, including the benefits and drawbacks of this approach is provided below.

1.5.2 Chapter specific approach

Chapter 2: The challenges of applying EU competition law to online platforms

This chapter provides the general background for the research project. The chapter provides a brief description of the special characteristics of online platforms as identified by economic literature as well as some common commercial practices and technical attributes of such actors. These factors are then assessed under the legal frameworks of art. 101 and 102 TFEU in order to point out the challenges these could give rise to in practice. This assessment includes a review of the wording of the two provisions as well as their application in practice on the basis of various corresponding legal tests.

This chapter is important for demonstrating the significance of the legal challenges posed by undertakings, like online platforms, that rely on economic models that were not considered or addressed throughout the development of the current EU framework of competition law. For this purpose, both provisions, which entail the main body of EU antitrust law were selected. The chapter shows that the application of art. 101 and 102 TFEU to online platforms gives rise to challenges at three important stages of the application process. These stages concern:

1. The application thresholds which determine whether art. 101 or 102 TFEU are applicable to the commercial practices of undertakings.
2. The qualification of commercial practices adopted by the concerned undertakings as legitimate or prohibited under art. 101 or 102 TFEU.
3. The justification possibilities that the concerned undertakings have to demonstrate that their potentially prohibited practices should nevertheless be permitted due to their efficiency generating potential.

These stages concern the three of the four main steps in the application process of both provisions and cover the perspective of both enforcement authorities (or private claimants) and undertakings suspected of engaging in prohibited practices. The first two stages concern matters for which the enforcement authority (or claimant in private enforcement cases) carry the burden of proof and the third stage concerns a challenge for the concerned undertakings as they carry the burden of proof for it.

In this chapter the matter of remedies, which constitutes the fourth main step of the application process, was not addressed as many of the challenges involved in the design of suitable remedies depend greatly on the specific type of prohibited practices that require scrutiny. This in turn requires a thorough discussion of such prohibited practices, the competitive concerns these raise and the manner in which they manifest. As this chapter was intended to provide a general overview of the challenges posed by online platforms, such an in-depth discussion was not suitable for this article. This

preliminary chapter does not discuss the manner in which the prohibited practices of online platforms should be assessed under these provisions but rather points out the challenges involved in this process. Accordingly a meaningful exploration of the challenges involved in remedy design was not entirely attainable in such a context. Instead, the matter of remedy design was covered in chapter 6 in relation to the abuses extensively discussed in chapters 4 and 5, which allowed for a material discussion with regard to remedies.

Chapter 3: The definition of the relevant market for online platforms

This chapter focuses on the definition of the relevant markets in cases concerning online platforms. The definition of relevant markets is a key element of the application of (EU) competition policy. In the context of art. 102 TFEU, the market definition is required for multiple reasons. Firstly, it constitutes an obligatory step that needs to be taken in order to establish dominance which in turn determines whether this provision is applicable. Secondly, the outcome of this process also determines how the pro-and anti-competitive effects in each case need to be assessed. Thirdly, it will determine how the corresponding remedies need to be implemented and how eventual fines need to be calculated. Accordingly, I have chosen to focus on the aspect of market definition, as it is indispensable to the application process of art. 102 TFEU and to a large extent also to other areas of EU competition law where it plays a comparable role.

The research in this chapter is focused on assessing the implications of the economic and commercial characteristics of online platforms for the market definition process. The chapter is split in two parts, each covering a separate angle of the market definition process. The first part of the chapter is concerned with the substantive approach to the market definition process and how such process needs to be performed in the case of platforms in light of their multisided nature, which may require the definition of multiple separate, yet interrelated relevant markets. In short, the first part is concerned with the challenge of deciding how many relevant markets need to be defined when dealing with cases concerning online platforms. The second part of the chapter focuses on the practical aspect of the market definition process that involves the SSNIP test which is commonly considered to be the main quantitative tool used by the Commission (and NCA's) for defining relevant markets. This part of the chapter is concerned with the applicability of the price-based SSNIP test to the pricing schemes of online platforms that often entail zero priced services which prevent the SSNIP test from being applied in its current form.

For the purpose of both parts of the chapter, economic and management literature on online platforms is consulted in order to establish the nature of the challenges posed by these actors for the process of the market definition

and the SSNIP test. Existing theoretical solutions for the identified challenges are analyzed in order to show why these are not entirely compatible with the commercial reality of online platforms actors in practice. The final section of each part of the chapter takes a normative approach and provides some suggestions with respect to possible solutions that can be adopted for future practice. The offered solutions are based on insights from academic literature as well as the analysis of EU case law, the decision making process of the Commission as well as insights from case law of national courts and the decision making practices of NCA's.

Chapter 4: Platform expansions and anti-competitive market power leveraging

The fourth chapter focuses on the expansion strategies of online platforms, which have been found to be indispensable from a commercial and strategic perspective for these actors. Such strategies will involve, however, various forms of market power leveraging, which may be considered prohibited under competition law when implemented by dominant platforms. This is particularly so when expansion is implemented through tying or bundling practices which are efficient strategies for this purpose and thus likely to be pursued by online platforms in their pursuit for further growth. Against this backdrop chapter 4 is focused on assessing whether the current framework is suitable for filtering out anti-competitive tying and bundling practices from the variety of expansion techniques that online platforms can attempt. This topic was selected because the ability of the current legal framework to distinguish between legitimate and anti-competitive expansion strategies is paramount for the protection of the competition in the context of platforms. As expansions by platforms are inevitable for their viable existence, incorrectly condemning legitimate expansion strategies risks distorting competition among such actors and undermining their viability in the long run. Similarly, not tackling anti-competitive expansion strategies that rely on tying or bundling practices risks the distortion and even elimination of competition across multiple markets as such practices can be highly effective for leveraging market power across markets.

This chapter starts off with an exploration of the commercial trajectory that is pursued by online platforms from the moment they are launched to the moment they will seek to expand according to economic and management literature. This part also includes the manner in which such expansions may manifest and how these might resemble tying and bundling practices in the context of competition law. From there a discussion of the various competitive concerns associated with tying and bundling practice according to economic theory is provided. This discussion shows that the risks posed by tying and bundling practice in the context of multisided platforms are similar to those identified in the past in the case of traditional markets, thus justifying a similar degree of legal scrutiny and diligence. This section engages in a legal analysis of the existing legal framework for abusive

tying and bundling practices under art. 102 TFEU, which covers the case law of EU courts and the decision making practice of the Commission. This final part of the chapter explores how this existing framework translates to the settings of online platforms. The results of the research in this chapter provide guidance on how tying and bundling practices can manifest in the commercial practices of online platforms so that art. 102 TFEU could be applied in a manner that avoids under and over enforcement.

In the context of this chapter, a choice was made to focus predominantly on tying and bundling practices as a source of competitive concern in the process of expansion strategies by online platforms. In practice, however, anti-competitive leveraging of market power could theoretically be implemented by online platforms outside the scope of tying and bundling. This possibility is also addressed to a limited degree in the context of this chapter. Such discussion of general abusive practices of leveraging was limited, given the open ended and unclear framework associated with this kind of abuses that constitute a form of catch-all or rest category of abuse. Accordingly, pursuing such alternative leveraging strategies more extensively could have undermined the effort made by this chapter to provide clarity on the application of art. 102 TFEU to online platforms. By contrast, the legal framework of tying and bundling is well established and extensively addressed in legal literature and practice. Furthermore, tying and bundling practices or practices that resemble tying and bundling have already been widely used by platforms in practice. Moreover, tying and bundling, have been found to be effective for market power leveraging and thus more likely to be used in the context of expansions. Therefore, the choice made in this chapter may mean that anti-competitive practices that may fall out of the framework of tying and bundling may not be fully covered by the scope of this chapter.

Chapter 5: Platform pricing and the identification of potential price-related abuses

This chapter focuses on the pricing practice of online platforms and assesses how the current legal tests of price-related abuses can be used for dealing with such practices in light of the multisided nature of platforms. The multisided nature of platforms entails that these will commonly rely on pricing schemes that are unconventional in the context of non-platform markets and undertakings. The most common example in this regard is the use of zero pricing by online platforms, such as Booking.com, where one (or more) platform customer group (mostly consisting of consumers) does not pay for using the platform because the costs of serving such customers with the platform service are recouped from other customer groups (mostly consisting of commercial parties). Such unconventional pricing strategies, despite being considered suspicious when viewed through the prism of previous practice, can be perfectly legitimate in the context of online platforms. In fact, platforms depend greatly on such skewed pricing structures

in order to attract multiple separate customer groups with different degrees of demand for the intermediary service provided by the platform. Without this ability, platforms would be unable to overcome the chick-and-egg problem inherent to multisided platforms. At the same time, online platforms, like any other kind of undertakings are driven by the same profit maximization motives. Accordingly, platforms are just as likely to adopt anti-competitive practices as any other undertaking; however, their multisided nature makes the analysis of their pricing strategies far more complex.

Therefore, this chapter looks into how price-related abuses should be identified and assessed in the case of online platforms. To do so, the first part of the chapter dives into economic and management literature on multi sided markets in order to establish how platforms price their services and what are the main factors that impact this price setting. The rest of the paper goes into a legal analysis of the respective framework of the price-related abuses selected for this chapter. This analysis combines the insights from the first section of the chapter so as to see how the legal framework of each abuse could accommodate the price setting reality of platforms and its determinants. To do so, the chapter goes into an analysis of EU case law, the decision making practice of the Commission and the official documents used by these bodies for the purpose of these abuses.

In the context of this chapter a choice was made to focus on three specific price-related abuses of dominance. These are predatory pricing, discriminatory pricing and excessive pricing. The reasons for this selection are both theoretical and practical. From a theoretical perspective these abuses represent the three forms of harm that dominant undertakings can cause with their pricing practices. Such forms include undermining competitors, exploiting customers and distorting competition between customers. Accordingly, the theories of harm covered by these abuses are also covered by all other price-related abuses which makes the analysis in this chapter also relevant for the price-related abuses not included in this chapter.[49] From a practical enforcement perspective, these abuses already are or have been the subject of claims in practice.[50]

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49 E.g. margin squeezes, selective price cuts, non-quantitative rebates may involve elements of predation, discrimination and excessive fees.

50 In the case of predatory pricing, in the US a case was launched against Uber by its competitor SideCar which was allegedly pushed out of the market by Uber's pricing policy, see SC Innovations, Inc. v. Uber Techs., Case No. 18-cv-07440-JCS (N.D. Cal. May. 1, 2020); In the case of discriminatory pricing, see the case of Dutch real estate platform Funda in Decision of the District Court of Amsterdam dated 21 March 2018 concerning real estate platform Funda ECLI: NL: RBAMS:2018:1654- Rechtbank Amsterdam, 21-03-2018/C/13/528337/HA ZA 12-1257 (*Funda* decision); in the case of excessive pricing see the recent claim of Spotify against Apple for its commission fee in the App Store see Spotify 'Time to Play Fair – Frequently Asked Questions' www.timetoplayfair.com/frequently-asked-questions/ accessed 1 June 2020.

Chapter 6: Designing remedies for abuses of dominance by online platforms

This chapter looks into remedy design challenges involved in abuse of dominance cases by online platforms. The topic of remedies was selected due to the imperative role played by effective remedies in the application process of competition policy. In the absence of adequate remedies following a final finding of infringement there is little to be gained by the enforcement process, as the competitive harm caused by the respective infringement will not be removed. Despite the importance of remedies in practice, in the context of online platforms this topic has been rather neglected. Instead, preference was clearly given to the discussion of whether the potentially undesirable practices of online platforms are caught by the current framework of EU competition law, and particularly in the context of art. 102 TFEU. In order to fill this gap in the debate, this chapter seeks to promote the topic of remedies and make several suggestions with regard to the platform characteristics that need to be taken into account in the process of remedy design within the current framework of EU competition policy.

In order to do so, the chapter first provides an overview of the EU legal framework for remedy design in abuses of dominance cases under Regulation 1/2003. In this context, the prime objectives of competition law remedies are discussed together with the limitations on remedy design stemming from the principle of proportionality. This is done through the analysis of legal literature, case law of the EU courts and the decision making practice of the European Commission. This overview covers predominantly the compulsory remedies available under art. 7 and 8 of regulation 1/2003. Following this overview, platform specific considerations from economic and management literature that should be taken into account for the design of remedies are discussed. This discussion shows that similar to the case of abuses, the multisided nature of online platforms means in practice that the remedies administered by the Commission (or NCAs) may have to extend on to multiple interrelated markets and concern multiple platform customer groups. From there the chapter dives into a legal analysis of previous practice on remedies in abuses of dominance cases. This analysis concerns the specific abuses of dominance covered in chapters 4 and 5 and covers the case law of EU courts and the decision making practice of the Commission. The analysis is then used in order to see how the specific platform considerations previously identified could be incorporated in the existing framework of remedies under art. 7 and 8 of Regulation 1/2003. The chapter then offers several suggestions on how such platform considerations should or at least could be incorporated in the process of remedy design. Furthermore, the chapter also provides suggestions on how the current use of remedies under Regulation 1/2003 could be enhanced, by utilizing interim measures in a more strategic manner, so that such a framework is better capable of addressing the potential harm caused by platforms. Additionally,

the chapter also looks into the possibility of introducing flexible remedies under art. 7 of Regulation 1/2003. Such remedies, if implemented, would provide a valuable solution to the dynamic character of competition in platform markets by making the ordering of behavioral and structural measures dependent upon the market developments post abuse.

In the last section of the chapter the recent Commission proposal of the Digital Markets Act is analyzed in order to assess how this Regulation could contribute to the design of effective and proportionate remedies. This analysis is focused on the various theories of harm covered by the DMA specifically with respect to online platforms as well as the jurisdictional scope of this regulation which determines which kind of platforms may fall under its scope. In this respect, the section provides that the jurisdictional thresholds of the DMA limit its relevance to a very narrow category of platforms, namely those that meet the definition of gatekeeper platform under the DMA. Furthermore, the scope of theories of harm included in the current proposal may make it relevant for certain types of tying by online platforms, however, not for price related abuses which are mostly unaddressed.

In this chapter several choices have been made with regard to the scope of the research. First, the chapter focuses on the abuses of dominance covered in chapters 4 and 5. Other types of abuses of dominance by online platforms were not included in the discussion of remedy design, as they have not been studied thoroughly in this dissertation. This is because the design of remedies is inherently impacted by effects created by respective abuses. Therefore, a discussion on remedies which aims to provide practical guidance, as this dissertation does, inevitably requires to be done with respect to specific abuses whose effects have extensively been researched.

Second, the discussion of remedies was solely focused on public enforcement measures under art. 7, 8 and to a limited extent 9 of Regulation 1/2003 directed at modifying the commercial practices of the concerned platforms. Fines and other monetary penalties were not included as these concern different types of challenges primarily with regard to calculation methods. Private enforcement remedies were not included as these vary across the jurisdictions of Member States and many of the design considerations are the same as the ones covered by this chapter.

1.5.3 Sources

The research in this dissertation is based on the analysis of various sources:

Literature: a wide range of academic and professional literature was used for the research in this dissertation. Such literature covers the fields of economics and management with a specific focus on the study of (online)

platforms, two or multi sided markets and network and IT sectors. The legal literature used covers the framework of EU competition law, and to a limited extent the general frameworks of US antitrust law and several national jurisdictions of EU and non-EU states. The literature used consists of (hand)books, academic and professional articles, conference and working papers. In order to access such literature, I have made use of the (digital) library of Leiden University, the competition law specific tool of Kluwer Competition Law I have access to, open access databases such as SSRN, internet searches and references included in other contributions.

Case law: case law has been used as a source throughout this entire dissertation. As the research is focused on evaluating the challenges posed by platforms to the existing framework of art. 102 TFEU the analysis of case law was required in the main body of all the chapters. Such case law originated almost entirely from EU courts. Case law from the US and other national jurisdictions was only occasionally used. Case law of the EU courts is easily accessible via the EU courts' own database and EUR-Lex. Case law from the US and other jurisdictions was found via their respective national databases.[51]

Prohibition decisions: Given the practice-oriented nature of this research project, all of the chapters include a legal analysis of prohibition decisions implemented by the European Commission and to a limited extent by NCAs. These decisions have been an important source for showing how the current framework of art. 102 TFEU operates in practice so as to assess which eventual adjustments may be required in the case of online platforms. The decisions of the Commission were accessed through its own database that contains an up to date registers of all the infringement decisions implemented by it. In the case of NCA's their respective national database was used. To a limited extent, national reports used in OECD roundtables were also consulted for this purpose.

Legislation: Existing and past legislations played an important role for delineating the legal frameworks analyzed in this dissertation. Such legislation primarily concerns the EU treaties provisions and regulations on EU competition law policy. An exception to this focus is the DMA which, despite not being an official competition law tool, is of direct concern to the state of competition among online platforms. To a very limited extent references were made to the Sherman Act with respect to US antitrust.

Official documents: Existing and past official documents concerning the application of art. 102 TFEU (or its predecessor art. 82 EC) an important role for delineating the legal frameworks analyzed in this dissertation. Such

51 E.g. in the Netherlands rechtspraak.nl was used. In the US supremecourt.gov and justice.gov were used.

official documents consisted primarily of the EU Commissions' guidelines, notices as well as green, white and other types of discussion papers. Most documents were easily accessible via EUR-Lex although certain older discussion papers required more effort to find, as these were not always well transformed into digital copies.

Policy documents and reports: National and international reports and policy documents on the challenges caused by online platforms for the application of competition policy were consulted. In addition, general reports and policy documents on the legal framework of EU competition law in general as well as art. 102 TFEU in particular were covered. Such documents and reports consist mainly of documents drafted by the Commission (or some of its working groups or think tanks), NCAs', OECD, policy oriented think tanks, governmental commissions, consumer associations, national bar associations.

Other public sources: in addition to the previously mentioned sources I have relied on a wide range of publicly available sources. This includes press releases of the Commission, NCA's and companies as well as professional and academic legal blogs, and news articles published by technology focused media outlets.

All online sources referred to in this dissertation have been accessed last in October 2021 so as to confirm this availability. In the event that the respective sources were no longer available, specific notice was placed in the concerned footnote.

1.5.4 Limitations

The scope of research within the framework of this dissertation is limited in several ways. These limitations concern in general terms the choice to focus on EU competition policy and specifically on art. 102 TFEU. The various choices I made to exclude or limit the coverage of certain topics in this dissertation and thus limit the scope of my research either from the start or throughout the process of research are explained below.

i. Excluding other (national) legal frameworks of competition policy

The research covered by this dissertation solely concerns the EU legal framework of antitrust law. The legal frameworks of other jurisdictions were at times referred to for the purpose of presenting additional examples used to support certain claims or arguments. A thorough research of such (national) legal frameworks or enforcement practice was not undertaken. The reasons behind this choice are the following. From a practical perspective covering the legal frameworks of other jurisdictions would have significantly impacted the scope of the research. A thorough comparison

across multiple legal frameworks would have also demanded an extensive broadening of my knowledge of such respective national frameworks and overcoming the inevitable language barriers involved in such a process. From a substantive perspective, extending the research to include other legal frameworks would have also likely forced me to change the character and structure of my project. A comparative project covering multiple jurisdictions would not accommodate the research of multiple legal challenges in the application process of art. 102 TFEU and the corresponding national equivalent provisions, but instead would most likely require focusing on one challenge, which can be observed across all the compared jurisdictions.

ii. Limited discussion on the challenges concerning art. 101 TFEU

The research covered by this project is predominantly focused on the challenges posed by online platforms for the application of art. 102 TFEU, and to a lesser extent art. 101 TFEU. The initial inquiry into the challenges caused by platforms for the application of both provisions is provided in chapter 2. The consecutive chapters narrowed down the scope of these challenges and research to matters that concern primarily the application of art. 102 TFEU, which has also become the focus of this dissertation as a whole.

The reasons behind this narrowing down follow from the theoretical nature and the practical relevance of the selected topics as well as those excluded. First, following the research performed for chapter 2 it became clear that the challenges identified in the context of art. 101 TFEU were significantly less pressing in practice than those discussed in the context of art. 102 TFEU. This is evidenced by the various institutional and academic reports and studies on online platforms that predominantly focused on the aggregation and misuse of market power by these actors. This focus seems to have translated overtime also into the enforcement priorities of the Commission that mainly focus on the misuse of market power by platforms.[52] Second, the challenges identified with respect to the application of art. 101 TFEU were to a great extent problems that do not stem necessarily for the specific characteristics of online platforms and the economic theory behind them, which could have required the adjustments of the existing legal framework of this provision. Such a fundamental challenge in the case of art. 101 TFEU was only present in the context of justification possibilities under art. 101(3) TFEU. This challenge and the potential solutions for it was, however, extensively covered in chapter 2 as well as in the context of chapter 3 when dealing with the market definition and its implications for the use of justification arguments in the context of both art. 101 and 102 TFEU.

52 Most the investigations initiated by the Commission against prominent platforms (GAFA) have focused on potential infringements of art. 102 TFEU.

Although this choice of focus admittedly narrowed down the scope of the research substantially, it also allowed for a thorough discussion to be conducted, of the most pressing challenges from a practical perspective as well as the most fundamental ones from a theoretical perspective. Extending the scope of research to the challenges concerning art. 101 TFEU would have significantly enlarged the magnitude of the project which would have made it less manageable and feasible while the added value of such an expansion to practice and academia would have been relatively modest.

iii. Limitation of scope of challenges covered in the context of art. 102 TFEU

The scope of challenge discussed with respect to art. 102 TFEU identified in chapter 2 was also narrowed down in the consecutive chapters. In this regard the topic of refusal to supply and the essential facility doctrine discussed in this chapter was not further explored in the dissertation. The reason for excluding this discussion is that the difficulties posed by platforms with respect to the application of these legal tests are not inherently connected to the distinguishing characteristics of platforms as such. Instead, the identified challenges in this respect concern their application to data that such platforms commonly collect and process, in significant proportion, for various commercial purposes. Therefore, similar problems would arise also with respect to other non-platform undertakings which equally collect and rely on data for the advancement of their commercial endeavors. Accordingly, while such a challenge has admittedly become rather pressing and relevant in practice in relation to various prominent online platforms, such as Facebook or Amazon Marketplace, it is not a problem that is inherent to them. Therefore, including this in the dissertation would not suit the character of this research, as it would require a shift of focus from the characteristics of platforms to those of data.

iv. Private enforcement of EU competition law

It is well established that the application and enforcement of art. 101 and 102 TFEU can happen via the routes of public and private enforcement. Although private enforcement currently plays a secondary role in the enforcement of EU competition policy, this role has increasingly grown over the years since the direct effect of these provisions was established by the CJEU. I made the choice, however, to focus only on the public enforcement aspect in this dissertation, not including the procedural aspects involved in the process. The reasons for this choice are the following. From a practical perspective, including private enforcement would have significantly extended the scope of this project making it less manageable as it would require diving into the national practice of multiple national jurisdictions, which may also involve language and accessibility barriers. From a substantive perspective, such an addition would have limited added value as national courts and competition authorities are expected to apply the same

legal tests and criteria covered by this dissertation when relying on EU law provisions. Accordingly, while covering the angle of private enforcement could admittedly have added to the completeness of the research as such, I do not believe such an addition would have led to significantly different findings and insights than the ones included in this dissertation.

v. Economic perspective of platforms

The research relies to a great degree on insights from economic literature on platforms and multisided markets. The literature used in this context does not cover the topic of platforms exhaustively. Such a review and analysis of economic literature would go beyond the scope and nature of this dissertation. Instead a choice was made to rely predominantly on the seminal and most recognized works in the field of economics that have become the reference works for Commission, NCA's and both EU and national legislators. To the extent that economic literature was used, the models covered in such works were not assessed or analyzed with regard to their robustness. Such materials were only used for the purpose of identifying the distinguishing characteristics of platforms and provide an understanding on how such characteristics may manifest in practice where the friction with competition policy would arise.

vi. Conclusions concerning the impact on the application of EU competition policy on the dynamics of digital markets

A noticeable part of the debate concerning the application of EU competition law to online platforms, particularly art. 102 TFEU, touches upon the implications of enforcement on the dynamics of digital markets. Specifically, this aspect of the debate is concerned with the impact of enforcement on the innovation potential of online platforms that may be reduced by (overly) aggressive enforcement policies and priority setting. Although this part of the debate is certainly worth exploring it was not included in the scope of this research beyond addressing application concerns that might lead to false positives. This is because including such matters would significantly change the nature of the research. Providing a meaningful answer on this matter would require an extensive inquiry into the economic theory of enforcement that would then be supported by extensive empirical evidence on the implications of competition law enforcement on innovation in practice. This in turn would transform this legal oriented dissertation into an economics oriented one.

Final note on choices and limitations

I am convinced that the research done for this dissertation would not have been manageable within the same framework of time granted to me by Leiden University if the above mentioned choices to narrow its focus were

not made. Including the aspects mentioned above would have significantly expanded the required research efforts for completing this project both in the field of law and outside of it. Attempting to do so in practice would have also risked losing track and control over the research given the myriad of angles that would have had to be considered and covered. This in turn may have undermined the ability of this thesis to communicate to readers the fundamental nature of the challenges posed by online platforms and the length of effort required to tackle such challenges in a comprehensible manner. Accordingly, I believe that the above-mentioned choices made to narrow the scope of research contributed to the quality of the research from an academic perspective, as well as to the relevance of this project for practice. Despite the seemingly specific scope of this dissertation, I believe that the research covers a fundamental part of the debate about the application of EU antitrust law to platforms. It provides key conclusions and insights capable of providing comprehensive and well substantiated guidance for practitioners and academics that are actively taking part in this debate with the aim of finding satisfactory solutions for the legal challenges posed by platforms.

2 The Challenges of Applying EU Antitrust Law to Online Platforms

This chapter is based on the two articles Applying EU Competition law to Online Platforms: The Road Ahead- Part 1 and Part 2, which were published in the European Competition Law review in 2017.

2.1 Introduction

Over time, the legal concepts and economic considerations in the context of EU competition law have been adjusted and modified so as to resolve countless anti-competitive issues in various distinct markets.[1] In the case of digital markets, developments are still at the initial phase wherein the Commission and the national competition authorities try to discover how competition law should apply.[2] Online platforms currently constitute a focal point of these legal developments, which include research and adaption initiatives in the context of EU competition law.[3] The growing attention to online platforms is a result of the vast economic opportunities that they facilitate.[4] The current online platform 'giants' such as Facebook and

1 A good example the overhaul that the system experienced with the Modernization in 2004, on this matter see the competition new letter at: <http://ec.europa.eu/competition/publications/cpn/2004_2_1.pdf>; The application of the essential facility doctrine' to cases concerning IP protected rights in the cases of Case T-201/04 *Microsoft* [2007] ECLI:EU:T:2007:289 and Case C-241/91 P *Magill* [1995] ECLI:EU:C:1995:98; The application of the concept of tying to free goods or services in Case T-201/04 *Microsoft* [2007] ECLI:EU:T:2007:289 ; The application of margin squeeze to network cases C-52/09 *TeliaSonera Sverige* [2011] ECLI:EU:C:2011:83; As well as the Commission's online database for the numerous Regulations, Guidelines and Notices dealing with general aspects of competition law and the application specific sectors.

2 Pieter Ballon and Eric Van Heesvelde, 'ICT platforms and regulatory concerns in Europe' (2011) 35(8) Telecommunications Policy 702, 709-710; See also the rapport from the DG for internal policy on online platforms online at:< http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf>.

3 See Commission Staff Working Document on Online Platforms SWD(2016) 172. Available online at:< https://ec.europa.eu/digital-single-market/en/news/commission-staff-working-document-online-platforms>.

4 Ibid, online platforms in the EU account for a total value of over 26 billion Dollars. Purchases within the 28 EU member states through use of online platforms were over 270 billion Euro and the time saved through the use of such platforms for purchases was over 140 billion EU; See also Commission Staff Working Document on online platforms SWD(2016) 172, pp. 9-16. < https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-288-EN-F1-1.PDF>.

Google have achieved extravagant market valuations in relatively short periods of time. Their economic and societal potential lies in the fact that online platforms have succeeded in creating new markets and disrupting the well-established. Based on market studies, online platforms are likely to become even more prominent with the recent increase in the use of portable devices such as smartphones and tablets that allow for continuous Internet access.[5] With such a significant increase in use, there will undoubtedly be more occasions that will require competition law scrutiny.

On the regulatory front, it would appear that the main concern with the increasing prevalence of online platforms, is whether specific regulation is needed rather than the complexity of application of the current system.[6] The inquiry for new forms of regulation has led to an agreement that the application of the established case law, legal tools and economic theories may require some adjustments in the context of online platforms.[7] Nevertheless, although the need for specific regulation has been dismissed, the complexity and extent of the desired adjustments to the current framework seem to have been underrated. Adapting the current system to high technology markets and, more specifically, to the case of online platforms, will not be a simple task as almost none of the developments in these markets have been foreseen or considered until recently.

Online platforms are part of a highly dynamic and competitive markets, which is sufficient in order to reconsider whether intervention is even desired and whether it can be done adequately.[8] A key challenge is the economic model that online platforms are based upon, namely the 'two- or multi sided market'.[9] Reliance on this market model will have a bearing on essential aspects of an assessment under either Art. 101 or 102 of the Treaty on the Functioning of the European Union (TFEU).[10] Similarly, the provision of zero priced goods or services and the way in which personal data has become an aspect of trade, will also be relevant for such assessments

5 David S. Evans, 'Mobile Advertising: Economics, Evolution and Policy' (2016) < http://ssrn.com/abstract=2786123 >.

6 Ibid.

7 See rapport of the German national competition authority available online at:< http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf>; See also the rapport from the DG for internal policy on online platforms online at:< http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf>; and the OECD Round table on two sided markets DAF/COMP/WD/(2009)69 available online at: < https://www.oecd.org/daf/competition/44445730.pdf>.

8 See the case of the Court order shutdown of Whatsapp in Brazil which led to millions of clients stepping over to the competing app Telegram within 48 hours < http://money.cnn.com/2015/12/17/technology/telegram-whatsapp-brazil-suspension/>.

9 David S. Evans, 'Mobile Advertising: Economics, Evolution and Policy' (2016) *supra* (n 5).

10 Dirk Auer and Nicolas Petit, 'Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy' (2015) 60(4) Antitrust Bulletin 426.

and are likely to increase complications.[11] Furthermore, market transparency, algorithmic trading and online interaction between competitors participating in online platforms will challenge the discovery and prohibition of coordination between competitors.[12] These factors and others will form challenges throughout the entire application process of Art. 101 and 102 TFEU, namely consisting of the application thresholds, qualification of practices and justification grounds. In the context of this article, application thresholds refer to the instance wherein certain behavior is considered as falling under the scope of Art. 101 or 102 TFEU. Qualifications of practices refer to the assessment of an investigated behavior and the finding of an abuse of dominance or a restriction of competition through coordination by object or effect. Finally, challenges concerning justification grounds in the context of this paper refer to the feasibility of relying on the justification grounds of Articles 101 and 102 TFEU.

This chapter provides an initial overview that is intended to serve as the starting point for an extensive study that will address the challenges of applying art. 101 and 102 TFEU (EU antitrust law) to online platforms, and the modifications that are required to enable this process. The focus of this article as well as the extensive study will be the compatibility assessment of the legal criteria of art. 101 and 102 TFEU and the application thereof to online platforms.

In order to provide a coherent overview, this chapter will be structured as follows. Following this introduction, the first section will discuss the concept of online platforms. The second section will address the difficulties encountered in applying Art. 101 TEFU to online platforms, specifically when the existence of coordination or collusion is uncovered, the qualification of such a coordination as having its object or effect to restricting competition and applying the cumulative criteria of Art. 101(3) TEFU. Similarly, the third section will examine the applicability challenges of Art. 102 TFEU, primarily concerning the concepts of dominance and the abuse of such together with specific aspects of online platforms that can be relevant for justification purposes. Each section will provide an initial compatibility evaluation between current practice and its application to online platforms. The final section will provide conclusions regarding the findings of the previous sections, as well as some remarks concerning subsequent research and practice in the case of online platforms.

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11 Ibid note n. 5; See also Andres V. Lerner, 'The Role of 'Big Data' in Online Platform Competition' (2014). Available online at: < http://ssrn.com/abstract=2482780> and Inge Greaf, 'Market Definition and Market Power in Data: The Case of Online Platforms' (2015). Forthcoming in World Competition: Law and Economics Review, Vol. 38, No. 4 (2015). Available online at: < http://ssrn.com/abstract=2657732>.

12 Andreas Heinemann and Aleksandra Gebicka, 'Can Computers Form Cartels? About the Need for European Institutions to Revise the Concertation Doctrine in the Information Age' (2016) 6 7) Journal of European Competition Law & Practice 431, 432-440.

2.2 Online platforms

Online platforms as a concept is one that is hard to define accurately. The difficulty arises as a result of a lack consensus on clear guidelines indicating the existence of an online platform,[13] while in practice this term is freely used with regard to existing businesses.[14] In this sense, one can compare it to light: we are all aware of it, use it and can provide examples of it yet its definition remains a complex matter.[15] It remains to be seen whether, similar to light, online platforms can also be subject to regulation and enforcement in the absence of a precise definition. The concept of a platform is not new; markets and newspapers are example of more traditional platforms. However, the application of this concept in the context of Internet technology increases its potential from a business perspective. While physical platforms are faced with physical expansion constraints, online platforms have more potential to expand. Nonetheless, this potential is not unlimited.[16] Studies of online platforms have taken various approaches with regard to the definition of this concept.[17] At the moment, it would appear that the most common approach to this concept is an economic one.[18] According to this approach, online platforms are primarily identified based on the characteristics of two- or multi sided markets, which can later be divided into *transaction* and *non-transaction* markets.[19] Consequently, within the context of this article, platforms or online platforms refer to two-or multi sided markets. Based on the two-or multi sided market model, online platforms generally operate on multiple markets and facilitate interaction between multiple parties for a fee.[20] Economic literature on two- or multi

13 Commission staff working document on online platforms accompanying the document Communication on online platforms and the digital single market {COM(2016) 288} , SWD(2016)172, at 1-9;

14 Ibid; David S. Evans, 'Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms' (2016). University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 753 < https://ssrn.com/abstract=2746095>.

15 For a discussion on this dispute see a short instructional video of Colm Kelleher, 'Is light a particle or a wave?'. Available online at: < http://ed.ted.com/lessons/is-light-a-particle-or-a-wave-colm-kelleher>.

16 Bertin Martens, 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological Studies Digital Economy Working Paper 2016/05, 12 < https://ec.europa.eu/jrc/sites/jrcsh/files/JRC101501.pdf >.

17 Winston James Maxwell and Thierry Pénard, 'Regulating Digital Platforms in Europe – A White Paper' (2015) 1, 7-10 < https://ssrn.com/abstract=2584873>.

18 Bertin Martens, (2016) *supra* (n 16).

19 Commission staff working document on online platforms n. 13, 1-9; Bundeskartellamt, 'The market power of platforms and networks' (2016) working paper executive summary. 1-2; Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt, 'Market Definition in Two-sided Markets: Theory and Practice' (2014) 10(2) Journal of Competition Law & Economics 293.

20 Pieter Ballon and Eric Van Heesvelde (2011) *supra* (n 2) at 702–708.

sided markets offers various definitions of this model,[21] which in practice may result in different findings with regard to online platforms.[22] The seminal works of Tirole, Evans, Raysman and other scholars vary in the scope of inclusiveness with regard to which features are required to be identified in order to establish the existence the a two-multi sided market.[23] Despite the differences between these studies, there is some agreement with regard to several core characteristics of such two- or multi sided markets. Accordingly, there must be an interaction between two groups of customers via the platform; the value obtained by one group of customers increases with the numbers of customers by the other group; and an intermediary is necessary for internalizing the externalities created by one group for the other group.[24] The relevance of the two- or multi sided market character for the purpose of competition law analysis then depends on: indirect network externalities; pricing structure; and multi-single homing.[25] These characteristics and their materialization can also be observed in the case of online platforms.

Network effects or externalities are a key aspect of two- or multi sided markets and also consequently, in the case of online platforms.[26] Indirect network effects are present when the utility or value of a service or good in a market for a group of customers depends on the consumption of the same good or service by a different group of customers.[27] By contrast, direct network effects are present when the value of the good or service for a group of customers is dependent on the consumption of the good or service by members of the same group. Online platforms will always exhibit a degree of indirect network effects.[28] A good example is an online marketplace such as Amazon. The more sellers Amazon has on its platform the more buyers it will attract and vice versa. In some cases, online platforms will also exhibit direct network effects such as in the case of Facebook or any other social communication platforms.[29] It is important to note that such effects work both ways. Thus, if an online platform conducts business well, it may grow relatively quickly, but if it fails to do so it will lose its

21 Bertin Martens (2016) *supra* (n 16) at 10-18.
22 Dirk Auer and Nicolas,Petit (2015) *supra* (n 10) at 438-450.
23 For an overview of these works see Bertin Martens (2016) *supra* (n 16) at 10-18.
24 OECD Round table on two-sided market, (2009), DAF/COMP/WD(2009)69, 3 < http://ec.europa.eu/competition/international/multilateral/2009_jun_twosided.pdf>.
25 Ibid.
26 Jean-Chalres Rochet and Jean Tirole,' Two-sided markets: An overview', (2004), at 5-6 <https://pdfs.semanticscholar.org/1181/ee3b92b2d6c1107a5c899bd94575b0099c32.pdf>.
27 Ibid.
28 Inge Graef, 'Market Definition and Market Power in Data: The Case of Online Platforms' (2015) 38(4) World Competition: Law and Economics Review 473.
29 This is due to the fact that in the case of social communication online platforms users are not only searching for the content provided from the business side of the platform but also in the option of interacting with other users.

profitability just as fast if not faster.[30] The intensity of the indirect network effects will also have an influence on the pricing structure on the market or platform.[31] Accordingly, the more a member of a customer group values the participation of a member of the other group the higher the price the customer will pay to access the market.[32] This relationship between network effects and pricing structure often results in a skewed structure where one side of the market pays little or nothing while the other side pays substantially more.[33] Such pricing schemes are common for online platforms where it is often the user or consumer side that gains access to the online platform free of charge.

Finally, multi-and single homing refers to the participation patterns of customers in cases where several two- or multi sided markets or platforms co-exist. In such instances, customers on each side of the platform or market chose to do business with a single provider on such markets (single homing) in order to have access to the other side of the market or to multiple providers (multi-homing). These preference patterns depend on the characteristics of the specific market, the business model, differentiation on the market and switching costs.[34] The single-multi homing patterns of customers will, in turn, influence the division of the price structure of a two- or multi sided market.[35] Accordingly, if one side of the market is characterized by single homing, the only way to reach those customers is via their favorite platform. Consequently, the platform in such cases has monopoly over the access to its single-homing customers. Under such circumstances, a competitive bottleneck arises that will allow the platform to charge higher prices to the multi-homing customers on the other sides of the platform.[36] The incentive of the platform is then, of course, to have at least one group of customers on one of its sides to single home. Similar to the previous characteristics of two-multi sided markets, single-and multi homing patterns, as well as their effect on pricing schemes, can be seen in the case of online platforms.[37] A good example of such evidence can be seen with regard to social communication platforms such as Google+ and Facebook, where consumers use a single platform for social

30 David S. Evans and Richard Schmalensee, 'Failure to Launch: Critical Mass in Platform Businesses' (2010), 3-4 < https://ssrn.com/abstract=1353502> .

31 Marc Rysman,' The Economics of Two-sided Markets', (2009) 23(3) Journal of Economic Perspectives 125, 129-131.

32 Ibid.

33 Ibid; OECD Roundtable on two-sided markets (2009) *supra* (n 24) at 8.

34 OECD Round table on two-sided markets (2009) *supra* (n 24) at 10-12.

35 David S. Evans (2016) *supra* (n 14) at 8-9.

36 David S. Evans and Richard Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses ' (2013) in Roger Blair and Daniel Sokol, (eds.) *Oxford Handbook on International Antitrust Economics*, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Online Research Paper No. 623, at 15-16 < https://ssrn.com/abstract=2185373>.

37 Commission staff working document on online platforms, *supra* (n 13) at 32-43.

communication, while advertisers looking to contact these consumers will be active on both platforms. With these characteristics in mind, it is necessary for the online platform to optimize its business model and pricing scheme so as to achieve the minimal threshold of profitability – also referred to as 'critical mass'.[38] Once critical mass has been achieved, the online platform is considered viable and well positioned to grow further, while failure to meet this threshold will result in exiting the market.

In light of the information mentioned above, it is not surprising that the Commission, while acknowledging the various approaches to two- or multi sided markets, seems to focus on the similar characteristics of two- or multi sided markets and online platforms that may be taken into account in the context of a legal analysis.[39] In addition to these characteristics, the Commission also accentuates the importance of the data processing practices and accumulation by online platforms, which may give raise to privacy and competitive law concerns.[40] All the above-mentioned characteristics will inevitably complicate the competition law assessment, however, these cannot be assessed in an abstract manner. An adequate assessment requires acknowledging the entire legal and economic context of each case.[41] Consequently, specific platform characteristics and the dynamics of the online markets in which online platforms play a prominent role, must also form part of future assessment concerning potential violation of EU competition law.[42] An assessment of such market dynamics should always consider the high intensity of competition and the constant repositioning of online platform businesses. The intensity of competition can be witnessed in the changes that have occurred in the online market since the early 2000's. Online platforms that were considered dominant by competition law authorities were, in reality, heading towards failure and were eventually replaced by new, more innovative players.[43] The intensity of competition is constantly growing with the development of Internet technology, which allows for lower launching costs for businesses, often in combination with low switching costs by consumers. Companies that were once unique in

38 David S. Evans and Richard Schmalensee (2010) *supra* (n 30).

39 OECD Round table of two-sided markets (2009) *supra* (n 24) at 5; Commission staff working document on online platforms *supra* (n 13) at 2-8.

40 Bertin Martens (2016) *supra* (n 16) at 30-43.

41 Case C- 32/11 *Allianz Hungaria Biztosito Zrt and Others v Gazdasagi Versnyhivatal*, [2013] ECLI:EU:C:2013:160, para. 36.

42 Preliminary findings in this regard can be seen in the Commission staff working document on online platforms (n. 13) and in Special Report by the Monopolies Commission pursuant to section 44(1)(4) of the Act Against Restraints on Competition, 'Competition Policy: the challenge of digital markets', (2015) special report n 68 < http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf>.

43 For example AOL instant messaging platform, Myspace, AltaVista; See Daniel O'Connor, 'understanding online platform competition: common misunderstandings', (2016) Internet Competition and Regulation of Online Platforms, Competition Policy International, 1, 13-14 < https://ssrn.com/abstract=2760061>.

their market must now compete with multiple competitors.[44] Such intense competition results not only from newcomers to the market, but also from established players that choose to expand their business operations. Google is known, for example, for its search engine, Amazon for its e-commerce platform and Microsoft for its PC OS and yet they now all compete on cloud services.[45] Additionally, in some cases online platforms can be stacked upon or linked to each other in a new model in order to provide a new type of platform. These circumstances make the assessment of competition on the market blurry compared to offline markets that are often more static. Additionally, online platform businesses may often not only compete for an existing market but also for future markets that have yet to fully materialize. Such competition will only intensify with the development of faster mobile Internet technology, which will allow for more online platforms to gain increased access to consumers.[46] With these initial findings taken into consideration, it remains to be seen which challenges can be expected when attempting to apply EU competition law to online platforms.

2.3 Article 101 TEFU – Restrictions of competition

Art. 101 TFEU prohibits restrictions of competition through coordination between competitors, regardless of their form. The prohibition applies to both vertical and horizontal relations,[47] as well as to relations with parties that are active outside the market where the prohibited behavior occurs but that contribute to the infringement.[48] Prohibited practices under Art. 101 TFEU are qualified as restrictions of competition by object or effect. In absence of exceptions or justification grounds, prohibited practices that are discovered are subject to substantial penalties depending on their character and gravity.[49] The application of Art. 101 TFEU based on the abovementioned division of application threshold, qualification of practices and justification, requires initially the existence of coordination in the form of agreement, decision or concerted practices. Once coordination has been discovered, the qualification phase consists of establishing whether the

44 See an overview of the development in the market dynamics of online platform in Evans, David S., Attention Rivalry Among Online Platforms (2013) University of Chicago Institute for Law & Economics Online Research Paper No. 627 < https://ssrn.com/abstract=2195340 >.

45 See Barb Darrow, 'Shocker! Amazon remains the top dog in cloud by far, but Microsoft, Google make strides', (Fortune, May 2015)< http://fortune.com/2015/05/19/amazon-tops-in-cloud/>.

46 On this process see David S. Evans, 'Mobile Advertising: Economics, Evolution and Policy' (2016) < https://ssrn.com/abstract=2786123 >.

47 Joined cases 56/64 and 58/64 *Consten and Grundig* [1966] ECLI:EU:C:1966:41.

48 Case C-194/14 P *AC-Treuhand AG v Commission* [2015] ECLI:EU:C:2015:717.

49 Commission Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003, (2006) OJ C 210/02, paras. 2, 19-20.

coordination has the object or effect to restrict competition. The conclusion in the qualification phase has later bearing on the final phase concerning justification possibilities under Art. 101 TFEU, as restrictions of competition by object are less likely to be justified under Art. 101 (3) TFEU.[50] Although this three-phase process under Art. 101 TFEU has been applied by the Commission and NCAs in over a hundred cases, its application to online platforms will pose challenges throughout the entire analysis process.

2.3.1 Establishing collusion

The prohibition of restricting competition under Art. 101 TEFU applies to agreements, concerted practices or a decision of an association of undertakings. When coordination between undertakings takes one of these forms, Art. 101 TFEU is applicable in principle. The concept of agreement within the meaning of Art. 101 TFEU has been stated by the General Court (GC) in *Bayer AG v Commission*.[51] According to the GC, there must be a concurrence of wills between at least two parties. The way in which such an agreement manifests is irrelevant as long as at it represents the faithful expression of the parties' intentions.[52] In the context of online platforms, agreements between undertakings are conceptually similar to agreements concerning other business sectors, however, these require a thorough understanding of online platform structures and management. A common form of agreement that would fall under Art. 101 TFEU would be one that occurs between two online platforms such as an interoperability agreement,[53] particularly if the two were considered competitors.[54] Similarly, the platform terms of use and management agreement where parties, often competitors, will come to an agreement on their participation on the platform will also fall under the scope of Art. 101 TFEU.[55] An example of a problematic participation agreement is one including a price parity clause,[56] or one that requires a

50 Commission Guidelines on vertical restraints (2010) OJ C 130/1, para. 47.

51 Case T-41/96 *Bayer AG v Commission* [2000] ECLI:EU:T:2000:242.

52 Ibid, para. 69.

53 A recent regulatory development in this direction has been introduced in Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC (2014) OJ L 257/73.

54 An example can be mutual sign-in / user identification or interoperability options such as in the case of Facebook and Instagram where a Facebook account can be used to long into Instagram and Instagram photos can be shared directly on Facebook.

55 See for example Amazon's participation agreement available at:< https://www.amazon.co.uk/gp/help/customer/display.html?nodeId=3216781> .

56 On this use of such clauses in the online travel booking industry see Simonetta Vezzozo, 'Online Platforms, Rate Parity, and the Free Riding Defense' (2016) <https://ssrn.com/abstract=2802151> .

specific pricing scheme.[57] Additionally, the administration of an online platform, particularly in the case of online marketplaces, involves extensive exchanges of information and monitoring between the administrator and the participants. The exchange of such information becomes considerably more sensitive when the administrator is also a competitor on the platform.[58] In the matter of decisions of associations of undertakings, the application of this threshold under Art. 101 TFEU will remain unchanged, as the conceptual meaning of this threshold is unlikely to be altered by the mere fact that it concerns online platforms.[59] Consequently, the assessment of such decisions can still rely on the established case law concerning decisions of associations of undertakings.

Although coordination through agreements and decisions of associations of undertakings can be translated to the context of online platforms with relative ease, it must be noted that their application is limited to cases involving a form of human decision-making process. In absence of the human aspect, these thresholds cannot be met.[60] The only remaining possibility in such cases is to rely on the concerted practices threshold wherein the required intensity of collusion is less demanding.[61] However, as will become evident, even the flexibility and extensive scope of the criteria of which this threshold consists may be circumvented through recent technological developments.[62]

57 Elai Katz,' Uber-algorithm alleged to constitute price-fixing', (2016) 225 New York Law Journal < https://awards.concurrences.com/IMG/pdf/uber_algorithm_alleged_to_constitute_price-fixing.pdf>.

58 Such issues were already considered in the context of B2B platforms, see Joachim Lücking, 'B2B E-Marketplaces: A New Challenge to Existing Competition Law Rules?'(2001)< http://ec.europa.eu/competition/speeches/text/sp2001_030_en.pdf>; The Commission has also dealt with a number of such B2B marketplaces. However the matters were settled informally so they may not offer sufficient guidance in cases concerning B2C platforms. See e.g. Commission clears the creation of the Covisint Automotive Internet Marketplace Press Release IP/01/1155, 31 July 2001; Commission clears electronic multi-bank trading platform for foreign exchange products Press Release IP/02/943, 27 June 2002.

59 In the context of online platforms the most relevant decisions taken as those taken by associations such as EDiMA and EMOTA that specifically seek to represent online platforms as well as standard setting organizations in this filed.

60 Ariel Ezrachi and Maurice E. Stucke, 'Artificial Intelligence & Collusion: When Computers Inhibit Competition', (2015) Oxford Legal Studies Research Paper No. 18/2015; University of Tennessee Legal Studies Research Paper No. 267, at 8-10 < https://ssrn.com/abstract=2591874>.

61 Alison Jones and Brenda Sufrin, ' EU Competition law – Text, Cases and Materials (6th edt. OUP, 2016), 153.

62 Andreas Heinemann and Aleksandra Gebicka, 'Can Computers Form Cartels? About the Need for European Institutions to Revise the Concertation Doctrine in the Information Age', (2016) 6 Journal of European Competition Law & Practice 1, 3-11.

The inclusion of the term 'concerted practices' in Art. 101 TFEU is intended to cover the remaining undesired coordination practices not in the form of a decision of an association of undertakings or that do not exhibit sufficient intensity to fall under the accepted terms of an agreement. The definition of what constitutes concerted practices was first provided in the case *ICI v Commission*, where the Court of Justice (CJEU) considered it to be a form of coordination without reaching the stage of a proper agreement.[63] In order to conclude that concerned practices occurred, a form of contact must be proven as well as common conduct on the market resulting from such contact.[64] Establishing the existence of all of these factors in the case of online platforms will result in both practical and conceptual challenges.

The link of cause and effect between contact and common conduct on the market indicates that there is a certain degree of awareness that is associated with the existence of contact or a meeting of the minds.[65] This requirement is met if it can be proven that the communication has been received by the other party.[66] Once that is established, the requirement of proving a causal link between the contact and subsequent conduct on the market has been met by way of a rebuttable presumption that coordinated market conduct will or has already followed.[67] Contact by way of meetings or public announcements meet the above-mentioned criteria quite easily, however, in the case of digital contact the story is more complex. The recent *Eturas* case proves that establishing contact and awareness of it in a digital environment such as an online platform can be a daunting task from a practical point of view.[68]

The case involved travel agencies that were active on an online booking platform, and the administrator of the platform had capped the reduction prices that agents could give on its platform. The capping occurred after sending all the agents a notification on this decision via the platform's internal communication system. The problem was that it was not clear whether the agents actually read the notification and were aware of the coordination of reduction percentages.[69] Although the capping was a result of a survey taken by an unknown number of members of the platform and the fact that the system was modified and all reduction rates were capped automatically was not sufficient to prove participation in concerted prac-

63 Case 48/69 *ICI v Commission* [1972] ECLI:EU:C:1972:70, para. 64.
64 Case C-8/08 *T-Mobile Netherlands BV v Raad van bestuur van de Nederlandse Mededingingsautoriteit* [2009] ECLI:EU:C:2009:343.
65 Joined Cases T-25/95 *Cimenteries and Others* [2000] ECLI:EU:T:2000:77 , para. 1849; Alison Jones and Brenda Sufrin (2016) *supra* (n 61) at 153.
66 Joined Cases T-25/95 *Cinmenteries CBR and Others v Commission* [2000] ECLI:EU:T:2000:77.
67 Case C-199/92 P *Huls v Commission* [1999] ECLI:EU:C:1999:358.
68 Case C-74/14 *Eturas and others* [2016] ECLI:EU:C:2016:42
69 Ibid, paras. 44-45.

tices.[70] Considering the difficulty of proving the existence of awareness of the contact in the *Eturas* case despite the very sensitive evidence that was available, one may wonder whether this burden of proof requirement is workable in the context of digital communication. At the same time, removing the requirement of awareness from the equation would imply that any form of contact between competitors is sufficient to lead to a presumption that participation in concerted practices has taken place when the dispatch of digital messages between competitors can be traced. Such an approach would be problematic, as an undertaking would be required to rebut the presumption actively by publicly distancing itself or reporting the matter to the Commission or the NCA.[71] This would be an unreasonable burden for undertakings, particularly when these are truly unaware of any sensitive information being exchanged via means of digital communication. Consequently, the aspect of awareness or conscious contact between undertakings via means of digital communication will require reconsidering the procedural rules, which determine whether the burden of proof has been met on grounds of direct or indirect evidence.[72]

Admittedly, this problem is not isolated to online platforms as communication via digital means, as it occurs outside this context as well. However, communication within the context of online platforms will predominantly occur via digital means of communication. Any changes to such procedural rules should take into account the balance between the effectiveness of (EU) competition law and the presumption of innocence.[73] Beyond this practical difficulty concerning the burden of proof in concerted practices cases[74], lays a far more complex conceptual problem resulting from recent technological developments.

The developments concern automatic pricing and monitoring software that are used to instantly react to market circumstances including the market behavior of competitors. The use of such tools can, in certain instances, lead to the same result as a cartel while not taking the form of an agreement or a decision by an association of undertakings.[75] Consequently, it should be considered whether the term 'concerted practices' could encompass such practices so as to enable the application of Art. 101 TFEU. The gist of such

70 Ibid.
71 Ibid, paras. 46-47.
72 Ibid, paras. 36-38.
73 Ibid, paras. 38-40.
74 Ibid, para. 34. The Court in this case notes that the factor of awareness is related to the burden of proof with regard with concerted practices rather than being part of the concept of ' concerted practices'. The practical meaning of this distinction is however not entirely clear.
75 Ariel Ezrachi and Maurice E. Stucke (2015) *supra* (n 60); Salil K. Mehra,' US v. Topkins: can price fixing be based on algorithms?',(2016) 7(7) Journal of European Competition Law and Practice 470.

new software is rather simple, namely, it monitors the conditions on the market and instantly adapts the price automatically according to circumstances within the framework of the programmed limits of the software.[76] The use of such software in the case of online platforms has been recognized by the Commission in its recent e-commerce sector inquiry and practice has shown that such tools can lead to problematic outcomes.[77] In order to apply the threshold of concerted practices to such tools, it should be considered whether the requirements of contact followed by common or parallel market conduct can cover such situations.

The first step in establishing the existence of concerted practices should consist of evaluating whether interaction between software programs could be considered a form of contact. Furthermore, it should be established what kind, as well as, what degree of awareness or meeting of the minds concerning contact is then required. The interaction between software programs is, however, different from contact in the sense of concerted practices. This interaction is, in essence, a series of unilateral decisions resulting from monitoring the market and competitors, which is considered legitimate practice. In contrast to human monitoring and decision-making, this automated process can provide instant reaction to every change on the market. The simultaneous use of such software reduces the incentives to lower prices due to eliminating the possible benefit of first mover advantage, which can result in reduced competition in the long run.[78] This, however, does not change the problem of establishing the existence of contact. If anything, such software only makes the requirement of finding contact even more crucial in cases exhibiting a high degree of parallel behavior. It is settled case law that parallel behavior such as pricing is not sufficient to conclude that concerted practices are taking place.[79] However, in the absence of other explanations, such parallel behavior may still serve to trigger a presumption that concerted practices occurred.[80] The problem is that the parallel pricing would then be the result of a series of unilateral decisions taken by various software in the context of a very transparent

76 Two examples of such software are Prisync and Competitormonitor. Each of these allows undertaking to monitor the market and their competition and if desired adapt their prices automatically. The monitoring results are updated in intervals of 1-3 hours, which allows for an almost instant opportunity for reaction to the circumstance on the market.

77 See Commission Staff working document- Preliminary Report on the E-commerce Sector Inquiry SWD(2016) 312 final, at 174-176; SUTTER, J. D. Amazon seller lists book at $23,698,655.93 – plus shipping. (CNN, April 2011) < http://edition.cnn.com/2011/TECH/web/04/25/amazon.price.algorithm/>; See also Decision of the CMA in the case of online sale of posters and frames, Case 50223. In this case the CMA managed to discover automatized pricing and monitoring software that was intended to digitally manage the functioning of a price fixing cartel on Amazon.

78 Ariel Ezrachi and Maurice E. Stucke (2015) *supra* (n 60); Salil K. Mehra, (2016) *supra* (n 75).

79 Case 48/69 *ICI v Commission* [1972] ECLI:EU:C:1972:70 paras. 64-66; Case C-89/85 *A. Ahlström Osakeyhtiö and others v Commission* [1993] ECLI:EU:C:1993:120, paras. 70-72.

80 Ibid.

market rather than an outcome of contact between competitors. The more popular the use of such developments becomes, the less valuable evidence of parallel pricing, as undertaking should be allowed to intelligently adapt to the conditions on the market.[81] As long as these unilateral decisions taken by computer software are not considered to be a result of contact in the form interaction between monitoring software, the entire practice will not meet the threshold of concerted practices for the purposes of applying Art. 101 TFEU. The parallel pricing will then be a result of legitimate practices in light of market transparency, which could not trigger the presumption that concerted practices have occurred. This applies to parallel prices on particular platforms as well as across platforms. This is a problematic outcome, as these undesired effects are identical to those of collusion and could not be caught under concerted practices nor by the other forms of coordination in Art. 101 TFEU.

In light of these circumstances, it would appear that concerted practices would lose relevance when dealing with parallel pricing resulting from monitoring and automatized pricing software. It then remains to be seen whether the criteria for establishing the existence of concerted practices should be changed in this context. This is particularly relevant in situations where the future parallel behavior as a result of computer software processes can be predicted by those who make use of it. It is unclear whether such cases could ever be considered concerted practices in the manner this term is defined by current practice. A possible approach is to focus on the awareness and predictability of the use of such software on price competition. If is proven that such software will reduce price competition based on empirical studies, then contact concerning the intention to use such tools may bring such use of software within the scope of concerted practices.[82] This will primarily concern undertakings participating on e-commerce platforms as well as platform administrators.[83] However, in the absence of such circumstances, covering the use of digital monitoring and pricing software on online platforms may require introducing a new threshold for collusion under Art. 101 TFEU.

At the same time, even if such practices will not be prohibited, price competition is only one aspect of competition and perhaps the only one that can be subjected to automatized decision-making process. Thus, evidence of common or parallel market conduct which cannot be a result of automa-

81 Ibid.

82 Such an exchange can be considered to have an adverse effect on price and thus would fall under the scope of Art. 101 TFEU according to the Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (2011) OJ C 11/1, paras. 68-74.

83 By analogy such cases would then be handled similar to the Case C-74/14 *Eturas and others* [2016] ECLI:EU:C:2016:42 and Case C-194/14 P *AC-Treuhand AG v Commission* [2015] ECLI:EU:C:2015:717.

tized unilateral decision making, such as terms and conditions or privacy settings, will remain relevant for establishing the existence of concerted practices.[84]

The evaluation of parallel behavior based on non-price criteria will be critical in such cases as well as in cases concerning non e-commerce online platforms that offer zero- priced access to users. In such cases, all competing platforms charge consumers a price of zero for their services, thus finding the existence of coordination in the form of concerted practices with regards to the consumer side is only possible based on non-price parameters.[85] Such parameters can be described as the quality aspect of the service that the platform provides to consumers.[86] Although quality parameters can be compared in principal, such parameters will often lack the transparency and objectivity of price comparisons.[87] Privacy, for example, has been recognized as a quality aspect for which there is competition on the market.[88] Furthermore, privacy requirements on the consumer side will also impact the pricing on the other side of the platform and as such, on competition between platforms on the paying side. Comparing privacy settings with the purpose of finding concerted practices between online platforms can, however, be very difficult as platform competition often occurs across platforms that offer very different services. An additional burden would be to prove that platforms that offer different services to consumers are in fact in competition. However, even if a relation of competition can be established, modifications in privacy settings may appear different while having the same effect or vice versa. Although collusion on non-price parameters may affect the pricing structure or level of the online platform, it cannot be expected that such effects will be parallel and similar. Nonetheless, as the paying side and the user side of online platforms are interrelated, parallel price changes on the paying side of competing platforms can serve

84 The recognition of such non-price aspects of competition such as privacy can be seen in *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014, paras. 87, 102; *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016, paras. 349-352.

85 This is true with regard to agreements and decisions of associations of undertakings as well. The complexity in such cases concerns establishing whether the contents of such agreements or decision may restrict competition rather than the existence of a form of coordination.

86 *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014, paras. 87, 102; *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016, paras. 349-352.

87 See Inge Graef, 'Stretching EU competition law tools for search engines and social networks' (2015) 4 Internet Policy Review 1, 2-3. Innovation is a key aspect of competition in social media application – measurement of such quality is highly complex and often subjective.

88 *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014, paras. 87, 102; *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016 paras. 349-352.

as additional evidence for establishing the existence of concerted practices on the user side. Accordingly, it can be said that in the absence of evidence concerning contact, triggering the presumption that such contact occurred based on common conduct on the market will be a herculean task.

In light of the above-mentioned, it can be seen that the jurisdictional thresholds of Art. 101 TFEU are not fully compatible in the case of online platforms and the introduction of an additional threshold for collusion is necessary. The use of digital communication tools, monitoring and pricing software, and collusion based on non-price parameters will entail the primary challenges in this respect. The thresholds of collusion are the first challenge in the process of applying Art. 101 TFEU. The difficulty surrounding online platforms continues with regard to all forms of coordination when qualifying the practice as a restriction of competition by object or effect.

2.3.2 Restrictions by object or effect

Once a form of coordination between undertakings has been established, an unavoidable following step is to determine whether such form of coordination restricts competition by object or effect.[89] Although both qualifications concern prohibited practices, the choice between the two determines multiple aspects of the enforcement process. Restrictions by object are practices that by their very nature have the potential to restrict competition.[90] Consequently, once agreements, decisions or concerted practices are found to restrict competition by object it is no longer necessary to prove the anti-competitive effects of such practice, which provides obvious advantages from an enforcement point of view.[91] Furthermore, restrictions by object are always considered to have an appreciable effect on competition. Additionally, establishing the existence of an object restriction will likely have an aggravating effect on the amount of the fine imposed and reduce the chances of success with regard to the justification of the practices under Art. 101(3) TFEU.[92] Practice shows there is a degree of variation concerning practices that may or may not constitute a restriction by object. First, are the 'obvious' object restrictions, which are considered highly undesirable and include price fixing, output limitation and market sharing.[93] Second,

89 See Richard Wish and David Bailey, *Competition law* (8th edn, OUP, 2016) 373, the term 'object' in article 101 TFEU refers to the objective meaning and purpose of the practice in the economic context in which it is applied.

90 Case C- 209/07 *Competition Authority v Beef Industry Department Society and Barry Brothers (Cargimore) Meats* [2008] ECLI:EU:C:2008:643 para. 16.

91 Case C- 56/65 *Societe Telchnique Miniere v Maschinen Ulm* [1996] ECLI:EU:C:1966:38 paras. 235, 249.

92 Commission Guidelines on the application of Article 81(3) of the Treaty (2004) OJ C 101/97, para 46.

93 Ibid , paras. 21 and 24.

there are practices that do not seem to contain an obvious object restriction, however, when assessed in it the specific circumstances of the case reveal such a character in the context of their application.[94] Finally, there are also practices that seem to restrict competition by object, however, when analyzed within their specific context prove to have no anti-competitive object.[95] The latter two options can be said to constitute the borderline cases concerning object restriction rather than restriction by effect. Such cases inherently require more analysis than the obvious object restrictions. Consequently, in order to maintain the separation between the two qualifications it is important that the analysis that is necessary in cases concerning object restrictions is not as elaborate as the analysis required in cases concerning restrictions of competition by effect.[96] This may prove a difficult task in the case of online platforms, particularly those involving vertical restraints.

The case law on the separation between restrictions by effect and non-obvious object restrictions is, however, unclear when considering *Allianz Hungraria*.[97] In this case, the CJEU required an analysis that seems more suitable for the finding of a restriction by effect rather than an object restriction.[98] The CJEU seemed to require the analysis of additional aspects beyond the objectives of the practices as well the economic and legal context thereof.[99] According to the CJEU, practices should also be considered in the light of their legal and economic context to determine whether the practices are sufficiently injurious to competition on the market so as to amount to an object restriction.[100] The effects base tendency is further confirmed by the suggestions made by the CJEU with regard to the elements of the assessment.[101] In addition to blurring the line between object restriction and restrictions by effect, such an approach is capable of extending the scope of object restriction beyond the wide definition of the CJEU in *T-mobile*.[102] This approach is hard to reconcile with the later findings of the CJEU in *Groupement Cartes Bancaires*, wherein the CJEU stated that the assessment must be made with consideration to the legal and economic context of the

94 Ibid, para 22.
95 See as example Case C- 27/87 *SPRL Louis Erauw-Jaquery v La Hebignonne SC* [1988] ECLI:EU:C:1988:183 paras. 10-11.
96 On this see Case C-8/08 *T-mobile Nethterlands BV and Others* [2009] ECLI:EU:C:2009:110, Opinion of AG Kokott, paras. 46-48.
97 Case C- 32/11 *Allianz Hungaria Biztosito Zrt and Others v Gazdasagi Versnyhivatal* [2013] ECLI:EU:C:2013:160.
98 J. Faull and A. Nikpay (eds) *The EU Law of Competition* (3rd edn, OUP, 2014) 241-243.
99 Case C- 32/11 *Allianz Hungaria Biztosito Zrt and Others v Gazdasagi Versnyhivatal* [2013] ECLI:EU:C:2013:160 paras. 36-38.
100 Ibid, para. 46.
101 Ibid, para. 48.
102 See C-8/08 *T-mobile Nethterlands BV and Others* [2009] ECLI:EU:C:2009:343 para. 31. According to the Court it is sufficient that the practices have the potential of having a negative effect on competition.

investigated practice.[103] When determining the legal and economic context, consideration must be given to the nature of the goods or services affected as well as to the real conditions of the functioning and structure of the market or markets in question.[104] In order to then ascertain that a practice restricts competition by object, the coordination facilitated by it must reveal, according to the CJEU, a sufficient degree of harm to competition within that legal and economic context.[105] Such assessment in the case of online platforms – which are inherently two-multi sided markets – makes the finding of non-obvious object restrictions troublesome. This is confirmed by the CJEU's findings on the two-sided market character of the payment system market.[106]

According to the CJEU, once the GC observed that the practices of the undertakings in the case produced an indirect network effect, the finding of an object restriction could not be made.[107] The practices in the case sought to establish a certain ratio between the two sides of the payment system market through a measure that had as its object, the imposition of a financial contribution on some of the members in the payment system.[108] Such an object could not be by its very nature harmful to competition as is required to establish in the case of an object restriction.[109] Nonetheless, the CJEU noted that such practices could hinder competition. However the finding of such consequences should be part of the effects analysis of the practices and not the examination of their object.[110] Although the CJEU in *Groupement des Cartes Bancaires* takes a stricter approach to object restrictions than in *Allianz Hungraria*, the reliance on either approach in the case of online platforms will lead to an effects-based analysis in most cases concerning the restriction of competition between participants on the platform.

Online platforms are two-multisided markets, which operate on a business model that primarily revolves around the ability to facilitate interactions between multiple parties for a fee.[111] As mentioned previously, such interconnection in the context of two- or multi sided markets will exhibit direct- and indirect network effects between the sides of the platform. The more intense the network effects, the more complex the analysis will become because every action on one side of the platform will impact the other

103 Case C-67/13 P *Groupement des cartes bancaires v Commission* [2014] ECLI:EU:C:2014:2204 para. 53.
104 Ibid.
105 Ibid, para. 57.
106 Ibid, para. 73.
107 Ibid, para. 74.
108 Ibid, para. 75.
109 Ibid.
110 Ibid, paras. 80-81.
111 Pieter Ballon and Eric Van Heesvelde (2011) *supra* (n 2) at 702–708.

side.[112] Consequently, the so-called 'quick test' that is undertaken before qualifying a practice as an object restriction will become more elaborate.[113] The elaborate test suggested by the CJEU in *Allianz Hungraria* will therefore become even more extensive as object of the practices must be observed with regard to all the sides of the platform while taking into account the network effect between them.[114] The more extensive the test, the blurrier the line between restrictions by object or effect becomes in terms of qualification. At this stage, there are still very few studies devoted to theories of harm for the two- and multi sided market models,[115] consequently limiting the possibility to conclude that a certain practice has the object of limiting competition without extensive analysis.[116] Under such circumstances, it becomes more difficult to conclude, without going into a form of an effects analysis, that a certain practice has the object of restricting competition. Such a situation is unlikely to change before more knowledge and consensus is established on the matter of the two- or multi sided market theories of harm and the online market on which platforms are active.

Reliance on the CJEU's findings in *Groupement des Cartes Bancaires* allows for two approaches in the case of online platforms. First, a broad interpretation of the case that excludes the possibility of qualifying many practices as object restrictions. According to this approach, the finding of object restrictions in the case of practices that seek to improve the balance between the sides of the platform in light of network effects is not possible.[117] The second approach to the CJEU's findings in *Groupement des Cartes Bancaires* would be to treat the findings as relevant only to this specific case and circumstances. Consequently, this approach will still allow for an attempt at the stricter and more limited test of object restriction based primarily the assessment

112 See discussion on the complexity of the analysis for collusion and vertical restraints in David S. Evans and Richard Schmalensee,, (2013), n. 36; David S. Evans, 'Economics of Vertical Restraints for Multi-Sided Platforms' (2013). University of Chicago Institute for Law & Economics Online Research Paper No. 626 < https://ssrn.com/abstract=2195778 >.

113 Richard Wish and David Bailey (2016) *supra* (n 89) at 133.

114 See by analogy *Allianz Hungaria Biztosito Zrt and Others v Gazdasagi Versnyhivatal* [2013] ECLI:EU:C:2013:160, para 42.

115 David S. Evans and Richard Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses' (2013) *supra* (n 36) at 28.

116 Examples of such studies Massimo Motta & Helder Vasconcelos, 'Exclusionary Pricing in a Two-sided Market' (2012) Centre for Econ. Pol'y Research, Discussion Paper No 9164 < https://cepr.org/active/publications/discussion_papers/dp.php?dpno=9164#>; David S. Evans, 'Economics of Vertical Restraints for Multi-Sided Platforms' (2013) *supra* (n 112).

117 Supported by the findings in Case C-67/13 P *Grupemant des Cartes Bancaires* [2014] ECLI:EU:C:2014:2204 paras. 74-75; Javier Ruiz Calzado, Andreas Scordamaglia-Tousis, 'Groupement des Cartes Bancaires v Commission: Shedding Light on What is not a 'by object' Restriction of Competition (2015) 6(7) Journal of European Competition Law & Practice 495.

of the legal and economic context of the case.[118] This approach will offer a more stringent attitude towards the finding of an object restriction than is suggested by the CJEU in *Allianz Hungraria.* However, it is still likely to blur the line between object restrictions and restriction by effect.

Finding an object restriction is cumbersome in the absence of established theories of harm and experience with practices that are known to be harmful to competition in two- or multi sided markets. Consequently, it is only when practices exhibit obvious evidence of harmful interference with competition that they should be considered to be restricting competition by object. In the absence of such evidence, there is a risk that the quick test associated with object restriction would then be stretched as seen in *Allianz Hungraria.* Such an outcome must be avoided. If finding that a practice constitutes a restriction by object is not possible without going into a quasi-effects analysis, it might be better to adopt an effects-based approach for two- or multi sided market settings such as in the case of online platforms.

This approach need not be permanent, however, it must be sufficient for studying such markets and allowing for the development of clear theories of harm. Over the course of this process, all cases concerning two- or multi sided markets can be relevant for discovering new obvious object restrictions as well as restrictions that are presumed to be object restrictions and yet fall outside of such qualification.[119] Accumulating experience in this context is necessary in order to avoid the creation of a hybrid qualification test that has not been included in the treaty.[120] Namely, an object restriction based on an effects test, which contradicts the alternative nature of the two approaches in the context of Art. 101 TFEU. At the same time, it will provide for a better understanding of two sided markets and the relevance of such theories in the investigation and assessment process, as they may not always be relevant or useful in every case.[121] In some cases, reliance on two- or multi sided market models will not affect the outcome but will only complicate the process.[122] Obtaining a better understanding of such markets and the dynamic character thereof in the case of online platforms will evidently benefit the process of application regardless of the qualification chosen.

118 Case C-67/13 P *Grupemant des Cartes Bancaires* [2014] ECLI:EU:C:2014:2204 para. 53.

119 See for example Case C- 345/14 *SIA Maxima Latvija v Konkurences padome* [2015] ECLI:EU:C:2015:784. The case concerned vertical restrictions in rental agreements for shopping mall tenants. From an economic perspective shopping malls can be considered similar to a certain extent with online platforms as both exhibit tendencies of two-sided markets.

120 On the risk of mixing the two qualifications into one see Case C-8/08 *T-Mobile Netherlands BV and Others* [2009] ECLI:EU:C:2009:110 Opinion of AG Kokott paras. 41-49.

121 For an overview of such past cases see Dirk Auer and Nicolas Petit (2015) *supra* (n 10).

122 Ibid.

Challenges concerning the establishing of a form of collusion and qualification of practices as discussed above will primarily concern the Commission and the various NCA's. The challenges with the application of Art. 101 TFEU will, however, also affect the undertakings concerned as reliance in Art. 101 (3) TFEU may prove to be a theoretical rather than a practical possibility.

2.3.3 Justification criteria

Art. 101(3) TFEU provides for important justification grounds for practices that are considered prohibited under Art. 101(1) TFEU irrespective of the qualification given.[123] In order to benefit from such a justification, practices must fulfill the four cumulative criteria of Article 101(3) TFEU.[124] The burden of proof lies initially with the undertakings concerned and is shifted once convincing evidence has been provided in support of the view that the investigated practices comply with all four criteria.[125] According to Article 101(3), in order for the justification to apply, an agreement, decision or concerted practices:

a) Must contribute to improving the production or distribution of goods or to promoting technical or economic progress;
b) consumers must receive a fair share of the resulting benefit;
c) The investigated restrictions are indispensable to the attainment of these objectives; and
d) do not afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

The fulfillment of the four criteria in the case of online platforms will likely be more cumbersome than in other instances due to their two- or multi sided market character and the highly competitive market setting in which they operate. The difficulties concern the fulfillment of the first two criteria which deal with the welfare of consumers and the fourth criterion which concerns the competitive process on the market.[126]

The challenge of fulfilling the first and second criteria result from the efficiencies that are accepted for the purpose of relying on Art. 101(3) TFEU and the manner in which these are assessed. The first criterion requires undertakings to provide proof of objective efficiencies directly resulting

123 Case T-168/01 *GlaxoSmithKline Services Unlimited* [2006] ECLI:EU:T:2006:265 para. 233.
124 Case C- 68/12 *Protimonopolný úrad Slovenskej republiky v Slovenská sporite a a.s.*, [2013] ECLI:EU:C:2013:71, para. 31.
125 Ibid, para 32; Case T-168/01 *GlaxoSmithKline Services Unlimited* [2006] ECLI:EU:T:2006:265 para. 82.
126 See Commission Guidelines on the application of Article 81(3) *supra* (n 92) para. 84. Consumers in the context of Art. 101(3) TFEU criteria include commercial parties as well and end consumers.

from the practices that were initially prohibited under Art. 101(1) TFEU.[127] The second criterion of Article 101(3) TFEU requires that consumers receive a fair share of the efficiencies that can be achieved through the potentially anti-competitive practice.[128] The meaning of 'fair share' in this context is that consumers that are affected by the restrictive practices are compensated by the efficiencies gained by the practices.[129] The application of these two criteria in cases concerning two-multi sided markets is problematic.

On this matter the Commission Guidelines on the application of Article 101(3) TFEU state that the efficiencies must be achieved in the same relevant market as where the restrictive practice takes place.[130] In the case where two markets are related, efficiencies in these separate markets could be considered only when the consumers on both markets are the same.[131] Meeting these requirements in the case of online platforms will often be difficult if not impossible because online platforms will always entail a two- or multi sided market setting.[132] Therefore, the parties on the different sides of the platforms will not be the same, as the whole idea of online platforms in general is to facilitate the interaction between two or more customer groups in an efficient manner.[133] Consequently, in some cases the implementation of restrictive measures on one side of the platform may lead to benefits on the other side of the platform.[134] Under such circumstances, a strict interpretation of the Commission guidelines would essentially indicate that relying on Article 101(3) TFEU is not possible since the two or more sides of the platform do not consist of the same group of consumers.[135] Fortunately, the recent case law of the CJEU in *Mastercard* relaxed this requirement to a certain extent but not sufficient so as to resolve the complexities resulting from this requirement in the cases of two-or multi sided markets such as online platforms.[136]

The case concerned MasterCard's four-party payment system, which includes the acquiring bank, issuing bank, merchant accepting the payment cards and the cardholder. In this case, the GC, later confirmed by the

127 Ibid, paras. 48-54.
128 Ibid, para. 83.
129 Ibid, para. 85.
130 Ibid, para. 43.
131 Ibid.
132 Commission staff working document on online platforms n. 13, at 1-9.
133 David S. Evans (2016) *supra* (n 14) at 6-15.
134 OECD Roundtable on two-sided markets (2003) *supra* (n 7) para. 52.
135 Ibid, para.54-55; Gönenç Gürkaynak, Öznur Ínanılır, Sinan Diniz, Ayşe Gizem Yaşar, 'Multisided markets and the challenge of incorporating multisided considerations into competition law analysis' (2017) 5 Journal of Antitrust Enforcement 100, 125; Alfonso Lamadrid de Pablo, 'The Double Duality of Two-Sided Markets' (2015) 64 Comp Law 5, 9-15 < https://antitrustlair.files.wordpress.com/2015/05/the-double-duality-of-two-sided-markets_clj_lamadrid.pdf>
136 Case C-382/12 P *MasterCard Inc and Others v Commission* [2014] ECLI:EU:C:2014:2201.

CJEU, held that the agreement to set intra-EEA multi-lateral interchange fees (MIF) for cross border transactions paid by the acquiring banks to the issuing banks for payment transactions was in violation of Article 101 TEFU.[137] The Commission identified three different product markets within this four-party system. The relevant market in the case was found to be the national acquiring markets, also referred to as the merchant market.[138] According to the GC, and later confirmed by the CJEU, the restrictive effects of the contested agreement were identified in this market. In the process of relying on Art. 101(3), MasterCard had evidence of the possible advantages in the acquiring market but not in the merchant market.[139] Accordingly, the evidence provided concerned a separate but connected market to the market affected by the observed restriction. In light of these circumstances, the GC found that evidence of such advantage is not sufficient to satisfy the requirements of Article 101(3) TFEU.[140] In the appeal, the CJEU provided more clarity on the matter of proving the existence of objective advantages. Accordingly, in the case of two-or multi sided markets, evidence of consumer advantages is not necessarily limited to the relevant market where the infringement took place but can be considered in combination with advantages in related markets.[141] Even when the advantages on the relevant market are not sufficient in themselves to comply with Article 101(3) TFEU, the combination of such advantages with others found in the observed related market may sway the balance towards a justified practice.[142] However, in order to do so there must be proof of efficiencies firstly on the relevant market where the infringement took place, only then can the efficiencies in the related market be considered for the purpose of Article 101(3) TFEU. Relying on efficiencies solely obtained in separate although related markets will not suffice for this purpose.[143]

The findings of the CJEU in this case relax the requirement found in the Guidelines yet these are not sufficient to resolve the issue completely. In a case concerning an online platform where multiple separate but related markets are identified, proof of efficiencies must first be provided with relation to the market where the restriction has been established. Only once such proof has been provided, can the efficiencies on other related markets be considered. Consequently, when dealing with online platforms, the choice between defining the relevant market with regard to the platform will undoubtedly have an impact on the burden of proof concerning efficiencies. If the relevant market entails all the sides of the platform, then

137 Case T-111/08 *MasterCards Inc and Other v Commission* [2012] ECLI:EU:T:2012:260.
138 Ibid, paras. 21-22.
139 Ibid, paras. 222-230.
140 Ibid.
141 Case C-382/12P *MasterCard Inc and Others v Commission* ECLI:EU:C:2014:2201 paras. 236-240.
142 Ibid, para. 241.
143 Ibid, para. 242.

any evidence of efficiency is equally useful for the purpose of an Art. 101(3) assessment. If, however, the case entails multiple interrelated relevant markets corresponding with the various sides of the platform, the burden of proof will still form a substantial obstacle in future cases.

The choice between the two market definition methods depends on the type of the platform. Transaction platforms that seek to facilitate specific mutual interaction between the various sides of the platforms, such as online marketplaces, can be defined within one relevant market. Non-transaction platforms where the interest in the interaction on the platform lies primarily with the participants on one side of the platform, such as advertisement platforms will, however, likely entail several relevant interrelated markets.[144] Accordingly, defining the relevant market for the platform as whole will not offer a solution for this issue in all cases concerning online platforms or other two-or multi sided market settings for that matter. In the case of such platforms, it will still be necessary to provide evidence of objective efficiencies firstly in the market where the restriction has been observed, otherwise reliance on Art. 101(3) TFEU is not possible according to the MasterCard case. In the absence of such evidence, undertakings would not be able to comply with the second criteria of 101(3).[145]

Resolving the difficulty created by the consumer communality requirement calls for reevaluating the evidentiary status given to network effects in relation to providing proof of efficiencies. Accordingly, the matter will depend on whether efficiencies in a related market that are transferred via network effects into the relevant market can be sufficient for complying with the first two criteria of 101(3) TFEU. This will, of course depend on the feasibility of such a relationship between the separate markets in the case and the efficiencies exchanged based on the intensity of the network effect they exhibit. A more comprehensive solution would be to simply balance off all the efficiencies and anti-competitive effects in a specific case regardless of the markets in which they occur, with an emphasis on the consumer side. Accepting such evidence as compatible for the purpose of relying on this exception would allow for a more adequate assessment of efficiencies in the case of two-or sided markets including online platforms. Such a change in approach would admittedly be inconsistent with the Commission guidelines, however, such a document would not have a binding legal status for the EU Courts and the wording of Art. 101(3) TFEU is neutral in this regard. Therefore, the change in approach, while being substantial is relatively easy to attain, as it would essentially be one of policy rather than legislation.

144 Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt, (2014) *supra* (n 19) at 323; Budeskartellamt, working paper (2016) *supra* (n 19) at 5-6.

145 In such cases it could not be possibility to hold that the parties that are affects by the restrictive practices are not worse off as is required to prove according to para 85 of the Commission Guidelines on the application of Article 81(3) n. 92.

Similar to the first two criteria of Art. 101(3) TFEU, the fourth criterion requires taking into consideration some aspects of analysis that are relevant specifically to online platforms. The fourth condition of Article 101(3) TFEU is aimed at protecting the competitive process on the market. According to this condition, the restrictive practice should not provide the undertakings concerned with the possibility to eliminate competition in a substantial part of the market of the products concerned.[146] The rationale is that the protection of the competitive process is more important than the efficiencies that can be obtained by any kind of practice. The Art. 101(3) Guidelines do not provide for a threshold for quantifying the restriction of competition that is not acceptable for complying with the fourth criteria. The findings in this regard depend on the specific circumstances of the market in each separate case.[147] In the case of online platform assessing the elimination of competition as such is a rather complex concept. On one hand, online platforms concern two- or multi sided market settings meaning that the network effects associated with this type of business models could eventually tip the market and create a monopoly.[148] This outlook would require an assessment of whether the market where the analyzed restriction of competition occurs is prone to tipping. Predicting the likelihood of tipping in the case of online platforms requires assessing the intensity of network effects, scale economies, congestion limits, differentiation and multi-homing possibilities.[149] The result of such assessment will provide essential insight into the risks involving the restriction of competition in each case with regard to long-term consequences.

On the other hand, the market dynamics of online platforms are characterized by intense competition that will make the elimination of competition and establishment of monopolies very difficult.[150] Proponents of this view rely the developments of the past years in the online markets to dismiss as concerns with regard to elimination of competition and monopolization.[151] Alternatively, both approaches can be combined and viewed as a process, namely that market dynamics in the case of online platforms in combination with network effects can lead to a type of rotation system where one 'giant'

146 Commission Guidelines on the application of Article 81(3) *supra* (n 92) para. 105.
147 Ibid, paras. 107-114.
148 Michael Katz and Carl Shapiro 'Systems Competition and Network Effects' (1994) 8(2) Journal of Economic Perspectives 93; David S. Evans and Richard Schmalensee, 'The Industrial Organization of Markets Based on Two-Sided Platforms' (2007) 3(1) Competition Policy International 151, 164-165.
149 Special Report by the Monopolies Commission (2015) *supra* (n 42) at 21-23; David S. Evans and Richard Schmalensee, (2007) *supra* (n 148), at 164-165.
150 Ibid.
151 Daniel O'Connor (2016) *supra* (n 43).

is replaced by another.[152] The question in future cases concerning online platform will then be to determine how the relationship between tipping tendencies resulting from the two- or multi sided nature of online platforms and the market dynamics thereof is expected to materialize on the market. Accordingly, it remains to be seen whether, in light of these characteristics, potential restrictions of competition should be met with more austerity or lenience depending on the characteristic that is granted primacy.

In view of the above, it can be seen that the application of Art. 101 TFEU to online platforms will involve various challenges. Resolving the challenges throughout the all three application stages of Art. 101 TFEU will require primarily changes in the application practice. It appears that only in the case of establishing a form of collusion in order to bring certain practices under the scope of Art. 101 TFEU is the introduction of a new legal basis necessary. In the absence hereof, the increasing use of monitoring and pricing software will reduce the intensity of price competition in a manner comparable to collusion based on unilateral decisions falling outside the scope of Art. 101 TFEU.

The need for similar adaptations to the two- or multisided market character of online platforms and the dynamics of online markets will also play in the context of Article 102 TFEU. Such adaption will be crucial to the correct finding of dominance, abuses thereof and under exceptional circumstances reliance on the possible justification grounds.

2.4 Article 102 TEFU – Abuse of dominance

Article 102 TFEU deals with the restrictions of competition resulting from unilateral behavior of undertakings having a dominant position. The objectives of Art. 102 TFEU are in principle similar to those of 101 TFEU, however, it seems that its primary aim is the protection of competition on the market. Consumer welfare is then considered to be attained as a result of achieving this primary aim.[153] The prohibition found in Article 102 TFEU applies only to undertakings that have a dominant position. Accordingly, the finding of dominance entails the jurisdictional threshold for the purpose of applicability. The qualification of prohibited practices under Article 102 TFEU is that of abuse, which is divided into exclusionary and exploitative

152 Ibid; Leslie Daigle, 'On the nature of internet', (2015) Global Commission on internet Governance, Paper series no.7, 8-9 < https://www.cigionline.org/sites/default/files/gcig_paper_no7.pdf> ; *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014 paras. 118,125 and 132.

153 J. Faull and A. Nikpay (2014) *supra* (n 98) at 332-335.

abuses of dominance, however combinations of the two are also possible.[154] In practice, priority is given to cases concerning exclusionary abuses as these are considered more damaging.[155] Although Article 102 TFEU does not have a specific justification provision as in the case of Art. 101(3) TFEU, the possibility of specific behavior that may restrict competition exists nonetheless.[156] Accordingly, in the context of Art. 102 TFEU concerned undertakings can provide evidence of the objective justification and efficiencies arguments .[157] Similar to the case of Art. 101 TFEU, the application of Art. 102 TFEU to online platforms will require overcoming multiple challenges throughout these three stages of application.

2.4.1 Establishing dominance

The finding of dominance is the determinant threshold for applying Article 102 TFEU to a certain practice of behavior, in the absence of which Article 102 TFEU would simply not be relevant. The finding of dominance entails a two-stage process, starting with the definition of the relevant market followed by an assessment of the market power the concerned undertaking has within the relevant market. Implementing this two stage process in the case of online platforms requires taking into account, among others: the two- or multi sided character of online platforms, the dynamics of the market and the interchangeability between online platforms and the offline world. These aspects and others will not only complicate the process of uncovering dominance but will also require a reevaluation of the concept of dominance as such. Failing to acknowledge the existence of such aspects will likely lead to multiple assessment errors with regard to both the finding of a dominant position as well as abuses thereof.[158]

A. Defining the relevant market

Defining the relevant market in the case of online platforms will entail complications that have not been clarified or dealt with by current practice. The fact the online platforms are two- or multi sided markets has a bearing on the way the market is defined in each case. Accordingly, the first question

154 For example a vertically integrated undertaking can charge excessive prices on downstream competitors which eventually will lead to a margin squeeze and impede such parties to offer competitive price to consumers which on a long term basis will force downstream competitors out the market.

155 Commission Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (2009) OJ C 45/2, paras. 6-7.

156 J. Faull and A. Nikpay (2014) *supra* (n 98) at 333.

157 Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155), paras. 28-31.

158 Julian Wright,' One-Sided Logic in Two-Sided Markets' (2003) AEI-Brookings Joint Center Working Paper No. 03-10 < https://ssrn.com/abstract=459362>.

that must be addressed is whether the relevant market should include all the sides of the platform as a whole, or whether a market should be defined for each of its separate sides.[159] The current literature on this issue indicates that that the choice between a single and multiple relevant markets depends on whether the case concerns a transaction or non-transaction platform.[160] Accordingly, when the case concerns a transaction platform, the relevant market should include the entire platform.[161] An alternative for the transaction criteria is the specific matching function platform as provided by the Bundeskartellamt,[162] which provides that the customers of the platform participate on the platform with the purpose of mutual discoverability. While both approaches will likely overlap to a large extent in practice, the second approach leaves more room to deal with the ever-changing business models of online platforms.[163] In cases where no transaction or a specific matching function is facilitated, it is required that multiple relevant markets are defined.[164] It is important to note, however, that these approaches seem to divide online platforms into two types based on a core functionality. However, this division does not seem to fit with practice. Online platforms will often bring together multiple users and facilitate interaction on all of its sides. The relationship between those sides can be one of transaction or matching but also one of non- transaction. It is thus unclear whether these approaches should be executed based on a general classification of the platform or, rather, on the relationship between the sides and the perspective chosen for the purpose of the assessment. In the case of YouTube, for example, one may say that it is a transaction platform between consumers and content uploaders and a non-transaction platform between consumers and advertisers. This matter requires clarification in order to avoid erroneous findings with regard to the existence of dominance.

When assessing the scope of the relevant market, the traditional concepts of the market definition process – namely the demand and supply-side substitution – remain relevant. Generally, substitutability in the context of online platforms will focus on the functionality of the platform.[165] Accordingly, if

159 Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt (2014) *supra* (n 19).

160 Although most literature is focused on two sided markets in general the insights are equally relevant to online platforms.

161 Supra note 159.

162 Bundeskartellamt, working paper (2016) *supra* (n 19) at 5-6;

163 TripAdvisor for example would be difficult to cover with the concept of a transaction platform since consumers do no always go on TripAdvisor to make a booking however they will always go on it in order to receive information with regard to future bookings from other consumers or operators. The criteria of matching platform is thus in this case and similar one better suited.

164 Supra note (n 159) and (n 162).

165 See analysis of closeness of competition in *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014 and *Microsoft / LinkedIn* (Case COMP/M.8124) Commission decision of 6 December 2016.

a single relevant market is defined for the platform as a whole, the relevant product market should include the alternatives, which offer the same functionality with regard to all the sides of the platform that are considered for the purpose of the competition law assessment.[166] In a case where multiple relevant markets are being defined, the same exercise will be conducted for each of the sides, separately.

Despite the conceptual relevance of demand and supply side substitutability that remains unchanged, establishing which options can truly be a substitute for the platform or for one of its sides requires a change of approach. A rather unaddressed challenge in the process of establishing interchangeability is the competitive relation between online platforms and the offline brick and mortar alternatives. This matter is relevant to both transaction and non-transaction platforms. There is currently limited practice examples on how the assessment of such a competitive relationship will be exercised.[167] Evidently, however, the existence or absence of such a relationship will have a great impact on the eventual market power of an online platform. Furthermore, in the case of non-transaction or specific interaction platforms, difficulties with interchangeability can also concern the competitive relationship amongst online platforms. This is expected in the case of advertisement online platforms.[168] On the advertisement placing side, such platforms compete on the search or non- search based advertisement market.[169] Interchangeability for the advertisement side can then be assessed in terms of advertisement functionality. Interchangeability on the consumer or user side is, however, more challenging in the case of such platforms. Yet a consumer or user perspective platforms will often not be considered interchangeable as they offer very different services.[170] A functionality-based assessment of interchangeability on the consumer side risks the finding of a very narrow product market due to the high degree of differentiation in the online platform market.[171] In such cases, one side of the platform may exhibit characteristics of a wide and competitive market while other side, in most cases unpaid, entails a narrow and highly concentrated market. This is a characteristic of two- or multi sided markets where one side is often open for multi-homing while the other side of the market is prone to single homing due to differentiation. However, it is currently

166 Bundeskartellamt, working paper (2016) *supra* (n 19) at 5-6.

167 The most relevant example in the case of online platforms can be seen in *Google / DoubleClick* (Case COMP/M.4731) Commission decision of 8 Mar. 2008, section 6.

168 David S. Evans (2016) *supra* (n 14).

169 Florence Thépot, 'Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets' (2013) 36(2) World Competition 195.

170 This is true when platforms are asymmetric for example see David S. Evans and Richard Schmalensee (2013) *supra* (n 36) at 16-17.

171 Inge Graef (2015) *supra* (n 87) at 5-6.

unclear what role such findings will have in the finding of dominance in the future and what solutions can be offered.[172]

Beyond the substantive and conceptual challenges of the market definition process, the tools used to confirm such choices require a change in application. The widely used SSNIP test will require some tweaks in light of the price structure and two-sided market character of online platforms.[173] Applying the SSNIP test to a two- or multi sided platform will require that the theoretic rise in price be applied to all sides while taking into consideration the impact network effects. Although there is agreement about this general modification in the application of the SSNIP test, discussions remain on how the test and its application should be changed in practice.[174] The debate primarily concerns the use of this tool in zero-priced markets, the application of the test to the entire price structure of the platform or per side and whether the test should take into account the possibility of price structure modifications.[175] Although the difficulties concerning the SSNIPP test are less critical than in the case of substantive aspects of the market definition process as mentioned above, this matter too must be clarified in order to ensure a sound application of the SSNIP test and avoid false conclusions.

Finally, in the context of defining the relevant market it must also be considered what role data plays in an Art. 102 TFEU assessment of an online platform. Most online platforms do not sell the data gathered from their users, normally consumers, but rather use it to improve and expand the range of services they provide and ideally gain a competitive edge on the market.[176] However, to the extent that the concepts of data and privacy are not considered synonyms, it has been argued that there are good reasons to consider whether a relevant market should also be defined for data despite the absence of direct trade therein.[177] In practice, it appears that defining a separate market for data is considered mainly in cases concerning mergers.[178]

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172 An option would be to consider all consumer sides as interchangeable with regard to consumers as these are all free and focus particularly at getting user to make use of the platform. See David S. Evans, 'Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms' (2016) at 20-22.

173 Sebastian Wismer, Christian Bongard, Arno Rasek, ' Multi-Sided Market Economics in Competition Law Enforcement', (2017) 8(4) Journal of European Competition Law & Practice 262, 263-270.

174 David S. Evans and Richard Schmalensee (2013) *supra* (n 36) at 21-23.

175 Ibid; Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt (2014) *supra* (n 19) at 329-339.

176 Joint report of the Bundellekartelamt and Autorite de la concurrence, Çompetition law and data (10th of May 2016), 11-25 < http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf>.

177 Inge Graef (2015) n. 28.

178 *Google/DoubleClick* (Case COMP/M.4731) Commission decision of 8 Mar. 2008; *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014; *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016.

In the context of an Art. 102 TFEU case, it would seem more suitable to assess data in the process of market power assessment as will be discussed in the following section.[179]

B. Assessing Market power

The core assessment criteria of market power in the case of online platforms remain unchanged in principal. Accordingly, the assessment will still include the elements of actual competition, future competition and countervailing buying power in accordance with the Commission's guidance on the enforcement priorities in applying Art. 102 TFEU. The substance and relevance of these three pillars of assessment may, however, require certain adaptations.

Market shares are traditionally used to provide a first indication of the actual market structure and competitive relations on the market.[180] The existence of high market shares is not sufficient to establish dominance,[181] however, under certain circumstances it may be sufficient in order to serve as a presumption or otherwise an indication of dominance.[182] The relevance of market shares in the case of online platforms is likely to diminish due to the difficulty of calculating such market shares and the dynamic character on online markets.[183] Additionally, online platforms will often be active on more than one market where the market shares may differ, which complicates the comparison with competitors both individually and cumulatively.[184] Further, it is important to consider how asymmetric competition will affect the outcome of such assessment, as online platforms may also have different positions in overlapping as well as distinct related markets.[185] Moreover, the relevance of market shares will be limited even when calculated correctly, as the dynamics of the online and technology markets have shown drastic changes of market shares in short periods of time. An approach to obtaining an overview of the actual competition on the market would be to measure the number of unique users that online

179 Bundeskartellamt, working paper (2016) *supra* (n 19) at 16-17; However it was also recognized as a potential factor that can materialize in an abuse of a dominant position see Joint report of the Bundellekartelamt and Autorite de la concurrence, *supra* (n 176).

180 Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155), para. 13.

181 Richard Wish and David Bailey (2016) *supra* (n 89) at 192.

182 Case C- 62/86 *AKZO v. Commission* [1991] ECLI:EU:C:1991:286, para. 60; Case T-340/03 *France Télécom v Commission* [2007] ECLI:EU:T:2007:22, paras. 100-111; J. Faull and A. Nikpay (2014) *supra* (n 98) at 365.

183 Special Report by the Monopolies Commission (2015) *supra* (n 42) at 24.

184 David S. Evans and Richard Schmalensee,(2013) *supra* (n 36) at 20-21; J. Faull and A. Nikpay (2014) *supra* (n 98) at 367-368 .

185 David S. Evans and Richard Schmalensee (2013) *supra* (n 36) at 16-17.

platforms considered to be competitors receive.[186] The statements made by online platforms in their corporate annual reports as well as in their tax report may at times provide a better understanding on the actual competition on the market.[187] Furthermore, acquisition patterns may also provide further insight into the present and future competition on the market. Unfortunately, there has been little discussion of the aspects that are crucial for determining actual competition in the case of online platforms. Rather, it would appear that the high pace of development on the online platform market has directed the focus of the assessment towards the barriers of entry of potential competition.[188] It is important, however, that such a shift is not so extensive so as to make the finding of dominance primarily dependent on discovering future competitive constraints. A clear indication of substantial market power in the present must first be found. Whether such indication in the case of online platforms entails findings different from those accepted by common practice remains to be considered.

Assessing potential competition and the extent of constraints experienced by the concerned undertaking as a result thereof requires looking primarily into the barriers for entry to the market.[189] The common categories of barriers to entry established by practice and academic work remain largely relevant in the case of online platforms.[190] The importance of these will of course vary depending on the type of online platform being assessed.[191] According to the Bundeskartellamt, the entry barriers that would be important to consider in the case of online platforms are: direct and indirect network effects, economies of scale, multi-homing and differentiation, access to data and the innovation potential of digital markets.[192] The criteria overlap extensively with those defined by economic literature as indicators of markets with tipping potential as well as ones used in EU practice.[193] From the five criteria put forward, the latter two are new to

186 Bundeskartellamt, working paper (2016) *supra* (n 19) at 9-10

187 See for example the information with regard to competition in Amazon's 10-K form. Available online at: < https://www.sec.gov/Archives/edgar/data/1018724/000101872416000172/amzn-20151231x10k.htm> .

188 Bundeskartellamt, working paper (2016) *supra* (n 19) at 10; See Inge Graef, 'Stretching EU competition law tools for search engines and social networks'(2015) *supra* (n 87) at 7.

189 OECD Round Table on Barriers to Entry DAF/COMP(2005)42, at 9-11 < https://www.oecd.org/competition/abuse/36344429.pdf>; A market exhibiting low entry barriers will limit the possibility of finding one online platforms as having a dominant position even when actual competition is still limited. At the same time the presence of such barriers will simplify the finding of dominance even in the absence of a market share based analysis.

190 Ibid; J. Faull and A. Nikpay (2014) *supra* (n 98) at 368-276.

191 Platforms that facilitate monetary transaction will be far more concerned with reputational aspects of their business than compared to platforms that do not facilitate such transactions.

192 Bundeskartellamt, working paper (2016) *supra* (n 19) at 9-17.

193 Ibid; *supra* (n 190).

the list of known barriers and will likely be disputed in practice. Despite being indisputably important, it is unclear how the innovation potential can be measured in an industry that is prone to disruptive developments, which are by their very nature hard to predict. Furthermore, the value of big data and the access to it for the purposes of competition is still intensely debated.[194] Although access to large amounts of data can contribute greatly to the success of an online platform, its value diminishes significantly in the absence of other essential input including monetization strategies and effective processing algorithms.[195] Further, there seems a reluctance to accept that specific undertakings can have a dominant position with regard to access to data.[196] The former list of criteria is not exhaustive nor intended to replace existing practice, but rather to complement it.[197] Additional potential barriers to entry will likely be discovered once a more thorough study of the online platform markets has been concluded. Together with the definition of new barriers to entry for online platforms, there is also a need for clarity regarding the concrete measurement and assessment of such criteria. Accordingly, while the aforementioned criteria can be justified from a theoretic point of view, it is unclear how the practical assessment thereof will be carried out.

The final section of the market power assessment concerning the countervailing buying power has not yet been discussed in the context of online platforms. However, at first glance it can be assumed that buying power will likely have limited relevance in the case of online platforms due to their interaction facilitating character. In order for concrete countervailing power to exist there must be proof of a powerful buyer that can constrain price increases by the concerned undertaking for the entire market.[198] This would require a credible alternative to the concerned undertaking to which an important buyer could switch, or otherwise a new entrant that would be sponsored by such a buyer. In the case of online platforms, this is a difficult picture to paint, as the inherent purpose of online platforms is to facilitate interactions between two or more parties in a better manner than they would be able to do themselves.[199] Consequently, in many cases, particularly e-commerce, online platforms will facilitate interactions between consumers and multiple smaller rather than bigger players. A more

194 Andres V. Lerner (2014) *supra* (n 11); Inge Graef (2015) *supra* (n 28).

195 Ibid; Justus Haucap and Ulrich Heimeshoff, 'Google, Facebook, Amazon, eBay: Is the Internet driving competition or market monopolization?' (2014) 11 Int Econ Econ Policy 49.

196 *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014 para. 187-189; *Microsoft/ LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016, para. 180.

197 Supra (n 192) at 10.

198 Commission Guidance on the Commission's enforcement priorities in applying Article 82, n. 155, para. 18.

199 Bertin Martens (2016) *supra* (n 16) at 20-25.

conceivable scenario might take place in the context of online advertisement online platforms if the advertisements are bought in a concentrated manner by larger advertisement agencies. Beyond this initial impression there is a need for further study of buyer power in the context of online platforms.

The challenges concerning the finding of dominance paint a complex picture. On one hand, it appears that the legal test for this jurisdictional threshold of Article 102 TFEU generally consists of the common concepts and definitions. Consequently, the required adaptations concern primarily the application of such concepts and definitions. On the other hand, the combination of the seeming application hardships regarding establishing dominance, result in a fundamental question that has yet to be answered, namely: what is dominance in the case of online platforms?

In cases concerning transaction or matching platforms where the platform is part of a single relevant market, the analysis might resemble common practice to a great extent. The difficulty in such cases lies primarily in establishing the competitive relation with asymmetric platforms and the offline world needs to be clarified. However, in cases concerning multiple relevant markets the situation is far less clear. In such cases, the relation between the degree of market power, the number of defined relevant markets in each case and the threshold of dominance remains to be clarified. The difficulty of finding the threshold for dominance in each case will increase, in addition to the discrepancy in market power between such relevant markets.[200] Such reality makes the transition from market power that is a matter of degree to the finding of dominance, which is a binary conclusion even more problematic than in traditional cases. Currently, it is not clear how such diversity in market power across multiple interrelated markets should be addressed. Clarification is required not only for the purposes of establishing dominance but also for legitimizing possible remedies. If dominance is established based on an average of market power in a collection of relevant markets, the finding of dominance might not be consistent with the specific situation in each of those markets. Consequently, remedies concerning the markets or platform sides with lower market power may mean that an online platform might be subject to Art. 102 TFEU scrutiny earlier than a single sided business on such markets. Alternatively, requiring dominance by the online platform on all the sides for which a relevant market was defined will increase the difficulty of establishing dominance for the purposes of applying Art. 102 TFEU. However, once such absolute dominance has been established, intervention gains legitimacy which is critical in the case of online platforms considering that remedies are highly likely to have an extraterritorial effect. These uncertainties show that it is not only the manner that dominance should be established that requires adapta-

200 In practice this will occur where one side of the online platform is characterized by single homing while the other sides exhibit strong indications of multi-homing patterns.

tion, but also the concept of dominance as such in the context of online platforms. In the process of adaption, it may be useful to consider whether adopting the common practice is workable or whether an alternative, less conventional approach might be more suitable.

The difficulty encountered in adapting current practice and concepts to online platforms is also applicable to the qualification of certain practices as abuses of dominance. Although the rationale behind the general concept of abuse and in the case of specific types of abuses remains unchallenged, an adequate application thereof may require significant alterations. Furthermore, the skewed pricing structure combined with the common requirement that users provide their personal data to the platform could justify devoting more attention to exploitative abuses.

2.4.2 Abuse of dominance or legitimate practice

Once the threshold of dominance has been met it then remains to be assessed whether the practice of the concerned undertaking constitutes an abuse. The distinction between legitimate practices and abuses of dominance is a difficult one to make according to current practice[201], and will not be easier in the case of online platforms. The concept of abuse in Art. 102 TFEU does not have a clear definition but is a rather general term encompassing an unexhausted range of practices that can be divided into exclusionary and exploitative abuses.[202]

The jurisprudence on Art. 102 TFEU provided several general indications as to what would constitute an abusive behavior on the part on the concerned undertaking. In *Michelin I* the CJEU spoke of a special responsibility that dominant undertakings not to allow their conduct to impair genuine undistorted competition.[203] Later, in *Hoffman- La Roche* the CJEU of Justice defined abuse as: conduct that hinders competition through recourse to methods different than those of competition on the merits.[204] This was later sharpened in *Post Denmark* by the CJEU adding that Art. 102 TFEU applies *in particular* to the conduct of a dominant undertaking that hinders competition *to the detriment of consumers*.[205] Despite these various contributions, the process of finding an abuse of dominance still leaves room for

201 Robert O'Donghue and Jorge Padilla, 'The law and Economics of Article 102 TFEU' (2nd edn, Hart, 2013), 217.

202 J. Faull and A. Nikpay (2014) *supra* (n 98) at 387.

203 Case 322/81 *NV Nederlandsche Banden Industrie Michelin v Commission* [1983] ECLI:EU:C:1983:313, para. 57.

204 In this case the CJEU referred to the normal conditions of competition- see Case 85/76 *Hoffmann-La Roche & Co. AG v* Commission [1979] ECLI:EU:C:1979:36 para. 91. See also reference to competition on merits in Case C-280/08 P *Deutsche Telekom v Commission* [2010] ECLI:EU:C:2010:603 para.177.

205 C-209/10 *Post Danmark v Konkurrencerådet* [2012] ECLI:EU:C:2012:172, para. 24.

improvement regarding legal certainty.[206] The general definitions serve as a guideline when it comes to the focus of enforcement, namely exclusionary abuses, rather than a genuine definition of a single concept of abuse in Art. 102 TFEU.[207] In practice, the finding of an abuse entails an analysis within the framework of multiple tests that have been developed over time in order to understand the strategic choices of undertakings. These include: the profit sacrifice test, no economic sense test, equally efficient competitor test and consumer welfare test, each with its strengths and weakness.[208] The extent to which such tests remain relevant for cases concerning online platforms depends on their compatibility with multisided markets, which has yet to fully explored. Nonetheless, the concept of abuse as such remains unchanged and unchallenged in the case of online platforms, yet finding abuses requires a correct understanding of exclusionary and exploitative behavior in a new legal and economic context. Failing to consider the reality of the online platform business and the economics behind their organizational form when investigating suspicious practices will very likely lead to false conclusions.[209]

Generally, the success of online platforms will depend on their ability to achieve and maintain critical mass. It is within this general framework that the search for possible exclusionary abuses should take place. Consequently, in the context of online platforms this should translate to observing whether dominant platforms prevent competitors from achieving critical mass.[210] Similarly, where exclusion from the platform occurs it should be considered whether this is an anti-competitive practice or a form of exclusion that is inherent in the business model of the online platform, thus crucial for the maintenance of critical mass. Similar parallels can be drawn to practices that could be otherwise considered to be exploitative. Beyond this initial change of perspective with regard to the concept of abuse, the following overview of specific abuses provides an introductory illustration to the range of difficulties that have yet to be fully explored in the case of online platforms.

A. Tying and Bundling

The concepts of tying and bundling are formally located in Article 102 (d) TFEU. The legal test for finding such an abuse is found in the Commission's guidance on the enforcement priorities in applying Art. 102 TFEU and was later clarified by the GC in *Microsoft*.[211] The test criteria for tying are: (i) the concerned undertaking must have a dominant position in the tying market,

206 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 201) at 219.
207 Ibid, at 217.
208 Ibid, at 227-231.
209 Julian Wright (2003) *supra* (n 158).
210 David S. Evans and Richard Schmalensee (2013) *supra* (n 36) at 29-30.
211 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289.

(ii) the undertaking must be tying two distinct products, (iii) the consumer is coerced into purchasing both the tying and tied products, (iv) the tie has an anti-competitive effect and (v) there is not objective justification. In the case of bundling the same criteria apply in principle with the exception of consumer coercion.[212] The test is apprehensible but when applied to online platforms that provide user the access to an eco-system or a complex interface for free, it could be difficult to follow. In this context, Google services can provide a good example.

The Commission considers two products to be distinct in three particular cases. Firstly, the tied products will be considered distinct if there is proof that in the absence of the tie, consumers would buy the tying product without the tied product from the same supplier.[213] In the case of Google services, if one wants to use Gmail or GoogleDrive, he or she must create a Google account. The account grants the user automatic access to all of Google's separate services. Thus, by subscribing to one service the user get access to multiple services in which he was not necessarily interested.[214] These can be considered different products as there is no necessity for all these services to be offered together by nature or based on commercial usage.[215] In fact, on handheld devices all of these features can be used only when all the separate apps are downloaded and installed.[216] Thus, there is evidence from Google itself to support the finding that the services are distinct. At the same time, all Google services are subject to a single user policy contract linked to the Google account, which makes the separation less genuine.[217] Beyond evidence from Google's practices there is evidence of many competitors that offer such services on an individual basis, which is the second kind of evidence relevant in tying cases according to the Commission.[218] Consequently, one may assume that the two-product test can be met. Alternatively, it has been accepted that multiple products can in the course of time, become part of a single offer.[219] Evidence of such

212 Supra (n 201) at 616.

213 Commission Guidance on the Commission's enforcement priorities in applying Article 82, n. 155, para. 51.

214 When logging into the Google account users that are on the search page off Google get automatic access to all the services that Google offer via scroll down menu on the top right corner.

215 Consider the link made by the account between Google Docs, YouTube, and Google Calendar.

216 However as it has be claimed by the Commission in its investigation into Google's practices in the context of Android OS, these separate applications are often pre-installed by the OEMs. Similar however more complex constructions can be seen at LinkedIn and Facebook where desktop functionalities are separated for handheld devices.

217 See Google service policy page. Available online at: < https://www.google.com/policies/privacy/>.

218 Supra (n 212); OpenOffice, Dropbox, Vimeo and GMX all provide some of the individual services offered by Google.

219 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 913.

developments can be seen in the case of Microsoft which offers a comparable package to that of Google for both computer and handhelds. They are however the only two undertakings that offer such extensive packages and evidently both undertakings have substantial market power thus evidentiary value of these practices might be limited.[220]

The difficulty in the case of the packages offered by Google and Microsoft is, however, far more complex than conflicting evidence. In such cases one may also have to question the identities of the tied and the tying products as all products are linked through a user account but the account itself is not a product as such. Does this mean that the tying product can be any of the services that users choose to use first, and as such, is it potentially different in the case of different users? The answers impact the finding of dominance and as such determine the possible finding of tying practices under Art. 102 TFEU. It is important to note that in the services offered by Google for personal computer or desktops, the only one where Google was found to have a dominant position is that of the search engine which does not require the user to have a Google account. Nonetheless, the Google search page always includes the digital tray for the rest of the Google services, which cannot be removed. Additionally, Android smartphone users have little choice but to create a Google account in order to make full use of their smartphones. Thus, in practice, in the smartphone market where Android has a dominant position, all users will have a Google account and thus automatically receive access to all Google services even when logging in from a personal computer. It remains to be considered how this relation might affect the finding of dominance with regards to any of the services linked to the Google account.

The matter of consumer coercion may also be difficult to conclude in a market where downloading is perhaps the most common form of distribution and consumer access to online services is predominantly without cost. When considering the above-mentioned example of Google, both the tying and the tied products, no matter the combination, are provided for free as is also found in most competitor alternatives. It is unclear whether this affects the relevance of the GC's findings in Microsoft involving free tied products, as the circumstances are different and consumer behavior may have also changed. Nonetheless, the core concept of coercion, namely that users cannot have an account to access one service without having automatic access to the other services which includes the creation of a profile for each of the services, will likely hold. Alternatively, one may consider such practices to be a form of pure bundling whereby the Google services are offered together on personal computers and to some extent separately in case of handheld devices. This would allow to avoid the difficulty of

220 Supra (n 212).

deciding which of the services is the tying or tied one but rather evaluate them as an entire bundle. Consequently, dominance for the purpose of bundling can be established with regard to any of the services rather than a specific combination as in the case of tying.

Regardless of the qualification chosen, it remains to be seen how these practices influence the incentives of consumers to use competing services while having a Google account. Indication with regard to the existence or absence of such incentives will determine the extent of the foreclosure effect of such practices, which will determine whether such practices are prohibited under Art. 102 TFEU.[221] Although there are indications that the Commission may assume the existence of the foreclosure effect in some cases of tying, the decision in the case of Microsoft clearly indicates that such effect must be proven, particularly when it concerns online platforms.[222] The circumstances based on which the Commission was inclined to undertake an effects assessment rather than assume the anti-competitive foreclosure effect will predominately be present in cases concerning online platforms .[223] Namely, new unexplored markets exhibiting network effects and positive feedback loops.[224] It can therefore be argued that in the case of tying, previous practice may not offer an adequate framework to deal with such practices in the case of online platforms and thus requires multiple adaptations in its application. Bundling may in some cases serve as an alternative safety-net however the scope of this concept require further study as online platforms will often offer a variety of functionalities in a single package.

B. Predatory pricing

Investigating predatory pricing in the case of online platforms will require adapting the application of the legal test for this abuse. The legal test for establishing the existence of predatory pricing in the EU was established in *AKZO v. Commission*.[225] In this case the CJEU established two standards for determining whether pricing methods should be considered predatory. Accordingly, when a dominant undertaking is charging under AVC it is presumed to be acting in violation of Article 102 TFEU. When a dominant undertaking is pricing its products or services above AVC but under ATC it could be considered to be violating Art. 102 TFEU if there is proof of intent to eliminate competition.[226] When applying these criteria to online platforms, it is critical that the entire pricing structure of the platform is taken into account and not only the side that exhibits the suspicious pricing

221 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 201) at 623-624.
222 Ibid.
223 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, para. 841.
224 Ibid.
225 Case C- 62/86 *AKZO v. Commission* [1991] ECLI:EU:C:1991:286.
226 Ibid, paras. 70-72.

scheme. In the case of online platforms, skewed pricing structures are commonly used for optimizing the balance between the demand on the various sides in a manner that maximizes profit. In the online world, it is regular practice that access for the consumers to the platform is free of charge.[227] The costs needed of this offer to potential consumers are retrieved from the users on the other sides of the platform.[228] Applying the Akzo test solely to the consumer side of an online platform would automatically bring it within the scope of the presumption of unlawfulness since zero priced access to the platform will always be under AVC.[229] Such an application is flawed since providing the consumer side with free access to the platform does not mean that the platform is providing its services at a loss. Instead, the Akzo test should only be attempted if applied to the entire pricing level of the online platform. Accordingly, one can speak of below AVC predatory pricing if the sum of the compensation coming in from all the sides is not sufficient to cover the costs incurred by the online platform.[230] All sides of the platform should similarly be taken into account when observing that prices are above AVC but below ATC. In such cases, if clear intent of exclusionary behavior is found, the analysis remains as is accepted by previous practice, however, in the absence of such evidence the analysis may require additional caution.

According to the CJEU in *Post Danmark*, in such situations intent can be inferred if the pricing scheme is likely to exclude an equally efficient competitor.[231] It remains to be seen how the Post Danmark test will be applied to online platforms in light of various possible price structures that can be chosen by such undertakings. Accordingly, it must be decided whether the equally efficient competitor test should be applied to the pricing on each side of the platform or to the total pricing on the platform with a possibility to adapt the price structure. The Commission approaches the matter of predatory pricing based on an assessment of deliberate incurrence of short-term losses as a strategy to obtain or maintain dominance on the market and to foreclose it in the long term.[232] While the logic is similar to that found in the Akzo test, the calculation is different and it remains to be seen which of the two approaches is better suited for the case of online platforms.[233] The mentioned adjustments and considerations are relevant to all two-multi sided markets. In the case of online platforms however, the

227 See Commission staff working document on online platforms, *supra* (n 42) at 5.
228 Ibid, pp. 4-5.
229 Julian Wright (2003) *supra* (n 158); David S. Evans and Richard Schmalensee (2013) *supra* (n 36) at 33-35; Amelia Fletcher,' Predatory pricing in two-sided markets: a brief comment' (2007) 3(1) Competition Policy International, 1.
230 Ibid.
231 Case C-23/14 *Post Danmark* [2015] ECLI:EU:C:2015:651 para. 66.
232 Commission Guidance on the Commission's enforcement priorities in applying Article 82, n. 155, para 63.
233 Ibid, paras. 59-69.

complexity will increase substantially due to dynamic and discriminatory pricing possibilities that online platform have. The possibility to adapt price offers to different costumers at every given moment means that in theory prices with regard to some costumers may be predatory and while other costumers will receive non-predatory price offers. Discovering and proving the existence of such abusive practices will require highly intrusive and complex monitoring by the Commission or NCAs as the predation character thereof is all but evident.

In addition to predatory price levels, there might be a possibility for online platforms to predate via their price structure.[234] Accordingly, once online platforms have successfully launched and obtained critical mass can they change their pricing structure in a manner that eliminates competitors or deters new entrants to the market. In this sense, the switch from a user paid model to a zero-priced model can constitute such a strategy.[235] Comparable predatory price structures could take many forms and will be difficult to discover when the price level of the platform will be above ATC, thus presumed to be lawful. In such instances, finding an infringement would require showing that the adopted structure is predatory rather than the optimal pricing structure to correspond with circumstances of the case. This will be however very difficult to prove with regard to pricing structures in case of asymmetric competition where competition platforms do not have the same number of sides or do not compete on all sides.

C. Data related abuses: refusal to supply and excessive pricing

Data-related abuses within the scope of Art. 102 TFEU are perhaps the most difficult types of infringements that the application of this article will bring about. Such infringements require not only a different form of application but also a conceptual change of approach with regard to the role and value of data within the competitive process. Two possible abuses in this context include refusal to supply and excessive pricing.

Refusal to supply cases in the sphere of online platforms concern access to the personal data the online platforms accumulate through the participation of users on the platform.[236] Due to the important role that data plays in the development and improvement of online products and services, there

234 Amelia Fletcher (2007) *supra* (n 229).

235 Zero priced services goods can constitute a barrier of entry to the market as well as tool to overcome other barriers of entry. See John M. Newman,' Antitrust in Zero-Price Markets: Foundations' (2014) 164 University of Pennsylvania Law Review < https://ssrn.com/abstract=2474874 >; Gal, Michal S. and Rubinfeld, Daniel L., The Hidden Costs of Free Goods: Implications for Antitrust Enforcement (January 2015). UC Berkeley Public Law Research Paper No. 2529425, NYU Law and Economics Research Paper No. 14-44< https://ssrn.com/abstract=2529425>.

236 Special Report by the Monopolies Commission (2015) *supra* (n 42) at 29-31.

has been some discussion on whether denial of access to such data can be considered an abuse. The assessment of such refusals would be based on the essential facilities case law.[237] Critics oppose this possibility as they seriously doubt that data possesses the required qualities to qualify it as an essential facility.[238] The main critique concerns the non-rivalrous and non-exclusive nature of data, the mere secondary importance of data in the development of products or services and the fast-diminishing value of data.[239] Accordingly, these aspects would make it difficult for data to pass the essential facility test that has been developed in the EU case law.[240] The essential facility test, with regard to IP related matters, was clarified in IMS Health indicating that (i) a refusal is only abusive when it concerns input that is indispensable for carrying out business on a related market; (ii) the refusal excludes any effective competition; (iii) the refusal prevents the emergence of new products for which there is potential consumer demand; and (iv) the refusal is not objectively justified.[241]

When applying such criteria to data accumulated by online platforms, it seems like the indispensability criteria represents the main hurdle for the finding of abuse.[242] Accordingly, finding an abuse would require proving that the data to which access is denied is unique and cannot be obtained from other sources.[243] This is a high burden of proof considering that data is non-rivalrous, non-exclusive and non-exhaustive. At the same time, not all online data forms are comparable. Online platforms gather data in a manner that is suitable for their business purposes and the services they provide.[244] Thus in theory, if not yet in practice, there is no reason why a specific data set should not be unique at a particular given moment. The challenge with the indispensability criteria would then be to decide whether such data could be reproduced or otherwise replaced by a different data set.[245] In theory, the answer is easily yes, but in practice this may not be the case. If certain types of databases are linked to specific types of platforms,

237 Inge Graef and Yuli Wahyuningtyas and Peggy Valcke,' Assessing Data Access Issues in Online Platforms' (2015) 39 Telecommunications Policy 375.
238 Andres V. Lerner (2014) *supra* (n 11).
239 Ibid.
240 Supra (n 236).
241 Case C-418/01 *IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG*. [2004] ECLI:EU:C:2004:257, para. 38. These are similar to the ones found in the Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155), para. 81.
242 In Case T-201/04 *Microsoft* [2007] ECLI:EU:T:2007:289 the GC has criteria of indispensability and new product have been relaxed to a certain extent, however it is unclear which criteria are applicable law. On this aspect see supra (n 236).
243 Joint report of the Bundeskartellamt and Autorite de la concurrence, *supra* (n 176) at 18.
244 The data sets of LinkedIn and YouTube cannot really be considered to be comparable.
245 Even if such data is less compatible it may not meet the indispensability criteria based on the findings of the Court in Case C-7/97 *Oscar Bronner v. Mediaprint* [1998] ECLI:EU:C:1998:569, paras. 41-47.

reproducing the data set of a competitor might mean reproducing its businesses to a certain extent. The possibility of reproducing an online platform depends on whether the market has tipped and on multi-homing possibilities, which can indicate the existence of feasible alternatives. However, even in cases where tipping has not taken place, reproducing a data set might not be feasible due to the required volume.[246] If reproducing a data set would require several years, it is highly questionable whether such an option can serve as an alternative in the age of Internet even in the sense of *Bronner*.[247] Data portability may mitigate this difficulty however, data portability alone cannot eliminate the time factor involved in reproducing a data set.[248] Consequently, although the application of the essential facilities cannot be applied easily to online platforms to find an abuse, it cannot simply be dismissed due to the characteristics of data as such.

The use of skewed pricing schemes and the extensive reliance on data by online platforms also introduces new risks for exploitative pricing practices and difficulties with regards to their discovery and prevention. The primary risk concerns excessive pricing, which is found in Article 102 (a) TFEU. Excessive pricing refers to situations where an undertaking with a dominant position on the market imposes unfair or excessive prices on its customers to make profits it would not be able to make in the absence of such market power. Despite the valid points of critics against intervention in cases concerning excessive pricing, the EU practice has developed limited case law on the matter. The legal test for assessing excessive pricing has been formulated by the CJEU in *United Brands v. Commission*. According to the CJEU, prices are excessive when they have no reasonable relation to the economic value of the product supplied.[249] The difficulty in this qualification lies in evidently establishing the economic value of a product of service.[250] The assessment of this relation has been conducted in *United Brands* based on a cost price assessment and a comparison with competitor prices.[251] In doing so, the CJEU formulated a two-stage test for establishing whether a price is excessive in relation to its economic value. First, it addresses if the price is excessive in comparison to the production costs and

246 Consider Facebook's dataset in its refusal to grant access to Admiral. Available online at: < http://www.bbc.com/news/business-37847647>.

247 Case C-7/97 *Oscar Bronner v. Mediaprint* [1998] ECLI:EU:C:1998:569, paras. 41-47.

248 Data portability is currently dictated by 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) OJ L 119/1. Data portability must however take into account also matter of interoperability that might make the process very slow and impractical. See Special Report by the Monopolies Commission (2015) *supra* (n 42) at 73.

249 Case 27/76 *United Brands v. Commission* ECLI:EU:C:1978:22, para. 250.

250 Richard Wish and David Bailey (2016) *supra* (n 89) at 762.

251 Case 27/76 *United Brands v. Commission* [1978] ECLI:EU:C:1978:22 para. 252.

second, if that is the case whether the price is also excessive in comparison with competing products. While the two-stage test has been useful in the case of *United Brands*, economic value consists of more than just production costs. Furthermore, the economic value of a certain product or service will also depend on the demand for such a product or service. This has also been recognized by the Commission in *Port of Helsingborg*.[252] Consequently, assessing whether the price is unfair in itself and with regard to competitors will likely be far more complex than portrayed by the test at first glance.

Online platforms are two-or multi sided businesses, thus excessive prices can in principle occur with respect to all the sides of the platforms. The application of the *United Brands* test to such cases will, however, require overcoming several conceptual hurdles. First, the pricing structure of online platforms often involves a subsidy side, usually end user, and a subsidizing side usually consisting of commercial parties.[253] Accordingly, the price that the subsidizing side will pay must cover the costs of the subsidy side as well. So prices for that side will be higher from the start regardless of whether the online platform adopts an abusive pricing strategy, as it must cover the access to the platform of subsidy side. The price on the subsidy side is influenced greatly by the value the parties on the subsidizing side attach to the ability to access the end user on the other side of the platform. The value that is attached to the interaction by the subsidizing as well as subsidized sides determines the balance in price scheme of the platform. In many online platforms, the pricing model entails zero priced access to end users with the requirement to provide a variety of personal data and full subsidizing of their costs by the other sides of the platform. Accordingly, assessing whether a price is excessive on the subsidizing side may require an analysis of the cost of running the entire platform minus the cost covered by the subsidy side. This assessment should then also take into account the additional non-price aspects that determine the willingness of the users on the subsidizing side to interact with the other sides of the platform. Such aspects will later complicate the comparison of such prices with offers made by competitors. Competing platforms might have different pricing schemes, which reflect different balances in the value that the various users of the platforms attach to the interaction facilitated by the platform. Consequently, similar to the matter of predatory pricing, excessive pricing will require a more elaborate assessment in the case of online platforms due to their two-multi sided nature and often skewed pricing schemes.

The complexity and uncertainty of the assessment will increase dramatically if applied to the end user side of the platform when its access is granted without monetary charge and only dependable upon sharing personal

252 *Scandlines Sverige AB v Port of Helsingborg* (Case COMP/ A.36.568/D3) Commission decision of 23 Jul. 2004, para. 232.

253 See Commission staff working document on online platforms, *supra* (n 13) at. 5

data with the platform. The question that must be answered is whether a price of zero in combination with a requirement to share personal data can be excessive. The United Brands two stage test would imply that zero priced cannot be excessive or unfair as zero will always be lower than cost prices. However, can it truly be maintained that the requirement to share personal data can never be excessive in relation to getting access to the service offered by the platform? Surely not. In fact there is rather a greater risk for excessiveness.[254] Establishing the existence of excessive prices will be challenging as it requires an evaluation of the relation between personal data and the economic value of access to the platform. This relation will be difficult to measure not only because it is onerous to put a monetary value on personal data, but also due to the fact the users are not likely to perceive this exchange in a similar manner as in the case of monetary exchange.[255] These difficulties are also a reason for competition law authorities to try and label such practices as matters concerning privacy or consumer protection legislation.[256] It does not mean, however, that such matters cannot or should not be assessed in context of competition law as other fields of law have their own shortcomings for such cases. The is particularly so when considering the data shared by the end user is likely to have an effect on the prices paid in transactions with the other side or with third parties that have purchased the data from the online platform.[257] Thus, the zero-priced access has personal data as a cost, which may later translate to a price surplus in future transactions and consequently a reduction in consumer welfare.

2.4.3 Objective justifications

Although Art. 102 TFEU does not have a derogation possibility explicitly mentioned in the provision itself, the possibility of objective justification exists nonetheless.[258] The application thereof was however subject to various doubts. First, there was no clarity with regard to the scope of the objective justification and the possible arguments that were to be considered

254 See John M. Newman (2014) *supra* (n 235) at 172-195.

255 Ibid.

256 Special Report by the Monopolies Commission (2015) *supra* (n 42) at 117-121; Preliminary Opinion of the European Data Protection Supervisor- Privacy and competitiveness in the age of big data: The interplay between data protection, competition law and consumer protection in the Digital Economy (March 2014). Available online at: < https://edps.europa.eu/sites/edp/files/publication/14-03-26_competitition_law_big_data_en.pdf>.

257 See Commission staff working document on online platforms, *supra* (n 13) at 20-21; David S. Evans, 'The Online Advertising Industry: Economics, Evolution and Privacy' (2009) 23 Journal of Economic Perspectives 37, 55-59.

258 See e.g. Case 27/76 *United Brands v Commission* [1978] ECLI:EU:C:1978:22; Case 311/84 *CBEM v CLT* [1985] ECLI:EU:C:1985:394; Case T-30/89 *Hilti v Commission* [1991] ECLI:EU:T:1991:70.

suitable under this category.[259] Second, it was not clear which party was responsible for baring the burden of proof, as the structure of the provision does not provide any indication in that respect. Accordingly, some believed an abuse by the Commission was to be established once the Commission has proven the existence of a *prima facie* abuse and the absence of any objective justifications.[260] While practice indicated that there must first be a finding of an abuse by the Commission, which occurs later, contested by the concerned undertaking based on proof of a possible objective justification.[261] Finally, even if the undertaking had to discharge the burden of proof it was also not clear whether an abuse could even be justified, as the finding of an abuse itself implies the absence of any justification.[262] These concerns and others were later clarified through case law as well as Commission's publications. Accordingly, case law indicated that objective justification includes efficiencies arguments, objective necessity and the protection of commercial interests.[263] Similarly, case law clearly indicated that the burden of proof was on the concerned undertaking.[264] Both issues were also confirmed by the Commission's notices on the application of Art. 102 TFEU.[265] Furthermore, the case law as well as the Commission's communication indicates the justification is indeed a possibility yet in practice is very hard make use of, as it has never been successfully applied.

The three possibilities for an objective justification have different substantive tests and standard of proof.[266] First, the undertaking may justify its practices by proving that it consists solely of legitimate business behavior

259 A Albors-Llorens, 'The Role of Objective Justification and Efficiencies in the Application of Article 82 EC', (2007) 44(6) CMLRev. 1727, 1745-1746.

260 Ibid, at. 1747; R Nazzini, 'The wood began to move: an essay on consumer welfare, evidence and burden of proof in Article 82 EC cases', (2006) 31(4) European Law Review 518, 520-522.

261 Case C-395/87 *Ministere Public v Jean-Louis Tournier* [1989] ECLI:EU:C:1989:319, para. 38; Case C-163/99 *Portuguese Republic v Commission* [2001] ECLI:EU:C:2001:189 para. 52.

262 A. Albors-Llorens (2007) *supra* (n 259) at 1742-1745; Robert O'Donghue and Jorge Padilla (2013) *supra* (n 201) at 283.

263 See e.g. Case T-30/89 *Hilti AG v Commission* [1991] ECLI:EU:T:1991:70; Joined Cases C-468/06 to C-478/06 *Sot. Lélos kai Sia EE and Others v GlaxoSmithKline AEVE Farmakeftikon Proïonton, formerly Glaxowellcome AEVE* [2008] ECLI:EU:C:2008:504 ; Case C-95/04 P *British Airways v Commission* [2007] ECLI:EU:C:2007:166.

264 See eg Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 688 and 1144.

265 See DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses. Available online at: < https://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>; Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155) paras. 28-30.

266 Tjarda van der Vijver, 'Article 102 TFEU: How to Claim the Application of objective justification in the case of prima facie dominance abuses?' (2013) 4(2) Journal of Competition law and Practice 121, 128-130.

even if such practices resulted in a competitor exiting the market.[267] This possibility is rather obvious and is in fact a reconfirmation that competition on merits is always compatible with the objectives of competition law including cases concerning dominant undertakings.[268] The second category of objective justification consists of objective necessity where dominant undertakings are limited in their practice choices due to factors external to the undertakings.[269] Such external factors can include general public interest such as health or safety of consumers,[270] as well as situations involving exceptional business circumstances.[271] Both possibilities for justification require that the practices be proportionate with regard to the objectives pursued and potential negative effect on competition.[272]Finally, undertakings can also attempt and justify their practices based on efficiencies arguments,[273] which was introduced in a form more suitable for a test in *British Airways*.[274] The criteria for such arguments were later reformulated by the Commission in a manner very similar to the criteria of Art. 101 (3) TFEU.[275] Accordingly, the criteria that must be met for such a justification are: (i) the efficiencies have been or are likely to result from the conduct of the dominant undertaking; (ii) the conduct is indispensable to the realization of such efficiencies; (iii) the efficiencies outweigh any negative impact on competition and consumer welfare in the affected markets; (iv) the conduct does not eliminate effective competition, by removing all or most existing sources of actual or potential competition. These reformulated criteria seem to also have been accepted by the CJEU in *Post Danmark*.[276]

Despite the objective justification not being a successful possibility in the past, its application in the context of online platforms may prove to make the objective justification more than theoretical. `recent technological developments can give rise to interesting situations in this regard. In light of the increased transparency in the pricing of online marketplaces and price comparison tools, the use of monitoring software could be justified. Monitoring software can be programmed for automatic price cuts

267 See eg Case C-209/10 *Post Danmark v Konkurrenceradet* [2012] ECLI:EU:C:2012:172, paras. 20-22.
268 Ibid.
269 Commission Guidance on the Commission's enforcement priorities in applying Article 82, n. 155, para. 29.
270 Case T-30/89 *Hilti AG v Commission* [1991] ECLI:EU:T:1991:70, paras. 33, 108-109.
271 Case 77/77 *BP v Commission* [1978] ECLI:EU:C:1978:141, paras. 19, 26-36.
272 Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155), para. 28; Case 27/76, *United Brands Company and United Brands Continentaal BV v Commission* [1978] ECLI:EU:C:1978:22, paras. 198-191; *BBI/ Boosy & Hawkes- Interim measures* (Case IV/32.279) Commission decision of 29 Jul. 1987.
273 Case T-228/97 *Irish Sugar v Commission* [1999] ECLI:EU:T:1999:246, para. 189
274 Case C-95/04 P *British Airways v Commission* [2007] ECLI:EU:C:2007:166, para. 86.
275 Commission Guidance on the Commission's enforcement priorities in applying Article 82, n. 155, para.30.
276 Case C-209/10 *Post Danmark v Konkurrenceradet* [2012] ECLI:EU:C:2012:172, para. 42.

based on online pricing information and still be allowed even if it leads to the market exit of competitors.[277] Evidently, such price cuts should be proportionate and not turn into predatory pricing. By eliminating the first mover advantage, the use of such software by dominant undertakings can easily eliminate less efficient competitors that cannot match prices. This is true for both competition on a specific platform such as an app store or a price comparison site as well competition between platforms. Similarly, the protection of business interests that also falls under the same form of justification, exclusionary behavior might be considered necessary. The protection of correct balance in the volume of customers on the various sides of the concerned platform may be distorted by participants that may undermine the business model of the platform; thus justifying their removal.[278] A good example is the removal of the Disconnect Mobile app from the Google Play store, as it would inevitably interfere with the functioning of the other apps made available in the app store.[279] Similarly, participants placing fake reviews on platforms might also be removed to prevent the decline of interest in the platform. Such self-regulation by the platform can be mistaken for exclusionary behavior so must be justifiable provided its true purpose is the maintenance of the viability of the platform. Such exclusionary actions, if truly without anti-competitive purposes, will often have basis in the participation agreements of the online platforms, which are often known to the participants prior to the exclusion.[280]

In the case of objective necessity where it comes to the protection of public interests, online platforms may currently have quite an important role. Online platforms can be key actors in the protection of consumer privacy as well as prevention of IP rights violation due to counterfeit goods.[281]Although the Commission states in its communication that public interests are normally a matter to be regulated and dealt with by public authorities, not all such matters have been regulated adequately for the

277 This is to the extent that such practices will not be considered under the scope of Art. 101 TFEU as discussed in the section concerning the jurisdictional threshold of Art. 101 TFEU.

278 David S. Evans,' The Antitrust Analysis of Rules and Standards for Software Platforms' (2014) 10 *Competition Policy International*; University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 708 <https://ssrn.com/abstract=2520860>

279 Aaron Mamiit, 'Google removes Disconnect, other privacy apps from Android Play store' (Tech Times 29 August 2014)<http://www.techtimes.com/articles/14379/20140829/google-removes-disconnect-mobile-other-privacy-apps-from-android-play-store.htm>; On necessity of certain refusal or exclusion from a market that is inherent in conducting a business in a specific market see Case 311/84 *Centre belge d'études de marché — Télémarketing (CBEM) SA v Compagnie luxembourgeoise de télédiffusion SA, and Information publicité Benelux SA* [1985] ECLI:EU:C:1985:394, para. 26.

280 Supra (n 277); See eg Amazon's guidelines for participating on the platform. Available online at: < https://sellercentral.amazon.com/gp/help/external/G1801?language=en-US&ref=efph_G1801_cont_200386250>.

281 See Commission staff working document on online platforms, *supra* (n 13) at. 7.

online markets nor can traditional procedures be always adequate for the dynamics of online interaction.[282] Furthermore, the protection of such interests will often be entwined with the legitimate business purposes of the platforms themselves.[283]

The possibility to rely on the objective justification based on efficiencies arguments will be crucial to online platforms, as their existence inherently revolves around and depends upon the creation of efficiency.[284] The application of the efficiencies criteria has yet to be successful in the course of current practice. Although efficiencies claims have been made, the Commission and EU Courts have found the evidence of efficiencies insufficient or an absence of necessity between practices and claimed efficiencies.[285] Accordingly, there is no indication as to the manner in which efficiencies will be balanced with the anti-competitive effects of the practices entailing a *prima facie* violation of Art. 102 TFEU. As in the case of Art. 101(3) TFEU the manner in which efficiencies are considered will influence the chances of success in the case of two-multi sided markets.[286] In consideration of Art. 101 (3) TFEU, the Commission and EU Courts clearly indicate that evidence of efficiency is required primarily in the relevant market where the anti-competitive effects are present.[287] If the same is true with regard to Art. 102 TFEU, then the same difficulties will occur when multiple interrelated relevant markets will be defined. In such cases, the absence of clear evidence of efficiencies in the affected market will lead to an impossibility to justify such practices.[288] However, unlike with Art. 101 (3) TFEU the situation with regard to Art. 102 TFEU is yet to be determined. The provision itself does not provide any indication on the matter. The discussion paper on the application of Art. 102 TFEU does, however, indicate that the focus is on the efficiencies passed on to consumers.[289] Accordingly, regardless of

282 Bertin Martens (2016) *supra* (n 16) at 31-35.

283 A lack of privacy protection or sales of counterfeit goods can be observed as by consumers as a lack of quality on behalf of the platform and reduces its competitiveness; See e.g. Myspace's quality problem with regard to the screening of sexual predators in Marlon A. Walker, 'Myspace removes 90,000 sex offenders', CNBC News (2 march 2009) available online at: < http://www.nbcnews.com/id/28999365/ns/technology_and_science-security/t/myspace-removes-sex-offenders/#.WM0WVFUrKUk>.

284 See Commission Staff Working Document on online platforms SWD(2016) 172, at 12-15.

285 Hans W. Friederiszick and Linda Gratz, 'Hidden efficiencies: The relevance of business justifications in abuse of dominance cases', (2015) 11(3) Journal of Competition law and Economics 671, 681-688.

286 Case C-382/12 P *MasterCard Inc and Others v Commission* [2014] ECLI:EU:C:2014:2201 paras. 236-243; The question is primarily whether the findings will apply by analogy to efficiencies arguments under 102 TFEU in the case of two-multi sided markets.

287 Ibid; Commission Guidelines on the application of Article 81(3), *supra* (n 92) para. 43.

288 Gönenç Gürkaynak, Öznur İnanılır, Sinan Diniz, Ayşe Gizem Yaşar, (2017) *supra* (n 135); Alfonso Lamadrid de Pablo (2015) *supra* (n 135).

289 See DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, *supra* (n 264) at 26-27.

the market where the anti-competitive exclusion takes places, the efficiencies passed on to the consumers could justify the practices provided that competition is not eliminated.[290] This would allow for an overall balancing of efficiencies and anti-competitive effects on all the relevant markets concerned in a specific case. However, the section of efficiencies arguments in the Commission's communication on Art. 102 TFEU refers to the Guidelines on the application of Art. 101(3) TFEU.[291] This would indicate that the intention of the Commission would be to apply both options in a similar manner. From a legal consistency and certainty perspective, this would be a desired outcome as both provisions may in some cases be simultaneously applied.[292] Unfortunately, in the case of two-multi sided markets such practice reduces the feasibility of a successful justification. The previous practice has little guidance to offer in this regard, as two-multi sided markets have been only discussed in the case of *Microsoft* where no findings in this matter were made or accepted.[293] Furthermore, the formulation of the criteria concerning efficiency arguments in the guidance of the Commission incentivize putting forward any possible efficiency argument held by undertakings.[294] Thus, until a decision is made by the Commission or the EU Courts on this specific matter, this lack of clarity will remain unresolved. With regard to the last criteria of the assessment, the situation is again dependent upon whether the market has tipped or shows signs of foreseeable tipping. Finally, the balancing of the positive effects and the negative effects of the practice as well as the aspect of indispensability require no substantive modification. The application of these criteria should of course take the legal and economic context of online platforms into account.

In light of the above-mentioned information, it appears that the reliance on the business practices and the objective necessity justification possibilities remain open also for online platforms. A study of the platform participation rules and evidence of previous exclusionary behavior by platforms is required to provide a better insight into the success chances in this regard. Furthermore, it is unknown whether online platforms will receive more room for the protection of public interests that have yet to be regulated within the online context. The reliance on efficiency arguments will depend

290 Ibid, see para. 90 on page. 27. If the exclusionary behavior results in a monopoly situation efficiencies passed on to consumers would not suffice.

291 See Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155) para. 30 concerning efficiencies arguments makes reference to 101(3) Guidelines in footnote n. 3.

292 C-395/96 P *Compagnie Maritime Belge Transports and Others v Commission* [2000] ECLI:EU:C:2000:132, paras. 33-34; Case 85/76 *Hoffmann-La Roche & Co. AG v Commission* [1979] ECLI:EU:C:1979:36 para. 116; Case T-51/89 *Tetra Pak Rausing SA v Commission* [1990] ECLI:EU:T:1990:41, paras. 25-29.

293 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 1158-1160.

294 See Commission Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 155) para. 30.

on the Commissions' approach to the assessment of the four criteria. Here, an overall balancing of the positive and negative effects resulting from the behavior of the dominant undertaking will allow online platforms to have an equal chance of success as a single-sided business from a legal point of view.

2.5 Conclusion and final remarks

The overview provided in this chapter illustrates that the application of EU competition law to online platforms will be a complex matter. Most cases appear to primarily require changes in application methodologies when concerning online platforms. This is particularly true in the qualification of practices under both Art. 101 and Art. 102 TFEU as well as with regard to the justification possibilities that undertakings have under these provisions. However, when considering the adaption for the jurisdictional thresholds for both provisions, the application adaptions seemingly bring a requirement for reconsideration of fundamental aspects of EU competition law. Such aspects include the concepts of collusion and dominances within the context of Art. 101 and Art. 102 TFEU as well as translating the objectives of these provisions in the context of online platforms. This is, however, unsurprising as the application of such criteria is primarily determinant for the scope of the respective provision. Consequently, changing the application of such criteria and as such modifying the scope of the provisions, will require far more intricate considerations than is seemingly communicated by current discussion on this matter. Thus, although previous studies finding no need for specific regulation appear to be correct, the difficulty of adapting current practice to online platforms will not likely prove much easier. Furthermore it is also the question whether such adaption will only apply to the case of online platforms or whether broad application may be more suitable. In the latter case the considerations related to the respective adaptions will evidently be more elaborate.

The challenges identified in the scope of this chapter formed the background to the research that was further refined and narrowed down in the consecutive chapters of this dissertation. This chapter provide an answer to the sub-question: *What are the challenges posed by the inherent characteristics of online platforms for the application of the current EU antitrust law to these actors and what is the nature of the adjustments required in order to tackle them?*

The discussion and exploration of the various challenges covered by this chapter show, similar to the findings in the remainder of the chapters, that the current framework of both art. 101 and 102 TFEU is in principle suitable for applying to online platforms. It would appear that the wording of both provisions offers sufficient room for legal interpretation and application. This means that the multi sided nature of online platforms does not, in itself,

impede the application of these provisions. The main reason behind this is that the wording of the provisions as such does not seem to reflect any specific choices with regard to the specific economic context of that cases that are expected to fall under the their scope. Accordingly, these provisions are indifferent to the economics behind the circumstances of a given case in the sense that these provisions are capable of applying under all circumstances. The challenges caused by online platform arise then from the practice of the EU Commission and courts that has restrained this neutral character of the provisions by making their mode of application more concrete and standardized. Contrary to the wording of the provisions their application in practice involved many specific choices that presupposed rather specific economic contexts which, unfortunately, did not include the possibility of multi sided markets or platforms. Consequently such choices made by previous practice entail a more visible challenge for the application of art. 101 and 102 TFEU to platforms that the provisions themselves.

The subsequent chapters that focus predominantly on the framework of art. 102 TFEU further display the limitations and difficulties following from the choices of previous practice throughout the entire application process of this provision.

3 The Definition of the Relevant Market for Online Platforms

This chapter is based on the two articles published on this topic covering the substantive and practical perspectives of the challenges posed by online platforms for the process of market definition. The first part of this chapter is based on the publication Applying (EU) competition law to online platforms: Reflections on the definition of the relevant market(s) (2018) 41(3) World Competition 453. The second part of the chapter is based on the publication The SSNIP test and Zero-Pricing Strategies: Considerations for Online Platforms (2018) 2(4) European Competition and Regulatory Law Review 244.

3.1 Introduction

The developments of the past decades in online markets have demonstrated the potential for online platforms to create new markets as well as disrupt established ones. The success of platforms such as Facebook, Amazon and Google has resulted in unprecedented market valuations in relatively short periods of time.[1] This success has increasingly attracted the attention of competition law authorities that hope to address future competitive concerns before they might materialize.[2] Despite the consensus that online markets are highly dynamic and competitive, such reality does not exempt online platforms from competition law scrutiny. In fact, this dynamic character may constitute a strong argument for intervention in order to prevent stagnation in innovation, resulting from anti-competitive practices.[3]

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1 See e.g. Accompany, 'Growth of Apple, Google (Alphabet), Amazon & Facebook. A Comparison of Financial Performance, https://www.accompany.com/insights/growth-of-apple-amazon-google-facebook/ (since this publication Accompany has been acquired by Cisco thus its site no longer exists in its previous form).

2 See e.g. Commission, Staff Working Document on Online Platforms Accompanying the document Communication of Online Platforms and the Digital Single Market, COM(2016) 288; Bundeskartellamt and Autorite de la concurrence, *Competition law and data*, at. 11-25 <https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.html>; MonopolKommission, *Competition policy: The challenge of digital markets*, special Report No. 68. <http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf >; Directorate General for Internal Policies, *Challenges for Competition Policy in a Digitalized Economy*, IP/A/ECON/2014-12, PE 542.235; House of Lords Select Committee on European Union, *Online Platforms and the Digital Single Market*, 10th Report of Session 2015–16, HL paper 129 (20 April 2016).

3 See e.g. OECD Global Forum for Competition Law, The impact of disruptive innovation on Competition Law Enforcement, DAF/COMP/GF(2015)16/FINAL.

In the context of EU competition law, much of the interest in online platforms relates to possible abuses of dominance. Abuse of dominance cases are inherently dependent upon establishing the existence of a dominant position held by the concerned undertaking. The definition of the relevant market constitutes one of the two main steps of establishing dominance in the context of art. 102 TFEU.[4] It is therefore essential that the market definition be carried out adequately to prevent erroneous application and incorrect findings concerning art. 102 TFEU. Performing this exercise in the case of online platforms requires additional caution due to the challenges posed by their two- or multisided nature.

In practice, delineating the relevant market will entail both substantive and practical challenges. Substantive difficulties concern primarily the requirement to determine the number of markets that need to be defined as online platforms deal with at least two separate customer groups, which may be part of a single or multiple relevant markets.[5] Practical difficulties concern the reduced compatibility of the legal and economic tools used for the purpose of the market definition.[6] The most prominent issue in this second category of difficulties is the application of the small but significant non-transitory increase in price (SSNIP) test in the context of zero-pricing strategies,[7] which significantly undermine its usefulness by removing the prices that would otherwise be used for the purpose of the test.

Therefore the purpose of this chapter is to examine both the substantive and the practical challenges that can be expected when attempting to define the relevant market in the case of multisided online platforms. These two types of challenges will be addressed separately in this chapter, which is divided into two main parts. The first main part will address the substantive challenges involved in the market definition process in the case of platform. Accordingly this part will address the matter of how many markets need to be defined when defining the relevant market for a two or multisided

4 Robert O'Donoghue and Jorge Padilla, *The law and Economics of Article 102 TFEU*, at. 94 (2nd edn, Hart, 2013).

5 See Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt, 'Market Definition in Two-Sided Markets: Theory and Practice' (2014) 10(2) Journal of Competition Law & Economics 293; OECD, 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018) <www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm >; in practice this aspect of the market definition was most visibly discussed in the US in in OHIO ET AL. v. AMERICAN EXPRESS CO. ET AL, 585 U. S. (2018), pp.2-8 due to the two-sided nature of credit card schemes.

6 See eg David S Evans and Richard Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses' in Roger Blair and Daniel Sokol (eds), *Oxford Handbook on International Antitrust Economics* (Oxford University Press 2014).

7 Ibid and OECD (2018) *supra* (n 5); David S Evans, 'Two-Sided Market Definition' (2009) in ABA Section of Antitrust Law, *Market Definition in Antitrust: Theory and Case Studies* <https://ssrn.com/abstract=1396751>.

platform and how such decision should be made. The second part of the chapter will address the practical challenge posed by zero pricing strategies for the application of the SSNIP test. This second part will discuss the matter of how the price oriented SSNIP test could and should be adjusted so as to remain relevant in zero pricing settings that are common to online platforms. When taken together, the discussion in both parts of this chapter provides a cleaner view on the challenges and potential solutions for the definition of relevant markets in the case of online platforms as a whole.

3.2 Defining the relevant market(s) for online platforms: a substantive perspective

Online platforms cater their services to at least two separate customer groups by facilitating an interaction between them. Accordingly, when assessing the market power of an online platform, which in turn requires defining the relevant market, it is essential to establish whether those customer groups are part of a single relevant market or multiple relevant markets. Once a decision in this regard it made, the exact scope of the relevant market must be determined based on the assessment of substitutability between the online platform and its closest competitors. The Commission, EU Courts and several national authorities have some experience with complex market definitions that include multiple relevant markets, yet this experience may not be equally relevant to online platforms. The two- or multisided nature and diverging business structures of online platforms combined with the dynamics of online markets fuelled by constant technological developments have not been addressed extensively by competition authorities, yet these aspects may have a decisive impact on the outcome of future investigations. It is therefore the purpose of this section to provide practical guidance on the market definition process for online platforms in light of their distinctive characteristics so as to minimize the risk of erroneous findings in future cases.

In order to present coherent guidance this first part of the chapter will be divided into three sections. The first section will shortly discuss the importance of the market definition for the purpose of applying art. 102 TFEU in practice. The second section will address the approach to the market definition process in the case of online platforms based on the interactions they facilitate between the customer groups participating on the platform. Accordingly, this section will provide a new method for determining the number of relevant markets that must be defined in each case. The third and final section, followed by concluding remarks, will provide some insight with regard to the key considerations in the assessment of substitutability between online platforms and their closest online and offline competitors. Such insight will equally play a key role in determining the number of relevant markets required in each case, as well as their scope.

3.2.1 Article 102 TFEU and market definition

The objective of art. 102 TFEU is the protection of competition on the market, which is expected to result in enhanced consumer welfare.[8] Attaining this objective at times requires intervention in the business practices of undertakings by the EU Commission or national competition law authorities (NCAs). Intervention in the context of art. 102 TFEU depends, however, on meeting the jurisdictional threshold of dominance in the absence of which it will not apply.

The legal meaning of dominance in the context of an Art. 102 TFEU procedures has been provided in the jurisprudence of the European courts in various formulations. In the seminal case of United Brands, the Court of Justice of the European Union (CJEU) found that dominance is a situation in which an undertaking can act, to an appreciable extent, independently of its competitors, customers and eventually its consumers.[9] This was later repeated by the Court in *Hoffmann-La Roche* with an additional refinement. According to the Court, a position of dominance does not require an absence of competition for the dominant undertaking but rather the ability of such undertaking to influence the degree of competition on the market, unrestrained.[10] Similar indications can be found in the Commission discussion paper and guidelines that were published after these judgments.[11] In later cases, additional elements were added to this definition that are still relevant today.[12] Although this definition is firmly set in the legal framework, it does not fully square with the economic concept of dominance. The idea of an undertaking acting independently from its competitors, customers and consumers is something that cannot occur from an economic perspective.[13] Instead, the economic concept of dominance entails an undertaking that enjoys a substantial degree of market power that could manifest an increase of price above competitive level or a reduction

8 J. Faull and A. Nikpay (eds), *The EU Law of Competition* (3rd edn, OUP, 2014) at 332-335.

9 Case 27/76 *United Brands v. Commission* [1978] ECLI:EU:C:1978:22, para. 65.

10 Case 85/76 *Hoffmann-La Roche & Co. AG v Commission* [1979] ECLI:EU:C:1979:36, paras. 38-39.

11 Commission, DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, public consultation, December 2005, paras. 21-23; Communication from the Commission — 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), C 45/7, paras. 9-13 ('Guidance on the Commission's enforcement priorities in applying Article 82').

12 Case 322/81 NV *Nederlandsche Banden Industrie Michelin v Commission* [1983] ECLI:EU:C:1983:313, para. 57.

13 Damian Geradin, Nicolas Petit, Mike Walker, Paul Hofer and Frédéric Luis, 'The Concept of Dominance in EC Competition Law' (2005) <https://ssrn.com/abstract=770144>; Gunnar Niels, Helen Jenkins and James Kavanagh, *Economics for Competition Lawyers* (2nd Ed, Oxford press publishing, 2016) at 97-99.

of output or quality below competitive level over a significant period of time.[14] Bringing the two approaches together means, in practice, translating a predominantly economic measurement of market power into the legal finding of dominance. The transition from an economic measurement to a legal finding has never been a simple process. This is because the legal threshold of dominance under Art. 102 TFEU is a binary one; an undertaking either is or is not dominant, whereas market power measurement is a matter of degree. The difference between the two approaches to dominance is further complicated by the lack of an absolute reference point where a specific degree of market power entails dominance.[15] Therefore, findings of dominance must ensure an adequate measurement of market power and a justified transition from market power to dominance, a determination that is initially dependent upon a properly defined relevant market. Despite the practice of market definition being often-criticized,[16] it nonetheless remains a prerequisite to the finding of dominance according to the EU courts.[17]

Beyond the matter of establishing dominance, the market definition is required for the purpose of evaluating any possible efficiency arguments that would justify the practices of the concerned undertaking. Currently there is no established practice on how such justification would be assessed by the CJEU, as this justification possibility has only been discussed by the case law but has never been successfully applied.[18] Nonetheless, the Commission seems to indicate that the approach under Art. 102 TFEU will be similar to that utilized under art. 101 (3) TFEU.[19] In the context of art. 101

14 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty, *supra* (n 11) para. 11.

15 Despite the attempt to provide an indication of a reference point for dominance in Case C- 62/86 *AKZO v. Commission* [1991] ECLI:EU:C:1991:286, para. 60, practice has shown that dominance is a matter of case-by-case analysis depending on the circumstances of the case. See e.g. Case T-340/03 *France Télécom v Commission* [2007] ECLI:EU:T:2007:22, paras. 100-111. In this regard the application of the Akzo market share benchmark is not always applied uniformly across member states, see Brenda Sufrin, 'The notion of dominance in competition law: An overview of EU and national case law', (2012) e-Competitions <http://awa2013.concurrences.com/business-articles-awards/article/the-notion-of-dominance-in>.

16 See e.g. Luis Kaplow, Why (Ever) Define Markets?' (2010) 124 Harv. L. Rev 437; Daniel A. Crane, 'Market Power Without Market Definition' (2014) 90 (1) Notre Dame L. Rev 31.

17 Case T-62/98 *Volkswagen v Commission* [2000] ECLI:EU:T:2000:180, para. 230; Case C-7/97 *Oscar Bronner GmbH & Co. KG v Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co. KG* [1998] ECLI:EU:C:1998:569, para. 32; Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa* [2008] ECLI:EU:C:2008:703, para. 19.

18 Case C-95/04 P *British Airways v Commission* [2007] ECLI:EU:C:2007:166, para. 86; Case C-209/10 *Post Danmark v Konkurrenceradet* [2012] ECLI:EU:C:2012:172, para. 42.

19 Guidance on the Commission's enforcement priorities in applying Article 82 (n 11) para. 30.

(3) TFEU, the Commission and EU Courts established that evidence of efficiencies is required primarily in the relevant market where the anti-competitive effects are present.[20] According to the CJEU in *Mastercard*, in the case of two- or multi sided markets, evidence of efficiencies is not necessarily limited to the relevant market but can be considered jointly with advantages in related markets.[21] Relying on efficiencies obtained solely in separate yet related markets will, however, not suffice for the purpose of relying on art. 101(3) TFEU.[22] If the same is true with regard to art. 102 TFEU, the manner in which the market definition is performed will determine which out-of-market efficiencies are taken into account for the purposes of analysis and thus the success of potential justifications. Particularly, determining the number of relevant markets that must be defined in each case may prove to be of great importance in this context.[23]

In light of the important role that the market definition currently plays in the application process of art. 102 TFEU, this process must also be addressed in the context of online platforms where some fine-tuning of current practices may be required.

3.2.2 Market definition and online platforms

The starting point of the market definition process is identifying the product or service of the concerned undertaking for which dominance must be established; this is also referred to as the focal product or service.[24] The market is then defined predominantly based on demand side substitutability with regard to competitors of the concerned undertaking.[25] The demand side substitutability analysis in previous practice has primarily been single-sided, as the concerned undertakings were mostly single-

20 Commission Guidelines on the Application of art. 101(3) of the Treaty, (2004) OJ C 101/08, para. 43.

21 Case C-382/12P *MasterCard Inc and Others v Commission*, [2014] ECLI:EU:C:2014:2201, paras. 236-242.

22 Ibid, para. 242. Accordingly, proof of efficiencies must first be provided with relation to the market where the anti-competitive behaviour has been identified.

23 Alfonso Lamadrid de Pablo, 'The Double Duality of Two-Sided Markets' (2015) 64 Comp Law 1, 5, 9-15 (2015); Daniel Mandrescu, 'Applying EU competition law to online platforms: the road ahead- Part 1' (2017a) 38(8) ECLR 353, 362-365 (2017); Daniel Mandrescu, 'Applying EU competition law to online platforms: the road ahead- Part 2' (2017b) 38(9) ECLR 410, 420-422.

24 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 13) pp. 41-47.

25 Commission Notice on the definition of the relevant market for the purposes of Community competition law [1997] Official Journal C 372/5, para. 13-20.

sided.[26] Online platforms by contrast are based on the two-or multi sided market model, which also constitutes the cornerstone of the definition according to the Commission and other competition authorities.[27] Although the literature on two-sided markets may differ with regard to the qualification of online platforms,[28] such platforms display all the main undisputed characteristics of two- or multi sided markets which possess competition law relevance.[29] Therefore, approaching the market definition process in the case of online platforms adequately will first require revisiting the manner in which the process is approached in light of their two- or multisided nature.

Online platforms interact with two or more customer groups and meet the demands of these groups by facilitating interaction between the two. The core product or service they provide is, in essence, the interaction between those distinct customer groups in some form of matchmaking.[30] Accordingly, demand-side substitutability can be assessed with regard to more than one customer group, meaning that the market definition process might result in multiple relevant markets. For example, Deliveroo facilitates the interaction between restaurants, self-employed delivery cyclists and consumers. Deliveroo does not own a restaurant or delivery service that consumers access via the platform. The product or service offered by Deliveroo is facilitating and managing the three-sided interaction between these distinct customer groups. The success of Deliveroo depends on the demand for its interaction facilitation service by all three parties. If an undertaking like Deliveroo were to be subject to an abuse of dominance investigation, dominance would have to be established, in principle, with regard to this three-sided interaction. From a competition law perspective this interaction facilitating service will constitute the focal product of the market definition process for which demand-side substitutability should be tested for all

26 In the previous case practice of the Commission and EU courts there were multiple chances to deal with a market definition in two-sided market, however, the matter has been limited to the acknowledgment of network effects. On this matter, see Dirk Auer and Nicolas Petit, 'Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy' (2015) 60(4) The Antitrust Bulletin 426; The recent case of Google Shopping represents an example where the importance of two-sided markets in the context of competition law is being better understood and explicitly addressed. See *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017.

27 Bertin Martens, 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological Studies Digital Economy working paper 2016/05, at 12. https://ec.europa.eu/jrc/sites/jrcsh/files/JRC101501.pdf.

28 Dirk Auer and Nicolas Petit (2015) *supra* (n 26) at 431-438.

29 Those characteristics are: the interaction between at least two separate customer groups, indirect network externalities, skewed pricing structure and multi-single homing patterns. See OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at 3.

30 Pieter Ballon and Eric Van Heesvelde, 'ICT platforms and regulatory concerns in Europe' (2011) 35(8) Telecommunications Policy 702, 702–708.

three customer groups. The perspective and demand of the three customer groups with regard to the interaction service provided by Deliveroo may, however, differ.

Consumers may not care whether the food is delivered by a self-employed delivery cyclist or by one hired by the restaurant. Restaurants may equally not care whether the delivery cyclists are self-employed. Self-employed delivery cyclists may not care whether they are hired to deliver food orders or documents. Accordingly, the interaction may prove to be more than one product due to such different perspectives by the customer groups of the platform. If that is the case, the demand-side substitutability assessment for each of these groups might offer different results which would indicate that the three are not part of the same market. In the case of consumers, the interaction service may fall within the market for home-delivered food while in the case of the cyclists it may be part may be part of the delivery market for small deliveries. Thus, when defining the market for such a multi-sided platform, one must first consider whether the interaction, facilitated by the platforms for two or more distinct customer groups it serves, requires the definition of one or more relevant markets. The current approach to market definition in this regard is platform-type oriented that, as will be seen, requires some refinement in order to provide adequate guidance in ongoing as well as future cases.

A. Market definition based on platform typology

The current literature and practical guidance on online platforms builds upon the general literature on two-sided markets and addresses the process of market definition based on a typology approach with regard to future practices.[31] The recent contribution by the Bundeskartellamt developed a rather general approach for online platforms and market definition based on the nature of the platform at hand and the network effects between the distinct customer groups interacting on the platform.[32] The Bundeskartellamt describes two types of platforms; namely, matching platforms and audience-providing platforms, also referred to as advertising platforms.[33] Matching platforms enable the intermediation or interaction between two or more distinct user or customer groups based on their mutual demand for each other. Matching platforms can then be further divided into platforms

31 According to the literature on two-sided markets the number of relevant markets per case is dependent on whether the matter concerns a transaction or non-transaction market. See e.g. Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt (2014) *supra* (n 5).

32 Bundeskartellamt, *Working Paper – Market Power of Platforms and Networks* B6-113/15 (2016) <https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Langfassung.pdf?__blob=publicationFile&v=2>.

33 Ibid, at 19-30; See similar discussion in OECD, 'Rethinking Antitrust Tools for Multi-Sided Platforms' (2018) supra (n 5) at 55-64.

that provide a transaction function and platforms without a transaction function.[34] Audience-providing or advertisement platforms facilitate an interaction between users brought to the platform by content matching their interests, and advertisers seeking access to those users.[35] Unlike the matching platforms, the interaction facilitated on the advertisement platforms between users and advertisers is not a result of mutual interest in the interaction, as it is generally only the advertisers that are interested in that aspect.[36]

The demand of the users in the case of advertisement platforms could be met even in the absence of the advertisers. For example, users visit the Dailymail site to read the latest news and gossip, it is this context that pulls them to the platform. Accordingly, reducing the amount of advertisement on the platform will not influence user traffic on the platform negatively, in fact it may even result in an increase.[37] This is observable when examining the indirect network effects in such cases, which are likely to be unilateral or rather modest bilateral. In practice, consumers may be willing to be exposed to advertisements when this results in gaining access to certain services free of charge and even more so if the respective advertisements are well targeted. Nonetheless this rather positive attitude towards advertisements is not so significant so as exhibit true demand interdependency between users and advertisers. Meeting the demand of such users is still predominantly depended on the service provided by the online platform. The amount of advertisements and their targeting accuracy may be perceived as a quality of the entire service, which may determine the scope of the relevant market but not the number of markets that need to be defined. On a matching platform such a situation would not be possible, as the demand curves of the distinct user groups and interrelated ones was described by the example of Deliveroo. The differences between platform types will determine the number of relevant markets required in each case, according to the Bundeskartellamt.

The definition of a single relevant market for all the involved customer groups could be required in the case of a matching platform where the product is the intermediation service, which cannot be provided without the involvement of all the distinct customer groups.[38] In addition to this interdependency of demand between the user groups, defining a single

34 Bundeskartellamt (2016) *supra* (n 32) at 21.

35 Ibid, at 21-22.

36 This one-directional interest in the interaction is primarily true with regard to display advertisements that are presented on an unsolicited basis to consumers. Search-based advertisement on the other hand may exhibit a degree of mutual positive indirect network effects between consumers and advertisers; See David. S. Evans, 'The Economics of the Online Advertising Industry' (2008) 7(3) Review of Network Economics 359.

37 Ibid.

38 Bundeskartellamt (2016) *supra* (n 32) at 28.

relevant market for the platform also requires that the demands of these users cannot be met by other means than through intermediation by the platform.[39] In the absence of the above-mentioned circumstances, multiple relevant markets would be required for the distinct user groups participating on the matching platform. In the case of audience-providing platforms, the advertisers pulled to the platform will always be analysed within a separate relevant market than the other user groups participating on the platform.[40] In contrast to the Bundeskartellamt, academic contributions devoted specifically to online platforms have addressed the matter on a more tailor-made basis, tackling the market definition hurdle based on the business model type of specific platforms. Such studies concern primarily market definitions for social media platforms, search engines and online marketplaces that focus largely on currently prominent platforms such as Google, Facebook, EBay and Amazon.[41] Although these contributions represent a valuable evolution in the practice of competition law and online platforms, they are not entirely suitable to serve as guidelines for future cases.

Generally speaking, a typology-based approach to legal matters can help simplify the analysis process greatly by providing several frameworks within which the legal assessment should be executed. This is, however, a rather static approach that presupposes a typology with a definite number of categories, which is not the case when dealing with online platforms. Online platforms do not have a predetermined number of types or business models but can take any shape or form depending on the value they create and how it is monetized.[42] In this sense, online platforms are fluid like water and developing categories or typology for platforms is similar to categorizing the shapes that water can take. Albeit an exaggeration, the analogy to water can serve as a useful tool for explaining the disadvantages of the current typology approach to online platforms as well as their added value.

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39 Ibid, at 29.

40 Ibid, at 29-30.

41 See e.g, Justus Haucap & Ulrich Heimeshoff, 'Google, Facebook, Amazon, eBay: Is the Internet driving competition or market monopolization', (2014) 11 Int Econ Policy 49; Florence Thépot, 'Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets' (2013) 36(2) World Competition 195; Lina M. Khan, 'Amazon's Antitrust Paradox' (2017) 127 Yale Law Journal 710; Thomas Hoppner, 'Defining Markets for Multi-Sided Platforms: The Case of Search Engines' (2015) 38(3) World Competition 349; A. Gebicka and A. Heinemann, 'Social Media & Competition Law' (2014) 37(2) World Competition 149.

42 See Sangeet Paul Choudary, *Platform Scale: How an emerging business model helps start-ups build large empires with minimum investment* (1st ed. Platform Thinking Labs publishing, 2015) at 149-211. Platforms do not have a predestined purpose to fulfill that requires a specific form of platform incorporation but rather constitute a moldable form of business organization.

A tailor-made, case-by-case approach to the market definition of online platforms based on their business model is similar to describing the shape of water based on its container. Every description will be accurate but there is an infinite number of container forms, which limits the relevance of each finding to the matter of describing the shape of water. Following this analogy, the approach of the Bundeskartellamt to online platforms would be equivalent to describing the shape of water based on the geometric tree to which the shape of the water container belongs. Such an approach provides general guidance but does not recognize the possibility of hybrid shapes. Despite the shortcomings of each approach, they both contribute greatly to distilling an essential finding that is always true, namely that the shape that water will take depends on the form of its container. In the case of online platforms, this essential finding is the link between the nature of the interaction between the sides of the platform, which is under competition law scrutiny and the market definition for the platform. This link is addressed to some extent by the Bundeskartellamt, however, it is framed as a criterion of platform typology rather than an interaction typology. In contrast to online platforms as such, the interactions facilitated by platforms can be divided into finite categories that will remain constant. A short inquiry into the business reality of online platforms demonstrates the importance of the difference between the two approaches.

In their early stages, all online platforms face the same chicken-and-egg problem. The platform must convince one user group to join the platform before members of the other group necessary for the interaction also join. The idea is that once one group of users joins the platform, the other group will join as well and the platform will scale up due to indirect network effects. Solving the chicken-and-egg problem is far more complex than it appears, as the members of the first group have nothing to gain from their participation on the platform before users on the other side appear.[43] A marketplace without sellers is just as unattractive to buyers as a marketplace without potential buyers is to sellers, which was the chicken-and-egg problem faced by EBay. In order to overcome this obstacle, various launching strategies have been adopted by online platforms based on the nature of the value they seek to create and monetize. If the launching phase is successful, online platforms may achieve critical mass and thus become viable.[44] In these early stages it is highly unlikely that an online platform

43 Bernard Caillaud and Bruno Jullien, 'Chicken & Egg: Competition among Intermediation Service Providers' (2003) 34(2) RAND Journal of Economics 309.

44 David S. Evans and Richard Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses' in Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics (Oxford University Press 2014); D.S. Evans and R. Schmalensee, 'Failure to Launch: Critical Mass in Platform Businesses' (2010) <https://ssrn.com/abstract=1353502>.

will fall under the scope of art. 102 TFEU, as substantial market power is incompatible with an undertaking struggling to survive. Once the platform is viable and shows signs of stability, the next steps focus on increasing future revenue, which brings it closer to the scope of art. 102 TFEU.

In order for an online platform to obtain more revenue, it must increase the value created for its customer groups. The increase in value could then increase the number of participants on the platform (implicitly increasing the number of interactions), raise the willingness of such participants to pay for the platform participation or a combination of the two. The increase in value can take two forms: optimization and expansion. Optimization refers to improving the quality of the interaction that is facilitated by the platform. For example, an online marketplace can improve the interaction between sellers and buyers by making it more user-friendly or improving transaction security. Expansion possibilities are twofold; namely, expanding the territorial reach of the interaction and expanding the number of interaction types.[45] Airbnb serves as a good example for both types of expansion. In the course of time, Airbnb expanded from San Francisco to various major cities in the United States and now offers its matching functionality in over one hundred and ninety countries.[46] In addition to expanding the territorial reach of matching guests to short stay accommodations, Airbnb also introduced matching functions for experiences and restaurants.[47] By adding these matching functionalities, Airbnb attracted two more groups of users to the platform: experience providers and restaurant owners. Accordingly, its matching service is now active in additional markets. If the purpose of the platform typology was to determine whether one or two relevant markets must be defined in the case of a matching platform, this consideration is no longer relevant. Each additional matching functionality on a platform entails potentially two additional relevant markets that may need to be defined for the purpose of finding dominance. While the choice of defining one or two relevant market remains true with regard to each interaction, it is no longer true for the platform as a whole once the platform becomes multi-sided. Thus the guidance of the Bundeskartellamt with regard to matching platforms would perhaps be useful in the launching stage of the platform[48] but once the platform expands, such guidance becomes less relevant.

45 Functionality expansion possibilities for online platforms are equally two-fold, namely expansion into a constellation of platforms and functionalities bundling. For further discussion see Kalina S Staykova and Jan Damsgaard, 'Platform Expansion Design as Strategic Choice: The case of WeChat and Kakaotalk' (2016) Research Papers. 78 <https://aisel.aisnet.org/ecis2016_rp/78>.

46 See territorial reach of Airbnb online at:< https://www.airbnb.com/about/about-us>.

47 Ibid.

48 This is provided that the platform does not launch as a multi-sided matching platform from day one.

The possibility of expansion also undermines the division of platforms to matching and audience-providing platforms as a functionality expansion can result in hybrid models. For example, YouTube, which started as a platform for video sharing. In its early days YouTube could have been considered a matching platform that matched video producers to viewers based on their search query. Through continued development, this matching characteristic has been preserved and even enhanced by adding professional content that is accessible for a fee.[49] But in addition to the matching functionality, YouTube also displays both video and non-video advertisements.[50] Furthermore, and perhaps more importantly, the division between the two types of platforms as provided by the Bundeskartellamt is one that cannot be made in practice. This is because matching refers to an operational core functionality of the online platform whereas advertisement is a form of commercial application and monetization of such an operational functionality. Thus the two can coexist in practice as can be seen in the case of price comparison sites that match sellers and buyers, which can nonetheless be considered a form of advertisement.[51]

Finally, it must be added that platform expansions from a two-sided to a multi-sided online platform will similarly undermine the tailor-made analysis approach. A market definition analysis performed for a particular platform with a particular business model will lose its relevance as expansion inevitably entails certain changes to the business model. The more changes a platform will undergo in the phase of expansion, the less usable such tailor-made analysis will be in prospective cases. Therefore, in order to develop an approach that can serve as a guideline in future cases, it is preferable to address that market definition process based on the type of interaction it facilitates.

B. Interaction typology as the cornerstone of the market definition

The various business models relied upon by online platforms entail, essentially, a series of interactions that are designed to offer a certain value to the platform participants that such participants cannot achieve on their own or at least not as efficiently. The division of interactions or functionalities facilitated by online platforms with regard to the separate customer groups they serve can be framed as a division between bi-or multilateral matching and

49 See terms and conditions with regard to paid content online at: <https://www.youtube.com/t/usage_paycontent>.

50 See types and functionalities of the various advertisement possibilities online at: <https://support.google.com/youtube/answer/2467968?hl=en>.

51 Commission, Staff Working Document Accompanying the document Report from the Commission to the Council and the European Parliament Final report on the E-commerce Sector Inquiry, COM(2017) 229 final, at 164-165.

unilateral matching.[52] These two matching variations are then applied and monetized in practice in various ways such as pay-per-click ads, personal data registration, per-transaction fees, membership fees and others. Accordingly, depending on the business model, online platforms may entail multiple unilateral as well as bi-or multilateral matching interactions.

Bi-or multilateral matching refers to situations where the interaction between customer groups on the platform is sought after by all customer groups that are part of a particular interaction. This mutual interest in the interaction is then confirmed by a degree of bi-or multi-lateral positive indirect network effects. Accordingly, the increase in the number of participants of each user group will increase the attractiveness of the platform for the other user group on the platform, provided this growth is managed efficiently.[53] Conversely, unilateral matching refers to situations where one user group wishes to reach another, separate customer group(s) on the platform but this will is not necessarily observable the other way around, as is the case with non-search display advertisements or data aggregators.[54] This unilateral interest in the interaction is also manifested by the one-directional positive indirect network effects in such cases. Accordingly, on a platform with user groups A and B the increase in the number of users in group A will increase the attractiveness of the platform for users in group B but not vice-versa. That does not mean that the presence of group B on the platform is entirely irrelevant, particularly when it may have a significant effect on the price structure of the platform. Accordingly in some cases the participation of group B on the platform will enable the platform to offer zero priced access to the platform to members of group A. Although this relation between groups A and B will still not become one of true mutual interdependence, it will very likely limit the scope of substitutability from the perspective of group A to zero-priced alternatives.

In the context of market definition, approaching the question of how many relevant markets must be defined based on an interaction typology allows one to focus the legal analysis on the relevant context of the anti-competitive behaviour at hand. Such context may require defining the relevant market only with regard to some of the interactions facilitated by the platform when

52 Hereinafter the terms interaction and functionality will be used as interchangeable.

53 An imbalance in the ratio between the various customer groups interconnected by the platform or congestion may reduce such attractiveness. On this matter see David S. Evans and Richard Schmalensee, 'The Industrial Organization of Markets Based on Two-Sided Platforms' (2007) 3(1) Competition Policy International 151.

54 Based on the Commission's e-commerce sector inquiry, both marketplaces and price comparison platforms aggregate multiple types of user data which in some cases is shared with third parties for a fee. See Commission COM(2017) 229 final, *supra* (n 51) at 182-185.

the said platform is multi-sided.[55] For example, if LinkedIn, a multi-sided platform, were to be accused of excessive pricing with regard the posting of vacancies by recruiters, defining the relevant market for online courses offered on LinkedIn would not be useful. This is because the presence and strength of indirect network effects may vary greatly between the separate customer groups on LinkedIn or any other online platform.[56] Consequently, the presence of a certain customer group on the platform may not always affect the market power of the online platform with regard to the other platform participants. Alternatively, in the case of an anti-competitive practice such as leveraging of market power on a multi-sided platform, it may be necessary to define multiple relevant markets on such a platform.[57] Once the relevant interactions for the purpose of the market definition have been identified, the difference between the two types of interaction facilitation determines the need to define one or more relevant markets for each of those specific interactions.

In the case of unilateral matching, the outcome with regard to market definition is relatively straightforward. Due to the fact that the demand of the customer groups is not mutually dependent and thus indirect network effects are predominantly one-directional, these customer groups will not belong to the same relevant market. Accordingly, the definition of the market for such a platform with regard to its customer groups, interlinked by a unilateral matching functionality, will result in two or more markets. Platforms that provide a bi-multilateral matching functionality become slightly more complex. In the case of such platforms, meeting the demand of the different customer groups interconnected by the bi-multilateral matching functionality is dependent on their simultaneous participation on the platform. Therefore, in cases concerning a bi-multilateral matching functionality, the definition of a single relevant market for the customer groups connected by such functionality may be justified. The dependency between separate customer groups is observable to a great extent in the intensity of indirect network effects that is then translated to the pricing scheme of the

55 A good example of such a situation can be seen in the recent ruling of the district Court of Amsterdam dated 21 March 2018 concerning real estate platform Funda. Case available online at: https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBAMS:2018:1654 (in Dutch). In this case the platform subject to the competition law claim was a multi-sided one facilitating multiple interactions including those between sellers and buyers of residential real estate, renters and tenants of residential real estate, sellers and buyers of commercial real estate. The court in this case however, dealt only with the market of buyers and sellers of real estate. Thus only addressing one of the interactions facilitated by the platforms.

56 In the case of LinkedIn, online courses creators and recruiters are rather ambivalent to each other's participation on the platform however both are very dependent on the participation of users on the platform.

57 See e.g. *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017.

platform.[58] In such cases, the greater the dependency between the customer groups in terms of meeting their demand, the more likely it is that such separate customer groups belong to a single relevant market. Accordingly, in such cases substitution concerns the bi-multilateral matching functionality of the platform as the focal product, which is seen as the same product by all the connected customer groups.

Although both types of matching interactions can be found pertaining to any online platform, the qualification of an interaction as unilateral matching, a bi-or multilateral matching cannot be done in abstract. Determining which type of matching interaction the online platform facilitates with regard to its respective customer groups requires looking into the business model of the platform. Such an inquiry will entail considering the value propositions that the platform offers its customer groups, as well as the manner in which the participation of such customer groups and their mutual interaction is being monetized. Such an inquiry is not only necessary to determine the type of matching interaction but also in order to determine whether two or more relevant markets must be defined for a bi-or multi-lateral matching interaction. In this regard, some guidance can be formulated concerning the link between the matching functionalities and the value propositions of the platform for each of its interactions.

In the case of unilateral matching where only one customer group is interested in the matching, the value proposition for that group will include the other customer group to which it is being matched but not the other way around. For example, the value proposition for the various businesses that pay for display and video advertisements on YouTube entails exposure to the vast number of YouTube users. The value proposition for YouTube users however, does not include being exposed to display advertisements but rather revolves around access to the enormous amount of content on YouTube. In the case of bi- or multi-lateral matching where all the customer groups are interested in the matching, the value proposition for all the groups will include the other customer groups interconnected by the interaction to some extent. Accordingly, a bilateral matching interaction between groups A and B will have value propositions for A and B which basically entail gaining access to each other can be the case between buyers and sellers, renters and landlords, jobs seekers and employers among many other options. Determining whether A and B should also be part of the single relevant market depends on the focus of the value proposition. Accordingly, when the value proposition entails the mutual interaction between the groups, the platform essentially offers one and the same

58 See e.g. Marc Rysman, 'The Economics of Two-sided Markets' (2009) 23(3) Journal of Economic Perspectives 125; OECD Roundtable on two-sided markets, (2009), DAF/COMP/WD(2009)69, at 8.

product to both A and B and these may be part of the same relevant market. This is the case on LinkedIn, for example, with regard to the job placement interaction which matches job seekers and potential employers. Alternatively, when the value proposition with regard to group A is not focused on the interaction with group B, but rather on the product or service supplied by group B, separate relevant markets may be required for A and B. This is likely the case with online marketplaces to which buyers are attracted by a value proposition concerning the variety of products and prices but not so much by the number of sellers.[59] In practice, however, determining the focus of the value proposition may be more complex, particularly when the product or service is not fully severable from its producer or supplier as in the case of hotels on Booking.com. Such complex cases will require additional analysis of the business model of the platform and of other (non) platform alternatives that provide customer groups with comparable value propositions.

C. Matching interactions and substitution

The decision concerning whether two or more customer groups form part of the same relevant market is one of great importance for matters of substitution and thus for the scope of the relevant market. The previously mentioned example of Deliveroo demonstrates the consequences of this decision in this regard. Defining a single relevant market in the case of Deliveroo would mean that consumers, bicycle delivery workers and restaurants are all part of the same market. Accordingly, when looking for substitution the only relevant alternatives would be those that meet the trifold demand of these three customer groups simultaneously. As a consequence, alternatives that only meet the demand of only one or few of the user groups cannot be considered a substitute for the purpose of defining the relevant market. Thus, in the Deliveroo example, a two-sided platform that provides consumers access to restaurants with delivery services should not be considered a substitute. This finding would be very difficult to maintain as there is limited reason for consumers to consider these options different. Consequently, establishing that two or more separate customer groups of an online platform are part of the same relevant market should be done diligently, as such a finding substantially limits the range of substitution. Cases concerning bilateral matching functionality would exclude single-sided substitutes and cases involving multilateral matching interactions would exclude both two-sided and single-sided substitutes for the various customer groups involved. Such dramatic restriction in the range

59 See e.g. Commission, COM (2017) 229 final (n 51) at 50; See also EU Commission, Study on the coverage, functioning and consumer use of comparison tools and third-party verification schemes for such tools', Final report prepared by ECME Consortium (EAHC/FWC/2013 85 07), at. 176-177.

of substitutes is more likely to lead to an erroneous finding of dominance where such a position may not exist. Thus, finding the two or more or customer groups that are part of the same relevant market (meaning that a single relevant market should be defined for a bi-or multilateral matching functionality), should be done when the intermediary matching service by the platform is indispensable for meeting the demands of each separate customer group.[60] Furthermore, this indispensability should be also confirmed by the lack of obvious alternatives for either customer groups to have their demand met by a non-platform alternative. Thus, evaluating the indispensability criteria requires looking beyond the business model of the concerned platform, which may fully be dependent on a bi-or multilateral interaction as in the case of marketplaces or a hotel room-booking platform.

Cases concerning bi-or multilateral matching functionalities that do not meet the indispensability requirement would entail looking at each customer group of the platform as a separate, related, market.[61] Such a situation would occur, for example, in the case of marketplaces that have a bilateral matching functionality, namely between buyers and sellers, and that include the possibility to conclude a financial transaction. Meeting the demand of both sellers and buyers participating on the platform depends on their mutual participation, thus for the purpose of using the platform, mutual participation is required. However, it is quite unlikely that buyers would not consider online marketplaces and big online retailers substitutable, particularly when these appear to be one and the same, like in the case of Amazon. Accordingly, from the perspective of buyers the use of the marketplace is not likely to be indispensable for meeting their demand but rather entail some aspect of convenience. Consequently, from the perspective of the buyers the relevant market is not limited to the platform market even if that may be the case from the perspective of the sellers. Thus the bilateral matching function may not be linked to the demand of both user groups in the same manner. Therefore, the focal product for which substitution should be tested is no longer the intermediation provided by the platform. Instead, in such cases there are two or more different focal products based on the different demand characteristics of the user groups

60 In this regard, a parallel can be drawn from the literature on two-sided transaction markets, the transaction between the interconnected customer groups takes place on the platform or does not take place at all. See Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt (2014) *supra* (n 5). A starting point with regard to the manner in which indispensability should be evaluated can be seen in Bundeskartellamt (2016)*supra* (n 32) at 27-32.

61 Separate markets imply that the demand of one or more of the user groups can also be met through other means, making the intermediary matching function of the platform a matter of efficiency or convenience rather than necessity.

involved.[62] In such cases, substitutability assessments are done separately for each of these user groups, similar to current practice. This allows for a broader substitutability analysis for at least one of the participant groups involved in the interaction, as, in such cases alternatives no longer have to be strictly two- or multi sided.

In light of the above, it can be concluded that approaching the market definition process should be done on an interaction typology rather than on a platform typology to allow for a more accurate analysis. Approaching the market definition accordingly prevents incorrect findings with regard to the number of relevant markets that need to be defined in each case. As previously discussed, however, the number of relevant markets that need to be defined in each case cannot be solely determined based on the type of matching interaction facilitated by the platform. Determining the number of relevant markets needed in the case of bi- or multilateral matching interactions requires assessing the degree of indispensability of the platform for the customer groups connected by such interaction. Such an assessment entails determining whether the demand of such customer groups can easily be met by other (non-platform) undertakings. Throughout this assessment, the substitutability between the concerned online platform and other platform and non-platform alternatives, online as well as offline will need to be tested. The insights of such assessment will be essential to the entire market definition process since, in addition to determining the number of relevant markets in each case, one must eventually also determine the scope of each relevant market that is entirely dependent on the assessment of substitutability.

3.2.3 Platform substitution – a tale of (at least) two perspectives

In the digital economy the absolute majority of online platforms will include one or more bi- or multi-lateral matching interactions. Such matching interactions form the core of many platforms such as marketplaces, booking gateways, vacancies-posting websites, crowdfunding platforms, e-learning platforms, and many others. Therefore, with regard to such platforms there is a great likelihood that future Art. 102 TFEU cases will concern the bi- or multilateral matching interaction. Accordingly, such cases will require establishing dominance with regard to such interaction, which calls for performing the market definition process with regard to all customer groups interconnected by this functionality. Consequently,

62 For example, generic online marketplaces are an efficient way for consumers and sellers to interact and eventually transact. For sellers that are not renown and cannot afford their own retail web shop, the intermediation aspect of the marketplace may be essential for meeting their demand to sell merchandise. However, for consumers, the intermediary matching function of the marketplace is perhaps convenient but often not indispensable for purchasing goods.

the number of relevant markets in each case as well as their scope will need to be determined in light of a substitutability assessment. Generally speaking, the market definition in such cases will require defining the market for platform participants that are seeking a service or product and for the participants that offer their services or products through the platform. For the purposes of clarity, the first customer group of the platform will be referred to as 'consumers' and the latter as 'merchants' hereinafter. Given that such customer groups consist of different kind of participants, it is expected that their views on substitutability and the criteria affecting it also differ. Therefore, when assessing the competitive relation between online platforms and other undertakings with regard to both consumers and merchants, it is important to consider which platform characteristics are predestined to affect this assessment. However, with regard to both merchants and consumers it must be noted that the following discussion concerning the analysis of substitutability is not intended to establish an all-encompassing practice for such an analysis. Instead, the following aims to provide guidance with regard to several key aspects that will help identify the presence or absence of obvious substitutes for the platform so as to determine the number of relevant markets required in each case and to obtain an initial impression concerning the scope of such markets.[63] Such guidance will allow for a better understanding of the competitive pressure that online platforms may experience in practice that may prove to be more complex than the common 'one click away'. For the purpose of this section, the term 'platform' refers to platforms that facilitate the interaction between commercial parties and consumers, also known as Business-to-Consumer (B2C) platforms.[64]

A. The merchant perspective

The platform participants that offer their services or products on the platform will use such platforms primarily as either a sale or an advertisement channel depending on whether the online platform offers a transaction functionality.[65] In order to participate on online platforms, such participants will be required to pay some kind of remuneration.[66] Unlike in the case of end consumers, online platforms will usually not use zero-pricing with these platform participants.[67] Defining the relevant market with regard to

63 In practice, however, the process of delineating the precise scope relevant markets which will require a more detailed analysis including the geographic aspect of the relevant market, supply-side substitution and barriers to entry, which goes beyond this scope of this article.

64 Although as Business-to-Consumer (B2C) and Business- to-Business (B2B) rely essentially on the same two-sided market economic model, the business reality of the two types of platforms differ when concerning their position in the supply chain.

65 See Commission COM(2017) 229 final, *supra* (n 51) at 164-165.

66 Ibid, at 37-40, 190.

67 Ibid.

such participants then requires assessing whether they will be willing to switch to a competitor in the case of a participation fee raise by the online platform. Online platforms that provide these participants with mutual matching and transaction functionalities will be used as a sales or distribution channel from their perspective. Accordingly, the willingness of the platform participants that offer their products or services on the platform to switch in such cases will indicate that other (possibly non-platform) sales or distribution channels are considered substitutes to the online platform. In the context of a substitutability assessment among sales or distribution channels, it is important to consider that the facilitation of direct interactions by online platforms in essence means that these constitute a distinct kind of intermediary. This distinctive nature is a result of a business governance that is primarily targeted at facilitating, rather than owning or fully controlling, the interaction between its customer groups.[68] Such distinct form of intermediation in practice may significantly limit potential substitution with other sales or distribution channels.

The facilitation of interactions by online platforms that offer mutual matching and transaction functionalities translates, in practice, into processing transactions between sellers and buyers, managing bookings between service providers and customers or even facilitating funding by bringing together creators and investors.[69] From the perspective of merchant participants, this facilitation of interactions positions online platforms in a different stage of the supply chain when compared to non-platform alternatives.[70] Online platforms allow such merchant participants to interact directly with their customers, a feature that non-platform sale channels cannot offer. In practice, the direct interaction between the two means that platform participants can maintain more control over the service or products they offer on the platform compared to non-platform single-sided alternatives.[71] A look into practice clarifies this matter and indicates the reasons behind why the degree of substitution between online platforms and other sales channels is not obvious and is likely more limited than would appear.

Online marketplaces allow producers to sell their products directly to end consumers. In return for facilitating this interaction and processing the transaction, the retailers or producers pay a participation fee to the

68 See e.g. Andrei Hagiu and Julian Wright, 'Enabling Versus Controlling', (2015) Harvard Business School Working Paper, No. 16-002 < https://www.hbs.edu/faculty/Pages/item.aspx?num=49375>.

69 Known examples of platforms that offer such services are for example Amazon.com, Booking.com and Kickstarter.com.

70 See *supra* (n 68); Andrei Hagiu and Julian Wright, 'Marketplace or reseller?' (2015) 61(1) Management Science 184.

71 Ibid.

online platform in the form of a fixed membership fee, a percentage of the transactions value or a combination of the two.[72] The producers that sell their product on the online marketplace are free to determine their price and can generally adjust it as they see fit; consumer relations are dealt with by the marketplace and the individual sellers to a certain extent.[73] This is a very different form of sales when compared to non-platform alternative outlets. In practice, when considering sales outlets or channels, producers can choose to sell their products to wholesalers, retailers or directly to consumers. From the producers' perspective, the sale of products via the wholesale or retail outlets means transferring control of the price-setting decision and consumer relations together with the sale of the products to the next step in the supply chain. Attempts to maintain a substantial degree of price control throughout the supply chain will run the risk of falling foul of competition law as it may be considered a form of retail price maintenance.[74] The difference in the business organization of these single-sided outlets compared to an online marketplace evidently has an impact on the manner in which revenue is generated by the producer in each case.[75] For retailers, these circumstances remain the same but alternative outlets to an online platform are even more limited, as retailers are positioned further down the supply chain than producers.[76] Similarly, when the online platform is facilitating an interaction between service providers and their potential customers, the non-platform alternatives include wholesalers, retailers and in some cases even employers, which present a completely different form of conducting business.[77] In the case of entrepreneurs, seeking financing a non-platform alternative to online crowdfunding platforms would typically entail sacrificing a percentage of the business they hope to realize.[78] The differences between non-platform alternatives and online platforms with mutual matching and transaction functionalities indicate that the two are positioned in a different place in the supply chain. When comparable circumstances arise, it may therefore be justified to establish

72 See Commission COM(2017) 229 final, *supra* (n 51) at 37-40, 190.

73 Ibid.

74 See art. 4(a) of 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, OJ L 102/1.

75 Producers that sell their products via wholesalers or retailers enjoy a certain degree of financial security once the products are sold to these parties whereas direct sale to the consumers via an online platform entails more uncertainty since its requires fulfilling each sale separately.

76 In this scenario, it is rather unlikely that a retailer would be able to profitably sell its inventory of products to another retailer and even less so with regard a wholesaler.

77 See the example of Deliveroo or UberRush where the non-platform alternative for freelance delivery cyclists would be an employer that caters to multiple restaurants or companies such as Foodora or Quiqup.

78 Unlike traditional venture capital, crowd funding platform Kickstarter allows entrepreneurs to raise capital in exchange for product or service discounts rather than sacrificing equity.

that online platforms do not form part of the same relevant product market that non-platform alternatives do with regard to the platform participants that offer their products or services on the platform. In this regard, it must be noted that differences in the supply chain positioning can also occur among two-multi-sided platforms. This will be most evident when the interaction facilitated by the platform does not concern the same customer groups when compared to potential alternatives.[79]

Defining the relevant market based on the position of a sales or distribution channel in the supply chain in the case of online platforms entails applying current practice in a different setting, as this approach has been acknowledged in the context of EU competition law. The Commission's Notice on the definition of the relevant market indicates that separate product markets can be established for different levels of the production or distribution of the products or services in a given case.[80] This is a practice that is common in the context of mergers in order to evaluate the effects of such a merger along the vertical and horizontal lines of production or distribution.[81] In the context of art. 102 TFEU cases, however, defining the market in such a manner is uncommon as it concerns rather exotic cases such as dominant buyers, essential facilities, refusals to supply and margin squeezes.[82] By contrast, all future cases involving online platforms with a mutual matching and transaction functionalities will require taking into account the position of such a platform in the supply chain. This is because the substitutability for the platform from the merchant perspective will always require a comparison across all other alternative sales channels.

The market definition, in light of differences in the supply chain positioning of online platforms, has been performed in the context of merger decisions in the online travel industry as well as cases concerning the use of MFN clauses in this industry. These cases provide valuable guidance as they address the matter of substitution for the platform from the merchant as well as the consumer perspective. Accordingly, it has been found that various sales channels including multiple types of platforms were some-

79 For example such difference can be observed between business-to–business (B2B) wholesale or retail marketplaces and business-to-consumer (B2C) marketplace platforms. In this respect it may be considered that non-platform alternatives will be closer substitutes for B2B online platforms than to B2C online platforms from the perspective of the producers as the contracting parties may be the same.

80 Commission Notice on the definition of the relevant market (1997) *supra* (n 25) para. 33.

81 See Commission Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings [2008] OJ C 265/6 and Commission Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings [2004] OJ C 31/5.

82 Commission Notice on the definition of the relevant market (1997) *supra* (n 25) paras. 17-18; Guidance on the Commission's enforcement priorities in applying Article 82, *supra* (n 11) paras. 75-90.

times part of different relevant product markets.[83] This is because such sale channels entailed different contractual links between the service providers and their potential customers. Therefore, it is important to stress that establishing the position of an online platform in the supply chain cannot be done in abstract based on the abovementioned general remarks. A proper analysis will require a thorough inquiry into the business model and governance of the online platform while taking into account the legal and economic context in the given case.

The decisions of the German Bundeskartellamt and the Swiss Competition Commission (COMCO) in the cases concerning MFN clauses, provide an example of the detailed analysis that would be required in order to establish the position of online platforms in the supply chain.[84] According to these decisions, hotel portals form part of different product markets than hotels' own websites, online travel agencies, tour operator portal and meta-search engines from the perspective of hotels.[85] These findings result from the fact that such sales channels differ in their in their position in the supply chain,[86] as well as provide different functionalities and market exposure.[87] The analysis of the Bundeskartellamt in the MFN cases adduces that the differences in the positioning of online platforms in the supply chain occur with regard to both non-platform alternatives and two- or multisided platform alternatives. The findings of the Bundeskartellamt are similar to those of the COMCO in their investigation concerning the use of MFN clauses by online booking platforms.[88] The COMCO analysis also indicates that the inclusion or absence of transaction functionalities on a platform that facilitates a bi-or multilateral matching interaction will also determine the degree of substitution between such platforms greatly. Accordingly, online platforms with solely a bi-or multilateral matching functionality – price comparison sites for example – may not constitute a substitute to online platforms with bi-or multilateral matching and transaction functionalities such as an online marketplace. This is because the transaction functionality defines the business model of such platforms and has a substantial impact on their contractual relation with the customer groups that participate on

83 *Travelport/Worldspan* (Case Comp/M. 4523) Commission decision of 21 Aug. 2007; Bundeskartellamt Prohibition decision 20 Dec. 2013 in the case of HRS, B9-66/10; Bundeskartellamt Prohibition decision, 22 Dec 2015, in the case of Booking.com B.V, B9-121/13; Competition Commission COMCO prohibition decision, 19 Oct. 2015, Online-booking Platforms for Hotels.

84 Ibid, Bundeskartellamt Prohibition decision, B9-66/10; Bundeskartellamt Prohibition decision B9-121/13.

85 Bundeskartellamt Prohibition decision, B9-66/10, *supra* (n 83) para. 73.

86 Ibid, paras. 91, 93, 96, 100.

87 Ibid, paras. 92, 93, 94, 97.

88 Competition Commission COMCO prohibition decision, *supra* (n 83) para. 254. Although the COMCO did not refer specifically to the placement of the online booking platforms alternatives position in the distribution chain, their findings refer to the same elements as the Bundeskartellamt.

the platform. In the case of e-commerce marketplaces and online booking platforms, the existence or absence of transaction functionalities determines whether a platform is a sales channel or an advertisement tool.[89]

Assessing substitution for platforms with solely a mutual matching functionality may therefore also result in similar findings, as has been observed by the Commission in the recent Google shopping decision.[90] In the absence of a possibility to process a financial transaction, the bi-or multilateral matching functionality essentially means that in practice, merchants use the platform as a comparison tool for the purpose of advertising rather than as a sales channel.[91] Consequently, the substitutability will be tested across the various advertisement possibilities that, unlike sales channels, will inherently be two-or multi-sided to some degree.[92] Therefore, with regard to the platform indispensability test, from the merchant perspective some form of two-or-multi-sided platform is indispensable for meeting its demand for the advertisement service. Thus the relevant market from the merchant perspective is solely a platform market. When delineating the exact scope of such relevant market, however, it would appear that there is limited substitution among the various advertisement platforms (both online and offline). The findings of the Commission in the *Google Shopping* decision indicate that the various types of online platforms offering a bi-or multilateral matching functionality used primarily as a form of advertisement are not really substitutable. These findings concern the assessment of substitutability among the search shopping services of Google, specialized search services platforms and online search advertising platforms.[93] Furthermore, according to the previous findings by the Commission online and offline advertisement services are not considered to be part of the same relevant market.[94] This has been confirmed multiple times by the Commis-

89 *Travelport/Worldspan* (Case Comp/M. 4523) Commission decision of 21 Aug. 2007, paras. 24-33; Bundeskartellamt Prohibition decision, B9-66/10 (n 83) para. 73, 97-101; Competition Commission COMCO prohibition decision, *supra* (n 81) paras. 232- 247; Commission COM(2017) 229 final, *supra* (n 51) at 164-165. Additionally, the importance of the transaction functionality with respect to substitution among platforms can also be observed in the manner in which the MFN clauses were formulated. In all cases, the MFN clauses included solely other platforms with mutual matching and transaction functionalities that concerned the same customer groups. Accordingly, also from the perspective of the platforms other alternatives appear not to be considered direct competitors that may free-ride on their success.

90 See *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, paras. 216-246.

91 Ibid; Commission COM(2017) 229 final, *supra* (n 51) at164-165.

92 See e.g. David S. Evans, 'The Economics of the Online Advertising Industry' (2008) 7(3) Review of Network Economics 359.

93 *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017 paras. 192-247.

94 *Telia/Telenor/Schibstedt* (Case IV/JV.1) Commission decision of 27 May 1998 ; *Telia/Telenor* (Case IV/M.1439) Commission decision of 3 Oct. 1999, para. 107; *Vodafone/Vivendi/Canal Plus* (Case IV/M.0048) Commission decision of 20 Jul. 2000, paras. 42-44.

sion including in the Google Shopping decision.[95] Consequently, the scope of the relevant market in such case is likely to be rather narrow. Finally, although not a competition law matter, the recent case of Uber also demonstrates the importance of performing an inquiry into the governance of the online platform.[96] Although Uber marketed itself as an intermediary that facilitates the interaction between consumers and self-employed drivers, its governance with regard to this interaction led to a different legal qualification, namely that of an employer.[97] Such a diverging legal qualification of the platform, based on its governance, equally affects the position of the concerned undertaking in the supply chain since it determines what kind of intermediary it constitutes, if any at all.

In light of the above, it can be said that in the case of platforms with a bi-or multilateral matching function, the relevant product market from the perspective of merchants will very likely be a platform market (i.e. one that consists solely of two-or multi-sided undertakings), regardless of whether the platforms also offer transaction possibility. The scope of such relevant markets, meaning the number of competing undertakings included in the relevant market, may nonetheless be somewhat narrower than would first appear.[98] With regard to reaching such findings, adequately approaching the market definition based on interaction typology in combination with the analysis of the business model and governance of the platform as performed in the Booking.com, Google Shopping and Uber cases will be essential.

95 *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 June 2017 paras. 247-250; *Google/Double Click* (Case COMP/M.4731) Commission decision of 11 Mar. 2008, paras. 45-46; *News Corp/BSkyB* (Case COMP/M.5932) Commission decision of 21 Dec. 2010, para. 262; *Viacom/ Channel 5 Broadcasting* (Case No COMP/M.7288) Commission decision of 9 Sep.2014, paras. 34-35. The reason for this division was primarily based on the way online and offline advertising were perceived by advertisers in light of their different pricing structure and the targeting capability.

96 Case C-434/15 *Asociación Profesional Élite Taxi V Uber Systems Spain SL* [2017] ECLI:EU:C:2017:981.

97 Although EU Courts did not explicitly say that Uber is to be considered an employer AG Szpunar did note that Uber relationship with its drivers resembles that of an employer's relationship with its employees, see Case C-434/15 *Asociación Profesional Élite Taxi V Uber Systems Spain SL* [2017] ECLI:EU:C:2017:364 Opinion of AG Szpunar paras. 52-54. In contrast, national courts found that Uber was indeed an employer and not an intermediary platform, see e.g. UK Employment Tribunal Appeal No. UKEAT/0056/17/DA- Uber BV v. Mr. Y Salam and Others.

98 It goes without saying that these initial findings may change to a certain extent based on the particular circumstances of the respective case when the analysis will include the geographic aspect of the relevant market, supply-side substitution and barriers to entry. However, such change is more likely to translate into finding a more restricted relevant market rather than one exhibiting a greater degree of competitive pressure with respect to the concerned online platform.

B. The consumer perspective

From a consumer perspective, the difference in the positioning of a sales channel in the supply chain is unlikely to be an issue as this does not determine whether its demand for a product or service can be met. A consumer will likely not care much about whether a product is purchased from an online retailer or an online marketplace as long as the same products are received and the terms of the transaction are similar. From a consumer perspective, the assessment of demand substitution for online platforms when used as a sales channel (thus having bi-or multilateral matching and transaction functionalities) will likely depend on other aspects, which have been addressed to some extent by current practice. The first and perhaps most obvious aspect that must be addressed entails the question of whether offline alternatives can be substitutes for online platforms. The numerous variables involved in the substitutability assessment in each case will result in a myriad of arguments for or against the inclusion of online and offline alternatives in the same relevant market. This difficulty is also observed in practice, where this matter has been addressed on various occasions.

Despite the rather chaotic appearance of decisions on the matter, it can be said that the degree of substitution between online and offline alternatives depends on the implications such difference has on the product or service in question. For example, in the case of shopping for non-digital goods, the difference between shopping online or offline concerns primarily a form of distribution or selling form and shopping experience. The purchased good does not change. Buying a CD on Amazon or at a local music shop does not alter the CD as such. In such cases, the implication of the online or offline difference in the matter is external to the product from the perspective of the consumer. In contrast, in other cases the services or products offered online and offline, the difference in the service offered may be an integral one. This can be the case when substitution is assessed between a CD and a music streaming or downloading site. The consumer pays for music in both cases but the differences between the online and offline alternatives also involve integral differences with regard to the product itself, which in fact transforms from a product into a service. Consequently, when assessing substitutability between online and offline alternatives from a consumer perspective, the degree of substitution will depend on whether the difference between the two alternatives entails a variation of an integral or external characteristic of the product or service at hand. Current practice appears to indicate that online and offline alternatives are less interchangeable in cases concerning integral changes than in cases concerning external changes. This indication is confirmed by the Commission decisional practice in the case of online advertising, retail of consumer goods, travel services, payment services, music distribution and TV content services. In these cases, the finding of separate relevant markets for online and offline alternatives was prevalent in cases where the online element of the product

or service in question entailed a difference in an integral characteristic of the product or service concerned.[99]

Where the choice between the online and offline alternatives entailed a difference in an external characteristic of the product or service substitution between the two appeared more feasible.[100] The importance of the online aspect for the product in a given case evidently also applies in situations where all the envisaged alternatives for the online platform consist of online undertakings. An undertaking selling CDs will not be considered an obvious substitute for an online platform that sells individual songs in a digital format or provides music streaming services, regardless of whether the sale of CDs occurs online or in a brick-and-mortar shop. Accordingly, based on these previous findings, one can conclude that offline alternatives (both platform and non-platform) may in principle be interchangeable from

99 *Telefónica UK/Vodafone UK/ Everything Everywhere/ JV* (Case No COMP/M.6314) Commission decision of 4 Sep. 2012, paras. 127-139; *Telefonica/Caixbank/Banco Santander* (Case No COMP/M.6956) Commission decision of 14 Aug. 2013, paras. 34-41; *Thomas Cook/ Travel Business of Cooperative Group/ Travel Business of Midlands Cooperative Society* (Case No COMP/M.5996) Commission decision of 6 Jan. 2011, paras. 27-28; *Axa/ Permira/ Opodo/Go Voyages/ EDreams* (Case No COMP/M.6163) Commission decision of 30 May 2011, para. 23; *Telia/Telenor* (Case IV/M.1439) Commission decision of 3 Oct. 1999 , para. 107; *Vodafone/Vivendi/Canal Plus* (Case IV/M.0048) Commission decision of 20 July 2000, paras. 42-44; *Google/Double Click* (Case COMP/M.4731)Commission decision of 11 Mar. 2008, paras. 45-46; *News Corp/ BSkyB* (Case COMP/M.5932) Commission decision of 12 Oct. 2010, para, 262; *Viacom/ Channel 5 Broadcasting* (Case No COMP/M.7288) Commission decision of 9 Sep. 2014, paras. 34-35; *Vivendi/ Canal+ Seagram* (Case No COMP/M.2050) Commission decision of 13 Oct. 2000, paras. 26-28; *Sony/BMG* (Case No COMP/M.3333) Commission decision of 19 Jul. 2004, paras. 21-29; *Sony/ SonyBMG* (Case No COMP/M.5272) Commission decision of 15 Sep. 2008, paras. 13-28; *Universal Music Group/EMI Music* (Case No COMP/M.6458) Commission decision of 21 Sep. 2012 , paras. 116-128; *ACCESS/ PLG* (Case No COMP/M.6884) Commission decision of 14 May 2013, paras. 12-19; *Vodafone/Liberty Global/Dutch JV* (Case COMP/M.7978) Commission decision of 3 Aug. 2016, paras. 59-62.

100 *News Corp/ BSkyB* (Case COMP/M.5932)Commission decision of 12 Oct. 2010, paras. 102-105; *Vodafone/Kabel Deutschland* (Case COMP/M.6990) Commission decision of 20 Sep. 2013, paras. 49-51; *Liberty Global/Ziggo* (Case COMP/M.7000) Commission decision of 10 Oct. 2014, paras. 105, 111-113; *Liberty Global/Discovery/All3media* (Case COMP/M.7282) Commission decision of 16 Sep. 2014, paras. 114, 125,126; *21st CENTURY FOX/APOLLO/JV* (Case COMP/M.7360) Commission decision of 9 Oct. 2014, para. 28; *Liberty Global/ Corelio/W&W/ De Vijver Media* (Case COMP/M.7194) Commission decision of 24 Feb. 2015, paras. 96,97, 125,126; *Vodafone/Liberty Global/ Dutch JV* (Case COMP/M.7978) Commission decision of 3 Aug. 2016, paras. 170,178,179; *Vivendi/ Telecom Italia* (Case COMP/M.8465) Commission decision of 30 May 2017, paras. 17-19. In the above-mentioned cases, the finding of a single relevant market for all distribution technologies was found on both the retail and wholesale markets. That was however not always the case see *Egmont/Bonnier* (Case COMP/M.4611) Commission decision of 15 Oct. 2007, paras. 13-19; *Ahold/ Flevo* (Case COMP/M.6543) Commission decision of 7 May 2012, paras. 13-16; *Otto/Primondo Assets* (Case COMP/M.5721) Commission decision of 16 Feb. 2010, paras. 24-30; *Tui/Transat France* (Case COMP/M.8046) Commission decision 20 Oct. 2016, paras. 24-26 .

a consumer perspective for online platforms that are used as sales channels. Therefore, unlike in the case of merchants, online platforms may not necessarily be considered indispensable for meeting the demand of consumers for a certain product or service. Consequently, the definition of the relevant market for the bi-or multilateral matching and transaction functionality of such an online platform may require the definition of separate markets for the consumers and merchants interconnected by such functionality.

In addition to taking account of the gap between the online and offline world, the scope of the products or services offered by online platforms, when used as sales channels, will also be important for assessing substitution from the consumer perspective.[101] Online platforms such as eBay, Amazon or Alibaba often offer far more categories of products, variety of products within a category as well as a variety of offers with regard to the same specific product compared to other outlets. This increased level of choice provided by online platforms is confirmed to be as a distinguishing positive characteristic according to consumer perceptions.[102] In the context of e-commerce, it is thus likely that the relevant product market for a marketplace from a consumer perspective will not include all other online alternatives and certainly very few offline ones.[103] The link between the scope of products or services and substitutability has been addressed in the decisional practice of the Commission concerning mergers. In such cases, it was considered that width and depth of the range of the products offered resulted in excluding specialized sellers from the daily consumer goods market.[104]

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101 See Commission COM(2017) 229 final, pp. 46-50. According to the results of the sector inquiry online marketplaces compete for buyers firstly on the basis of scope of products while price comparisons sites firstly compete based on the availability of the latest models and second based on scope of products. In contrast hybrid retailers compete firstly based on price similar to online pure player retailers.

102 Commission COM(2016) 288 *supra* (n 2) at 11-13; Oxera, 'Benefits of online platforms' (2015) at 30 < https://www.oxera.com/wp-content/uploads/2018/07/The-benefits-of-online-platforms-main-findings-October-2015-1.pdf-1.pdf >.

103 In practice, such scope may prove even more limited once the geographical aspect of the relevant market is also assessed. See e.g. Simon Genevaz and Jérôme Vidal, 'Going Digital: How Online Competition Changed Market Definition and Swayed Competition Analysis in Fnac/Darty' (2017) 8(1) Journal of European Competition Law & Practice 30; *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017 paras. 251-263.

104 *Rewe/Meinl* (Case IV/M.1221) Commission decision of 3 Feb. 1999, paras. 10-16; *Kesko/ICA/JV* (Case COMP/M.3464) Commission decision of 15 Nov. 2004, paras. 11-13; *Tesco/Carrefour* (Case COMP/M.3905) Commission decision of 22 Dec. 2005, paras. 10-11; *Rewe/Plus Discount* (Case COMP/M.5112) Commission decision of 3 Jul. 2008, paras. 14-17; *Triton/Suomen Lähikauppa* (Case COMP/M.6847) Commission decision of 22 Feb. 2013, paras. 10-12.

The guidance of the Commissions' findings is, however, not necessarily limited to retail of goods. Such findings could provide guidance in any context where the width and depth of the range of the offers made by alternative outlets varies substantially.[105] The variation in the range of goods on offer observed in e-commerce is likely to occur in the case of online platforms also with regard to services or service providers,[106]as well as content or content creators.[107] The existence of such variation in the range of the offers made by online platforms compared to other outlets will be inevitable in practice as platforms are essentially aggregators of demand for multiple customer groups. The success of the platform then depends on increasing the number of interactions between these customer groups by meeting the demands of each group for each other, which requires effective and accurate matching. Since the chances of meeting the demands of multiple groups increases with the number of members in each customer group, the platform will generally try to increase the volume of such groups up to an optimal maximum.[108]Consequently, in the case of platforms with mutual matching and transaction functionalities this increase in volume will translate into an increase in the scope of product or service offers on the platform. Therefore, in practice, the offers that non-platform online or offline outlets provide will likely be substantially outnumbered by those of online platforms.[109] The exact scope of offers needed to influence demand substitutability from a consumer perspective will differ from case to case, however, it should be broad enough so as to allow for comparisons across offers as this is considered an important characteristic of online platforms for consumers.[110]

Therefore, as in the case of the online aspect for the product or service, the scope of offers may determine the degree of substitution for the online platform from the perspective of consumers and thus the definition of the relevant market. If the scope of offers of an online platform is of great importance to consumers and significantly outnumbers that of other non-platform undertakings (online and offline), the relevant market from the perspective of such consumers may be the (online) platform market. This means that a single relevant market can be defined for both consumers and merchants, which consists solely of two-or multisided competi-

105 *Tesco/Carrefour* (Case COMP/M.3905) Commission decision of 22 Dec. 2005, para. 17. A different range of products appears not to be sufficient to exclude substitutability when the difference is not substantial.

106 E.g. a volume comparison between LinkedIn and websites of recruitment agencies.

107 E.g. the content aggregated by YouTube or Coursera is highly unlikely to ever be reproduced by a single creator.

108 The maximum optimal number of offers will depend on the type of offer involved in the case and the manner in which these are filtered and presented by the platform.

109 This is observable in e-commerce when comparing online marketplaces and retailers as well as in the case of online booking platforms when compared to online travel agents.

110 Commission COM(2016) 288, *supra* (n 2) at 11-13; Oxera (2015) *supra* (n 102) at 21, 32, 33.

tors. In contrast, if the scope of offers is not of critical importance and/ or it can reasonably be matched by other non-platform (online or offline) undertakings, substitutability will not be restricted to two-or multi-sided alternatives. Consequently, when such circumstances arise, the market definition for the bi-or multilateral matching and transaction functionalities may require defining separate relevant markets for the consumers and merchants interconnected by such functionalities. In such circumstances, the scope of the relevant market from the perspective of consumers, while limited, would nevertheless not be restricted exclusively to two-or multi-sided undertakings.

Finally when the bi-or multilateral matching functionality does not include a possibility to conduct a financial transaction, the online platform will, generally speaking,[111] provide consumers with some form of information comparison service. In practice such platforms include price comparison sites, specified search engines, customer review websites, real estate platforms, dating platforms and many others.[112] In this context it is very likely that substitutability from the perspective of consumers will be limited to two-or multi-sided alternatives. While single-sided alternatives may exist,[113] such options will almost inevitably mean that consumers will have to pay to gain access to such comparable services which are predominantly provided without pay by online platforms. Consequently, in such cases, the relevant market from the perspective of consumers will be limited to the platform market, as their demand cannot easily be met through other non-platform alternatives. Accordingly, based on the similar findings with regard to merchants, the market definition for such a bi-or multilateral matching functionality would require defining a single market for both consumers and merchants. The findings of the Commission in the Google Shopping decision indicate the scope of such relevant markets would be

111 In this regards content platforms will constitute somewhat of an exception. In the case of content platforms such as YouTube or Coursera, the absence of a transaction functionally (or better yet obligation to pay for the content), may indicate the use of a freemium business model as an alternative to the transaction model. In such cases the bi-or multilateral interaction is often financed by the merchants or alternatively through the display of advertisements paid for by a third parties participating on the platform. In such cases the platform may be considered as a tool combining both advertisement and sales channel characteristics.

112 In the context of social media/ communication platforms, such as Facebook, it must be noted that the interactions among private users does not fall under the scope of the term bi-or multilateral matching because such interactions occur among members within a single customer group of the platform. In contrast interactions between (paying) business users and such private users may fall under the scope of the term bi-or multilateral matching.

113 Examples of such an alternative would be the Dutch consumer association (www.consumentednbond.nl) or US based Consumer Reports (www.consumerreports.org), which test and review products and services accompanied with a variation of information on price and availability.

rather limited, at least for the time being, given the current lack of substitutability with offline platform alternatives and quite restricted substitutability among various kinds of online platforms.[114]

3.2.4 Preliminary conclusion on the substantive challenges of the market definition for online platforms

The application of the market definition process in the case of online platforms in future cases will not be an easy task. The execution of the market definition will pose multiple challenges throughout the entire process and require adaptation of current practice. The approach to market definition requires starting with an inquiry into the number of relevant markets that need to be defined in each case. This aspect has unfortunately not been dealt with properly until recently. Therefore, as mentioned above, this phase is best addressed based on the nature of the matching interaction facilitated by the platform that raises competitive concerns in the respective case. In cases concerning a unilateral matching functionality, the definition of the market for such an interaction will require separate relevant markets for the interconnected customer groups. Cases concerning bi- or multilateral matching functionalities will require a more in-depth inquiry into the business model and governance of the online platforms on a case-by-case basis. Whether two or more relevant markets will need to be defined in such cases will depend greatly on the substitutability assessment of all customer groups that are intercommoned by the matching functionality. When such assessment will indicate that the demand of the platforms' customer groups cannot be easily met by non-platform undertakings, defining a single relevant market for all the interconnected customer groups may be justified. In other cases, separate relevant markets will need to be defined for such customer groups while taking into account the indirect network effect between such separate but related markets in the context of the legal analysis.

In cases where the platform is used as a sales channel by one of its customer groups (i.e. merchants), it is important that the demand substitutability analysis for such customers take into account the positioning of the online platform in the chain of supply. The differences in the chain of supply positioning between platforms and non-platform alternatives with respect to these platform customers may limit demand substitution solely to platforms. Platform participants who seek to gain access to services or purchase products on online platforms (consumers) will, however, be less sensitive to implications resulting from the positioning of online platforms in the supply chain. The interchangeability between online platforms and potential alter-

114 *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017 paras. 192-227.

natives with respect to these platform participants will be influenced by the broad scope of offers provided by online platforms that operate as demand aggregators. Moreover, the implications of obtaining access to a service or product via the internet rather than through more traditional offline channels will also inevitably play a role in the demand substitutability of such platform customers. In practice, however, when online platforms constitute a sales channel it is more likely that substitutability for the platform of this latter customer group will not be limited solely to platform undertakings. In contrast, when the online platform facilitates a bi-or multilateral matching functionality without the possibility to conduct a financial transaction, substitution for the platform is likely to be limited solely to platform undertakings with all the customer groups interconnected by such interaction (i.e. both merchants and consumers).

Upon reflection, one may conclude that the challenges posed by online platforms primarily concern changes to the application practice that do not exceed the boundaries of current practice. Accordingly, the envisaged issues highlighted by this article do not indicate any need for the introduction of specific regulation or a substantive revision of art. 102 TFEU. Beyond the necessity to first assess the number of relevant markets that need to be defined, there are no truly unfamiliar matters to be addressed from a substantive point of view. In practice, the challenges in this regard lay in the correct application of current tools and translation of existing concepts to platforms rather than the lack thereof. Over time, experience will prove whether and how such application can indeed be performed adequately.

3.3 Defining the relevant market(s) for online platforms: practical implications

The use of quantitative tools for the process of the market definition has significant value in practice. In this regard, the SSNIP test can be said to entail the main tool used for this purpose. Unfortunately in the case of online platforms that commonly rely on zero pricing strategies this test may lose (some of) its relevance. This is because the application of the price centred SSNIP test to situations where prices are absent leads to a practical impossibility. Although there is no legal obligation to make use of the SSNIP test in the context of the market definition process,[115] its growing importance in practice calls for exploring adjustment possibilities that would allow for the application of its logic even in the absence of positive prices. Current literature suggests that the in the presence of zero-pricing the SSNIP test should be modified from a price centred test into either a

115 Case T-699/14 *Topps Europe Ltd v Commission* [2017] EU:T:2017:2, para. 82.

cost or quality centred test.[116] In this second part of the chapter both suggestions will be evaluated in light of their potential for application in cases concerning online platforms that rely on zero-pricing strategies.

Therefore, the purpose of this second part of the chapter is to examine the difficulties that the reliance of online platforms on zero-pricing strategies may create for the process of the market definition in light of the incompatibility of such pricing strategies with the SSNIP test, and provide some suggestions on how to overcome such difficulties. In order to provide a coherent evaluation and practical guidance on this matter for future cases this part of the chapter is divided into three sections. The first section will shortly discuss the use of zero-pricing strategies by online platforms and the implications of these strategies in the context of the market definition. The second section will cover the role of the SSNIP test in the process of the market definition together with the expected complexities following from its application in cases concerning zero-pricing strategies. Within the scope of this section, potential conversion suggestions for the SSNIP test will be evaluated in light of their suitability and feasibility for cases concerning online platforms. The third section will shortly address the implications of zero-pricing for the future state of practice in the absence of a modified SSNIP test, followed by some concluding remarks.

3.3.1 Online platforms and zero-pricing – the inevitable task of defining the relevant market of 'free'

The use of zero-pricing strategies by companies is neither a novel business practice nor one that is exclusive to online platforms. Similar to the concept of platforms, zero-priced goods and services have existed before the age of Internet.[117] In modern times, the use of zero-pricing has often been adopted by companies in the context of tying practices, complementary products, two- or multi sided markets and 'freemium' products or services.[118] In some cases, such use of zero-pricing strategies, mainly in tying cases, has been found to be abusive in the context of Article 102 TFEU.[119] The use of zero-

116 See. eg John M. Newman, 'Antitrust in Zero-Price Markets: Applications' (2016) 94(29) Wash U L Rev 51; John M Newman, 'Antitrust in Zero-Price Markets: Foundations'(2015) 164(149) University of Pennsylvania Law Review 150; OECD, 'Policy Roundtable - The Role and Measurement of Quality in Competition Analysis' DAF/COMP(2013) <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf> accessed 2 May 2018.

117 David S Evans, 'The Antitrust Economics of Free' (2011) 7(1) Competition Policy International 1; Michal S Gal and Daniel L Rubinfeld, 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (UC Berkeley Public Law Research Paper No 2529425, 2015) <https://ssrn.com/abstract=2529425>.

118 ibid.

119 Prominent examples of such cases are Case T-30/89 *Hilti v Commission* [1991] ECLI:EU:T:1991:70; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289.

pricing does not mean that undertakings make zero profits or no longer compete, it merely means that undertakings compete on other aspects and profits are made with regard to a different but related product or service.[120] However, when the need to define a market for the free product or service was discussed, it is not until recently that such markets were even considered to exist.[121] Today, there is an agreement that the provision of free goods or services does not stand in the way of establishing the existence of a relevant market for such products or services for competition law purposes.[122] Although in previous instances, the question of the market definition for zero-priced products or services was rarely addressed, in the case of online platforms it will be one that can hardly be avoided. Online platforms are currently identified and approached predominantly from an economics perspective with reference to their two- or multi sided nature.[123] This nature entails that online platforms constitute intermediaries which cater their services to two or more separate customer groups by facilitating an interaction between them, in some form of matchmaking,[124] in return for remuneration by all or part of these platform participants.[125] The success of online platforms as intermediaries is thus depended on their ability to get (and keep) all the parties of their matchmaking interactions 'on board' and internalise the indirect network effects between them.[126] Accordingly, online platforms will often implement a skewed pricing scheme reflecting the intensity of the indirect network effects between their various customer groups and their respective market power with regard to the platform and one another.[127] In practice the skewed pricing scheme means that one of the customer groups participating on the online platform, composed very often of end consumers, will do so without any charge by the online platform since their participation is subsidised by the other customer groups of the platform.[128]

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120 J. Newman (2015) *supra* (n 116) at 153-158.

121 David S Evans, 'The Antitrust Economics of Free' (2011) 7(1) Competition Policy International at 78-81.

122 ibid at 81- 86; Michal S Gal and Daniel L Rubinfeld (2015) *supra* (n 117) 30-48; Bundeskartellamt (2016) *supra* (n 32) at 32-39.

123 See eg Bertin Martens (2016) *supra* (n 27); Commission staff working document on online platforms COM(2016) 288, SWD(2016)172, *supra* (n 2) at 1-9 .

124 ibid.

125 Pieter Ballon and Eric Van Heesvelde (2011) *supra* (n 30) at 702–708.

126 OECD, 'Round table on Two-sided Markets' (2009) DAF/COMP/WD(2009)69, 3 <http://ec.europa.eu/competition/international/multilateral/2009_jun_twosided.pdf>.

127 Julian Wright, 'One-Sided Logic in Two-Sided Markets' (AEI-Brookings Joint Center Working Paper No 03-10, 2003) <https://ssrn.com/abstract=459362>; OECD (2009) *supra* (n 126) at 19-32.

128 See e.g. a short overview of some of the prominent online platforms in the US and their pricing choices in David S. Evans, 'Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms' (2016) University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 753 <https://ssrn.com/abstract=2746095>.

In cases where the alleged abuse of dominance may occur with respect to such a subsidized group of customers, the market definition will inevitably have to be performed with regard to the free product or service provided to them by the online platform. This is currently the case concerning the abuse of dominance investigation of Facebook in Germany where Facebook is accused of exploiting its users by violating data protection law.[129] Furthermore, when the alleged abuse of dominance occurs with regard to a paying customer group that is interlinked with a non-paying customer group, it may still be required to define the relevant market for the non-paying customer group in case of bi – or multilateral indirect network effects. Such indirect network effects are present where the value of the interaction facilitated by the online platform for its customer groups is dependent on the mutual participation of the respective customer groups interlinked by the interaction. For example if Deliveroo, were to be accused of charging excessive prices from restaurants, determining the market power of Deliveroo with regard to the restaurants would also require defining the relevant market for Deliveroo with regard to consumers. This is because the market power of Deliveroo vis-a-vis the restaurant owners using its platform depends upon the demand of consumers for Deliveroo and vice-versa. In absence of any market power with regard to either customer group (i.e. no demand) Deliveroo would simply not exist as its business model relies on the monetisation of the interaction between restaurants and consumers. Similar conditions apply, in principle, to any online platform which facilitates a bi- or multilateral matching interaction that matches members of a paying customers group to members of another customer group which does not pay to participate on the platform. Bi- or multilateral matching refers to situations where the facilitated interaction between customer groups on the platform exhibits bi- or multilateral positive indirect network effects indicating the existence of demand interdependency between those customer groups.[130] Such bi- or multilateral matching interactions, which allow for the participation of consumers on the platform without any monetary charge, constitute the core of most online platforms including marketplaces, travel booking platforms, meta search engines, e-learning platforms, price comparison websites, crowd funding platforms and many others.[131] Therefore, future cases concerning the abuse of dominance by online platforms will very likely require defining the relevant market with regard to the customer group(s) of the platform which participate on the platform without paying any monetary fee.

129 The German Competition authority is currently in an ongoing case against Facebook for a potential abuse of dominance, see press release online <https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2017/19_12_2017_Facebook.html> accessed 30 July 2018.

130 Daniel Mandrescu, 'Applying (EU) Competition Law to Online Platforms: Reflections on the Definition of the Relevant Market(s)' (2018) 41(3) World Competition 453, 464–468.

131 Ibid 470.

The methodology involved in the current market definition process relies however greatly on the SSNIP test, which is price oriented.[132] The dependency on the use of positive pricing therefore makes the SSNIP test unsuitable for cases concerning zero-priced products or services as is commonly the case with online platforms. Accordingly, it is important to examine how this friction between zero-pricing and the SSNIP test may interfere with the market definition process and whether the SSNIP test can be adapted in a manner that can compensate for its current shortcomings.

3.3.2 Market definition and the SSNIP test

The definition of the relevant market starts with defining the relevant product market which includes all the products or services that compete with those offered by the concerned undertaking.[133] The process is then followed by the definition of the relevant geographic market. Due to the fact the both aspects of the market definition are performed similarly,[134] the following addresses only the relevant product market, but the findings are equally applicable to the relevant geographic market. The level of competition between the product or service offered by the concerned undertaking and those of its closest competitions is established primarily based on demand – side substitutability.[135] This is because the greatest competitive constraint on the behaviour of undertakings comes from customers that are willing to switch to substitutes offered by competitors in the event of a price increase or other undesired practices.[136] The result of the demand side substitution assessment indicates the closest competing products or services to those offered by the concerned undertaking. Accordingly, the undertakings that offer these competing products or services are considered to be in the relevant product market as the concerned undertaking.[137]

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132 The development, application and reliance on the hypothetical monopolist test (HTM) that represents a key aspect of the market definition process is entirely dependent upon predictable effects on customer demand in light of price changes by the concerned undertaking. Essentially, beyond the traditional forms of qualitative forms of evidence the majority of the quantitative tools used for the purpose of market definition are price-cantered.

133 See OECD Roundtable On Market Definition (11 October 2012) DAF/COMP(2012)19.

134 O'Donoghue and Padilla, *The Law and Economics of Article 102 TFEU* (2nd edn, Hart 2013) at 125.

135 Commission Notice on the definition of the relevant market (1997) *supra* (n 25) paras 13, 14, 20; OECD Roundtable of market definition, Note by the Delegation of the European Union 31 May 2012 (DAF/COMP/WD(2012)28), para 11. Supply substitution will only play a role to the extent its effects on the behaviour of the concerned undertaking are likely to be similar to those of demand substitution, which rarely happens in practice.

136 Commission Notice on the definition of the relevant market (1997) *supra* (n 25) para 13.

137 Ibid, paras 13, 14, 20.

Demand side substitution can be assessed based on direct and indirect evidence of substitution. Direct evidence of substitution refers to previously observed behaviour indicating substitution patterns with regard to the product or service offered by the concerned undertaking and those offered by its competitors.[138] When direct evidence is not available, not sufficient or not helpful, competition authorities can make use of indirect evidence of substitution. Indirect evidence of substitution includes quantitative evidence, such as price elasticity estimates, as well as qualitative evidence including the inspection of product or service characteristics and intended use.[139] From a legal point of view there is no hierarchy with regard to qualitative or quantitative evidence despite that the latter is often considered more accurate.[140] Consequently, there is a growing opinion that qualitative evidence should serve as a second check for the findings of quantitative evidence rather than being considered equal in evidentiary value.[141]

In the context of indirect quantitative evidence, the need for an accurate economic tool for determining substitution resulted in the reliance on the hypothetical monopolist test (HMT). The test, originally developed by US competition authorities in the context of merger evaluations, has gained substantial acknowledgement worldwide including its adoption by the Commission and EU Courts.[142] In the context of the HMT, the defined market in each case contains the product or set of products for which a hypothetical monopolist could increase its prices in a profitable manner on a long lasting basis. The test entails three main steps and is performed based on quantitative and qualitative evidence. In the first step, the candidate set of products or services controlled by the hypothetical monopolist is established. In the context of an Article 102 TFEU case such candidate set of products or services normally entails those products or services which are the subject of the alleged abuse of dominance.[143] In the second step, demand-side substitutability is assessed based on a hypothetical increase in the price of the candidate products or services set. Finally, in the third step, the possible effect of supply-side substitution is also brought into the picture. In practice, however, this aspect has often played a rather limited role due to fact that establishing the existence of effective supply side constraints

138 O'Donoghue and Padilla (2013) *supra* (n 134) at 101.

139 ibid; Vivien Rose and David Bailey (eds), *Bellamy and Child: European Union Law of Competition* (7th edn, Oxford 2013) 231-234.

140 O'Donoghue and Padilla (2013) *supra* (n 134) at 110.

141 ibid.

142 See the history of the SSNIP in e.g. OECD, 'Roundtable on Market Definition- background note by the Secretariat' (2012) DAF/COMP(2012)13.

143 This can differ however if the investigated abuse of dominance concerns multiple separate but related markets such as in the case of tying, bundling, leveraging or margin squeeze.

depends on meeting several strict criteria.[144] The test may require several iterations, namely if the hypothetical monopolist is not capable to raise its prices profitably the candidate market is enlarged so as to include the identified substitutable products or services and the test is performed repeatedly until the market worth monopolising is found (ie demand-side substitutability is no longer present). In the framework of the HMT, which may be performed based on various quantitative approaches,[145] the SSNIP test constitutes perhaps the main tool for testing demand-side substitutability.[146] The SSNIP assess whether a small but significant non-transitory increase in price of 5-10% by the concerned undertaking could be implemented in a profitable manner. Accordingly, the SSNIP test essentially constitutes a direct form of applying the thought experiment behind the HMT, which explains the preference for this test in practice. Given the preference for the SSNIP test in practice one may thus say that it constitutes the main source of indirect quantitative evidence in the process of the market definition and therefore influences greatly the outcome of such process, particularly where direct evidence is not available, sufficient or suitable for this purpose.

The application of the SSNIP test in the case of two-sided markets, however, has been one of the main subjects of debate concerning the definition of the relevant market in such circumstances. Currently, there appears to be no agreement on whether of the test should be applied to the entire price structure of the platform or per side and whether the test should take into account the possibility of price structure modifications by the concerned undertaking.[147] In the case of online platforms this difficulty seems to be accentuated by a preceding lack of clarity concerning the identification of the candidate set of products or services.[148] Namely it is often difficult to establish whether the interaction among various separate customer groups facilitated by the online platform constitutes a single product or multiple ones for which the HMT should be should be performed. Although these difficulties are also capable of interfering with the market definition process they are not insurmountable nor do they always arise. The SSNIP test can in principle be applied in various forms in practice after which the relevance of the outcomes can be assessed in light of other forms of evidence. Furthermore the difficulty of identifying the candidate product or service in each case is not inherent in each analysis involving online platforms and will nevertheless be eventually overcome through practical experience.

144 See eg O'Donoghue and Padilla (2013) *supra* (n 134) at 102-106; Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 13) 56-62.

145 See eg Malcolm B Coate and Jeffrey H Fischer, 'A Practical Guide to the Hypothetical Monopolist Test for Market Definition' (2008) 4(4) Journal of Competition Law & Economics 1031.

146 O'Donoghue and Padilla (2013) *supra* (n 134) at 109.

147 Evans and Schmalensee *supra* (n 42) at 21-23; Lapo Filistrucchi, Damien Geradin, Eric van Damme, Pauline Affeldt (2014) *supra* (n 5) at 329-339.

148 See e.g. OECD, 'Rethinking Antitrust Tools' (2018) *supra* (n 31).

By contrast, the use of zero-pricing strategies by online platforms will inevitably eliminate any evidentiary value resulting from the application of the SSNIP since such strategy removes the core aspect of the test itself, namely the positive price charged for the product or service offered by the concerned undertaking. The SSNIP test simulates a theoretical nominal increase in the price of the product or service provided by the concerned undertaking. This exercise is however mathematically impossible when the price of the product or service is zero: an increase of 5-10% of zero is still zero. The increase of a price of zero to any positive price is no longer a nominal one but a different thing altogether, as studies show that zero-pricing has a distinct impact on the customers' decision making process. Consequently, a theoretical increase in price as is intended in the context of a SSNIP test cannot be performed when defining the market for a zero-priced product or service.[149] The incompatibility between the price centred SSNIP and zero-pricing is not only a mathematical one but also a logical one. Online platforms that do not charge certain customer groups in return for their participation on the platform are very unlikely to switch from zero-pricing to positive pricing regardless of their market power.[150] Thus, posing the underlying question of the SSNIP test (or the HMT) even as a thought experiment is not entirely sensible since the theoretic scenario depicted, namely the raise of price cannot or at least will not occur in practice with respect to those customers. This outcome is rather problematic as the SSNIP test is the main source of indirect quantitative evidence of substitution for the purpose of the market definition. Consequently, the inability to relay on the SSNIP test, or on any price cantered quantitative tools for this matter means that the relevant market may often be defined to a great extent based on qualitative indirect evidence. In order avoid this outcome and overcome the mathematical and logical incompatibility between the SSNIP test and zero-pricing strategies, alternative approaches for the SSNIP test have been developed which rely on a nominal change in quality or cost.[151]

Although both approaches are theoretically sound from an economic point of view, the feasibility of their application in practice may differ significantly due to their respective practical complications. Therefore it is important consider and evaluate these proposals for modification in the context of

149 John M Newman (2016) (n 116) 65-66; David S. Evans (2011) *supra* (n 121) at 81- 86; Michal S. Gal and, Daniel L. Rubinfield *supra* (n 117) at 32-35.

150 See e.g. *Microsoft/ Skype* (Case COMP/M.6281) Commission decision of 7 Nov. 2011, paras 13, 76, 121. In the context of the merger it was observed that despite the prominent position of Skype in the relevant markets for consumer communication services, over 75% of its customers would switch if it started charging them for the services that were regularly provided for free; See also *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014, paras 90-91 where it was noted that zero-pricing is an industry standard.

151 OECD, 'Rethinking Antitrust Tools' (2018) (n 5).

online platforms relying on zero-pricing strategies in light of the legal and business reality of such actors in order to avoid findings and suggestions which may have solely theoretical relevance.

A. Testing substitution based on information and attention costs – an attractive yet unworkable alternative

Modifying the price oriented SSNIP into a cost oriented test, would mean that the purpose of the test would be to assess whether the concerned undertaking is capable of imposing a small but significant non-transitory increase in cost for customers in a profitable manner (SSNIC).[152] In the context of such a test, the costs for customers in the case of zero-priced markets are divided into information and attention costs.[153] Information costs refer to the amount of data that the customer needs to provide in order to make use of the free product or service.[154] Attention costs refer to the exposure of customers to advertisements during their use of the zero-priced product or service.[155] Both types of costs can be identified in the case of zero-priced products or services offered by online platforms.[156] Although these costs depict the existence of a certain form of trade or exchange that resembles that of monetary exchanges,[157] they are not fully compatible as a yardstick for a demand-side substitutability analysis in the case of online platforms.

Asking customers, particularly consumers, to evaluate their behaviour in light of theoretical increases in price is a wholly different matter than asking them to do the same with regard to an increase in information or attention costs. In contrast to prices, information or attention costs are far less comprehensible for consumers, and so their value among consumers may differ to great extent. Accordingly, theoretical increases in such costs are difficult to evaluate in an abstract manner. This may require that consumers must first experience such increase in order to make a decision on whether they will switch over to a competing undertaking.

The obscure nature of information and attention costs will also pose a challenge when the theoretical degree of increase in either cost will ultimately have to be translated in practice in a more specific manner. Both informa-

152 J. Newman (2016) *supra* (n 116) at 66-70.
153 J. Newman (2015) *supra* (n 116) 165-167; J. Newman (2016) *supra* (n 124) 67;
154 J. Newman (2015) *supra* (n 116) 166-169.
155 Ibid, at 169.
156 Many online platforms expose customers to unsolicited display ads that qualify in this regard as attention costs. Similarly, numerous online platforms require a form of registration and acceptance of cookies prior to allowing customers to access the platform, which can qualify as information costs.
157 J. Newman (2015) *supra* (n 116) 163-174.

tion and attention costs can come in a variety of shapes and forms, which can also be combined. Information costs can translate into sensitive and less sensitive types of personal data and the combination thereof. Attention costs can be translated into the number of ads displayed, the length of display, size of each ad, the frequency of their appearance as well a combination thereof. Although these elements represent a form of cost, they are different kinds of cost and there is no indication with regard to the kind of cost or combination thereof that is particularly relevant for the purpose of a SSNIC in the way the prices are relevant for the purpose of a SSNIP. Accordingly, if a SSNIC is to be adopted in practice, a methodology must first be developed with regard to establishing the relevant cost in each case. In the absence of such a methodology, which determines the relevant cost in each case, there is no possibility to test the theoretical increase of such cost in a statistical manner, as there will be no set reference point. Furthermore, the meaning of a nominal increase of information or attention costs is rather challenging. On the one hand, it is uncertain whether a 5-10% change is as important for consumers as in the case of a similar price increase, particularly when taking into account the 'free effect' of zero-prices that has been found to lead to overconsumption.[158] On the other hand some types of (personal) information increases, although minimal in terms of quantity, may be considered unreasonable thus giving the, possibly mistaken, impression that an increase of data by an online platform cannot be done in a profitable manner. For example job seekers may be less averse to providing their entire work experience history compared to stating the reasons behind their (perhaps involuntary) unemployment and transfer of work placements.

On top of these considerations, the use of information and attention costs requires looking into situations that may not be entirely realistic in the case of the online economy in general, nor in the case of online platforms in particular. This is because the SSNIC test simulates an increase of cost with the sole purpose of maximising the profits of the concerned undertaking, as is the case of the SSNIP test.[159] In practice however, increases of information costs in the case of online platforms are often linked to product or service improvements. Similarly, an increase of attention costs may be moderated by the increased relevance of advertisements, which may entail a certain added value for consumers.[160] Moreover, while an increase in attention costs can occur in practice it is not a suitable benchmark because attention costs, meaning exposure to advertisements, are not an inherent aspect of

158 On the effect of zero-pricing see Kristina Shampanier, Nina Mazar and Dan Ariely, 'Zero as a Special Price: The True Value of Free Products' (2007) 26(6) Marketing Science 742.

159 See e.g. Bundellekartelamt and Autorite de la concurrence, 'Competition law and data' (n 2) 11-25; See also Andres V Lerner, 'The Role of 'Big Data' in Online Platform Competition' (2014) 7-19 <http://ssrn.com/abstract=2482780> accessed 7 April 2018.

160 See e.g. D S Evans, 'The Economics of the Online Advertising Industry' (2008) 7(3) Review of Network Economics 359.

the business models of all online platforms. While some online platforms relay on advertisements as a primary source of revenue, other see it as a secondary source of revenue and some do not use it at all.[161] Consequently a hypothetical increase in attention costs, even when it is measurable, will not be an adequate test for demand-side substitution with respect to all online platforms.

Finally, theorising about an increase in information costs for the sole purpose of maximising profit without any product or service improvement may also not be sensible due to the legal framework covering such a situation. Under EU law the processing of personal data by online platforms falls under the scope of the General Data Protection Regulation (GDPR).[162] The GDPR requires, in Article 5, that personal data is collected for specific, explicit and legitimate purposes and only to the extent that the data is truly necessary for such purposes. Following the collection of personal data, the processing should be done lawfully, fairly and in a transparent manner. In light of these requirements it appears that an increase in information costs based on the SSNIC logic is rather problematic. The data that a platform requests from its users (data subjects in the sense of the GDPR) must serve a specific purpose that is communicated to such users. Accordingly, increasing the amount of data required from users for the purpose of profit maximising (without any intention to improve the service provided by the platform) would entail disclosing such purpose to them so as not to breach Article 5 of the GDPR.

It is evident that in practice undertakings, even dominant ones, would be reluctant to take such steps in order to get access to more user data and users may be less willing to accept such surcharge when it is posed in such a transparent manner. Furthermore, the same article also states that the collection of personal data should be limited to the absolute minimum necessary for the purposes for which it is collected. Therefore, an 'overcharge' of data for a given stated purpose, including service development, is essentially prohibited by the GDPR in light of its data minimisation objective.[163] Moreover, using personal data that was collected for the purpose of product development in a manner that does not relate to achieving such

161 Online platforms, which facilitate monetary transactions, will usually treat advertisements as a secondary or optional source of revenues. For example marketplaces and booking platforms rely primarily on the transaction and membership fee by the merchants participating on the platform and advertisement is usually limited to products or services offered on the platform itself in order to increase the number of transactions.

162 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) OJ L 119/1 ('GDPR').

163 See GDPR, arts 5(1)(c), 25 and para 125 of the Preamble.

progress is equally not allowed unless specifically communicated to users, which in principle must first express their consent for such use.[164] In light of such legal framework, simulating an increase in information costs in the form of personal data seems rather futile given that the entire exercise may concern a situation that is unnatural or illegal and thus cannot occur due to other reasons than the lack of market power. In case the increase in information costs concerns primarily non-personal data the GDPR would not apply, however, users may be rather ambivalent to such 'overcharges' thus possibly resulting in erroneous findings of narrow markets that are worth monopolising.

In light of the above, it can be said that although the economic logic behind the SSNIC test appears sound in theory, it is unsuitable for application in cases concerning online platforms in practice. The increase in attention costs is very difficult to quantify and will not be a suitable for evaluating the market power of an online platform where these costs do not constitute its only or at least main source of revenue. Similarly, the use of information costs entails a myriad of complexities with regard to the quantification thereof, which are complemented by the legal hurdles of the newly adopted GDPR that significantly hampers the collection and processing of personal data solely for profit maximising purposes. Consequently, a conversion of the SSNIP into a SSNIC cannot be recommended as it will require making highly complex decisions and adaptations with no real prospect of being as reliable as the SSNIP in non-zero-priced markets.

By contrast, the suggestion to modify the SSNIP test into a quality-centred test, as discussed below, may constitute a feasible option. Although such a conversion also entails overcoming multiple practical challenges, it constitutes a more suitable test for general application. The benchmark of quality can be applied to any possible online platform and the relation between quality and substitution has long been recognized in competition law practice. Furthermore, unlike in the case of information costs, the current legal framework applicable to online platforms does not stand directly in the way of theorising changes in the quality of a product or a service.

B. Quality as a benchmark for testing substitution – the intuitive choice that may deliver

Testing demand substitutability based on quality entails some similar practical complexities as in the case of a cost-based test despite the soundness of its economic foundation. In the context of a quality-oriented test, the core question will concern the effect of a small but significant non-transitory decrease in quality (SSNDQ), which is comparable to an increase of price

164 GDPR, art 6.

from an economic perspective.[165] The quality of a product or service has long been recognized as one of the main criteria based on which undertakings compete with each other in the context of digital markets, particularly in light of zero-pricing strategies.[166] This is to be expected since, in the absence of positive prices, consumers will inevitably make their decision to use a product or service based on some form of quality considerations. That being said, it is also true that consumers will find it more difficult to assess quality instead of prices.[167] Thus, using quality as a benchmark for a quantitative assessment of demand substitutability in the context of online platforms remains problematic. Similar to the case of information or attention costs, choosing the relevant quality for the purpose of the assessment is not as straightforward as choosing prices in the case of the SSNIP. Quality is a general term that can encompass a wide variety of criteria.[168] In the case of online platforms, the criteria covered may include privacy, user friendliness, security and others.[169] Given that different kinds of online platforms will compete based on different quality parameters, the relevant quality that needs to be the subject of the SSNDQ test will likely differ from case to case. Therefore, as in the case of a SSNIC, a methodology must first be developed with regard to establishing the quality that should be tested in each case.

When dealing with a two- or multisided online platform, it must also be considered whether the quality that is being tested will solely concern the zero-priced side of the platform or the other sides as well. For example, reducing the user friendliness of an ordering system of a marketplace for consumers may also result in a decrease in the quality of the order system for the sellers participating in the online marketplace. Such an application would be incorrect if the purpose of the SSNDQ is to test the degree of demand side-substitution of consumers alone. In any event, however, the

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165 See OECD Directorate for Financial and Enterprise Affairs Competition Committee, 'The Role and Measurement of Quality in Competition Analysis' (2013) DAF/COMP (2013)17.

166 *Microsoft/ Skype* (Case COMP/M.6281) Commission decision of 7 Nov. 2011 para 81.

167 OECD (2013) *supra* (n 165).

168 Ibid, at 12-21. Certain methodologies have already been developed by economists in order to select the qualities that are most appreciated by consumers.

169 See e.g. Commission, 'Staff Working Document Accompanying the document Report from the Commission to the Council and the European Parliament Final report on the E-commerce Sector Inquiry' (2017) COM(2017) 229 final, SWD(2017) 154 final, 40-50. In the context of the sector inquiry the Commission observed that the online marketplaces and price comparison site compete based on different features of quality. In the context of mergers in the financial payment industry between online and mobile payment platforms, the matter of user interface, security of transaction and speed of transaction were considered key aspects of competition see *Telefónica UK/Vodafone UK/ Everything Everywhere/JV* (Case COMP/M.6314) Commission decision of 4 Sep. 2012, paras 127-149; *Telefonica/ Caixabank/ Banco Santander /JV* (Case COMP/M.6956) Commission decision of 14 August 2013, paras 34- 41. In Case M.7217 *Facebook/WhatsApp* decision of 3 Oct. 2014, paras 87, 102 and *Microsoft /LinkedIn* (Case M.8124) Commission decision of 6 Dec. 2016, paras 349-352 privacy was a quality that was an important quality for competition in the respective markets of the merging undertakings.

test should take into account the interrelation between the various sides of the platform when considering the profitability of a certain quality change.[170] Accordingly, when simulating a decrease of quality on one side of the platform that leads to a loss demand (customer switch) on that side of the platform, it is important to consider what is the consequence of such reduced demand with respect to the other side(s) of the platform. In other words, testing the profitability of the quality decrease by the platform should take into account the relevance of the indirect network effects between the various sides of the concerned platform.[171]

Furthermore, the meaning of a nominal increase or decrease of quality in such cases must also be defined and translated into practice while taking into account the effect that zero-pricing has on consumers. It must be established whether a 5-10% decrease is suitable in the case of quality and how such a change can be measured in practice.[172] To the extent that the required decrease is higher than 5-10%, it should be considered from a policy perspective whether the results of such an assessment are comparable to those of the SSNIP test when applied to positive prices. Additionally, it should be noted that in many cases in the digital economy, it is the development of a certain product or service quality that is very costly rather than its provision to the consumers once it has been developed.[173] Accordingly, in such cases testing a hypothetical decrease of quality might not be representative of the true situation in practice, as an undertaking will have no incentive to reduce quality if such a reduction will not result in a significant increase of revenue.[174] Moreover, when dealing with the quality of a certain online platform, it is important to keep in mind that some aspects thereof are also dependent upon the customer groups present on the platform. This remains true even when the consumer is not entirely aware of the source of quality or the lack thereof. For example, an online marketplace may be in charge of curating the variety of products offered however the price, shipment costs, quality of goods and after sales services may also depend substantially on the sellers. Thus when choosing a quality that is tested in the context of a SSNDQ, the role of such shared accountability for quality between the online platform and its participants must be taken into account. In this regard the regulatory framework that applies to the concerned platform in a given case should be considered as the obligations

170 David S. Evans and Richard Schmalensee (2014) *supra* (n 6) 27.

171 OECD (2018) *supra* (n 5) 10-20.

172 See OECD (2013) *supra* (n 165) 15. A decrease of quality that would impact consumer behavior may be as high as 25% in the context of this test.

173 For example, the difference between setting up an online marketplace website and the costs of maintaining it is almost tenfold. See a rough calculation of the costs online at Jon Jordan, 'How Much Does an eCommerce Website Cost in 2018?' (*Atlantic BT*, 9 April 2018) <https://www.atlanticbt.com/blog/how-much-does-ecommerce-website-cost/> accessed 1 November 2018.

174 J. Newman (2016) *supra* (n 116) 70.

and liabilities of online platforms may also determine the scope of qualities that can be tested. Testing a degradation of qualities that fall more within the legal ambit of the platform participants rather than that of the platform itself would be conceptually erroneous.

In this regard it is worth noting that the term online platform, does not constitute a category of undertakings nor does it refer to a specific sector of the economy. Rather, online platforms can be best seen as the undercarriage upon which an undertaking can be developed. The undertaking that eventually emerges on the market, from both a legal and commercial perspective, depends on the value that the platform intends to create for its various customer groups and the governance of such a platform. Currently there is no platform-specific regulation,[175] however online platforms will generally fall under the scope of various EU and national rules in the areas of competition, consumer protection, personal data protection and free movement.[176] The applicability of this general legal framework is unfortunately not always consistent, as it was not designed in a manner that foresees the contractual realities of the platform economy.[177] Consequently, establishing the legal framework for an online platform for the purpose of determining the qualities that may be tested in the context of a SSNDQ is something that will need to be done on a case-by-case basis. In this respect, the recent case of *Uber* demonstrates the importance of performing an inquiry into the business model and governance of the online platform.

Although Uber maintained that it is an intermediary that facilitates the interaction between consumers and self-employed drivers, its platform governance led to a different legal qualification, namely one that resembles an employer.[178] The importance of such a legal qualification of a platform cannot be overstated in the context of a SSNDQ and a competition law analysis as a whole. The legal qualification of a platform determines namely what kind of intermediary it constitutes, if at all. In the case of Uber the spectrum of legal qualifications entails at least three options: an information society service provider as claimed by Uber; an intermediary in the field of transport as indicated by the CJEU;[179] and an employer in the field

175 The newest development towards such a legal framework is the Commission's proposal for a Regulation of the European Parliament and of the Council on promoting fairness and transparency for business users of online intermediation services 2018/0112 (COD).

176 Aneta Wiewiórowska-Domagalska, 'Online Platforms: How to Adapt Regulatory Framework to the Digital Age?' (Briefing for the IMCO Committee of the European Parliament, 2017) 3-4http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/607323/IPOL_BRI(2017)607323_EN.pdf accessed 19 May 2018.

177 Ibid.

178 See Case C-434/15 *Asociación Profesional Élite Taxi V Uber Systems Spain SL* [2017] ECLI:EU:C:2017:364, AG Opinion, paras 52-54.

179 Case C-434/15 *Asociación Profesional Élite Taxi V Uber Systems Spain SL* [2017] ECLI:EU:C:2017:981, paras 40-44.

of transport as found by national courts.[180] Each of the three qualifications entails a different legal framework and consequently a potentially different scope of qualities that can be tested for the purpose of a SSNDQ. In the case of the legal qualification of Uber as an employer, Uber is in fact no longer considered a two-sided platform, which means that replacing the SSNIP for the SSNDQ is no longer needed. If Uber is no longer a two-sided platform, demand-side substitution of consumers for Uber can be tested based on the positive prices they are charged for the rides, as the drivers are no longer a separate customer group of Uber but a part of it.[181]

In light of the above, it can be observed that the SSNDQ is sound from a substantive perspective, however, its application requires the development of an analytical and preferably also legal framework that regulate the selection of the relevant qualities to be tested in each case. In the absence of such a framework, the extensive modifications required to transform the SSNIP into a quantitative test suitable for zero-priced markets may add a layer of legal uncertainty to the existing criticism concerning the current SSNIP test.[182] Despite the identified hurdles in the process of adapting the SSNIP test to zero priced markets, the realisation of the SSNDQ may be a welcome step in the journey of adapting the current competition law practice to the reality online markets. In this regard it is worth noting that the importance of the abovementioned exceeds the mater of the SSNIP test alone. The complexities concerning zero-pricing depicted above can also be expected when considering other quantitative tools used for the purpose of defining the relevant market such as price correlations, co-integration analysis and critical loss analysis, since these are equally price-oriented tools.[183] Thus while the SSNIP test provides a straightforward example of the inevitable complexities resulting from the use of zero-pricing by online platforms for current practice, their implications may concern the entire quantitative evidence tool kit. Therefore, it is important that this conversation of the SSNIP test into a SSNDQ is pursued as a first stage to what may become the conversion of the entire quantitative tool kit in the long run so as to ensure compatibility with cases concerning zero-pricing.

The fact that the current quantitative tools may not be suitable does not mean, however, that the market definition process cannot be performed in the case of zero-priced markets as such. Rather, this challenging situation highlights the fact that zero-priced markets, particularly in case of online

180 See UK Employment Tribunal Appeal No UKEAT/0056/17/DA *Uber BV v Mr Y Salam and Others*.

181 In the context of an art 102 TFEU case it also means that establishing of dominance only requires looking at the market from the perspective of the consumers instead of also looking at the market power Uber has with regard to taxi drivers.

182 O'Donoghue and Padilla (2013) *supra* (n 134) at 112-116; Rose and Bailey (2013) *supra* (n 139) at 240-242.

183 Niels, Jenkins and Kavanagh (2016) *supra* (n 11) at 35-82.

platforms, will for the time being constitute cases where price oriented quantitative tests such as the SSNIP cannot be applied due to an evident absence of suitable data. Accordingly, in such cases the market definition process will have to be based primarily on non-quantitative evidence sources as it has been prior to the introduction of such tools. Although situation confirms that current practice is sufficiently flexible so as to be applied even in rather novel scenarios, it does not means that such partial compatibility is a desired or constitutes a sustainable outcome for long term purposes.

3.3.3 Back to (some) basics and plans for the future – a temporary SSNIP free market definition

The definition of the relevant product market has initially been performed by drawing a comparison of the price, characteristics and functionalities of the product or service concerned.[184] In art. 102 TFEU cases, such an approach to the definition of the relevant product market even appears to prevail.[185] The seminal case of *United Brands* is a textbook example wherein the market definition was executed predominantly according to qualitative evidence.[186] Following the introduction of the Commission Notice on the Relevant Market in 1997, the definition of the relevant market often resulted from a combination of quantitative evidence as well as non-quantitative sources of evidence depending on the amount of available data.[187] According to some scholars, this combined approach will eventually lead to a shift in favour of the quantitative evidence sources, leaving non-quantitative evidence to serve as a secondary check.[188] It is important to note that even if one were to be convinced of such a development in practice, the increased evidentiary value and use of quantitative evidence would only be possible in situations where sufficient data is available for this purpose. When that is not the case, non-quantitative evidence will always provide the most important guidance with regard to the market definition.[189] The reliance on non-quantitative evidence in light of the absence of price data can be observed in the case law of the EU Courts as well as the decisional practice of the Commission.[190] In the context of the recent mergers dealing with free products or services in digital markets the discussion around the

184 Commission Notice on the definition of the relevant market (1997) *supra* (n 25) para 7; Rose and Bailey (2013) *supra* (n 139) at 231.

185 O'Donoghue and Padilla (2013) *supra* (n 134) at 119.

186 Case 27/76 *United Brands v Commission* [1978] ECLI:EU:C:1978:22.

187 Rose and Bailey (2013) *supra* (n 139) at 232-233.

188 O'Donoghue and Padilla (2013) *supra* (n 134) at 120.

189 Rose and Bailey (2013) *supra* (n 139) at 233.

190 See cases where the product or service at hand concerned one which was offered for free e.g. *Facebook/WhatsApp* (Case COMP/M.7217) decision of 3 October 2014; *Microsoft / LinkedIn* (Case COMP/M.8124) Commission decision of 6 December 2016; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289.

relevant market was based entirely on qualitative considerations regarding the various functionalities and uses of the concerned products or services.

In the merger between Microsoft and Skype the Commission noted that competition among consumer communication services (and thus substitutability) initially depends on the offering of several key functionalities in a package that is provided without cost to consumers.[191] The success of the players, who fulfil these criteria and are accordingly within this relevant market, is then depended on their ability to innovate and improve such services or products.[192] In the merger between Facebook and WhatsApp the Commission found that the markets for consumer communication and social networking services were prone to offerings of free services.[193] The competitive relation between Facebook and WhatsApp was therefore assessed in light of the functionalities and size of the networks the two undertaking were offering, as these aspects were considered to be the most important for consumer choice in the absence of prices.[194] According to the Commission the two undertakings were not close competitors in the market for consumer communication services nor in the market for social networking services due the differences in the functionalities of the WhatsApp and the Facebook messaging applications.[195] This functionality focused approach was also followed in a comparable manner in the merger between Microsoft and LinkedIn when the relevant product market for professional social networks, that are also offered free of monetary charge, was defined.[196] Similarly, in the tying case concerning Microsoft no mention was made with regard to that use of the SSNIP test to define the relevant market for media players which consisted of both free and priced media players (basic and premium versions). The definition of the relevant market for media players in that case was equally focused on the functionalities that were included in both free and paid versions of the media players offered by Microsoft and its competitors.[197] Finally in the recent case of *Google Shopping* the Commission explicitly chose to not use the SSNIP test when defining the relevant markets for general search services and comparison-shopping services because such services are provided for consumers without charge.[198]

191 *Microsoft/ Skype* (Case COMP/M.6281) Commission decision of 7 Nov. 2011 paras 17-19, 21-26, 75-77.
192 ibid paras. 81-84.
193 *Facebook/WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2014, paras 47, 90-92.
194 Ibid, paras. 46-53, 86.
195 Ibid, paras. 101-107, 153-158.
196 *Microsoft / LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016 paras. 87, 95-117.
197 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, paras. 107-145, 411-424.
198 *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, para. 245.

The definition of the relevant market for zero-priced products or services provided by online platforms in future cases will inevitably constitute analogous situations where the data needed for quantitative tests is not adequate for their application. This challenging situation that can be expected in the case of online platforms is, however, not of such magnitude so as to completely obstruct the definition of the relevant market as is showed by the previously mentioned cases. This is due to the fact that there is no legal obligation to rely on quantitative tools such as the SSNIP test, nor do these quantitative tools possess a higher evidentiary value compared to qualitative evidence.[199] Accordingly the process of the market definition can be performed in future cases even in the absence of a workable SSNIP test. However, this final outcome, wherein the most basic tools of competition law practice are the most suitable for the market definition of one of the most recent and innovative business practices, is admittedly rather ironic. Nevertheless, it does not mean that the reliance on non-price qualitative evidence will lead to unsatisfactory or erroneous findings in practice, nor should this be considered as an indication that the current practice has reached an impasse. Instead, this situation should be treated as a call to further the proficiency of the existing competition law framework and tools in a more future resilient manner. Therefore, it is important that the possibility to define the relevant market without the use of a working SSNIP alternative remains the exception rather than the rule in future practice when dealing with zero-pricing. Any other attitude towards this current state of practice would imply a return to the pre-SSNIP practice signifying a deterioration of current practice rather than a necessary side step in the process of its development. Therefore, even if the market definition process is not impeded as such in the case of zero-pricing, the conversion of the SSNIP test into a SSNDQ should be pursued for the benefit of competition law practice as a whole.

The necessity to convert the SSNIP test into a quality centred SSNDQ in order to allow for the application of the HMT in a quantitative manner in future cases involving zero-pricing may indeed eventually lead to a broader acceptance and understanding of non-price competition. The path to a successful conversion will require a better comprehension of quality based competition which is becoming increasingly important in technology markets where competition for end-consumers is predominantly deter-

199 Case T-342/07 *Ryanair v Commission* [2010] EU:T:2010:280, para 136; Case T-175/12 *Deutsche Börse v Commission* [2015] EU:T:2015:148, para. 133; Case T-699/14 *Topps Europe Ltd v Commission* [2017] EU:T:2017:2, para. 82.

mined in terms of functionalities and the quality thereof.[200] In this regard a better understanding of non-price competition is not only important for defining markets and evaluating market power but also, and perhaps more importantly, for assessing the anti-competitive nature or effects of practices which are investigated for constituting potential infringements of art. 101 or 102 TFEU. If competition in certain situations does not occur based on price it implies that also a potential increase or decrease of consumer welfare in the context of such investigations will equally relate to the non-price aspects of the service or product offered to consumers. Therefore while the conversion of the SSNIP test can serve as a specific element of adapting current practice to the realities of online markets, the process towards achieving this goal, if pursued, will undoubtedly have greater significance for practice than the creation of a quantitative test for assessing substitution in situation concerning zero-pricing alone.

3.3.4 Preliminary conclusion on the practical challenges of the market definition for online platforms

The application of the SSNIP test in future cases concerning online platforms will undoubtedly require overcoming multiple substantive as well as practical challenges. The two- or multi sided nature of online platforms will challenge the manner in which the SSNIP is applied due to the fact that the market definition for an online platform may result in multiple markets. When that is the case the application of the SSNIP, even in cases where prices are positive, will have to take into account the indirect network effects and demand interdependency between such markets when assessing the profitability of a theoretical increase in price.

In cases where the market definition concerns a product or service which is provided by the online platform without monetary charge, thus for a price of zero, the application of the SSNIP test is no longer possible from a substantive point of view. The absence of a positive price in such cases will prevent its application both as a quantitative tool for assessing substitutability as well as thought experiment used for a similar purpose. Theorising a price increase in relative terms will lead to a mathematical impossibility while theorising a price increase from zero to any positive price will be incompatible with the characteristics of competition among online plat-

200 End consumers are usually the customer group of the platform which is considered to be more price sensitive, meaning that in the creating of the skewed pricing scheme that platforms almost always have such users will pay nothing or far less than the other customer groups participating on the platform. An exception to this model can be platforms which make use of the freemium / premium membership pricing schemes such as LinkedIn where some degree of price competition would be possible also on the side of the end consumer.

forms. In order to overcome these conceptual problems, the SSNIP test should be converted to a non-price centred test.

The conversion of the SSNIP into a SSNIC where demand substitution is tested based on increases in attention or information costs provides an attractive yet unsuitable solution for practice due to the significant complexities and uncertainties involved in such a modification. Although both types of costs play an important role in the business reality of online platforms generally speaking they are unfit as a benchmark for market power measurement, which implies the ability to maximise profits without any improvement to the offered product or service. The increase of attention costs (exposure to more advertisements) may occur in practice however such form of revenue generation is often not linked to the core service provided by the platform and thus cannot serve as a test subject of market power. Furthermore, profit maximising increases in information costs (data sharing requirements) without any prospect of product improvements are uncommon and prohibited to a great extent by the GDPR therefore equally unsuited to be used for market power evaluations.

In this regard, the conversion of the SSNIP into a SSNDQ constitutes an attainable and desirable option as the relationship between quality and competition has already been recognized and studied extensively. Nevertheless, realizing this conversion in practice requires additional adjustments so as to correctly incorporate the distinctive legal and economic nature of online platforms. Accordingly, a concrete procedure should be developed for choosing the relevant qualities to be tested in each case concerning a SSNDQ while taking into account the legal framework of the concerned platform in each case. Despite the complexity of such adjustments, the revision of the SSNIP test should be pursued in order to ensure the completeness of the current competition law tool kit by including both qualitative and quantitative tests. Therefore the creation of such a quantitative tool would in essence ensure a certain procedural equality between the definition of the relevant market in cases concerning two- or multisided platforms and cases dealing with single sided undertakings. Passing up on the conversion of the SSNIP to a SSNDQ however would create a *de facto* exception for cases concerning zero-pricing for which there is no legal or economic justification. Clearly such an outcome is not desirable as the adoption of the SSNIP test was aimed at increasing the trueness of the market definition in the first place. Furthermore, beyond reinstating a SSNIP equivalent for zero-pricing scenarios, the process of conversion will likely contribute greatly to current practice by facilitating further research in non-price competition and its implications for the existing (EU) competition law framework.

Until the adaptations discussed in this paper are implemented, the process of the market definition in the case of online platforms (as well as other undertakings which rely on zero-pricing strategies) will have to rely on

qualitative indirect evidence of substitution when direct evidence is not available, not sufficient or not helpful. Whether the application of these tools in practice will lead to satisfactory results is a matter that remains to be seen, however, it is important that in the meantime this practice does not become the rule in future cases and that further development of a more future resilient competition law framework is pursued.

3.4 Conclusion and final remarks

This chapter provides an answer to the sub-question: '*How should the definition of the relevant market be performed in the case of online platforms in light of their multi sided nature?'*.

The answer provided by this chapter covers both theoretical and practical perspectives of the market definition process. From a theoretical perspective the first part of the chapter shows that determining the number of market that need to be defined in each case should not be done based on an preliminary platform typology as previously suggested by certain academics and the German competition authority. This is because platform based typologies such as transaction vs. non-transaction platform or matching vs. advertisement platform do not take into account the possibility that platforms will take a hybrid form, which commonly occurs in practice. Furthermore, such approaches presuppose that the platforms will always be two sided and that the decision with regard to the market definition in their case will concern the question of whether each case should result in the delineation of one or at most two separate yet related markets. This assumption has also been shown to be mistaken as online platforms, even when they start off as two sided, may eventually evolve into multi sided platforms. Thus in practice the decision regarding the number of markets that should be defined will be more elaborate as each of the interactions or services provided by such platforms may require the definition of one or two relevant markets respectively. Therefore a more suitable approach for determining the number of relevant markets that need to be defined is, as suggested by this chapter, to look into the nature of the platform interaction or service that gives rise to the competitive concerns in a respective case. Such an approach is also more compatible with the Commission's own experience in the case of *Google Shopping*, which has also been confirmed by the General Court in the appeal, and multiple merger decisions concerning online platforms where the respective parties were found to be active in multiple markets simultaneously.

From practical perspective the chapter shows that in order for the SSNIP test to its important role in the process of the market definition in cases concerning online platforms it would require a conversion into a non-price centered test. The most feasible adjustment in this regard was found to

be the SSNDQ. In the absence of such a conversion the SSNIP test will be unusable in cases where zero-pricing strategies have been implemented by the concerned online platform with respect to its interaction or service that is under investigation. This is confirmed by the Commission's practice in *Google Shopping* where it refused to use the SSNIP test in the market definition process due to the use of zero-pricing by Google with respect to is search functionalities. The feasibility of the conversion of the SSNIP into a SSNDQ has been recently confirmed by the Commission practice in *Google Android* where this test variation was utilized. Nevertheless, as pointed out by this chapter such a conversion process would requires an entirely new procedural framework which regulates such test. This aspect has, however, not been taken up by the Commission which constructed the quality criteria used by this test based on the input of Google's own staff without any further explanation.

4 Platform Expansions and Anti-Competitive Market Power Leveraging

This chapter is based on the published article 'Tying and Bundling by online platforms – Distinguishing between lawful expansion strategies and anti-competitive practices', (2021) 40 Computer Law and Security Review.

4.1 Introduction

The ever growing and evolving digital economy is currently subject to substantial legal debates and developments in the context of EU competition law.[1] Despite clear indications that competition law will apply to online platforms as in the case of any other undertaking, there is no coherent strategy on either the EU level or national level in this regard.[2] This absence of a unified strategy has not slowed down the application of EU competition law to online platforms, however. The growing success and prominence of multi-sided platforms such as the Amazon Marketplace and the Google search engine and Android OS has already triggered several investigations into their business strategies.[3] These investigations and decisions have not been welcomed by all, as much critique was addressed towards the

1 See e.g. Commission Staff Working Document on Online Platforms SWD(2016) 172.

2 See e.g. the rapport from the DG for internal policy on online platforms online at:< http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf> accessed 18 June 2020; Commission, 'Staff Working Document on Online Platforms Accompanying the document Communication of Online Platforms and the Digital Single Market', COM(2016) 288; See also D Mandrescu, EU Competition Law and the Digital Economy: Protecting Free and Fair Competition in an Age of Technological (R)evolution: The XXIX FIDE Congress in The Hague, 2020 Congress Publications, Vol. 3 (Boom Uitgevers, 2020, The Hague). The FIDE reports covering 26 European jurisdictions show an extremely differentiated approach across various competition authorities and national courts.

3 In the case of the Commission two infringement decisions have already been taken in the case of Google concerning Google Shopping and Android, see Case AT. 39740 Google Search (Shopping) Commission decision of 27 Jun 2017 and Case AT.40099 Google Android Commission decision of 17 July 2018. Furthermore, the business practices of Amazon are investigated by both the Commission and the German competition authorities, see Thomas Hoppner and Philip Westerhoff, The EU's investigation into Amazon Marketplace, Kluwer Competition Law Blog http://competitionlawblog.kluwercompetitionlaw.com/2018/11/30/the-eus-competition-investigation-into-amazon-marketplace/ (accessed 3 Dec 2018).

European Commission and national authorities for incorrectly applying competition law. In the context of tying and bundling such critique can be observed with regard to the recent cases against Google.[4]

The Google shopping decision was criticized for dealing with a theory of harm that resembles a tying case, yet it was qualified as a leveraging abuse that constitutes a generic term for many anti-competitive practices.[5] In the recent case of Google Android,[6] the matter of tying was no longer disputed. However, opponents of the decision stated that this type of tying is different as it is an inherent element of Google's business model and not a strategy adopted to eliminate competitors.[7] These cases and the debates they triggered prove that market power leveraging through tying and bundling practices in the context of multi sided (online) platforms is not yet understood. This conclusion is troublesome as online platforms are driven by the same profit-centered motives as any other type of undertaking and thus as likely to engage in anti-competitive tying and bundling practices. In fact, online platforms are more likely to adopt market power leveraging strategies as part of their expansion strategies, which are instrumental to their continuity in light of cross sectorial competitive threats.[8] It is therefore imperative that anti-competitive leveraging of market power by means of tying and bundling is distinguished from permitted, and in many cases, pro-competitive expansion strategies of online platforms.

Broadly speaking, tying occurs where an undertaking makes the provision of one of its products or services (the tying product) conditional upon customers obtaining another product or service (the tied product) from the

4 In *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, Google abused it dominant position in General search by giving a preferential treatment to its own shopping search service and demoting the placement of competing shop search services in the search results of the Google search engine. Such practices allowed Google to leverage its market power in general search to the market of specified shopping search. In *Google Android* (Case AT.40099) Commission decision of 17 July 2018, Google abused its dominant position by tying the Google Search App and the Chrome Browser to the Google Play Store which allowed it to maintain and increase its market power in the market for general search.

5 Robert O'Donghue and Jorge Padilla, 'The law and Economics of Article 102 TFEU' (2nd Edition, Hart Publishing, United Kingdom, 2013) at 250-256; See e.g. Magali Eben, 'Fining Google: a missed opportunity for legal certainty?' (2018) 14 (1) European Competition Journal 129.

6 *Google Android* (Case AT.40099) Commission decision of 17 July 2018.

7 See e.g. Pablo Ibanez Colomo, ' The Android decision s out: the exiting legal stud beneath the noise' ChillinCompetition Blog (18 July 2018) https://chillingcompetition.com/2018/07/18/the-android-decision-is-out-the-exciting-legal-stuff-beneath-the-noise-by-pablo/ > accessed 20 May 2019.

8 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne, 'Platform Envelopment' (2011) 32 (12) Strategic management Journal 1270.

same undertaking.[9] The tied product or service in such cases can nevertheless be acquired separately. Bundling practices entail a form of mutual tying where the tying and tied products can only be obtained together.[10] In cases where the undertaking that adopts such strategies enjoys a position of dominance in the tying product market or one of the bundle product markets competitive concerns may arise. Such concerns include the risk of foreclosing competing undertakings that cannot match these such multi-product offers as well as the extraction of additional profits from customers who may only be interested in acquiring one of the products or services offered by the dominant undertaking.[11] At the same time, tying and bundling practices have also been found to produce various efficiencies such as ensuring product quality and reducing distribution and search costs that may even intensify competition and increase welfare.[12] These two facets of tying and bundling practices have led to a complex line of case law in the EU where the legal framework for assessing such cases gradually evolved into a four-tier test.[13]

Applying this current framework to the business practices of online platforms will entail, however, a challenging process due to their complex technical and economic nature. Accordingly, an adequate application of the current framework requires that the distinctive characteristics of online platforms and their common business practices be correctly framed for the purpose of a competition law assessment.[14] The framing process for tying and bundling would firstly require identifying the tying or bundling of functionalities on the platform or the tying or bundling across platforms

9 E.g. most if not all smartphones today are sold together with a charger and earphones that are calculated in the package price; the purchase of a standalone smartphone without these accessories is not possible despite the fact that the accessories can be acquired in a standalone fashion.

10 E.g. the three-in-one packages often offered by telecom providers that include subscription to television, internet and telephone services in one contract.

11 E.g. the inclusion of media player and internet explorer by Microsoft in its Window OS suit allowed it to eliminate Netscape from the internet browser market and prevent RealTime player from gaining traction in the market for media players.

12 See e.g. David W. Hull, 'Tying: A Transatlantic Perspective', in Handbook of Research in Trans-Atlantic Antitrust, ed. by P. Marsden, pp. 287–318 (Edward Elgar Publishing Limited, 2006) at 289-290.

13 See e.g. Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) at 440-450; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 850-869. Accordingly, the finding of anti-competitive tying or bundling practices requires showing that (i) the concerned undertaking must have a dominant position in the tying market or the market of one of the bundled products, (ii) the undertaking must be tying or bundling two separate products (iii) customers are coerced into obtaining the tied and tying products or the bundled products together (iv) the tie has a foreclosure effect and (v) there is no objective justification for the practice.

14 See e.g. Julian Wright,' One-Sided Logic in Two-Sided Markets '(2003). AEI-Brookings Joint Center Working Paper No. 03-10. Available online at: < https://ssrn.com/abstract=459362>.

as a whole to each other. Functionality tying or bundling would occur for example if booking a hotel room on Expedia would be possible only in combination with the booking of a rental car whereas cross platform tying or bundling would be for example a requirement to have a Facebook account to sign up to Instagram. Secondly, the pro and anti competitive effects that may arise following such strategies should be assessed in light of the commercial link between the functionalities or platforms subject to tying or bundling and their multisided nature.

While these steps appear straightforward, in practice, carrying out this assessment will be cumbersome. The essence of tying or bundling separate products or services is far more elusive when dealing with platform functionalities and technical links between platforms operated by the same undertaking. Furthermore, in a digital world where many functionalities and platforms are provided to customers free of charge it is hard to distil an element of coercion that is required for this purpose.[15] Furthermore, observing the pro-and anti competitive effects of such practices across multiple interrelated markets has yet to become common practice, particularly in the context of the digital economy where current practice is limited to a handful of (on-going) cases.

In light of these circumstances, this contribution seeks to provide guidance as to how the current EU competition law framework should be applied when addressing tying or bundling practices by online platforms. The added value of this contribution to current practice is therefore to assist in developing an approach that will allow distinguishing permitted business practices from anti-competitive tying and bundling practices in the context of ongoing and future Art. 102 TFEU investigations concerning online platforms. This contribution to practice is achieved by the revisiting the legal framework of Art. 102 TFEU in light of the business reality and technical functionalities of online platforms. Combining these different aspects of platforms, which are currently still researched in isolation of each other, allows for a new approach to emerge that is less likely to lead to over or under enforcement errors.

15 For pricing strategies in the context of two-sided markets see Marc Armstrong 'Competition in two-sided markets' (2006) 37(3) The RAND Journal of Economics 668; Jean C. Rochet and Jean Tirole, 'Platform competition in two-sided markets' (2003) 1 (4) Journal of the European Economics Association 990. In this regard, despite the fact that end consumers will likely not be charged for their participation on the platform, and thus not be confronted with supra competitive pricing in conventional terms, supra competitive data sharing requirements or terms of use may arise in their place. For more on this see Aleksandra Gebicka, Andreas Heinemann, 'Social Media & Competition Law' (2014) 37(2) World Competition 149, 164–165.

In order to produce a coherent and thorough inquiry capable of providing practical guidance, this article will be divided into three sections following this introduction. In the first section, the article will address the business practices of online platforms and their technical manifestation, which may give rise to situations that qualify as tying and bundling practices. In the second section, the identified theories of harm for tying and bundling practices will be discussed in order to evaluate to what extent and under which circumstances such practices may produce anti-competitive effects. Finally, the third section will examine the legal criteria of Art. 102 TFEU for tying and bundling cases in order to assess how these can be applied to online platforms as they stand or subject to specific adjustments, followed by concluding remarks.

4.2 The life story of online platforms – from launching to tying and bundling

4.2.1 Launching phase – managing interactions and achieving critical mass

Online platforms are not an entirely new phenomenon but rather an improved version of more traditional platforms such a newspapers, shopping centers and credit cards. The application of the platform structure in the online sphere enhances its business potential by removing a great deal of the market entry barriers and expansion constraints that are usually experienced by offline (platform and non-platform) undertakings.[16] The current and common competition law approach to online (and offline) platforms is based on the economic model on which they rely, namely that of a two- (or multi) sided market. Despite the different definitions of two- (or-multi) sided markets found in economic literature, there is some agreement with regards to several core characteristics that such markets or platforms must exhibit, which are also observable in the case of online platforms. Accordingly, there must be (i) an interaction between two or more separate customer groups on the platform; (ii) which exhibits indirect network effects; (iii) and the platform is necessary for internalizing the externalities created by one group for the other group.[17]

16 Bertin Martens, 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological Studies Digital Economy working paper 2016/05, pp. 12. https://ec.europa.eu/jrc/sites/jrcsh/files/JRC101501.pdf (accessed 9 Jun 2020)..

17 Bertin Martens, (2016) *supra* (n 16), at 10-18; Commission staff working document on online platforms {COM(2016) 288} , SWD(2016)172, at. 1-9; OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at 3.

Two- or multi sided (online and offline) platforms have a significantly different approach to value creation compared to non-platform single-sided businesses. The creation of value by non-platform undertakings commonly follows a linear path throughout the entire chain of distribution from production to the end customer where each link in the chain adds a certain unit of value before being sold onwards. By contrast, the creation of value in the case of platforms occurs following a successful triangular relation where the added value of the platform lies in enabling the interaction between two (or more) of its separate customer groups.[18] Consequently, in their early stages all platforms (online and offline) face the same problem when deciding to enter a specific market, namely getting all the needed customer groups 'on-board'. A marketplace without sellers is just as unattractive to buyers as a marketplace without potential buyers is to sellers, regardless of whether the marketplace is digital or physical. In order to successfully launch, a platform must first convince (at least) one customer group to join the platform before members of the other customer group(s) necessary for the interaction also join. Once one group of customers joins the platform it will form part of the value proposition offered by the platform to attract the other needed customer group(s) to join.[19] This coordination challenge, commonly referred to as the 'chicken-and-egg' problem, faced by platforms is difficult to overcome. The members of the first customer group to participate on the platform often have nothing to gain from their participation in the absence of participation by additional customer groups on the other side(s) of the platform and are therefore difficult to attract.[20]

In order to overcome this obstacle, various launching and growth strategies have been adopted by online platforms based on the nature of the value they seek to create and monetize.[21] Generally speaking, in the initial launch phase an important decision in the process of getting all customers groups on board is whether to attract such groups sequentially (first side A and

18 Jean-Chalres Rochet and Jean Tirole, 'Two-sided markets: a progress report' (2006) 37(3) The RAND Journal of Economics 645.

19 The value proposition refers to the value that an undertaking promises to deliver to its customers if they choose to acquire its service and / or products.

20 Bernard Caillaud and Bruno Jullien, 'Chicken & Egg: Competition among Intermediation Service Providers' (2003) 34(2) The RAND Journal of Economics 309. Perhaps the only exception to this problem are peer-to-peer platforms such as EBay and Airbnb as the customers of these platforms can in most cases participate on both sides of the interaction (or platform). Sellers on EBay are often also buyers and users on Airbnb can choose to either offer their residence for short terms stay or rent one from other users.

21 For an overview on various launching strategies see e.g. Nina-Birte Schirrmacher, Jan Ondrus and Thomas Kude, 'Launch strategies of digital platforms: platforms with switching and non-switching uses' In Proceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal, June 5-10, 2017 (pp. 658-673). ISBN 978-989-20-7655-3 Research Papers.<https://aisel.aisnet.org/ecis2017_rp/43> accessed 17 Sep. 2018.

then side B) or simultaneously.[22] If the launching phase is successful, online platforms may eventually achieve critical mass and thus become viable, essentially paving the way for sustainable growth.[23] Of course, the realization of a successful platform requires not only a well-designed launching strategy but also constant refinement of the platform's interaction(s) as well as pricing structure and governance adaptations in order to maintain a healthy balance in the volume of the various customer groups of the platform.[24]

In practice, the multisided character of online platforms translates into facilitating some form of matchmaking interactions or functionalities between their various separate customer groups.[25] The terms interaction and functionality are used interchangeably in the context of this contribution. The variety of match-making interactions can, generally speaking, be divided into two categories, namely unilateral and bi (or-multi) lateral matching interactions, which are monetized in various ways depending on the value that the platform wishes to create for its customer groups.[26] Unilateral matching occurs when members of two customer groups are matched but only one of the two is interested in the matching taking place. By contrast bi (or-multi) lateral matching refers to a situation where the platforms matches between members of two (or more) customer groups and all parties involved in the interaction are interested in this matching interaction.[27] In this later case, the customer groups that participate in the matchmaking functionality in essence come to the platform to interact with each other. In this regard, YouTube can serve as a good example for an online platform that facilitates both types of matching interactions. Accordingly, on YouTube users are exposed to non-search display and video advertisements (unilateral matching) before being allowed to view videos uploaded by professional content creators such as *VEVO* (bilateral matching).

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22 See e.g. David S. Evans, 'How Catalysts Ignite: The Economics of Platform-Based Start-Ups'. In A. Gawer, (ed.), *Platforms, Markets and Innovation* (Edward Elgar, 2009) <https://ssrn.com/abstract=1279631 >accessed 17 Sep. 2018.

23 David S. Evans and Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses* in Roger Blair and Daniel Sokol, (eds.), *Oxford Handbook on International Antitrust Economics* (Oxford University Press 2014); D.S. Evans and R. Schmalensee, *Failure to Launch: Critical Mass in Platform Businesses* (2010) <https://ssrn.com/abstract=1353502 > accessed 3 Jul 2017.

24 See Andrei Hagiu, 'Pricing and Commitment by Two-Sided Platforms' (2006) 37(3) The RAND Journal of Economics 720; Kevin J. Boudreau and Andrei Hagiu. 'Platform Rules: Multi-Sided Platforms As Regulators' in A. Gawer, (ed.), *Platforms, Markets and Innovation* (Edward Elgar, 2009).

25 Bertin Martens (2016) *supra* (n 16), at 20.

26 Such monetization modalities can include pay-per-click ads, personal data registration, per-transaction fees, membership fees and others.

27 Daniel Mandrescu, 'Applying (EU) Competition Law to Online Platforms: Reflections on the Definition of the Relevant Market(s)' (2018) 41(3) World Competition 453, 464–468.

The difference between the two types of matchmaking interactions is reflected by the direction and nature (positive or negative) of the indirect network effects that are inherent to online platforms.[28] Bi-or multilateral matching interactions display positive indirect network effects with respect to all of the customer groups they connect.[29] This can be observed in the case of hotel booking platforms, like Booking.com, that facilitate such matchmaking functionalities. The more hotels participate on the platform, the more customers it will attract as well as the other way around. In the case of unilateral matching interactions, indirect network effect will, however, be positive only for one or some of the customer groups they connect.[30] Going back to the YouTube example, this means an increase in users on YouTube makes it more attractive for advertisers; however, the opposite is not true when considering an increase in advertisers with regard to users.

The importance of understanding the relations between the various customer groups of platforms cannot be overstated. The direction and intensity of the indirect networks effects will influence the entire decision-making process throughout the life cycle of the platform. Accordingly, the type of interactions adopted by the platform is not only important in the launching phase but also determines greatly the potential effects of the tying and bundling practices that may be implemented in the process of expansion as will be discussed in the following sections. Furthermore, the chosen interaction type will also determine the pricing structure and levels of the platform from the launch phase onwards.[31] Considering that the separate customer groups of platforms practically never value their mutual participation identically, the relation between network effects and pricing structure often results in a skewed structure where one customer group pays little or nothing while the other customer groups pay substantially more.[32] This impact of the relation between the customer groups of the platform is further complemented by their multi- or single homing partici-

28 Ibid; Jean-Chalres Rochet and Jean Tirole,' Two-sided markets: An overview', (2004) 5-6. <https://pdfs.semanticscholar.org/1181/ee3b92b2d6c1107a5c899bd94575b0099c32.pdf> accessed 3 Jul 2017.

29 Accordingly, an increase in members of customer group A that is part of a bilateral matching interaction with customer group B will increase the value of the interaction and thus of the platform for group B and vice-versa.

30 In a case involving a unilateral matching interaction between customer groups A and B, an increase of members in customer group A will increase the value of the interaction and the platform for customer group B but this does not apply the other way around.

31 Marc Rysman,' The Economics of Two-sided Markets', (2009) 23(3) Journal of Economic Perspectives 125, 129-131.

32 Ibid; OECD Round table on two sided markets (2009), *supra* (n 17), at. 8-12. Accordingly, the more a member of customer group A values the participation of a member of customer group B, the higher the participation fee of the customer group A will be.

pation patterns,[33] where single-homing customers are considered more valuable and are thus generally subject to lower prices than multi-homing customers.[34] In practice, it is rather common that the participation of end consumers on the platform is subsidized by the other customer groups of the platform, which often consist of undertakings that use the platform as a sales channel or advertisement tool.[35] Getting the pricing structure and levels right is evidently very important for optimizing the volume of participants on the platform as well as making sure that the platform operates profitably. Failing to optimize its pricing would essentially result in the inability of the platform to utilize the indirect network effects between its customers groups to gain traction or would otherwise reverse the nature of such network effects from positive to negative, creating a snowball effect towards market exit.[36] Therefore, similarly to the choice of interaction, adopting a suitable price scheme and level will also affect the profitability of any expansion strategy as well as tying and bundling practices if pursued by the concerned platform.

In addition to pricing optimization, the platform must also attend to the governance structure for the interaction it seeks to facilitate in order to optimize the value creation and monetization as well as to prevent undesired practices by its customer groups.[37] The term governance in this context refers to the set of rules that are established by the platform to determine

33 See e.g. David S. Evans, 'Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms' Coase Sandor Working Paper Series in Law and Economics, No. 753 (2016), 8-9 < https://ssrn.com/abstract=2746095> accessed 14 Sep 2018. Single homing refers to the situation where a customer group of a platform uses a single platform to meet one of its specific demands for a product or service. Multihoming, by contrast, farers to the situation where a customer group of a platform uses multiple platforms to meeting the same demand for a service or product offered by the platform. For example, consumers often tend to use a single credit card per bank account rather than serval due to membership costs whereas most merchants accept multiple types of credit cards as a means of payment. Therefore, in practice platforms have an incentive to ensure that at least one of their customer groups is single homing in order to obtain higher rents from the other customer groups. Achieving this, however, requires surviving often very intense competition with other platforms.

34 See e.g. David S. Evans and Richard Schmalensee (2014) *supra* (n 23). This is because the only way to reach those customers is through their favorite platform that essentially creates a competitive bottleneck that grants the platform monopoly powers over the access to such customers and thus allows it to charge ultra-competitive prices from the other customer groups.

35 Sales channels can come in the form of online marketplaces (Amazon, Taskrabbit) but also booking platforms (Expedia), delivery platforms (Ubereats, Deliveroo) and others. Advertisement tools include platforms such as vertical search engines (Skyscanner) and price comparison websites (PriceGrabber).

36 Mark Armstrong'(2006) *supra* (n 15); David S. Evans 'The Antitrust Economics of Multi-Sided Platform Markets' (2003) 20(2) Yale Journal on Regulation 327.

37 Kevin J. Boudreau and Andrei Hagiu (2009) *supra* (n 24); David S. Evans, Governing Bad Behavior By Users of Multi-Sided Platforms' (2012) 27(2) Berkeley Technology Law Journal 1201.

which actors are eligible to participate on the platform and regulate the actions of such parties when interacting on the platform.[38] The governance adopted by the platform is intended to ensure that the right type of actors are attracted to the platform and that their practices further contribute to the creation and increase of positive (indirect) network effects. Accordingly, such rules cover matters such as openness, control, quality assurance and curation, and of course exclusion possibilities or other penalties.[39] Therefore, when adopted, tying or bundling practices will also constitute a part of such governance that may be implemented in a contractual form via the platforms' terms and conditions, in technical form or a combination of both. Determining the exact criteria of the governance rules in each case depends on the kind of value the platform seeks to create and monetize and will therefore vary across platforms.[40] Once the platform manages to optimize these settings with regard to its specific business model it may eventually achieve the minimal threshold of profitability, namely 'critical mass'.[41] When this stage has been reached, the online platform is considered viable and can proceed with maximizing the value creation and monetization of the interaction it facilitates – a process also referred as increasing the depth or core base of the interaction.[42]

Optimizing the interaction translates in essence to continuously reducing the various costs incurred by the interacting customer groups of the platform, such as information, search and transaction costs.[43] By reducing such costs the platform increases the value of its interaction leading to a likely increase in the participation levels on the platform due to the indirect network effects at play, thus increasing the volume of profit-making interactions. This increased participation may also raise the willingness of the platforms' participants to pay higher fees for their participation, thus increasing the profitability of the platform not only in terms of volume of

38 Ibid.

39 Amrit Tiwana, Platform Ecosystems: Aligning Architecture, Governance and Strategy (Morgan Kaufmann Publishers Inc , San Francisco, 2014).

40 For various possibilities see e.g. David S. Evans (2012) *supra* (n 37); Andreas Hein, Maximilian Schreieck, Manuel Wiesche and Helmut Krcmar,'Multiple-Case Analysis on Governance Mechanisms of Multi-Sided Platforms' (2016) < http://andreas-hein.info/portfolio/MKWI_2016_Paper_Camera_Ready_256.pdf> accessed 17 Aug. 2018; David S. Evans, 'The Antitrust Analysis of Rules and Standards for Software Platforms' (2014) 10(2) Competition Policy International 71.

41 David S. Evans and Richard Schmalensee (2014) *supra* (n 23); David S. Evans and R. Schmalensee (2010) *supra* (n 23).

42 See e.g. Andrei Hagiu, 'Multi-sided platforms: From microfoundations to design and expansion strategies' (2007) Harvard Business School Strategy Unit Working Paper (09-115) <https://ssrn.com/abstract=955584> accessed 14 Aug. 2018.

43 Ibid.

interactions but also with regard to profit per successful interaction.[44] In the framework of such a value optimization process, the platform may gradually seek to increase its geographical reach once sufficient relevant density for the interaction facilitated by the platform can be guaranteed. The pattern for geographical growth and its profitability depends, however, on the existence of territorial consumption constraints for the interaction.[45] Choosing the wrong approach to territorial growth runs the risk of diminishing the quality and value of the platform as it may increase instead of reduce the costs for the platform participants.[46] When the commercial potential of its core matching interaction is utilized to a significant extent, the platform moves on to its next evolutionary step, namely the expansion stage where tying and bundling practices become conceivable and in many cases desirable for the platform. Similarly to the launching phase, the maturity phase during which the platform must expand entails many of the same strategic considerations. Accordingly, when expanding, a platform must once again: select the (additional) customer groups that may join the platform, adjust the pricing scheme and level of the platform to cover any additional costs, and adapt the governance rules to the new dynamics on the platform.

4.2.2 Maturity phase – the path towards expansion and tying

In the mature stage of the online platform life cycle, expansion entails an inevitable step that each platform must take in order to continue operating profitably in the long run. Platforms that do not (or cannot) take this step will struggle to continuously increase revenues and risk being overtaken by direct competitors that are able to expand as well as by platforms active in related markets that may become close competitors through expansions. From a competition policy perspective, it is only at this later stage that tying and bundling practices are capable of raising competitive concerns if

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44 Increased fees can, however, only be charged to the customers of the platform who pay to participate on the platform to begin with. Customers, often end consumers, who are not charged for their participation are also not likely to experience any rise in price. In this regard, maximizing platform participation must take into account the costs incurred by the platform for such increased participation in order to prevent negative returns on such growth which may harm viability in the long run.

45 For example, growth of platform participation and thus of interaction volume on a platform like Uber requires a city-by-city approach within the territory of any given country as most Uber or taxi rides occur within the premises of the city. By contrast, a video sharing platform like YouTube can invest in raising the volume of both content creators and viewers as the interaction between these two customer groups is generally less restricted territorial preferences or limitations.

46 See the example of OpenTable in David S. Evans and Richard Schmalensee, Matchmakers: The New Economics of Multisided Platforms (Harvard Business Review Press, Massachusetts, 2016) chapter 1; Sangeet Paul Choudary, Platform Scale: How an Emerging Business Model Helps Start-Ups Build Large Empires with Minimum Investment (1st ed. Platform Thinking Labs Publishing 2015) at 260–309.

implemented. A platform that is in the process of figuring out how to reach and maintain critical mass can hardly be described as an undertaking with substantial market power as would be needed in order to interfere with the competitive process and trigger (EU) competition law scrutiny.

A. Expansion motives – short term increase in revenue and long term competitive superiority

Generally speaking, the rationale behind expansion is twofold. First, in absence of expansion the platform often cannot significantly increase its profits.[47] The value creation and monetization by the platform is based on extracting a remuneration for the interaction it facilitates. Although online platforms face fewer constraints with regard to growth they also have a limit with regard to the volume of participants they can accommodate.[48] This volume limit can be due to on-platform congestion restrictions as well as due to intense competition on a rather concentrated markets.[49] Once the volume limit has been reached and the value extraction for the specific interaction facilitated by the platform has been maximized, the primary remaining option to generate additional revenue is expansion. By offering another matching functionality, the platform can, in essence, follow the same pattern it did with its initial interaction but without necessarily facing the chicken-and-egg launching problem again. Once the platform is well positioned in the market for its initial interaction, it has a significant customer base that it might be able to leverage when expanding if there is a certain overlap in the customers of the initial interaction and the new interaction. For example, Booking.com started off by allowing consumers to book hotel rooms and has gradually expanded to its current structure which consists of four bilateral matching interactions allowing consumers to book hotel rooms, flights, rental cars and airport taxis. Expanding from the initial mutual matching interaction to the other three interactions was possible for Booking.com as the consumer side of these interactions overlaps greatly. Consequently, when adding the possibility to book rental cars, Booking.com only needed to bring the car rental companies on board as a great deal of the consumers were already using the platform. This overlap in customer base for multiple interactions significantly reduces the difficulty of expanding into new markets for online platforms as it allows them to further utilize the indirect network effects present on the platform. If the expansion process is successful, the platform may enlarge its customer base on all the sides of the

47 The alternative for expansion in such cases is to pursue some form of disruptive innovation, however, such a path is hardly a realistic option for most companies as it is extremely challenging and a successful outcome is rarely achieved.

48 David S. Evans and Richard Schmalensee, 'The Industrial Organization of Markets Based on Two-Sided Platforms' (2007) 3(1) Competition Policy International 151, 163-166.

49 Ibid.

platform and offer all of its customer groups better value propositions.[50] By doing so, the platform increases the volume of profitable interactions and perhaps also the willingness of its customer groups to pay higher fees for their participation, thus generating more revenue.[51]

The second, and perhaps the more important, reason for platforms to expand is to remain competitive and survive the intense competition among platforms that compete in the same market(s) as well as between platforms active in neighboring markets.[52] In a market that is often characterized by dynamic competition and winner-takes-all tendencies it is important for platforms to secure their position in the market in order to survive. In essence, this requires platforms to establish and maintain a large and stable customer base, which is by no means an easy task when involving customers (often end consumers) that are subject to low switching costs. By facilitating an additional interaction, the platform is able to offer such customers a better deal and prevent them from switching to competing platforms while also increasing the participation on the platform at the cost of direct and indirect competitors and thus gaining a competitive advantage.[53] For example, car rental booking platforms offering only a single interaction – namely the car rental booking functionality – will have a tough time competing for consumers with platforms that offer multiple related or complementary interactions like Booking.com. Similarly, a functionality or interaction expansion can also shield the platform from competitive threats posed by platforms that may be active in neighboring markets with an overlapping customer base and provide it with a competitive advantage when entering such markets. For example, flight booking platforms and hotel booking platforms are not direct competitors; however, given the great overlap in their customers base, expanding to each other's markets by leveraging their customer base towards a new interaction will allow them to rapidly to become key actors in both markets. By expanding, the platform is able to engage in what is referred to as 'envelopment attack' on other platforms in neighboring markets, allowing it to achieve significant presence on both markets at the expense of platforms facilitating only one of its interactions.[54] Therefore, the first mover advantage of expansion for such

50 In the case of Booking.com, the current set of booking services offered to consumers is of greater value than the initial version of Booking.com which included only the option of hotel room booking. Therefore by increasing the value offered to consumers Booking.com is able to better attract them to its platform.

51 Hotels participating on Booking.com can pay these days a commission of up to 25% of the entire booking order. See pricing scheme at https://partnerhelp.booking.com/hc/en-us/articles/212708929-How-much-commission-do-I-pay- .

52 Andrei Hagiu (2007), *supra* (n 42); Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2011), *supra* (n 8).

53 Ibid.

54 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2011) *supra* (n 8).

strategic purposes may be significant. When network effects are significant and expansion is cumbersome (technically, financially or a combination of both) the first platform to expand, other things being equal, may become dominant in both markets. Conversely, when expansion by competitors is or can be replicated, such strategy may lead to intensified competition among platforms offering extended interaction packages.[55] However, successful expansions should by no means be taken for granted as they entail complex strategies that can backfire if not managed with calculated precision. The importance of choosing the correct strategy can be seen in the case of Yahoo and Google and their growth strategies in the early 2000's. Google's strategy focused on creating growth based on improving and expanding its existing products and services that propelled it to a market leader position. By contrast Yahoo's strategy was more dispersed and spread across many unrelated products and services that turned out to be too difficult to manage and coordinate.[56] Therefore, while platforms could in principle expand before securing a significant customer base with regard to their initial interaction, a premature expansion may bring about complications that put the success of the platform as a whole at risk.[57]

B. Expansion strategies – on platform vs. cross platform

In the process of expansion platforms have, generally speaking, two modalities according to which they can facilitate additional interactions to the one(s) they offered when launching; namely on-platform or cross platform expansion. In operational terms, the additional interactions a platform might adopt are the same ones with which it can launch, namely an interaction that facilitates unilateral matching or bi (or multi) lateral matching. On-platform expansion entails simply adding matching interactions or functionalities, which are incorporated directly into the interface of the online platform as found in the case of Booking.com, a site that has multiple tabs that give access to several bilateral matching interactions. By expanding in such a manner, the expansion is directly observable by the overlapping customer base of the interactions (consisting mostly of end consumers) upon access to the platform. Due to the bi or multilateral positive indirect network effects commonly exhibited by this type of matching interactions, a comparable expansion is capable of triggering a significant increase in customer volume and profitable interactions if managed adequately. Alternatively, the platform could choose to pursue an on-platform expansion of a unilateral matching functionality, for example: non-

55 Ibid, at 1277.

56 For more on this see V. P. Rindova, A. Yeow, L.L. Martins and S. Faraj 'Partnering portfolios, value! creation logics, and growth trajectories: A comparison of Yahoo and Google (1995 to 2007)' (2012) 6(2) Strategic Entrepreneurship Journal 133.

57 Sangeet Paul Choudary (2015) *supra* (n 46) at 260–309.

search display advertising. In this scenario the additional interaction will not generate an increase in the customer base volume but rather provide for a supplementary source of revenue generated from access to the existing customer base of the platform by a new customer group. For example, if Booking.com would start displaying non-search ads for suitcases, these ads could generate some additional revenue as all the members of the consumer side of Booking.com are likely to need to buy a suitcase at some point and are thus likely to click on such ads. However, adding this interaction will not bring more customers (consumers) to the platform since non-search ads exhibit generally positive indirect network effects only with respect to advertisers.[58] Therefore, a comparable expansion strategy will not constitute a very valuable strategy for strengthening the competitive position of the platform in the long run.

The second expansion modality that a platform has is cross-platform expansion with cross platform linkages. Accordingly, instead of adding a supplementary matching interaction on the platform, the expanding platform entity launches a separate platform for this purpose. In this scenario, the overlapping customer base of the two (or more) platforms serves as a hub between them, enabling the leveraging of the overlapping customer base from the initial platform across the new platform(s). Examples of this expansion strategy can be seen in the case of Uber, Google and Microsoft, which have multiple platforms linked to a single customer base (consisting of end consumers) by way of a universal sign-in account. Similar to on-platform expansion, the choice of expanding by way of a bi (or multi) lateral matching interaction may prove to be superior to expanding with a unilateral matching interaction. Due to the fact that the expansion occurs on a separate platform, adding a unilateral matching interaction does not provide the platform with an easy way to extract additional rents for accessing its existing customer base. In order to expand in such a manner the platform will have to design another service designed to attract one group of customers, such as providing news feeds, so as to extract rents from the other side of the platform consisting of advertisers that are interested in reaching these consumers. This essentially entails bringing the platform back to square one, namely back to the pursuit of critical mass. Consequently, such a strategy may constitute a rather costly plan for extracting additional revenues with limited capability in enhancing the intensity of indirect network effects across the customer groups participating in such a hub-and-spoke construction. Admittedly, platforms could also chose to expand by means of providing an additional single-sided product or service to one of its customer groups. However, since such a

58 See e.g. David. S. Evans, The Economics of the Online Advertising Industry (2008) 7(3) Review of Network Economics 359.

choice is less likely to constitute a competitive concern in the context of tying according to economic literature,[59] it falls outside the scope of this article.

In light of the above, it is primarily bi- or multi-lateral matching interactions that enable the leveraging of the platforms' customer base from one market to another, which may lead to some degree of foreclosure. This is due to the mutual positive indirect network effects displayed by such interactions that translate into increased participation by all of the platforms' customers groups following such type of expansion. By contrast, expansions through the adding of unilateral matching interactions will often not generate an increase in participation as such expansion does not inherently increase the value of the platform for all its customer groups. Therefore, in light of these differences in the foreclosure potential of these two types of interactions arising post expansion, the following sections address only the bundling or tying of bi- (or multi) lateral matching interactions.

In addition to the choice of interaction that is added by the platform, the choice between on-platform and cross-platform expansion also differs in terms of ability to enhance the intensity of indirect network effects across the various customer groups of the platform. An on-platform expansion is instantly visible to the platforms' participants directly propelling its existing customer base towards the added interaction. By contrast, cross-platform expansion is less visible for the existing customer bases of the platform and thus requires more action on its behalf to make customer base use its newly launched platform(s) in order to reach this same outcome. This difference does not necessarily mean, however, that cross-platform expansions are inferior to on-platforms ones as indirect network effects can also work in reverse when customer switch occurs.[60] Accordingly, the visibility of on-platform expansions may prove to be a disadvantage if the added interaction does not live up to customer expectations, while the reduced visibility of cross-platform expansions may provide more leeway to experiment with new services.[61] These differences between the expansion

59 Jay P Choi and Doh-Shin Jeon, 'A Leverage Theory of Tying in Two-sided Markets' (2016) CESIFO Working Paper No. 60073 at 4. This is particularly so if the single- sided tied product or service is positively priced. Furthermore, while the platform could chose to tie a single-sided and zero priced product or service to the platform, the costs for such an addition must be recouped from the already existing platform customers which may undermine the effectiveness of pricing scheme and level of the platform. Moreover, such a strategy would not likely make use of the growth potential of the indirect network effect at play therefore making it potentially less effective in extracting additional revenues and securing a stronger competitive position on the platform market.

60 Kalina S Staykova & Jan Damsgaard, Platform Expansion Design as Strategic Choice: The Case of WeChat and Kakaotalk (2016) Research Papers 78 (2016) https://aisel.aisnet.org/ecis2016_rp/78 (accessed 3 Sept. 2017); Andrei Hagiu (2007) *supra* (n 42).

61 Kalina S Staykova & Jan Damsgaard (2016) *supra* (n 60).

modalities will in turn also determine the selection of the interaction from a business perspective that can constitute a complementary, a weak substitute, or an unrelated service or product for the existing customer groups of the platform.[62] Finding the path of least resistance towards a successful expansion consequently entails finding the right combination between expansion modality, the type of matching interaction and the nature of such interaction from a business perspective. Once the decision to expand has been put into practice, leveraging the existing customer base of the platform from one interaction to another may require introducing various contractual or technical links between such interactions, which may qualify as tying and bundling under EU competition law.

C. *From expansion to tying and bundling – a progressive sequence of persuasion tactics*

Tying and bundling are common business practices that consist of the combined sale of two or more products or services. Such practices can be observed in almost any given industry and are usually considered beneficial by the companies employing them as well as their customers.[63] In practice, there are multiple forms of tying and bundling that can be distinguished; however, these can typically be divided into three types: tying, pure bundling and mixed bundling.[64]

Tying refers to a situation where the provision of a product or service (the tying product) by an undertaking requires obtaining a second, separate product or service (the tied product), from the same undertaking. The tied product in such a scenario can, however, be obtained as a stand-alone product.[65] The two products can be tied technically or contractually. Technical tying can occur for example when the tying product is physically attached to the tied product or designed to function correctly only in combination with the tied product and not with alternatives provided by competitors. Contractual tying occurs when the customer that purchases the tying product is bound by contractual obligations to also acquire the tied product.[66] Pure bundling refers to a situation wherein a series of products offered by an undertaking can only be purchased jointly in fixed proportions; the purchasing of individual products in such cases is not possible.[67]

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62 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2011) *supra* (n 8) at 1279-1282.

63 Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) 332–335;

64 Case T-210/01 *General Electric v Commission* [2005] ECLI:EU:T:2005:456, para. 406.

65 Communication from the Commission — 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), para. 48 (hereinafter referred to as The Commission's Guidance paper on Article 102 enforcement priorities).

66 Ibid.

67 Ibid.

Due to this similarity, the assessment of pure bundling is in practice not significantly different from that of tying.[68] To the extent that the difference between the two practices may lead to different legal outcomes an explicit distinction between the two will be made.

Finally, mixed bundling refers to a situation wherein each of the products offered by an undertaking can be obtained separately as well as in a bundle. When the products are purchased as a bundle the price of such a bundle is lower than the sum of all the products in the bundle if bought separately.[69] Accordingly, this strategy does not force customers to purchase multiple products at once from the same undertaking, but only incentivizes them to purchase the bundle by offering a better deal for the joint purchase.[70] That is not to say, however, that mixed bundling is always harmless. When the products offered as a mixed bundle are complementary and the bundle price savings are significant the outcome may be similar to tying thus equally justifying legal scrutiny.[71] When considering the actions that platforms must take in order to make their expansion attempts successful it is not hard to see how some of these actions may match some of these descriptions.

The successful deployment of a platform expansion strategy requires leveraging a customer group (composed primarily of end consumers) from one interaction to another, which would entail multiple contractual and technical tactics that differ in their degree of interference with customer choice. The more coercive these tactics are, the more they will resemble the effect that tying and bundling practices have on consumer behavior and thus the more likely to trigger competition law scrutiny.

Platforms pursuing on-platform expansions can, in the most extreme case, make the use of one interaction on the platform conditional upon using another interaction. For example, this would be the case if consumers wishing to book a room on Expedia would also be obliged to obtain their flight through the site. This would maximize the degree of leveraging from one interaction to another; however, if switching costs are low, this strategy would risk the reversal of the network effects when competing standalone platforms offer these separate interactions.

68 Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) 439.

69 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 48.

70 Barry Naleuff, 'Exclusionary bundling' (2005) 50(3) The Antitrust Bulletin 321.

71 Barry Nalebuff, 'Bundling, Tying and Portfolio Effect' (2003) DTI Economics Paper No.1 Part 1. <http://faculty.som.yale.edu/barrynalebuff/BundlingTyingPortfolio_Conceptual_DTI2003.pdf>accessed 10 April 2018. However, due to the extremely limited case law concerning this category its will not be explored further in the scope of this contribution.

A more subtle approach would entail a configuration where the use of one interaction triggers the functioning of a separate interaction without the request of the customer but does not impose a duty on the customer to use it. For example, a consumer booking a hotel room on Expedia could also be presented with price comparisons for flights or rental cars for the same dates without making that request. Such unsolicited triggering of interactions can also be accompanied by repetitive nudging, pushing the consumer towards actively making use of such additional interactions. Practices such as these entail a *de facto* form of tying or bundling as they introduce a conditionality aspect to the choices made by customers with regard to using one or more of the platforms' interactions. Furthermore, when the interactions constitute sales channels, thus enabling some form of monetary transactions like in the case of Expedia, price reductions for the bundled use of two (or more) interactions may also be offered and combined with nudging and the unsolicited triggering of interactions. Although these latter actions do not impose direct restrictions on the customers' freedom of choice, they can have a significant influence on their choices.[72] Of course when the monetary incentives for the bundled purchase are significant such actions can entail a form of mixed bundling, which may have a similar coercive effect as tying and (pure) bundling.[73] It is worth noting that on-platform customer leveraging strategies are not necessarily limited to end-consumers but can also be applied to other platform customer groups. This can observed for example in the case of Amazon Italy where Amazon (allegedly) gives preferential treatment on the Amazon Marketplace to sellers that make use of Amazon's logistic services. By doing so, Amazon is able to enter the logistic market where it may compete with undertakings such as UPS, FedEx or DHL and capture some of the fees often incurred for the delivery services often provided by these parties by buyers and sellers on Amazon Marketplace.[74]

Platforms pursuing cross-platform expansions can undertake relatively similar steps when attempting to leverage their customer base across two (or more) platforms. The most restrictive approach in this scenario would be making use of one platform conditional upon the usage of another platform owned by the same commercial entity. This strategy was applied to a great degree in the early days of EBay where all its customers (buyers and sellers) had to make use of PayPal when conducting transactions via

72 See e.g. Christoph Schneider, Markus Weinmann and Jan vom Brocke, 'Digital Nudging–Guiding Choices by Using Interface Design' (2018) Communications of the ACM, 61(7), 67-73< https://ssrn.com/abstract=3052192> accessed 15 Dec. 2018.

73 See e.g. Barry Naleuff, 'Exclusionary bundling' (2005) *supra* (n 70).

74 See Elizabeth Schulze, 'Amazon faces probe from Italy's antitrust authority over abuse of market position' (16 Apr. 2019, CNBC) https://www.cnbc.com/2019/04/16/amazon-faces-probe-from-italys-antitrust-authority-over-abuse-of-market-position.html> accessed 10 Jan 2020.

the platform.[75] As mentioned above, this strategy can be very effective for customer leveraging, however, it can simultaneously be risky when competing platforms offer similar services without such restrictions on customer behavior and switching costs are low. For this reason, in cases where accumulation of more data is the main deriver of the expansion strategy, the obligation concerning the parallel use or participation on separate platforms may be subtler and limited to an obligation to share data across platforms.[76] This can be observed in the links between Facebook and Instagram,[77] as well as between many of Google's services and products.[78] Although such strategy can be considered rather aggressive from a functional point of view, the complexity of privacy policy often blurs out the implications of such data sharing obligations, making it less likely that consumers will switch to other platforms when faced with such obligations. A less coercive tactic for leveraging customers from one platform to another would be requiring the members of their overlapping customer base to set up a cross-platform customer account that automatically creates a customer profile on both platforms. However, the creation of such a cross platform customer profile does not have to come with an obligation to use all of the platforms connected to the profile. This strategy can be seen in the case of Google where using an Android smartphone, Google PlayStore, Google+ or YouTube requires having a Google account and once the account is made, the user profile exists on all such platforms. The cross-platform profile can also be combined with some form of nudging through reminding customers of the other services offered across the interconnected platforms and to the extent that such platforms help facilitate transactions, monetary incentives can also be offered. This latter option can be observed in the case of Uber and Uber Eats, which share the same consumer account sign-in and in which consumers are often provided monetary incentives to increase participation on both platforms. These actions, while varying in their degree of interfering with customer choice, may meet the descriptions of tying and bundling due to the conditionality they introduce to share data across platforms and / or have cross platform accounts.

75 Buyers and Sellers are no longer obliged to make use of PayPal as an exclusive means of transaction however buyers must still sign up to PayPal before being able to make their first transaction on EBay even when they choose to use other means of payment. See PayPal policy at: https://www.paypal.com/ws/smarthelp/article/do-i-need-a-paypal-account-to-pay-for-an-ebay-item-faq427 (accessed 5 September 2018).

76 See e.g. Daniele Condorelli and Jorge Padilla, ' Harnessing platform envelopment in the digital world' (2020) 16(2) Journal of Competition Law & Economics 143.

77 See Instagram's Privacy Policy online at <https://help.instagram.com/519522125107875> accessed 10 Apr 2020.

78 See Google's Privacy policy online at < https://policies.google.com/privacy?hl=en-US> accessed 10 Apr 2020.

In light of these circumstances, it can be said that the leveraging strategies with regard to on-platform and cross-platform expansions are comparable in their effect and aim of getting customers to single-home. Despite the interference with customer choice, in practice, the abovementioned practices are often perceived (by consumers) in a positive manner. This is in itself not surprising as such actions often reduce search and transaction costs and thus offer similar efficiencies to those identified in the context of tying and bundling practices without additional fees. Nevertheless, this common perception does not neutralize the harmful potential of such strategies. The successful deployment of the above mentioned expansion strategies by dominant platforms can enable the leveraging of customers and thus market power across various markets, which may give rise to the competitive concerns identified with respect to tying and bundling.

4.3 The anti-competitive concerns of tying and bundling

Tying and bundling practices are quite common in most industries. Nevertheless, despite their popularity the potential drawbacks that these practices can generate have raised some doubts with regard to their legality under EU competition law on several occasions. The main concern with the use of tying and bundling is that such practices are targeted at limiting the freedom of buyers to make their own choices and consequently interfering with competition on the merits.[79] Throughout the years, the multiple studies of tying and bundling that explored the anti-competitive potential of these practices have contributed greatly to the shaping and application of the current legal framework that regulates such practices.

4.3.1 Tying and bundling in traditional (single-sided) markets

The skeptical approach to tying and bundling practices in competition law originates from the leveraging theory that considered tying and bundling practices to be *per se* detrimental to competition. According to the leveraging theory, a monopolist in the market of tying product A has the ability and incentive to obtain a monopoly in the market of the tied product B if it makes the buying of product A conditional on also buying product B. By pursuing this strategy the monopolist would be able to obtain monopoly prices in market A as well as in market B. The undesired effects in such a scenario are twofold, namely; buyers are forced to buy a product they do not desire, for a monopoly price, and the monopolist gains an undeserved

79 Competition on the merits refers to competition on parameters such as price, choice, quality or innovation rather than a through means that are only made possible due to significant market power. See further discussion in OECD 'Competition on the merits' (2006) DAF/COMP(2005)27.

advantage over its competitors in the tied product market. At the time the leverage theory was at its prime, the main drive behind the opposition to tying practices was the former concern, namely the extraction of monopoly prices in both tying and tied product markets.[80]

The leverage theory on tying was, however, disproved by the Chicago School, which successfully identified a logical flaw in this theory. According to the Chicago School, the monopolist in market A has no incentive to attempt to monopolize an otherwise competitive market B because it could never extract monopoly prices in both markets.[81] According to the Chicago School, attempting to monopolize market B would likely lead to a loss of profits in the already monopolized market A. By attempting to extract monopoly prices for product B (tied product) the monopolist will lose sales of product B to competitors which in turn will also lead to a loss in sales of product A (tying product). Instead of monopolizing the market for product B, the monopolist would in fact gain more by keeping the market competitive. A competitive market would enable an increase in the purchasing of product B which in turn would also lead to an increase in the sales of the already monopolized product A.[82]

This critique has become known as the 'single monopoly profit theorem', which had significant policy implications. According to the proponents of this theory, tying could be used as a vehicle for efficient price discrimination as well as in the reduction of production, distribution and transaction costs.[83] Furthermore, tying could reduce search cost and ensure product quality.[84] By providing a strong alternative argument for tying practices indicating their potential to create multiple kinds of efficiencies, the Chicago School succeeded in changing the manner in which tying practices were perceived and advocated in favor of a *per se* legality approach in such cases.[85] Despite the better economic understanding of tying practices by the Chicago School, the single monopoly profit theorem was not without flaw. The main problem of the theorem was that it only applied under rather

80 See e.g. Ward S. Jr. Bowman, 'Tying Arrangements and the Leverage Problem' (1957) 67(19) Yale Law Journal 19.

81 See e.g. Robert H. Bork, *The Antitrust Paradox*, (New York, Basic Books, 1978) 378-379.

82 Richard A. Posner, *Antitrust Law: An Economic Perspective* (University of Chicago Press, Chicago, 1976) 170-173.

83 Robert H. Bork (1978) *supra* (n. 81) at 376-379, 390-398.

84 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 5) at. 600-602; In practice, however, these arguments have been dismissed in the context of EU competition law cases, see e.g. Case T-30/89 *Hilti AG v Commission* [1991] ECLI:EU:T:1991:70 where quality and safety improvements were not considered sufficiently beneficial to overcome the anti competitive potential of such practices.

85 Christian Ahlborn, David S. Evans and Jorge A. Padilla, 'The Antitrust Economics of Tying: a Farewell to Per Se Illegality', (2004) 49(1) Antitrust Bulletin 287; Jarkko Vuorinen, 'Better together: the Evolution of tying theory and Doctrine in EU competition Law and US Antitrust Law' (2015) 1(1) Nordic Journal of Commercial Law 1, 10-11.

simple and restricted circumstances in which the tying and tied products were sold in fixed proportions and the tied market, where network effects and scale economies play no role, was perfectly competitive. Markets and tying practices are, however, unlikely to always fulfill these exact conditions in practice, thus making the theorem unsuitable as a guideline for enforcement purposes in all tying cases.[86]

Indeed, since the development of the single monopoly theorem multiple studies of tying have been undertaken that contributed to the formulation of various potential theories of harm. It was found that once the assumptions of the Chicago theorem are relaxed, the risk of leveraging for the purpose of foreclosure could become quite realistic.[87] Accordingly, if the monopolist in market A has also significant market power in market B, where competition is imperfect and scale economies and network effects matter,[88] the monopolist may have the incentive to adopt a foreclosure targeted tying or bundling practice. By adopting tying or bundling strategies under such circumstances, the concerned undertaking can prevent its competitors from reaching efficient scale in the tied product market and thus eventually forcing them out of this market.[89] These findings, which constituted the result of Whinston's seminal work, were equally dependent on a rather specific set of assumptions.[90] Reaching Whinston's conclusions requires that the dominant undertaking or monopolist is able to commit to tying so as to force competitors out of the market or at least reduce their output significantly.[91] Moreover, the success of such strategy also depends on whether the price valuations of the customers are heterogeneous or homogeneous and whether the products in each case are complements. Changes in each of these aspects could render the use of tying unprofitable. [92]

In addition to leveraging and possible foreclosure in the tied product market, more recent work on tying by Carlton and Waldman has shown that such strategies can also be deployed to exclude competitors from the

86 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 5) at. 604; Gunnar Niels, Helen Jenkins and James Kavanagh, *Economics for Competition Lawyers* (2nd Ed, Oxford press publishing, 2016) 210-211.

87 Barak D. Richman and Steven W. Usselman 'Elhauge on Tying: Vindicated by History' (2014) 49(3) Tulsa Law Review 689.

88 Imperfect competition occurs for example when prices on the market are not set by demand and supply, there is an information asymmetry between buyers and sellers, barriers to enter are high, the accumulation of significant market power is possible.

89 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 86) at 210-211.

90 Michael D. Whinston, 'Tying, Foreclosure and Exclusion' (1990) 80(4) The American Economic Review 837.

91 Ibid, at 839-840.

92 Ibid, at 840, 846-855. For example, when the price valuations of the customers are heterogeneous, commitment to tying may no longer be profitable while tying in the absence of commitment to such strategy my in turn become profitable.

tying product market.[93] Where products A and B are complementary and market entry is characterized by network effects or significant costs, the monopolist in product market A has the incentive to tie the two products together to prevent future competition on both markets. The rationale is that by tying products A and B together the monopolist sacrifices certain profits in order to deny competitors sufficient scale in the tied product market which will prevent such competitors to ever enter the market of product A.[94] Similarly, the monopolist can use this strategy to reduce the profitability and thus the emergence of a product C, which would constitute a cheaper alternative to the A-B complementary products combination. By tying product A and B together, the producer of product C is deterred from entering the market it would otherwise monopolize in the absence of the tie.[95] The undesired effects of such strategies concern long-term dynamic efficiency, namely the exclusion of equally efficient competitors through the tying of perhaps outdated and obsolete products by a monopolist or incumbent. Similarly, Choi and Stefanidis show that in industries where R&D costs are high and investment is risky, an incumbent undertaking with monopoly market power in the markets of the complementary products A and B has the incentive to tie them. By doing so, any new entrants will equally be required to enter both markets as well, thus the strategy will drive up the entry costs significantly when both markets are associated with risky and intense innovation. By raising entry costs and the stakes for successful innovation, the monopolist is capable of deterring its competitors from investing in innovation and thus preventing them from entering either markets.[96]

4.3.2 Tying and bundling in two-sided markets

Although the aforementioned studies and models can be applied to cases concerning platforms to a certain extent, these studies were not developed in a manner that incorporates the two-or multi sided nature of platforms.[97] Therefore, the suitability of such corresponding economic models may not always be guaranteed in the case of platforms. Nonetheless, the theories of harm developed by these previous studies have been tested in more recent studies specifically focused on two-sided markets so as to determine

93 Dennis W. Carlton and Micheal Waldman,' The strategic use of tying to preserve and create market power in evolving industries' (2002) 33(2) RAND Journal of Economics 194.

94 Ibid, at 196-212.

95 Ibid, at 196-197, 212-215.

96 Jay P Choi and Christodoulos Stefanidis, 'Tying, Investment and the Dynamic Leverage Theory' (2001) 32(1) The RAND Journal of Economics 52. In their paper the authors also use the logic behind their model to explain how this could also apply to the Microsoft tying case that was ongoing at the time.

97 Frederico Etro and Cristina Caffarra,'On the economics of the Android case' (2017) 13(2-3) European Competition Journal 282, 290-292.

whether tying can be used to extract supra-competitive profits, foreclose competitors or deter market entry in such contexts.[98] These studies on two-sided markets have shown that under certain circumstances, tying can indeed also serve as an anti-competitive strategy with similar outcomes as in the case of single-sided markets.

The concern that tying could be used as a leveraging tool for achieving ultra-competitive profits has also been confirmed in the context of two-sided platforms. According to Amelio and Jullien, a monopolistic platform that is constrained from offering negative prices to customers on side A of the platform (that are extremely price sensitive) can use tying the of zero-priced goods or services in order to circumvent the pricing limitation and increase customer participation on that side of the platform. Based on the assumption that indirect network effects are positive, by increasing participation on side A, the platform can subsequently extract higher prices from the platform customers on side B of the platform that value such increased participation by the former customers on side A of the platform.[99]

The idea of this strategy is to solve the coordination problem of bringing and keeping the customers on all sides of the platform on board,[100] a dilemma that all platforms face in the course of their existence and must constantly overcome to remain viable.[101] The profitability of such tying strategy depends on the balance between the additional profits that can be extracted from the customers on side B and the cost of increased participation by the customers on side A of the platform. The model behind this theory of harm entails that multiple specific assumptions and strict conditions are met in the context of a monopolistic and duopolistic two-sided market.[102] Furthermore, the possibility to employ tying for the purpose of foreclosure has been shown to work in similar circumstances in a more recent study by Choi and Jeon.[103] Accordingly, it was shown that where the

98 See e.g. Andrea Amelio and Bruno Jullien, 'Tying and Freebies in Two-Sided Markets' (2012) 30(5) International Journal of Industrial Organization 436; Jay P Choi and Doh-Shin Jeon (2016) *supra* (n 59).

99 Andrea Amelio and Bruno Jullien, (2012) *supra* (n 98) at 436-437; In the case of Booking.com, the current set of booking services offered to consumers is of greater value than the initial version of Booking.com which included only the option of hotel room booking. By increasing the value offered to consumers Booking.com is able to better attract more consumer to the platform and allow it to charge higher commissions from hotels since the increases participation of consumers means Booking.com is a more valuable trading partners for such hotels.

100 Ibid.

101 Caillaud, B. and B. Jullien, 'Chicken & Egg: Competition Among Intermediation Service Providers. (2003) 34(2) RAND Journal of Economics 309; Mark Armstrong' Competition in two-sided market', (2006) 37(3) RAND Journal of Economics 668.

102 Andrea Amelio and Bruno Jullien (2012) *supra* (n 98) at 436-437.

103 Jay P Choi and Doh-Shin Jeon (2016) *supra* (n 59).

platform and its competitors are constrained from competing on negative prices for the tied good, tying not only helps extract additional profits from the other side of the platform, but may also deter entrance or foreclose competitors on the tied product market.[104]

When all platforms are equally constrained from offering negative prices, meaning the lowest price for participation on the platform is zero, tying allows the concerned undertaking to circumvent this constraint. By tying the two platform services or products for no added fee the concerned undertaking is able provide the customers on that customer side of the platform a better offer for the price of zero and compete away a (more efficient) competitor on the tied market that cannot offer such a deal. The effects and profitability of the tying strategies are, however, dependent on the degree of two-sidedness of the tying and tied product markets. Accordingly, when both tied and tying markets are two-sided, the tying strategy might be profitable whereas tying might not be profitable when the tying market is two-sided and the tied market is (almost) single sided.[105] Moreover, when there is no negative price constraint for the platform, the single monopoly profit theory can also apply in the case of platforms as in the case of single-sided undertakings.[106]

In light of the above, it can be argued that tying and bundling can pose similar anti-competitive concerns in both traditional single-sided market conditions as well as in the case of two- or multi sided platforms. The two-sided nature of platforms and their common use of zero-pricing does not appear to preclude the possibility of anti-competitive effects and thus cannot offer immunity from competition law liability contrary to what has often been claimed in the past.[107] The economic literature on tying in two-sided markets does in fact indicate that the opposite is true. It is precisely the combination of the two-sided character of platforms and industry-wide use of zero pricing which can make tying and bundling practices profitable and effective for extracting supra-competitive prices and eliminating competition. Admittedly, while this is a predominant combination of attributes in the case of online platforms, the above-mentioned theories of harm

104 Ibid, at 1-2.

105 Ibid, at 4. Tying a two-sided platform to another platform on the consumer side entails that such consumer participates on both platforms for free thus tying can potentially increase participation of such consumers on both platforms. However tying a two-sided platform to a single sided service or product that is positively priced for the same consumers may lead to a loss when sufficient consumers have a low valuation for the respective product or service. In such cases consumers may purchase the tied good from a competitor for a better price and skip on participation on the tying two-sided platform leading to losses on both fronts for the concerned undertaking.

106 Ibid, at 3.

107 David S Evans, 'The Antitrust Economics of Free' (2011) 7(1) Competition Policy International 78-81.

for two-sided markets are based on economic models that entail multiple assumptions and conditions, which may not always reflect the daily business reality of (online) platforms.[108] Therefore, the insights resulting from these models and theories of harm are by no means sufficient to advocate in favor of a more rigorous approach to tying and even less so for a *per se* approach when dealing with platforms. Instead, the insights stemming from economic literature provide the basis for the reason that tying and bundling in the case of platforms should be scrutinized with the same diligence as in cases concerning single-sided markets. Accordingly, inquiries into tying and bundling practices by (online) platforms should be absent of any *per se* type of presumption concerning their lawful or unlawful nature.[109]

Understanding that tying and bundling can be used for anti-competitive purposes in the case of two-sided markets is, however, only the first step in the long journey towards adequate enforcement in the case of online platforms. Applying the current legal framework to tying and bundling practices adopted by online platforms also requires understanding and correctly identifying their use. The economic literature on tying in two-sided markets is focused entirely on the effects of tying in a context where tying practices are a given fact or are presupposed to be easily identifiable. In practice, however, the existence of tying practices from a legal perspective cannot be simply assumed and is often disputed throughout the enforcement process in various manners.[110] This reality will not only persist but also become more intricate when dealing with online platforms where tying practices involve technical functionalities that are often seamlessly integrated with each other.[111] Applying the current framework of Art. 102 TFEU to the above-mentioned on-platform and cross-platform expansion strategies reveals the challenges involved in the enforcement process and the adaptions needed to make this process feasible and adequate for online platforms.

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108 For example Coursera has both freemium and premium membership options for consumers wishing to follow of the courses posted on the platform while Airbnb and Deliveroo have a shared cost business model where both sides of the platform pay for the services offered on the platform. Accordingly the pricing structure of platforms in practice may be different than the price structure envisaged by the economic literature on tying in two-sided markets.

109 Renato Nazzini, 'The Evolution of the Law and Policy on Tying: A European Perspective From Classic Leveraging to the Challenges of Online Platforms' (2016) 26 Journal of Transnational Law and Policy; King's College London Law School Research Paper No. 2018-04 < https://ssrn.com/abstract=3112557> accessed 17 June 2020.

110 See e.g. in the case of Microsoft the argument was that providing the media player together with the Windows operating system should not be treated as tying as these were not separate products nor was there any element of coercion since the media player was provided to consumers for free without any obligation to use it. See *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, paraa. 404-405, 830.

111 Kalina S Staykova & Jan Damsgaard (2016) *supra* (n 60).

4.4 Tying and bundling under Article 102 TFEU

The abuse of dominance through tying and bundling practices is listed in Article 102 (d) TFEU. The application of this provision in practice has, however, led to quite a few debates as the approach of the Commission and EU Courts was considered too formalistic.[112] The early cases of *Hilti* and *Tetra Pak* concerning tying practices focused on establishing dominance with regard to the concerned undertaking, identifying the existence of two separate products offered jointly to customers in a manner which exhibited some element of coercion.[113] The potential foreclosure effect of tying and bundling practices was assumed to exist once these elements were proven.[114] Furthermore, the possibility to raise objective justifications for such strategies claiming the creation of various kinds of efficiencies proved to be more theoretical than practical, as these were categorically dismissed. Consequently, the Commission and EU courts were strongly criticized for adopting a *per se* formalistic approach to these types of abuses that ignored the pro-competitive and efficiency generating potential of tying and bundling.[115] This seemingly formalistic *per se* approach was abandoned in the Microsoft case where the Commission specifically treated the presence of foreclosure effect as one of the cumulative criteria for finding an abuse.[116] In the appeal procedure of Microsoft, the General Court confirmed this effects-based approach of the Commission,[117] which was at the time in the process of being fully incorporated into its policy papers.[118]

Following these developments, the legal test for finding an abuse based on the legal qualification of tying or bundling practices requires proof with regard to the following aspects: (i) the concerned undertaking must have a dominant position in the tying market or the market of one of the bundled

112 See e.g. Christian Ahlborn, David S. Evans and Jorge A. Padilla (2004) *supra* (n 85); David S. Evans, Jorge A. Padilla and Michel Slinger, 'A pragmatic approach to identifying and analyzing Legitimate Tying cases', in C. D. Ehlermann and I. Atanasiu (eds.) *European Competition Law Annual 2003: What is an Abuse of a Dominant Position?* (Hart Publishing, 2006) at 556-558.

113 *Eurofix –Bauco v. Hilti* (Case IV/30.787 and 31.488) Commission decision of 22 Dec. 1987 OJ 1988 L61/19, paras. 70-75; *Tetra Pak II* (Case IV/31043) Commission decision of 24 Jul. 1991, paras. 99-120, 143-151.

114 This approach was also noticed by EU courts and mentioned specifically by the GC in the Microsoft case, see Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 1009, 1035.

115 See e.g. Barry Nalebuff (2003) *supra* (n 71) at 16-20.

116 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, para. 794.

117 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 859-868, 1031-1035.

118 DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, Brussels, December 2005, para. 182-206; The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65), paras. 47-62.

products, (ii) the undertaking must be tying or bundling two separate products (iii) customers are coerced into obtaining the tied and tying products or the bundled products together (iv) the tie has a foreclosure effect and (v) there is no objective justification for the practice.[119] The test appears quite straightforward but when applied to the above mentioned on-platform and cross-platforms expansion strategies difficulties arise with respect to each of these steps due to the technical complexity of such strategies and the two (or multi) sided nature of online platforms.

4.4.1 Dominant position

In order for tying and bundling practices to fall under Art. 102 TFEU, the concerned undertaking must be dominant on the tying product market or on one of the bundled product markets.[120] Establishing dominance in such cases is no different than in any other abuse of dominance case and follows the process described in the Commission guidance on the definition of the relevant market.[121] Despite the existing experience of the Commission and EU courts with the definition of the relevant market, it is evident that this aspect of the legal analysis will be challenging in practice due to the two (or multi) sided nature of online platforms.[122] The difficulty with regard to this stage of the assessment is twofold.

First, one must decide with respect to which platform or interaction the proof of dominance is required. In the case of tying, dominance needs to be determined with regard to the tying platform or interaction, whereas as in the case of pure bundling, dominance can be established with regard to any of the platforms or interactions bundled. Therefore, when dealing with cross-platform expansions, establishing dominance would entail determining whether a specific platform is dominant. This was the situation in the Microsoft case as well as in the more recent Google Android

119 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 850-869; *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 741- 751; Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) at 440-450; David Bailey and Laura Elizabeth John (eds.), *Bellamy and Child: European Union Law of Competition*, 8th edn (OUP, 2018) at 948-951.

120 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 50.

121 Commission Notice on the definition of the relevant market for the purposes of Community competition law [1997] Official Journal C 372/5.

122 See e.g. Daniel Mandrescu (2018) *supra* (n 27); David S. Evans and Richard Schmalensee, (2007), *supra* (n 48) at 173-175.

case.[123] When dealing with on-platform expansions, establishing dominance requires establishing whether the platform possesses a dominant position with respect to one of in the interactions it facilitates. Although it was not a tying and bundling case strictly speaking, this can be seen in the recent Google Shopping case where separate relevant markets for Google's general search and Google's shopping search were defined.[124] Choosing the specific platform or interaction in each case depends furthermore on the nature of the customer leveraging relation between the concerned platforms or interactions in each case, namely whether such relation is reciprocal. If the leveraging across platforms or interactions is reciprocal, dominance can be assessed with regard to either interactions or platforms because such a relation may indicate the existence of (pure) bundling practices.

When the leveraging relation is not reciprocal, however, dominance will have to be determined with regard to the platform or interaction that triggers the element of leveraging as it may prove to constitute a form of tying. In either case, dominance would need to be established with regard to the customer group of the platform subjected to the leveraging strategy that may constitute abusive tying or bundling practices. Accordingly, dominance would need to be established with respect to the consumer group that is coerced into participating or sharing data on more than one platform or activating two or more functionalities on a platform. This approach can be seen in the Microsoft and Google Android cases where dominance was established from the perspective of the OEM's which were subject to the tying practices of Microsoft and Google.[125]

Second, once the platform or interaction with regard to which dominance must be established has been identified, the next step requires deciding

123 In the case of Microsoft, dominance was established with regard to its position on the market for operating systems and the tying was established with regard to the Windows Media Player. See *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004 paras. 403, 428-472, 800-813; In the case of Google, dominance was established with regard to its mobile operating system, general internet search services and app store while tying was established with regard to the Chrome web browser and the Google search app, see *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 439-727.

124 See *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, paras. 154, 191- 250, 271-330.

125 In the case of Microsoft OEM's were wanted to install Windows OS on the PS's they produced had to also pre-install Windows Media Player and Internet Explorer, See *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004 paras. 302-314; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 870; *Microsoft (tying)* (Case COMP/C-3/39.530) Commission decision of 16 Dec. 2009, paras. 24-38. In the case of Google OEM's were interested in pre-installing the Google Play Store on the Android smartphones they produced were required to also pre-install the Google Search app and the Google Chrome app, See *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 752-992.

how to define the relevant market for such platform or interaction. In both on-platform and cross-platform scenarios the relevant market will need to be defined with respect to a two (or multi) sided market. Consequently, one must first decide how many markets must be defined with regard to such a platform or interaction.[126] After this matter is resolved a market power assessment for the purpose of establishing dominance can be undertaken. This latter problem concerning the market definition is, however, inherent in any instance where defining the relevant market is required in the case of platforms and therefore will not be addressed within the scope of this contribution.[127]

4.4.2 Separate products

The requirement of demonstrating that separate products have been tied or bundled is aimed to make a distinction between cases where the joint provision of multiple products is appropriate and thus welfare enhancing, and cases where such offers may be detrimental to competition.[128] Proving that the concerned products are distinct can be done based on the combination of direct and indirect evidence of independent demand for untied or unbundled offers.[129] According to the Commission's guidelines, customer demand constitutes the decisive element for establishing that products are distinct in tying and bundling cases. The proof of separate customer demand needs to be delivered with regard to the same level of the supply chain where the investigated tying or bundling practices are implemented.[130]

Products will be considered distinct if there is proof that in the absence of the tie, a substantial number of consumers would acquire the tying product without the tied product or one of the bundle products from the same supplier.[131] Such proof can be accompanied by direct evidence that, when given a choice, customers obtain the two products from different suppliers,

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126 For a general discussion on the definition of the relevant market in platform markets see Lapo Filistrucchi, Damien Geradin, Eric van Damme and Pauline Affeldt, 'Market Definition in Two-Sided Markets: Theory and Practice' (2014) 10(2) Journal of Competition Law & Economics 293; Sebastian Wismer and Arno Rasek, 'Market Definition in Multi-Sided Markets', OECD (2018) Rethinking Antitrust Tools for Multi-Sided Platforms, 57; Vikas Kathuria, 'Platform competition and market definition in the US Amex case: lessons for economics and law' (2019) 15(2-3) European Competition Journal 254. For an extensive discussion on this matter specifically in the case of online platforms see Daniel Mandrescu (2018) *supra* (n 27); Bundeskartellamt, Working Paper – The Market Power of Platforms and Networks, Ref. B6-113/15, June 2016

127 Ibid.

128 David Bailey and Laura Elizabeth John (eds.), *Bellamy and Child: European Union Law of Competition*, 8th edn (OUP, 2018) at 948-949.

129 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 51.

130 Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) at 442.

131 Ibid.

as well as by indirect evidence that various (competing) suppliers offer such products separately or produce solely the tied product or one or the bundle products.[132] Furthermore, the commercial usage and common practices can also be relevant for the purpose of this analysis depending on the circumstances of the case. This combination of evidentiary sources can be observed throughout the decision making practice of the Commission that has been confirmed by the EU courts in past tying and bundling cases.[133] In an ideal situation, the competition authority investigating the allegedly abusive practices is also capable of producing evidence indicating whether independent demand exists also for the tying product. Strictly speaking, such kind of evidence is not necessary according to current practice,[134]however, producing it would make the case much stronger.

Translating these settings to the previously discussed leveraging strategies of online platforms entails the following. When dealing with cross-platform leveraging, the distinct product test means that one must establish whether two (or more) interlinked platforms constitute separate products. Generally speaking, reaching the conclusion that interlinked platforms constitute separate products should not be any more difficult than what has been seen in the Microsoft cases which also involved platforms, namely the Media Player and web browser that were provided together with Windows OS. Going back to the previous examples of Uber and Uber Eats, EBay and PayPal, YouTube and Google+ it is quite evident that such platforms constitute separate products according to criteria of current practice. These can be considered different products, as there is no necessity for all these services to be offered together due to their nature or based on their commercial usage.[135] In fact, on handheld devices all of these platforms can only be used via separate applications.[136] Thus, there is some form of evidence from the commercial practice of the platforms themselves to support the finding that such platforms constitute separate products. Furthermore, almost every platform will have some close competitors offering similar services on a standalone basis.[137]

132 Ibid.

133 For a short overview see Robert O'Donghue and Jorge Padilla (2013) *supra* (n 5) at 616-623.

134 See Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 919-923.

135 Consider the link made by the account between Google Docs, YouTube, and Google Calendar.

136 However as it has been claimed by the Commission in its investigation into Google's practices in the context of Android OS, these separate applications are often pre-installed by the OEMs. Similar yet more complex constructions can be seen at LinkedIn and Facebook where desktop functionalities are separated for handheld devices.

137 E.g. YouTube competes with Vimeo, Google+ has Facebook as one of its main competitors, Uber competes with Lyft and Cabify with respect to transport services and Deliveroo and Foodora for food delivery services.

Perhaps one of the only cases where competing platform ecosystems can be seen is that of the major players in the search engine market that offer quite comparable interfaces in terms of components.[138] However, the mere fact that a handful companies are capable of offering extensive ecosystems consisting of multiple platforms and single-sided products, interlinked through a single user account, is not sufficient to consider such ecosystems as one product.[139] Quite the contrary, given the fact that such companies are often the dominant ones in their respective territorial markets indicates that the ability to offer such ecosystems is only possible for undertakings with significant market power.[140] Such circumstances in combination with a wide variety of standalone competitors indicating evidence of supply-side availability will likely prevent separate platforms from being considered as a single product for the foreseeable future.[141]

When dealing with on-platform leveraging, however, the distinct-products test will require determining whether the various matchmaking interactions facilitated by the platform constitute separate products. Strictly speaking, finding that two interactions are separate may occur if the concerned platform launched with a single interaction and then introduced a second one that is also offered by standalone platforms.[142] Reaching such a conclusion would be compatible with the current practice of tying and bundling cases in principle. The interactions will often serve different yet related purposes, which have been offered by the platform and its competitors on a stand-alone basis and thus the technical integration in such cases will not likely be indispensable.[143] Accordingly, until the joint supply of interactions becomes the common commercial practice of all or at least a significant number of non-dominant competitors of the concerned undertaking, such interactions could be considered to be separate products.[144] In practice, establishing the existence of separate products in such cases requires a balanced approach that evaluates existing market conditions in a forward-looking manner so as

138 In this respect Microsoft, Yandex, Google, Baidu and Tencent offer comparable functionalities with respect to search services, navigation maps, email, photo and video search as well as some social media functionalities presented primarily as one interface.

139 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 938-942; *Rio Tinto Alcan* (Case COMP/39230) Commission decision of 20 Dec. 2012, para. 64.

140 Ibid.

141 Ibid; see also *Case T-30/89 Hilti AG v Commission* [1991] ECLI:EU:T:1991:70, para. 67.

142 E.g. Booking.com launched with a room booking functionality and recently added a flight search functionality that is also offered on a stand-alone basis by Skyscanner.com.

143 Such a situation would be analogous to the findings in Microsoft where the Explorer web browser and Media Player were considered as complements to the Windows OS however they did not constitute a single product together.

144 *Rio Tinto Alcan* (Case COMP/39230) Commission decision of 20 Dec. 2012, para. 64.

not reach conclusions that quickly become outdated and may even hamper the evolution of products and services.[145]

4.4.3 Coercion

The offering of separate products by a dominant undertaking, if established, must also entail an element of coercion that limits customer choice and allows for the leveraging of market power from one product market to another.[146] In the absence of coercion there would be nothing preventing competitors from persuading the customers of the dominant undertaking to switch and thus engage in competition on the merits. Coercion is, however, a difficult concept to apply uniformly as it may manifest itself in multiple forms and degrees. The strictest form of coercion with regard to customer choice is in essence the explicit obligation to obtain the respective separate products jointly from the concerned undertaking. Such obligation can be imposed on the customer through contractual terms, technical means or a combination of the two.[147] This would evidently also be the case in circumstances where customers wishing to make use of one platform or a specific interaction on a platform can only do so if they make use of another platform or interaction provided by the concerned undertaking. Furthermore, the obligation imposing joint acquisition can also be replaced by pricing schemes, unfavorable contractual conditions and poor technical compatibility that may *de facto* eliminate any potential incentive competitors can offer customers to deviate from such joint acquisitions.[148] In the case of online platforms, this could be the case if buyer protection on EBay would apply only to transactions made with PayPal, the joint booking of flights and hotel rooms on Expedia would be free of any booking or cancellation costs, include free breakfast and a pick up service from the airport or Instagram only allowing users to share videos when signing in with a Facebook account.

Of course, in practice, when there is no clear obligation concerning the joint acquisition of the separate products identifying *de facto* coercion may entail more complex factual assessments based on the circumstances of each case

145 E.g. if the separate product criterion is applied too mechanically products like smartphones could be considered as a bundle of a GSM device with an mp3 player, a digital camera and a navigation system where this is clearly not the case in practice.

146 Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) at 444-445; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 864, 945.

147 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* n.65, para. 48.

148 This is, for example, the case with regard to Nespresso which refused to disclose its designs to coffee cup producers as well waving its warranty for Nespresso machines in the case of consumers using coffee cups from other producers. For a discussion on this case see OECD report on Competition Issues in Aftermarkets - Note From France, 21-23 June 2017, DAF/COMP/WD(2017)42, pp. 7-11.

leading possibly to the finding of different kinds of abuses.[149] Beyond these extremely aggressive approaches, the leveraging strategies of undertakings will exhibit a declining degree of persuasion while attempting to achieve the same purpose, namely the joint acquisition of separate products. These latter strategies, which possibly lead to competitors exiting the market, may be nonetheless legal if they leave sufficient room for customer choice with regard to the possibility of obtaining the respective separate products from suppliers other than the concerned dominant undertaking.

As mentioned above, the success of online platform expansion strategies depends greatly on their ability to leverage their customer base from one product market to another. In order to avoid infringing competition law it can be assumed that such platforms will likely avoid leveraging tactics that impose strict contractual or technical obligations concerning the joint provision of separate interactions or platforms. Nonetheless, it is evident that leveraging will be attempted through more subtle means such as the creation of cross platform accounts and possibly various kinds of nudging techniques as previously discussed. When such seemingly subtle means have, however, *de facto* the same effect as strict obligations of joint provision such strategies can nonetheless be considered a form of tying or bundling in the sense of Art. 102 TFEU. Therefore, it is important to assess whether and how such alternative cross- and on-platform leveraging tactics may exhibit a sufficient degree of coercion so as to be qualified as a tying or bundling based on current practice.

The leveraging of an overlapping customer base across platforms essentially entails the creation of a common customer database that is shared by two or more platforms owned by the same entity as in the case of Google, Uber, KakaoTalk and Tencent. In practice, the realization of this common database means that the various platforms can only be accessed by users after creating an account that serves as a universal access pass. To the extent that such a common customer account serves solely as an access key, without creating and activating customer profiles across multiple platforms, such a strategy cannot be said to strictly coerce customers in obtaining multiple services or products from the concerned undertaking. This is also the case if the undertaking nudges such customers to use all of its platforms through various means such as messages, advertisements, first use bonuses and others. The borderline between leveraging through persuasion and leveraging through coercion may, however, be very easy to cross and quite difficult to identify.

149 For example, multi-product rebates or mixed bundling cases which display pricing schemes that make the separate acquisition of the bundled or tied products or services financially irrational for consumers and predatory or quasi-predatory with respect to competitors. See the Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) paras. 59-61.

If nudging strategies go so far as to trigger an unsolicited functioning of a separate platform this could also be considered a form of coercion rather than persuasion. This would be the case for example if customers filling in a search query on Google+ were redirected to YouTube for video search results for their query once they hit the search button. Furthermore, if the creation of a user account on one platform by a customer results in the creation of parallel user profiles on other platforms on which the same customer does not wish to participate, such an act may be regarded as coercive. This would occur, for example, if creating a Facebook account automatically creates an Instagram profile for the same customer. In this scenario the customer is essentially forced to participate, at least passively, on one or more additional platforms in which he or she had no interest. Considering such practices as coercive in the sense of Art. 102 TFEU would be in line with the findings in Microsoft, where the GC concluded that proof of coercion does not require identifying an obligation for the joint *use* of the products offered by the concerned undertaking.[150]

The simple fact that customers are prevented from obtaining the distinct products offered by the concerned undertaking separately is sufficient, even if such products are provided without cost and customers are able to use the products of competitors.[151] Moreover, where automatically generated profiles have access to the data generated by the customer on other platforms, the coercive nature of this practice is further amplified as the customer is then *de facto* also forced into sharing his or hers data across such separate platforms.[152] For example, this would be the case if customers of Uber would have their ride history analyzed in the context of their automatically generated UberEats user profile even if they have never used the UberEats platform. Therefore, the test for coercion with regard to cross-platform leveraging tactics would be whether customers can participate solely on one platform without being forced into unsolicited services or (active or passive) participation on a separate platform. When such a significant coercive effect is not observed, the leveraging strategies of the platform would not qualify as tying or bundling in the sense of Art. 102 TFEU.

150 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 970-971.

151 Ibid, para. 969.

152 See more on this in Daniele Condorelli and Jorge Padilla, ' Harnessing platform envelopment in the digital world' (2020) 16(2) Journal of Competition Law & Economics 143; In this regard the existence of an informed consent from users to take such action will be required based on Art. 5 of 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) OJ L 119/1 ('GDPR'). Obtaining such consent, however, will not stand in the way of qualifying such practices as tying or bundling if consumers must accept such conditions in order to make use of either services as this is in fact the essence of coercion and restriction of customer choice the such case law is intended to prevent.

Nevertheless, such practices could be caught under the general category of abusive leveraging practices. This may occur when the persuasion strategies and nudging implemented by the concerned platform trigger the same behavior from its customers as in the case of explicit obligations of joint provision despite the fact that such customers are free to participate (actively and/ or passively) on a single platform. The permissibility of such practices will then depend on the reasons behind such systematic joint participation behavior by the platform customers and their foreclosure effect. For example, joint participation that is a result of constant innovation and product improvement may be far less problematic than when joint participation is achieved through deception or the manipulation of consumer biases or inertia, despite that fact that both scenarios may entail competitors exiting the market.[153]

In the case of on-platform leveraging techniques a similar assessment could be made with regard to the relation among the various interactions on the platform. On-platform leveraging techniques boil down to various types of nudging which may be combined with financial incentives for the simultaneous use of two or more interactions on the same platform. Establishing whether nudging can be considered coercive in such cases depends therefore on whether the nudging *de facto* forces customers into participating in an interaction they did not solicit willingly as this is what the case law on tying and bundling intends to prevent. Therefore, nudges that take suggestions to use additional interaction a step further by triggering or initiating such additional separate interactions could be considered coercive. This could occur, for example, if Booking.com used the location data of the customer in combination with its hotel search query to display customers unsolicited search results for airplane tickets for the same period. By doing so, Booking.com would essentially be providing customers with another service on top of the one they seek, namely their vertical price comparison service for airplane tickets. If this additional interaction is triggered automatically, the customer is *de facto* coerced into obtaining it.[154] Therefore, considering such practices as coercive for the purpose of an Art. 102 TFEU case analysis is equally compatible with the findings of the GC in *Microsoft* since coercion does not need to go so far as to compel the *use* of separate products.[155] By contrast, nudges that remind, recommend, suggest or encourage customers to use two or more interactions on the same platform in the form of pop up notices, messages and ads would not be perceived as coercive for the purpose of finding tying or bundling practices. For example

153 Due to the fact that these scenarios, when they occur on platforms of across platforms, are highly casuistic requiring extensive research into the impact of nudging on consumer behavior they are not dealt with further in the scope of this contribution.

154 Similar conditions could arise when consumers must first view such search results before being able to finalize their transaction with respect to the booking of their hotel room.

155 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras.970-971.

Booking.com could display messages or advertisements about its flight booking functionality to customers that are in the process of booking hotel rooms for their upcoming trip. Similarly, Booking.com could also send emails to customers that have booked hotel rooms via the platform telling them they can also look for their flight there. Accordingly, nudging strategies that trigger or initiate an additional functionality should be considered *de facto* coercive in the sense of Art. 102 TFEU whereas nudging strategies that are intended to acquaint customer with a functionality should not.

Nonetheless, as mentioned above, even such latter strategies may be considered a form abusive market power leveraging under Art. 102 TFEU when they have the same effect of guarantying joint participation by consumers as a result of questionable strategies while producing a foreclosure effect on the market.

Once it can be concluded that the platform cross-platform or on-platform leveraging tactics are coercive because they force the platform customers to participate (actively or passively) on more that one interaction or platform such practices may qualify as either tying or bundling in the sense of Art. 102 TFEU. Following such a finding, the next step in the legal analysis requires establishing whether such practices can have a foreclosure effect on competition in order to determine their permissibility.

4.4.4 Foreclosure effect

Establishing whether the leveraging strategy of the concerned platform can create a foreclosure effect is practically the focal point of the entire analysis. In the absence of such an effect, it cannot be said that the potentially abusive practice prevents equally efficient competitors to compete on the merits with the concerted undertaking and therefore cannot be considered abusive.[156] In this regard it should be noted that evidence of foreclosure requires more than the mere evidence of disadvantaged rivals.[157] Evidence of foreclosure also requires proof that the practices of the concerned undertaking interfere with the structure of competition on the market, which is likely to result in some form of consumer harm.[158] Future tying and bundling cases concerning online platforms will undoubtedly have to follow such an effects-based approach,[159] which is essentially required by the objective of Art. 102 TFEU. The circumstances based on which the Commission was inclined to undertake an extensive effects assessment rather than assume the anti-competitive foreclosure effect in the Microsoft

156 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 5) at. 623-624.
157 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 19.
158 Case C-209/10 *Post Danmark v Konkurrencerådet* [2012] ECLI:EU:C:2012:172, para. 24.
159 Case C-413/14P *Intel v Commission* [2017] ECLI:EU:C:2017:63.

case will predominantly be present in cases concerning online platforms.[160] Namely, new unexplored markets exhibiting network effects and positive feedback loops.[161]

The assessment of anti-competitive foreclosure in the case of tying and bundling cases relies primarily on the criteria set for assessing such effect with regard to all other exclusionary abuses.[162] The criteria include (i) the strength of dominance; (ii) market conditions for expansion and barriers to entry including economies of scale and network effects; (iii) the market position of competitors; (iv) the position of customers and input suppliers; (v) direct evidence of foreclosure; (vi) direct evidence of any exclusionary strategy.[163] More specific criteria, mentioned especially with regard to tying and bundling cases, refer to the nature (technical or contractual) and duration of the tying or bundling practices and the market power that the concerned undertaking has with respect to its entire product portfolio.[164] When dealing with online platforms, however, it is important that their two (or multi) sided nature is also taken into account throughout the foreclosure effects analysis in addition the general criteria used to assess (potential) foreclosure effects in Art. 102 TFEU cases.

In this regard, economic literature on tying and bundling practices by platforms indicates that the functional relation between the tied or bundled products determines the potential foreclosure effect of such strategies to a great extent. Accordingly, the foreclosure effect of such practices will vary from case to case depending on whether the functional relationship between the platforms or interactions is one of complements, weak substitutes or unrelated products.[165] The functional relationship between the platforms or interactions in each case indicates to a great extent the degree of customer overlap, which in turn also influences the outcome of the leveraging exercise.[166] When tying or bundling complements the degree of customer overlap on one side of the platform will be significant as complements are inherently designed and marketed for essentially one and the same customer group. The greater the degree of customer overlap among products the greater the likelihood of success by the concerned undertaking,[167] meaning a greater foreclosure effect in practice.

160 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, para. 841.
161 Ibid.
162 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 52.
163 Ibid, para. 20.
164 Ibid, para. 53-54.
165 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne, (2011) *supra* (n 8) at 1279-1282.
166 Ibid, at 1280.
167 Ibid.

Tying or bundling of weak substitutes will likely entail situations where customer overlap is less pronounced than in the case of complements and thus normally requires the presence of great economies of scope opportunities in order to foreclose competitors or prevent entry.[168] In this regard, it should be noted that this limitation is based on the assumption that the tied or bundled products are positively priced. In the case of online platforms that, however, may not be the case as the bundling or tying will often occur with respect to the non-paying customer group of the platform, namely end consumers. Therefore, in practice, undertakings may not be disciplined by such considerations and tying or bundling practices involving weak substitutes may prove to possess a greater anti-competitive foreclosure potential than believed. In such situations the data aggregation advantage resulting from tying and bundling practices could give rise to a potential foreclosure effect that is obscure and easily underestimated in practice as demonstrated by Facebook's acquisition of WhatsApp and Instagram.[169]

Finally, the potential foreclosure effect of tying and bundling unrelated products also depends on the extent of customer overlap and economies of scope.[170] Accordingly, in such cases a platform that has achieved a dominant position with respect to a particular interaction or platform can leverage its customer base with relative ease to another platform which is functionally unrelated. The customer overlap then requires that the users of the newly added and unrelated interaction are also (mostly) users of the initial interaction or platform of the concerned undertaking. This would have been the case if, for example, Microsoft had tied LinkedIn to Windows or Office following its acquisition of the platform.[171] Due to the anti-competitive potential of such practices, however, Microsoft had to submit commitments specifically stating it will not pursue any kind of tying or bundling strategies in order to obtain the approval of the acquisition from the Commission.[172] In this regard, it is important that such a relation is understood correctly as tying or bundling for expansion purposes will occur under

168 Ibid.

169 See *Facebook/ WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2010, para. 53-61, 101-107, 153-157. The Commission considered Facebook and WhatsApp to be no more than weak substitutes and any concerns raised with regard to the concentration of data sources and possible integration between the two platforms were dismissed; See also CMA decision on the Acquisition of Instagram by Facebook ME/5525/12 of 14 Aug. 2012. In this case the two platforms were not considered competitors and any anti-competitive concern was dismissed by the CMA or considered unlikely by third parties. Yet a few years later, the once underestimated or unforeseen concerns have led to discussions about reversing these acquisitions which indicates that future data related to foreclosure risks may easily be missed.

170 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne, (2011) *supra* (n 8) at 1282.

171 *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016para. 301-321, 328-352.

172 Ibid, para. 409- 436.

circumstances that pose less obvious anti-competitive concerns. Whereas the merger between Microsoft and LinkedIn entailed two (likely) dominant platforms,[173] the use of tying and bundling strategies following expansion will entail binding a dominant platform to a non-dominant one that just entered the market. Therefore, the risk exists that the foreclosure effect of the tying and bundling practices will be observed only at a stage that may be too late for efficient enforcement, particularly if the market has tipped in favor of the concerned platform.

In addition to the functional relationship between the tied or bundled interactions or platforms, economic literature on tying an bundling in two sided markets indicates that the foreclosure effect of such practice also depends on the extent of which these interactions or platforms are indeed two-sided. Accordingly, when the markets of both tied and tying interactions or platform are two-sided the tying strategy might be more profitable than a situation where the tying market is two-sided and the tied market is (almost) single sided.[174] The reason behind this is that in the first scenario, the indirect network effects at play are mutually reinforcing. For example, tying EBay with PayPal increases the value of both platforms to buyers and sellers. Tying makes EBay safer for purchases meaning it attracts more buyers that in turn attract more sellers that lead to an increased number of transactions that general revenue for both EBay and PayPal. Furthermore, tying also makes PayPal more valuable since it helps create a significant customer base, which in turn makes it an attractive payment system for merchants (and consumers) to use outside the EBay marketplace thus generating extra revenues. By contrast, in the second scenario where the tied product is (almost) single sided this mutual reinforcement of indirect network effects may not be present and risks customer loss. For example, if Google would require consumers who use Google Docs to also acquire a paid subscription to Google Drive, such tying may not increase the usage of both products. Using Google Drive may improve the Google Docs functionality and thus popularity; the same cannot be said the other way around. Therefore, in cases where consumers do not have a clear preference for Google Docs they may prefer to acquire their online storage from Dropbox for example and avoid or abandon Google Docs altogether due to the tie. In this situation, Google does not only lose potential Google Drive users but also Google Docs users, which in turn makes Google Docs less interesting for third parties to adopt (e.g. PC producers, website developers) and vice versa.

173 Ibid, para. 283- 294. The market shares of both platforms reached 80-90% in their respective relevant markets.

174 Jay P Choi and Doh-Shin Jeon (2016) *supra* (n 59) at 4.

Therefore, assessing the foreclosure potential of tying or bundling practices will require assessing the intensity of the network effects at play with regard to each of the tied or bundled interactions or platforms separately to determine to what extent these are truly two-sided.[175] Furthermore the analysis will also require looking into the impact on the (indirect) network effects on or across platforms following the tying or bundling tactics to determine the potential of the leveraging of market power. Moreover, according to economic literature it should also be observed whether the competitors of the concerned undertaking in the tied market are capable of offering negative prices for the tied interaction or platform.[176] If negative prices are possible, competitors offering negative prices may still be able to compete for customers interested only in the tied interaction or platform thus limiting the foreclosure potential of the tying (or bundling) practices by the concerned undertaking.

Finally, when addressing the matter of foreclosure in the case of online platforms it is also imperative to consider to what extent similar competing offers of the tied or bundled products (or services) could be provided by competitors. Accordingly, the analysis should provide an evaluation of whether the competition on the market is moving from separate product or service competition to competition among bundles. In the case of online platforms such patterns of competition among bundles are likely to occur for the reasons mentioned above and observing such developments throughout the market requires assessing potential expansion from undertakings active on separate markets. For example, if Expedia were to be investigated for tying or bundling of its hotel booking function with its flight booking function, assessing whether the market is evolving or can evolve into competition among bundles would require looking at expansion possibilities for platforms offering only the hotel booking function as well as platforms offering only the flight booking function. If such potential market developments are observed than the foreclosure effect may over time be replaced and /or counterbalanced by intense competition on the merits among undertakings providing bundled offers that would reduce the need for competition law intervention and thus the finding of an abusive tying or bundling practice.

Despite the importance of the assessment criteria concerning foreclosure, the current practice of the EU Courts and Commission shows varying traces of such considerations when dealing with multisided platforms. In both Microsoft and the more recent Google Android the tying and bundling prac-

175 Lapo Filistrucchi, Damien Geradin and Eric van Damme, 'Identifying Two-Sided Markets', (2013) 36(1) World Competition 33.

176 See Jay P Choi and Doh-Shin Jeon (2016) *supra* (n 59) at 4. Negative prices refer to a situation where platform customers are offered (monetary) compensation or other kind of financial benefits in return for their use of the platform.

tices concerned complements, which pose the highest competitive concern given the great degree of customer overlap between the tied or bundled products.[177] This characteristic was identified in both cases and implicitly linked to the foreclosure potential of the prohibited practices in each case. In Microsoft, a link was made between the customer overlap of Windows OS and Windows Media Player and its implications for adoption of WMP by content creators following the bundling practices.[178] Similar findings were also made in Google Android where the market share of Android OS was used as a proxy for the market coverage that the Google Search App, Play Store and Chrome were guaranteed to have following Google's tying practices.[179] Accordingly, it can be said to some extent that the operational link and the customer overlap between the products tied or bundled in each case was addressed when assessing foreclosure.

By contrast, when it comes to taking account of the multi-sided nature of the tied or bundled products current practice paints quite a different picture. In Microsoft, the multi-sided nature of the products involved was not explicitly mentioned, however, references were made to the positive feedback loops that were triggered by the bundling practices as well as the indirect network effects at play. Such references can be said to be an implicit inclusion of the multi-sided nature of the products involved when assessing foreclosure.[180] By contrast, in Google Android, the multisided-sided nature of Android OS and the indirect network effects at play were only identified in the assessment of Google's dominance.[181] When assessing the foreclosure effect of Google's tying practices the Commission explicitly refused addressing the matter of network effects.[182] Such a refusal is problematic as the Google's products vary in their degree of multi-sidedness thus displaying different settings of indirect network effects.[183] By choosing not to look into such matters the Commission diminished the completeness of the analysis and thus risked reaching false conclusions, which may be penalized in the context of judicial review even if the outcome of the deci-

177 In Microsoft Media Player and Internet Explorer were bundled with Windows OS. In the case of Google Android, Chrome and the Google Search app were tied to the Play Store.

178 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 984. Since Windows OS had over 90% market share of PC users the bundling provided WMP a similar market exposure making it far more interesting for content developers than Microsoft's competitors.

179 *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018 paras. 783, 791, 902.

180 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004 paras. 8614-863, 873, 878-895; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 1061-1062 ; *Microsoft (tying)* (Case COMP/C-3/39.530) decision of 16 December 2009, paras. 55-56.

181 *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 464, 469, 624, 629, 635, 638, 721.

182 Ibid, paras. 776, 899.

183 Android OS and Google Play Store are multi-sided whereas Google Chrome and Google Search app far less so.

sion proves to be correct. Not taking into account indirect network effects when these are present and can impact the legal analysis in a given case has been found as a ground for annulment by the CJEU.[184] Furthermore, given the communalities between the two cases this deviation from the approach in Microsoft creates also legal uncertainty for future tying and bundling cases concerning platforms, which are already nearing the stage of investigation.[185]

In light of the above it would appear that the complexity brought about by multi-sided platforms are not always properly accounted for by current practice. The effect of the tying or bundling of the concerned platform on its various products, as displayed by the Google Android decision, does not appear to receive the attention it deserves as an important part of the effects analysis required in Art. 102 TFEU cases.[186] The main focus in this recent case seems to be whether competitors can make similar or at least competitive offers to the ones made by the dominant undertaking, namely Google. Such an approach is not only legally problematic but also logically flawed since assessing the capability of competitors to match the offers of the dominant platform only makes sense once the effects of such practices are evaluated in their respective economic and legal context. Therefore, a legally sound foreclosure analysis in such cases would require taking the assessment made in Microsoft a step further. Such an adjustment would entail starting off with a specific identification of the single or multi-sided nature of the tied or bundled products in each case followed by an assessment of the effect of the tying or bundling practices on the concerned platform in light of the indirect network effects at play. Following this assessment the ability of competitors to match the practices of the dominant undertaking can be evaluated as common in tying and bundling cases.

Once this stage of the legal analysis has been reached and a potential or actual foreclosure effect has been established, the burden of proof shifts to the concerned undertaking.[187] At this final stage the undertaking may be able to rely on the derogation possibility of Art. 102 TFEU in light of the efficiencies its practices can generate. The success of such arguments will

184 See by analogy Case C-67/13 P *CB v Commission* [2014] ECLI:EU:C:2014:2204, paras. 74, 87.

185 See e.g. Commission Press release, ' Commission opens investigation into Apple's App Store rules' (16 Jun. 2020) at: <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073> accessed 10 Jul 2020; BBC New technology, ' Slack makes EU antitrust claim against Microsoft over Teams' (22 Jul. 2020, BBC News) at: < https://www.bbc.com/news/technology-53503710> accessed 25 Jul. 2020.

186 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 867.

187 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 688, 1144; The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 64) paras. 28-30.

depend, however, not only on the aggregate effect of the generated efficiencies but also on the manner in which such efficiencies manifest and how these are assessed.

4.4.5 Objective justification and efficiency arguments

Current practice generally recognizes three forms of objective justification under Art. 102 TFEU that differ in terms of substance and standard of proof.[188] First, the concerned undertaking may prove that its actions are intended to defend its legitimate commercial interests in a manner that is compatible with competition on the merits despite the observed exclusionary effect.[189] Second, the concerned undertaking may try to prove that its practices were objectively necessary due to factors and circumstances that are external to the undertaking.[190] Finally, the concerned undertaking can rely on efficiency arguments in order to defend its practices and avoid eventual fines.[191] Regardless of the approach taken, a successful outcome requires that the practices of the concerned undertaking are proportionate with regard to the objectives pursued and potential negative effect on competition.[192]

In the case of online platforms, their two- or multi sided nature as well as their inherent need of expansion are very important for the analysis of such potential justification grounds. In this regard when considering the introduction of joint supply of services or products by online platforms it is necessary to consider the possibility that such practices are a manifestation of legitimate commercial practices. The inevitability of expansion in the case of online platforms, as previously discussed, means that most if not all platforms will, at some point in time, provide a form of joint supply

188 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 5) at. 283; Tjarda van der Vijver, 'Article 102 TFEU: How to Claim the Application of objective justification in the case of prima facie dominance abuses?' (2013) 4(2) Journal of Competition law and Practice 121, 128-130.

189 See e.g. Case C-209/10 *Post Denmark v Konkurrenceradet* [2012] ECLI:EU:C:2012:172, paras. 20-22. Not all evidence of exclusion are considered proof of anti-competitive foreclosure as competition on the merits may often entail less efficient competitors exiting the market.

190 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* n.65, para. 29; See e.g. Case T-30/89 *Hilti AG v Commission* [1991] ECLI:EU:T:1991:70, paras. 33, 108-109. In this case Hilti argued that its tying actions were needed to protect the health and safety of consumers.

191 Case T-228/97 *Irish Sugar v Commission* [1999] ECLI:EU:T:1999:246, para. 189 ; Case C-95/04 P *British Airways v Commission* [2007] ECLI:EU:C:2007:166, para. 86.

192 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* n.65, para. 28; Case 27/76, *United Brands Company and United Brands Continentaal BV v Commission* [1978] ECLI:EU:C:1978:22, paras. 191-198; BBI/ Boosy & Hawkes- Interim measures, OJ 1987 L 286/36.

of services or products. Accordingly, to the extent that such joint provision is not coercively restricting customer choice (contractually or technically), such practices should be seen as (at least *prima facie*) legitimate business practices. This is particularly so when comparable joint provision and expansion trends (actual or potential) can be observed by competitors or potential competitors of the concerned platform. In the context of competition between platforms such practices allow platforms to defend their commercial interests against direct competitors as well as eventual 'envelopment attacks' from (dominant) platforms active on related markets.[193] Where strict coercion is linked to the joint provision of services or products by online platforms, such a (*prima facie*) presumption of legitimate business practices may only arise where similar practices are implemented by all or most of the competitors of the concerned undertaking. Such a situation can occur in practice when competition in the effected markets has evolved from single products or services to bundled offers as in the case of TV, internet and phone line package deals. In the absence of a comparable market development, strict (contractual or technical) coercion is unlikely to be considered proportionate for protecting the commercial interest of the concerned online platform.[194] A comparable approach would be in line with the commercial reality of online platforms and their natural growth patterns.

In cases where the concerned platform cannot rely on the argument that it merely protects its commercial interests by engaging in competition on the merits it must provide other arguments in order to avoid penalties. In the case of tying and bundling practices the main focus of the Commission with regard to potential justifications is on the efficiencies generated by the concerned undertaking.[195] This is hardly surprising as economic literature has identified an array of efficiencies that may be achieved through the use of tying and bundling.[196] To some extent, this approach could be considered an advantage with regard to online platforms. The reduction of search and transaction costs, often mentioned as some of the key efficiencies behind tying and bundling practices,[197] will often be enhanced by such undertakings due to their multisided intermediary nature.[198] The entire rationale behind platforms is essentially to facilitate an interaction between two or

193 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2011), *supra* (n 8); Andrei Hagiu (2007), *supra* (n 42)

194 Supra (n 191).

195 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 62.

196 Robert O'Donghue and Jorge Padilla, (2013) *supra* n. 5, at 599-602; Gunnar Niels, Helen Jenkins and James Kavanagh, *Economics for Competition Lawyers* (2016) *supra* n 86 at 205-208.

197 Ibid; Barry Nalebuff (2003), *supra* (n 71).

198 Andrei Hagiu, (2007) *supra* (n 42).

more separate customer groups in a more efficient way than these parties could do on their own. The added value of the platform for its customer groups almost always includes, in practice, some reduction of search and transaction costs.[199] This inherent efficiency advantage that online platforms possess may, however, not increase the success rate of efficiencies-based justifications due to the manner in which such efficiencies are assessed under the current legal framework.

Following the clarification by the CJEU that efficiencies arguments can serve as an objective justification, the Commission formulated the legal test for such a justification under Art. 102 TFEU in an almost identical manner as 101 (3) TFEU.[200] The rationale of the Commission that justifications under Art. 102 should be assessed in the same manner as in the case of Art. 101(3) also obtained the approval of the CJEU in *Post Denmark*.[201] This common approach is desirable from a legal certainty and consistency perspective, as both articles can apply simultaneously in a given case.[202] However, in the case of platforms this approach is problematic because it entails that the scope of the balancing test between efficiencies and anti-competitive effects is limited to the relevant market where the anti-competitive practice occurs.[203] In the case of online platforms this may erroneously limit the scope of the analysis that, due to their two- or multi sided nature, may require the definition of multiple relevant markets.[204] Accordingly, it is possible that the abuse of dominance occurs in a separate market than the one in which the efficiencies are generated.[205] For example, in the case of tying PayPal to EBay, the tie may foreclose competition on the market for online payment solutions with respect to online retailers, while at the same time reduce transaction costs for consumers in the online retail market for

199 Ibid; Bertin Martens (2016) *supra* (n 16) at 10-21.

200 The Commission's Guidance paper on Article 102 enforcement priorities, *supra* n.16, para. 30. Accordingly, the criteria that must be met for such a justification are: (i) the efficiencies have been or are likely to result from the conduct of the dominant undertaking; (ii) the conduct is indispensable to the realization of such efficiencies; (iii) the efficiencies outweigh any negative impact on competition and consumer welfare in the affected markets; (iv) the conduct does not eliminate effective competition, by removing all or most existing sources of actual or potential competition.

201 Case C-209/10 *Post Denmark v Konkurrenceradet* [2012] ECLI:EU:C:2012:172, para. 42.

202 Case C-395/96 P *Compagnie Maritime Belge Transports and Others v Commission* [2000] ECLI:EU:C:2000:132, para. 33-34; Case 85/76 *Hoffmann-La Roche & Co. AG v Commission of the European Communities* [1979] ECLI:EU:C:1979:36 para. 116; Case T-51/89 *Tetra Pak Rausing SA v Commission of the European Communities* [1990] ECLI:EU:T:1990:41, pp. 25-29.

203 Commission Guidelines on the Application of Art. 101(3) of the Treaty, (2004) OJ C101/08, para 43.

204 Daniel Mandrescu, (2018) *supra* (n 27) at 455-459.

205 Ibid; Daniel Mandrescu, Applying EU Competition Law to Online Platforms: The Road Ahead – Part 2, (2017) Vol. 38(9) ECLR 410, 420–422; Alfonso Lamadrid de Pablo, The Double Duality of Two-Sided Markets, (2015) 64(5) Comp. Law 1, 9-15.

consumer goods. When a comparable situation arises, evidence of efficiencies must be provided firstly in the market where the alleged infringement occurred according to both the Commission and the CJEU.[206]

Efficiencies in separate related markets can only serve to complement the efficiencies identified in the market where the anti-competitive practices took place.[207] Evidence of efficiencies in a related market alone will not suffice for the purpose of justifying anti-competitive practices.[208] Accordingly, when assessing allegedly abusive tying or bundling practices, it is important that efficiencies are primarily identified with regard to the market where the potential anti-competitive foreclosure effect manifests. The efficiencies do not necessarily have to be greater than the anti-competitive effect in order for the concerned undertaking to successfully rely on this derogation. Efficiencies identified in the relevant market where the infringement occurred can be complemented by out-of- market efficiencies in related markets for this purpose. However, in order for out-of-market efficiencies to be considered, efficiencies in the relevant market where the infringement too place must first be demonstrated.[209] Therefore, it is crucial that the efficiencies generated by online platforms and possibly enhanced by tying or bundling practices are framed in the context of the legal analysis in a manner that adequately incorporates their two (or multi) sided nature. Failing to do so will unjustly reduce the likelihood that the concerned undertaking will be able to successfully rely on the efficiencies derogation, due to a formalistic deficiency in the current framework. This outcome is not only undesired with respect to the online platform undertakings but may also have a detrimental effect of consumer welfare as it deprives them of the possibility of obtaining better products or services that in turn may also lead to intensified competition for such consumers.

Unfortunately, current practice on platforms under Art. 102 TFEU has not addressed the abovementioned procedural hurdles. In both Microsoft and Google Android the efficiencies arguments raised with regard to the benefits that consumers enjoy following the tying and bundling practices were dismissed.[210] The assessment of benefits and anti-competitive consequences across markets in both cases does not appear, however, to look at

206 See The Commission's Guidance paper on Article 102 enforcement priorities, *supra* (n 65) para. 30; Commission Guidelines on the Application of Art. 101(3) of the Treaty, (2004) OJ C101/08, para 43; Case C-382/12P *MasterCard Inc and Others v Commission* [2014] ECLI:EU:C:2014:2201, paras. 236-243.

207 Case C-382/12P *MasterCard Inc and Others v Commission* [2014] ECLI:EU:C:2014:2201, para. 242.

208 Ibid, at para. 243.

209 Ibid.

210 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, paras. 956-970; Case T-201/04 *Microsoft v Commission* ECLI:EU:T:2007:289, paras. 1156-1161; *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 993-1008;

the manner in which such related markets are connected. The assessment of the claimed efficiencies by Microsoft seems to go in the desired direction for multisided platforms as the implications of the bundling practices were considered with regard to multiple markets.[211] Nevertheless the indirect network effect between such markets resulting from the fact that the bundled products were complements were not thoroughly considered. In Google Android, the assessment of efficiencies was more limited and focused mainly on consumers and OEM's rather than on all parties interlinked by the Android ecosystem influenced by such actions.[212]

Therefore, it can be said that the assessment of efficiencies across various markets has been performed to some degree in previous cases. Nevertheless, current practice still needs to adjust the manner in which such multimarket analyses are being brought together in order to fit in with the legal and economic reality of multisided (online) platforms.

4.5 Conclusion and final remarks

The discussion and analysis in this chapter addressed the third sub-question of this research, namely: *To what extent is the current framework of non-price related abuses suitable for distinguishing between legitimate expansions and anti-competitive leveraging of market power by online platforms?*

In this chapter, the specific framework of tying and bundling abuses was selected as a test case for non-price related abuses. This selection was made due to the fact that such type of practices are more likely to arise in the context of anti-competitive expansions than other non-price related abuses due to their effectiveness with respect to market power leveraging. In this respect, the discussion in this chapter showed that the current framework on tying and bundling cases might prove to be a useful tool in filtering out anti-competitive expansion strategies implemented by online platforms.

The leveraging of market power across markets and various customer groups will likely be an integral aspect of most growth strategies of online platforms. As previously discussed such strategies can take multiple forms, which may bring the business practices of online platforms within the ambit of Art. 102 TFEU when these undertakings possess a dominant position on the market. In this regard, it would appear that the current framework concerning tying and bundling practices is quite suitable for dealing with cases that raise competition concerns provided that the technical functionalities and the two- or multi sided nature of online platforms are taken into account.

211 *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004, paras. 956-970.
212 *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras. 993-1008.

From a technical perspective, it is important that the factual practice of tying or bundling is thoroughly investigated as the joint provision of products or services by online platforms may be rather obscure. Accordingly, it is critical that a tying or bundling analysis correctly identifies the existence of two or more separate products jointly offered by the concerned undertaking. Such a finding may be manageable in cases concerning the tying or bundling of separate platforms as demand and supply side evidence of substitution will often be available. When the investigated practices concern, however, the tying or bundling of two or more matching interactions on one platform, establishing the existence of separate products jointly offered may prove to be rather challenging. Nonetheless, even in such cases evidence of demand and supply side substitution for the individual interactions may often be available. However, in this later scenario the finding of separate products should be done based a forward looking as platforms are very likely to evolve and expand throughout the course of their existence.

In addition to identifying the separate products jointly offered by the concerned platform undertaking it is important that the matter of coercion correctly assessed. Accordingly, when looking into the leveraging strategies employed the concerned platform in the context of its expansion strategy it is crucial to evaluate to what extent such strategies restrict customer choice. Strict contractual and/ or technical obligations concerning the joint provision of the platforms' services imposed on customers are no different than the tying practices employed outside the context of online platforms and thus will very likely bring the practices within the ambit of Art. 102 TFEU based on previous case law. When such strict obligations are not present, establishing the existence of coercion requires determining whether the platform customers are able to participate on a single platform or interaction without being obliged to participate, either actively or passively, on a separate interaction or platform. For example can users have an Uber Eats account without having an Uber account and vice versa; or can consumers book their hotel room on Expedia without getting unsolicited search results for flights for the time of their stay. If customers (often end consumers) have no choice but to comply with such automatic joint participation then one may consider the leveraging strategies of the concerned platform sufficiently coercive to qualify as tying or bundling practices in the sense of Art. 102 TFEU. Where such coercion is not observed in the business practices of the concerned platform the joint provision of its services should in principle not be seen as problematic but rather as a legitimate business practices- namely those of expansion and persuasion. Nonetheless, even such practices may be considered a form of abusive market power leveraging under Art. 102 TFEU when they have the same effect of guarantying joint participation by consumers as a result of questionable strategies such as deception or the manipulation of consumer biases or inertia while producing a foreclosure effect on the market.

With regard to the two -or multi sided nature of platforms, economic literature has shown that there is no reason to address tying and bundling practices by platforms in a more strict or more lenient manner than in the case of non-platform undertakings as both types may give rise to similar anti-competitive effects. Furthermore, the common use of zero pricing with respect to consumers should not be seen as a reason for non-intervention considering that economic literature shows that the use of zero pricing may in fact be indicative of a situation where anti-competitive tying and bundling practices occur. Consequently, taking such two -or multi sided nature into account allows for a better understanding of the potential anti-competitive effects of the business practices of online platforms in practice. Accordingly, in the assessment of the (potential) foreclosure effects of the tying or bundling practices it is imperative that the assessment looks into whether the tied or bundled interactions or platforms are two-sided as well and if so to what extent as the degree of two-sides of the products or services in each case may determine the foreclosure potential of the tying or bundling practice. Furthermore, the functional relation between the tied or bundled interactions or platforms must also be accounted for this purpose. Finally, the ability of competitors to compete with the concerned undertaking based on negative prices and / or similar multi-product offers should be included in the foreclosure assessment as such possibilities, if used by competitors, may significantly undermine the profitability of the tying and bundling strategy and its (potential) foreclosure effects.

Finally when dealing with the possibility of the concerned platform to defend its business practices, correctly distinguishing between the anti-competitive practices and lawful joint offerings by online platforms cannot be overrated as every platform at some point in time will seek to expand the number of interactions it offers its customers. Although all platforms will seek to leverage their customer bases across the various markets they interconnect, not all leveraging exercises will entail coercive anti-competitive tying and bundling practices. When evidence of strict coercion limiting customer choice is absent the joint provision of services or products by online platforms should in principle be considered as legitimate business practices. When strict or *de facto* joint provision obligations (in either technical or contractual form) are observed, such practices may also at times be considered legitimate business practices when implemented by the majority of competitors of the concerned undertaking. In such situations implementing such business practices is a legitimate form of competition on the merits where the dominant undertaking should be allowed to protect its business interest against competitors and against 'envelopment attacks' by potential competitors. Furthermore, even when potentially abusive tying and bundling practices are indeed identified it is instrumental that their efficiency-generating potential within the context of two- (or multi) sided markets is currently evaluated. As platforms are inherently efficiency-generating entities, an adequate application of the current competition

law framework cannot allow for an evaluation that does not take this characteristic into account. Therefore, it is of utmost importance that future cases concerning online platforms, where tying or bundling are identified, observe the efficiencies generated by such practices on the market where these practices occur as well in the market(s) that are directly related (i.e. the other sides of the platform). In this regard it is imperative that the efficiencies generated are taken into account as whole in light of the indirect network effect at play on or between online platforms and their customer groups. Such an analysis would allow for a truer evaluation of the positive and negative effects caused by such practices when implemented by platforms, which is currently at risk due to the manner in which efficiencies are appraised with respect to the relevant market.

5 Platform Pricing and the Identification of Potential Price-Related Abuses

This chapter is based on the published article 'Abusive pricing practices by online platforms: a framework review of art. 102 TFEU for future cases' (2022), Journal of Antitrust Enforcement.

5.1 Introduction

Over the past few years, the growing and evolving digital economy has become one of the main subjects of legal debates in the field of EU competition law, with online platforms as a leading theme. Despite some initial hesitation as to how competition law should apply to online platforms, the currently prominent platforms are now involved in multiple ongoing competition law investigations.[1] Although most of the focus with regard to online platforms seems to be on potential abuses of market power, their pricing practices have remained rather unaddressed in the context of art. 102 TFEU. Until now, the most prominent cases dealing with the pricing strategies of platforms dealt with the use of price parity clauses which have been addressed under art. 101 TFEU instead.[2] Recent complaints against the pricing strategies of Apple and Amazon on their platforms indicate, however, that the assessment of platform pricing strategies under Art. 102 TFEU is inevitable.[3] Although price related abuses of dominance have been addressed on multiple occasions in the framework of EU competition law, such experience may not be readily transferable to the case of online platforms due to their multisided nature.[4]

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1 E.g. in the case of Google two infringement decisions have already been issued. See Google Shopping and Android ; See *Google Search (Shopping)* (Case AT.39740) decision of 27 Jun. 2017 and *Google Android* (Case AT.40099) Commission decision of 18 Jul. 2018.

2 The case of Amazon offered a possibility to make the analysis under 102 TFEU however the case was settled via a commitment decision. See *E-book MFNs and related matters (Amazon)* (Case AT.40153), Decision dated 4 May 2017.

3 See e.g. Rochelle Toplensky, ' Brussels poised to probe Apple over Spotify's fees complaint' Financial Times (Brussels 5 May 2019) < https://www.ft.com/content/1cc16026-6da7-11e9-80c7-60ee53e6681d > Accessed 27 September 2019.

4 See e.g. Julian Wright,' One-Sided Logic in Two-Sided Markets '(2003). AEI-Brookings Joint Center Working Paper No. 03-10. Available online at: < https://ssrn.com/abstract=459362>.

The current case law of the EU courts and decision making practice of the European Commission deal with cases governed by traditional economic insights that do not always hold in the context of multisided markets.[5] For example, platforms may price their services below marginal cost on one side of the platform in order to maximize profits on the other side(s) without such practices having an anti-competitive motive. This can be observed in the case of YouTube where consumers are able to use YouTube free of charge while advertisers pay significant fees to have their ads appear on YouTube. Comparable price structures are often adopted by online platforms regardless of the services they provide and the market power they possess.[6] Nevertheless, this use of skewed price structures can be easily mistaken for being anti-competitive if perceived through the lens of previous practice that has yet to adapt to the economics and business reality of multisided platforms. Pricing below cost on one side of the platform, if assessed in isolation, can be considered as predatory while the prices charged on the other side(s) of the platform can be perceived as excessive.[7] Despite the initial resemblance to scenarios involving price related abuses, the use of skewed pricing structures by online platforms is a legitimate practice inherent to their multisided character.

The economic literature on two and multisided markets has repeatedly confirmed the use of skewed pricing structures as a common, legitimate and necessary practice, which is a result of the indirect network effects at play in such markets. Undertakings that operate in two or multisided markets, like online platforms do,[8] enable the interaction between two or more separate customer groups participating on their different sides. The demand for the platform on one of its sides is then dependent on the demand for it on its other sides. For example, the number of consumers using Expedia depends on the number of hotels offering their rooms on Expedia and vice versa. In order to get such separate, yet interdependent customer groups on board, platforms must implement pricing schemes that are appealing to all the needed customer groups while maximizing the platforms' profits.[9] The pricing scheme in this context includes the pricing level, meaning the total remuneration charged by the platform, and the pricing structure that

5 See e.g. David S. Evans 'The Antitrust Economics of Multi-Sided Platform Markets' (2003) 20(2) Yale Journal on Regulation 327.

6 See e.g. David S. Evans, ' Some Empirical Aspects of Multi-Sided Platform Industries' (2003) 2(3) Review Of network Economics 191, 194.

7 OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at. 37-40.

8 Bertin Martens, 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological Studies Digital Economy working paper 2016/05, at. 12. https://ec.europa.eu/jrc/sites/jrcsh/files/JRC101501.pdf accessed 9 Jul 2020.

9 See e.g. Marc Armstrong 'Competition in two-sided markets' (2006) 37(3) The RAND Journal of Economics 668; Jean Charles Rochet and Jean Tirole, 'Platform competition in two-sided markets' (2003) 1(4) Journal of the European Economics Association 990.

determines the division of remuneration across the platforms' customer groups.[10] The pricing structure is set in a manner that reflects the workings of the network effects on the platform, the demand of the various customer groups for the platform, their single or multi-homing patterns as well as their respective degree of price sensitivity.[11] The pricing level is equally influenced by such factors, as well as by more conventional variables such as costs, intensity of competition and switching costs. The implementation of pricing schemes (i.e. pricing structure and level) that follow these principles is necessary for platforms to overcome the coordination problem they face when trying to bring together separate customer groups in order to facilitate an interaction between them. Therefore, although the pricing schemes of online platforms may entail settings that seem unnatural from the perspective of previous practice, they are essential for platforms to compete in a viable manner.

In light of this inherent reliance on unconventional pricing structures, it is important that anti-competitive pricing strategies of online platforms are correctly distinguished from legitimate business practices. In order to do so, the price setting practices of online platforms must be assessed in light of their distinctive characteristics and multisided nature. Accordingly, future cases concerning potential price related abuses of dominance must take into account the entire pricing scheme implemented by the platforms. Analyzing such schemes entails looking at both the price level and price structure of the platform. Applying the current framework to each side of the platform in isolation, as would commonly be the approach with one-sided markets, risks ignoring the economic logic and business reality of such platforms and can easily lead to incorrect findings resulting in over or under enforcement.[12]

In light of the above, it is the aim of this chapter to answer the question of how should price related abuses of dominance be assessed under art. 102 TFEU in light of their inherent reliance on unconventional price settings resulting from their multisided nature. The abuses selected for the purpose of answering this question are: predatory pricing, excessive pricing and discriminatory pricing. The reason behind this selection is two fold. From a (theoretic) competition policy perspective, these abuses represent the three main forms in which a dominant undertaking can abuse its market power.[13] From an enforcement perspective, these abuses that are already

10 Erik Hovenkamp, 'Platform Antitrust' (2018) 44(4) The Journal of Corporation Law 721.

11 Feriha Zinngal and Frauke Becker, 'Drivers of optimal prices in two-sided markets: the state of the art' (2013) Vol. 63(12) Journal für Betriebswirtsch 87, 87- 90.

12 Julian Wright (2003) *supra* (n 4).

13 Such forms include undermining competitors, exploiting customers and distorting competition between customers.

the subject of claims in practice,[14] entail situations that exhibit, in a clear manner, how significant the impact of a comprehensive assessment of the entire pricing scheme of the platform would be for finding an abuse. In this regard the possibility of objective justifications for such abuses is not included in the scope of this article as previous practice on these abuses shows that this defense possibility is almost never addressed. In such cases the legal debate predominantly concerns the abuse criteria for which the Commission (on NCA) carries the burden of proof. The contribution of this article to practice follows from combining the economics of platforms with the legal framework of current EU competition law practice. This approach, while being straight forward, is often missing in the existing claims against platforms and is often only briefly explored in legal literature. Nevertheless, such an approach remains imperative for ensuring the sound application of existing competition policy in the case of online platforms as will be shown throughout this article.

The importance of the framework review attempted by this paper is further accentuated by the fact that the recently proposed Digital Markets Act (DMA),[15] which is specifically designed to apply to platforms, does not appear to deal with practices that mirror 'traditional' price related abuses. Admittedly the DMA would serve as a complement rather than replacement for art. 102 TFEU as its scope is limited to gatekeeper platforms,[16] which does not seamlessly overlap with the concept of dominance under art. 102 TFEU.[17] Furthermore, unlike art. 102 TFEU its purpose is essentially to prevent in an ex-ante manner the materialization of circumstances and business practices that would leads to situations which EU competition policy

14 In the case of predatory pricing, in the US a case was launched against Uber by its competitor SideCar which was allegedly pushed out of the market by Uber's pricing policy, see SC Innovations, Inc. v. Uber Techs., Case No. 18-cv-07440-JCS (N.D. Cal. May. 1, 2020); In the case of discriminatory pricing, see the case of Dutch real estate platform Funda in Decision of the District Court of Amsterdam dated 21 March 2018 concerning real estate platform Funda ECLI: NL: RBAMS:2018:1654- Rechtbank Amsterdam, 21-03-2018/C/13/528337/HA ZA 12-1257 (*Funda* decision); in the case of excessive pricing see the recent claim of Spotify against Apple for its commission fee in the App Store see Spotify 'Time to Play Fair – Frequently Asked Questions' www.timetoplayfair.com/frequently-asked-questions/ accessed 1 June 2020.

15 European Commission, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final.

16 Art. 2 and 3 of the DMA.

17 The concept of dominance under art. 102 TFEU concerns a relation of relative market power between the concerned undertaking and its actual and potential competitors. A finding of dominance thus does not depend of the actual size or financial value of the respective relevant market in each case. By contrast the DMA seems to rely predominately on absolute measurements concerning the size of concerned undertaking and the corresponding market(s) it serves, which makes the finding of gatekeeper platforms in niche or narrow markets less rather unlikely. See thresholds in art. 2 and 3 of the DMA.

would commonly seek to prevent, such as abuses of dominance. Nevertheless this complementary function of the DMA, which is visible with regard to practices that resemble non-price related abuses of dominance,[18] is far more limited in the case of platform pricing. It would appear that when is comes to price related competitive concerns, the DMA only addresses the use of MFN clauses and some terms of remuneration when it comes to the access to the data generated by and on the concerned platform.[19] Consequently, until the DMA is updated in a manner that includes additional aspects of platform pricing, the undesired effects of pricing strategies adopted by platforms with significant market power will predominantly have to be dealt with under the scope of art. 102 TFEU.[20]

In order to answer the question posed by this chapter and provide a coherent and thorough inquiry capable of serving as practical guidance for ongoing and future cases, this chapter will be divided into three sections following this introduction. In the first section, the economics of pricing by platforms will be discussed. In this section the price setting logic of platforms will be explored as covered by economic literature. Accordingly, the section will look into the role played by platform pricing as well as into how platforms set their prices and which factors may impact this process. This discussion is intended to provide guidance for the competition law analysis of platform pricing by laying out the variables that determine such price settings from an economic perspective. The discussion in this section will therefore inform the legal analysis covered in the second section of the article that addresses the frameworks of predatory pricing, excessive pricing and discriminatory pricing. Each abuse will be covered in a separate sub-section where the general framework of the abuse will be addressed against the background of platform pricing as discussed in the first section of the chapter. The purpose of this exercise is to clarify the challenges faced by current practice when it comes to applying such frameworks to online platforms. Following the examination of each framework, the chapter offers some suggestions for adjustments that could be made in order to preserve the effectiveness of the current frameworks of these abuses when applying them in the context of online platforms. Finally, the third section will provide some final comments and conclusions

18 See Art. 5(c), (e), (f) and Art. 6 (b), (c), (d), (e) and (f) of the DMA. These provisions cover various practices that could potentially qualify as tying and bundling, refusal to supply, leveraging and unfair trading conditions.

19 Art. 5(b) and (g) and art. 6 (g), (i) and (j) of the DMA.

20 According to art. 10 of the DMA, the obligations imposed by it on platforms falling under its jurisdictional scope may be updated in light of new insights and/ or changed market conditions.

5.2 Online platform pricing

5.2.1 Skewed pricing structures of multisided platforms

The pricing strategies of online platforms have initially triggered the interest of antitrust scholars due to their common reliance on zero priced offers, which are often perceived as suspicious from the perspective of competition policy.[21] This seemingly unusual form of pricing has, however, been subject to extensive economic research where it has been found to be an inherent characteristic of platforms as such.[22] In this regard it should be noted that the term 'online platform' does not constitute a legal category of undertakings,[23] despite the fact that this term is often used with regard to existing businesses.[24] In practice, in the context of competition law policy, the term online platform commonly refers to an undertaking that displays some or all of the characteristics of a two-or multisided platform or market as defined by economic literature.[25] Similar to the current approach in economic and legal literature, for the purpose of this article the terms: platforms, online platforms and two-or multisided markets will be used interchangeably.

In the broader context of platform studies, the ability of platforms to set profit maximizing prices that are divided unevenly across their respective customer groups is considered one of their most important distinctive characteristics. In fact, the seminal work of Rochet and Tirole on two-sided platforms (which they refer to as two-sided markets) focused on the skewed pricing structure of platforms in order to define their very existence.[26] Other studies of two-or multisided platforms took a different approach to the definition of such platforms, focusing instead on the indirect network effects between the separate customer groups of the platform. Evans and Schemalensee, for example, focus on the value-creating role of the platform

21 See e.g. David S. Evans, 'The Antitrust Economics of Free' (2011) 7(1) Competition Policy International at 78-81; Michal S. Gal and, Daniel L. Rubinfeld, 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (2015) UC Berkeley Public Law Research Paper No. 2529425; NYU Law and Economics Research Paper No. 14-44. Available online at: < https://ssrn.com/abstract=2529425>.

22 OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at 37-40.

23 Commission staff working document on online platforms accompanying the document Communication on online platforms and the digital single market {COM(2016) 288} , SWD(2016)172, at 1-9.

24 Ibid; this status will remain unchanged even if the Digital Markets Act enters into force as art. 3 of the act explicitly refers to the term Gatekeepers rather than platforms. See Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act)COM/2020/842 final.

25 Bertin Martens, (2016) *supra* (n 8).

26 Jean-Charles Rochet and Jean Tirole 'Platform Competition in Two-Sided Markets' (2003) 1(4) Journal of the European Economic Association 990.

for separate customer groups by solving their coordination problem and reducing transaction costs.[27] The platform pricing structure is then instrumental for capturing and dividing the created value between the platform and its separate customer groups in a profitable manner.[28] A comparable approach can be observed in the case of Caillaud and Jullien that consider the use of skewed pricing structure as an important launch tactic to enter a two-sided market through a strategy they called divide-and-conquer.[29] Similarly, Armstrong's work on price competition among platforms describes the skewed pricing structure of platforms as an outcome of the indirect network effects between the customer groups of the platform.[30] Choosing the middle way between the two approaches, Filistrucchi, Geradin and van Damme use the pricing structure of the platform as a supplementary characteristic for identifying two-sided platforms in addition to the presence of indirect network effects.[31]

Although these seminal contributions, and others that followed, offer different definitions for two-or multisided platforms that utilize platform pricing in different manner,[32] all the studies share the common view that the price structure of platforms is non-neutral.[33] In other words, all the studies on platforms and their pricing strategies indicate that the demand for the products or services provided by platform depends not only on the price level of the platform but also on its price structure.[34] Accordingly, in order for a platform to enter the market and reach critical mass it must adjust the prices it charges each of its separate customer groups in a manner that reflects their demand for the platform and for the interaction with the other customer groups. By implementing a comparable pricing scheme the platform is then able to overcome the 'chicken-and-egg' coordination problem it faces when trying to bring together separate customer groups on board. As the demand of the separate groups of the platform with regard to the platform as well as each other will (almost) always vary, the price structure

27 David S. Evans and Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses* in Roger Blair and Daniel Sokol, (eds.), *Oxford Handbook on International Antitrust Economics* (Oxford University Press 2014).

28 Ibid, at. 410-415.

29 Bernard Caillaud and Bruno Jullien,'Chicken & Egg: Competition among Intermediation Service Providers' (2003) 34(2) The RAND Journal of Economics 309.

30 Marc Armstrong (2006) *supra* (n 9) at 668-669.

31 Lapo Filistrucchi, Damien Geradin & Eric van Damme, *Identifying Two-Sided Markets* (Tilburg Law School Research Paper, No. 008/2012, 2012) p. 10-11 <http://ssrn.com/abstract=2008661> accessed 1 March 2020.

32 Bertin Martens (2016) *supra* (n 8) at 10-18; Dirk Auer and Nicolas,Petit, 'Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy ' (2015) at 13-20. Available online at:< http://ssrn.com/abstract=2552337> accessed 1 March 2020.

33 Bertin Martens (2016) *supra* (n 8) at 11-14.

34 See OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at. 29-30.

of platforms will generally be skewed.[35] In extreme cases, skewness can manifest in some of the prices set by the platform being below marginal cost and yet make sense from an economic perspective in light of the entire price scheme of the platform.[36] This can be observed for example in the case of Booking.com where consumers do not pay for their use of the hotel room booking services, however, hotels are charged a commission fee for each booking made through the platform.

Therefore, the ability of a platform to charge significantly different prices from its separate customer groups for participating on the platform is more likely an indicator of legitimate business conduct than of anti-competitive pricing practices. In light of this inherent reliance on skewed pricing structures, the legal assessment of the price setting practices of platforms should include an analysis of both their price level(s) and structure. Adopting this broader scope of legal analysis in order to establish whether the pricing practices of platforms constitute potential abuses of dominance also requires looking into the variables that influence such price setting practices. Such an inquiry will assist in determining whether the pricing scheme of the concerned platform or modifications thereof make sense within the legal and economic context of each case.

5.2.2 Skewed pricing variables

The economic literature on pricing in two and multisided markets has identified multiple variables that have an important role in determining how the total price level of the platform is divided among its separate customer groups.[37] Such variables can be divided into on-platform and off-platform variables. In the context of this contribution on-platform variables concern variables that originate from the platforms' business model. Off-platform variables concern variables that originate from the market conditions and competitive pressure experienced by platforms in each case. These variables constitute essentially an inseparable part of the legal and economic context of online platforms that needs to be taken into account in a legal analysis of business practices in the context of EU competition law. Consequently, the assessment of such variables will be required in order to determine whether the pricing practices of dominant platforms constitute legitimate practices entailing competition on the merits or a manifestation of abusive pricing strategies.[38] Therefore it is important to explore such variables before moving on to revisiting the application of price-related abuses to online platforms.

35 See e.g. Richard Schmalensee and David S. Evans, 'Industrial Organization of Markets with Two-Sided Platforms' (2007) 3(1) Competition Policy International 151.

36 See OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69, at 38-39.

37 Feriha Zingal and Frauke Becker (2013) *supra* (n 11) at 87.

38 Case C-67/13 P *Groupement des cartes bancaires v Commission* [2014] ECLI:EU:C:2014:2204, para. 53.

A. On-platform variables

The first and perhaps most important variable is network effects. The presence of network effects in the case of two-or multisided platforms is an inherent factor of their existence and one of the main characteristics that is considered to be relevant in the context of competition law analysis.[39] Network effects can be divided into direct and indirect network effects. In the case of platforms (positive) direct network effects are present when the value of the platform for one of its customer groups increases with the presence of more customers on that side of the platform. For example, the value of Facebook for private users increases as more private users sign up to Facebook. By contrast, indirect network effects occur when the value of the platform for one of its customer groups increases with the presence of more customers on the other side(s) of the platform. For example, the more private users join Facebook the more valuable Facebook becomes for advertisers. As seen through the example of Facebook, direct and indirect network effects can simultaneously be present on the same platform.

In the context of pricing, indirect network effects can be said to have a significant impact on the skewness of the platform pricing scheme. This impact results from the fact that such effects are in essence the embodiment of the coordination problem of trying to get separate customer groups 'on-board', which all platforms face and try to solve by implementing skewed pricing structures.[40] Therefore, it is precisely the presence and intensity of indirect network effects that sets two-or multisided platforms aside from one-sided entities. In practice, the manner in which indirect network effects manifest indicates how the various customer groups of the platform evaluate each other's participation on the platform. Accordingly, several possible scenarios have been studied.[41] In some cases, the indirect network effects will be mutually positive. This occurs for example in the case of Booking.com where an increase in hotel listings attracts more consumers and vice versa. By contrast, in other cases, indirect effects may be positive on one side of the platform and negative on the other. For example, an increase of private users of Facebook may attract more advertisers but having more

39 This seems to also one of the main criteria that the Commission sees as important for this purpose. See Note by the Delegation of the European Commission in OECD Roundtable on Two-sided Markets DAF/COMP/WD(2009)69 < https://ec.europa.eu/competition/international/multilateral/2009_jun_twosided.pdf> accessed 5 August 2020.

40 See e.g. Richard Schmalensee and David S. Evans (2007) *supra* (n 35) at 153-161.

41 See e.g. Jean J. Gabszewicz, Diedier Laussel, Nathalie Sonnac, 'Does advertisement lower the price of newspapers to consumers? A theoretical appraisal' (2005) 87 Economic Letters 127. The authors study the impact of indirect network effects that represent the readers' attitude towards advertisements on the price setting of newspapers. Their insight is that the nature of such effects and the proportion of readers it covers will determine the pricing outcome i.e. relatively low or high compared to other settings.

advertisers will not (likely) attract more private users. Nevertheless, in this latter scenario the views of customers on one side of the platform may not be homogeneous, which would result in positive indirect network effects on one side of the platform and positive as well as negative indirect network effects on the other side of the platform. This can occur for example when some Facebook users value the targeted advertisements displayed while others would rather block them.[42]

Generally speaking, economic literature on pricing in two-sided markets has found that the customer group that benefits the most from the participation of other customer group(s) on the platform should pay the lion's share of platforms' total price level.[43] Accordingly, when indirect network effects are mutually positive, the side of the platform which displays more pronounced indirect network effect will (at least partly) subsidize the participation of the customer group(s) on the other side(s) of the platform. Similarly, when the indirect network effects are positive on one side and negative on the other side of the platform, the customer group that benefits from the participation of the other customer group(s) on the platform will likely have to fully subsidize their participation. This can be seen in the case of Facebook that is monetized predominantly by the advertiser side of the platform, while private users participate on the platform free of any monetary charge. In some cases such subsidization may even require offering some customer groups negative prices (i.e. a compensation for participation) in order to attract them to the platform as well as the limitation of the number of participants of a customer group.[44] The same holds with regard to the situation where one side of the platform exhibits both positive and negative indirect network effects while the other side of the platform displays positive indirect network effects. The degree of subsidization in this latter scenario depends on the ratio between customers who value the participation of other customer groups on the platforms and those who do not.[45]

42 Ibid, the proportion within such mix is then important for determining the final price of the platform product or service.

43 See e.g. Marc Armstrong (2006) *supra* (n 9) Jean Charles Rochet and Jean Tirole (2003) *supra* (n 9); David S. Evans and Richard Schmalensee, *Matchmakers: the new economics of Multisided Platforms* (Harvard Business Review Press 2016) at. 91-98; Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary, *Platform Revolution* (W.W. Norton & Company, 2016) at 123-127.

44 Ibid; e.g. in the case of LinkedIn trial periods for premium account are regularly given to consumers, UberEats regularly sends consumers discount codes to consumers to also share with their friends.

45 *Supra* (n. 41). In the context of the paper the advertisers are the subsidizing group of the newspaper platform.

Direct network effects can also be observed in the context of two-or multi-sided platforms and their occurrence will also have an impact on the price setting of the platform. Such effects can be either positive or negative.[46] The previously mentioned example of Facebook is one where direct network effects are positive as the value of Facebook for private users increases as more private users join Facebook. However, the increase of members of a platform customer group may also be seen as a value-reducing element for the members of such a group. For example, in the case of online market-places sellers value platforms which can reach many potential buyers (such as end consumers). However, such sellers may prefer not to be on a platform that has many other sellers. In such a scenario, sellers have perhaps access to many potential buyers but they also have to compete more intensively in order to complete transactions. In such situations, the presence of negative direct network effects may make the cross-subsidization across separate customer groups more difficult for the platform resulting in the possible sharing of costs across such groups.[47] Accordingly, in such cases a relatively less skewed pricing structure may arise unless the number of customers on the platform side where negative network effects occur is limited.[48]

Implementing these insights concerning direct and indirect network effects will depend to some extent on the ability of the platform to introduce discriminatory or differential pricing.[49] Discriminatory or differential pricing in this context entails applying different prices with regard to a customer group on one side of the platform. The more accuracy that the platform has in its ability to implement different prices to members of the same customer group the better it is able to take the nature and intensity of the network effects at play into account and maximize profits.[50] Having this ability will result in practice in more complex pricing schemes depending on whether the platform divides its customers into categories or allows customers to divide themselves into a price category based on their interests. For example, the Apple App Store has different pricing requirements for the various apps offered in the app store based on their price and business

46 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyn, 'Strategies for two-sided platforms' (2006) 84(10) Harvard Business Law Review 1, 3-6; Amrit Tiwana, 'Platform Ecosystems' (Elsevier, 2014) at 33-36.

47 See more on pricing in such settings Paul Belleflamme and Martin Peitz, 'Managing competition on a two-sided platform' (2019) 28(1) Journal of Economics & Management Strategy 5.

48 Paul Belleflamme and Eric Toulemonde,' Negative Intra-Group Externalities in Two-Sided Markets' (2009) 50(1) International Economic Review at 265-266.

49 A. Ambrus and R. Argenziano, ' Asymmetric networks in two-sided markets' (2009) 1(1) American Economic Journal 17.

50 Elias Carroni, 'Behavior-based price discrimination with cross-group externalities' (2018) 125(2) Journal of Economics 137.

model.[51] Youtube, that normally requires private users to view advertisements before being able to view any video, now has a 'premium' pricing option where private users pay to not be subject to advertisements.[52]

The presence of direct and, particularly, indirect network effects also influence the impact of the platform's own costs on its pricing structure. Such effects may mean in practice that the costs or increase thereof with respect to serving a customer group on one side of the platform may not concern that customer group alone. Accordingly, depending on the nature of the indirect network effect and their intensity, an increase in costs on one side (the subsidized side) of the platform may be transferred in part or in full to the other side(s) of the platform (the subsidizing side(s)).

Another element that will significantly impact the skewness of the pricing scheme, as well as the price level of the platform as a whole is the price sensitivity of the respective platform customer groups.[53] Unlike indirect network effects, however, the impact of this variable on the price structure is not entirely conclusive. The models that analyzed the impact of this variable adopted different assumptions with regard to the customer demand patterns, market conditions tested (monopolistic vs. competitive markets) and the presence of indirect network effects, which resulted in different outcomes.[54] Consequently, the impact of price sensitivity on the skewness of the price structure and the manner in which it is skewed (i.e. which is the subsidized or subsidizing side), while significant, will depend on the market conditions in each case.

B. Off – platform variables

In addition to the above-mentioned variables, off-platform variables that represent the competitive pressure experienced by such platforms will also impact their pricing practices. The main external variables that are capable of influencing the pricing strategies are therefore, not surprisingly, the number of (competing) platforms and the single or multi-homing patterns of platform customers.

51 See Apple's information for developers based on the business model they intend to implement in their app < https://developer.apple.com/app-store/business-models/> accessed 7 January 2021.

52 See Youtube's new premium membership services at< https://www.youtube.com/premium> accessed 7 January 2021.

53 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyn (2006) *supra* (n 46) at 6; David S. Evans and Richard Schmalensee (2016) *supra* (n 43) at 91-98; Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary, (2016) *supra* (n 43) at 123-127; Richard Schmalensee and David S. Evans, (2007) *supra* (n 35) at 159-161.

54 Feriha Zingal and Frauke Becker (2013) *supra* (n 11) at 99-100.

The impact of the number of (competing) platforms on the pricing decisions of platforms has been studied based on the state of competition that was pre-defined in each economic model, i.e. monopolistic and duo-polistic markets or perfect and imperfect competition.[55] Given that platforms compete with respect to two or more customer groups, these settings may vary with respect to each side of the platform. In other words, the number of competitors that a platform has for each of its sides may not be always identical. For example, Facebook may compete with Twitter for private users as well as advertisers, while competing with Google's search engine only for advertisers. In general, it can be said that the various studies of this variable indicate that the side of the platform where competition is the least intense will likely constitute the subsidizing side of the platform.[56] The degree and intensity of competition of each side of the platform is determined, not only by the number of existing platforms, but also by the single or multi-homing patterns displayed by the platform customer groups.

Single and multi-homing patterns refer to the choices that platforms customers make with regard to using one or more platforms.[57] Accordingly, single-homing refers to a situation where the platform customers choose to use a single platform for a specific purpose. For example, some private users may choose either Instagram or TikTok to fulfill their social media needs or make a choice between Visa and Amex when choosing a credit card. Multi-homing then refers to the opposite situation, where the platform customers choose to use more than one platform for similar purposes. For example, consumers may use multiple online booking platforms such as Expedia and Booking.com when searching to book a hotel room. Such usage patterns are possible with respect to each separate platform customer group, in various settings. Accordingly, usage patterns can be: (i) Multisided single-homing. This would occur for example when both private users and recruiters choose to use LinkedIn as their only professional social media platform. (ii) Multisided multi-homing. This occurs for example in the case of online hotel room booking platforms where consumers as well as hotel owners use multiple platforms for the same purpose of offering and booking hotel rooms. (iii) Single-homing on one side and multi-homing on another side of the platform, also referred to as a (competitive) bottleneck scenario. This occurs for example in the case of credit cards where users usually opt to having one credit card while merchants tend to accept more (if not all) types of credit cards. The manifestation of such usage patterns in

55 See e.g. Yuyu Zeng Harold Houba Gerard van der Laan, 'Note on 'Competition in Two-sided Markets' (2015) Tinbergen Institute Discussion paper (TI 2015-080/II) < https://papers.tinbergen.nl/15080.pdf> accessed 7 December 2020; Suijt Chakravoti and Roberto Roson, ' Platform competition in two-sided market: the case of payment networks' (2006) 5(1) Review of Network Economics, 118; Marc Armstrong (2006) *supra* (n 9) at 668.

56 Feriha Zingal and Frauke Becker (2013) *supra* (n 11) at 104-105.

57 Amrit Tiwana, *Platform Ecosystems* (Elsevier, 2014) at 36.

practice is generally a result of the manner in which the platform customers perceive platforms (homogeneous or heterogeneous) as well as their preferences and various biases,[58] which at times are curbed by switching costs and platform governance rules.[59]

In the context of platform studies, it is often assumed that homogeneous views of platforms lead to single-homing while heterogeneous views of platforms are associated with multi-homing. In other words, where platforms are perceived to be the same or similar by their (potential) customers, such customers will often opt to using only one platform. By contrast, when customers consider platforms to be somehow different this is often associated with the existence of multi-homing.[60]

In terms of intensity of competition platforms are said to compete more fiercely for the platform customer group(s) that are prone to single homing compared to the platform customer groups that are likely to multi-home.[61]This is because getting customers one side of the platform to single-home provides, in theory, the platform with significant market power with respect to the customers on the other side(s) of the platform that multi-home. In the context of platform pricing, this degree of competition also determines the division of prices in the platform pricing structure. Accordingly, in cases where there is single-homing on one side and multi-homing on the other side(s) of the platform, the multi-homing side(s) of the platform are likely to become the subsidizing customer group(s) of the platform.[62] In cases where multisided single-homing or multisided multi-homing occurs, determining which customer group will be the subsidizing one depends

58 See e.g. Bernard Caillaud and Bruno Jullien,'Chicken & Egg: Competition among Intermediation Service Providers (2003) 34(2) The RAND Journal of Economics 309.

59 E.g. in the context of the Google Android case, Google was found to by tying the app store, the Chrome browser and the Google search app in an attempt to prevent multi-homing across app stores which would otherwise be possible given the open source character of Android OS; In the case of Apple multi-homing in the context of app stores for iOS is simply excluded; In the case of Expedia hotels that offered their rooms on competing platforms were risking being demoted in the search result ranking on Expedia.

60 Richard Schmalensee and David S. Evans (2007) *supra* (n 32) at 166; Richard Schmalensee and David S. Evans, 'Industrial Organization of Markets with Two-Sided Platforms' (2007) 3(1) Competition Policy International 166; David S. Evans and Richard Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses ' (2013) in Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Online Research Paper No. 623, at 15-16. Available online at: < https://ssrn.com/abstract=2185373> accessed 2 Nov. 2020.

61 R. Poolsombat and G. Vernasca, 'Partial Multihoming in Two-sided Markets' (2006) Discussion Papers, Department of Economics, University of York, < https://EconPapers.repec.org/RePEc:yor:yorken:06/10 >accessed 20 December 2020.

62 Mark Armstrong and Julian Wright, ' Two-sided markets, competitive bottlenecks and exclusive contract' (2007) 32 Economic Theory 353.

on the nature and intensity of indirect network effects.[63] This is because the intensity of competition in such scenarios is considered to be similar on the various sides of the platform. As mentioned above, in such situations the customer group that benefits most from the participation of the other customer group(s) on the platform will likely (fully or partly) subsidize the participation of the latter. Therefore, when taking into account the state of competition for the purpose of determining their pricing scheme, platforms will likely take into account not only the existence of (potential) competitors but also the actual usage patterns of their various customer groups.

With the above-mentioned insights concerning the pricing setting practices of platforms in mind, the next section will look into the legal dimension of platform pricing practices and the manner in which these may be assessed under art. 102 TFEU. In this regard the following section covers the three main objections that can be raised with respect to the pricing practices of a dominant undertaking, namely its prices are too low, too high or discriminatory. Although multiple forms of abuse under art. 102 TFEU cover these concerns, the next section will focus only on predatory, excessive and discriminatory pricing that represent the main assessment frameworks for such concerns.

5.3 Abusive pricing practices under Article 102 TFEU

Abusive pricing practices constitute a large part of the art. 102 TFEU case law that covers exclusionary, exploitative and discriminatory abuses. In a way this is unsurprising, as price related abuses illustrate the most direct concerns attached to dominant undertakings that are considered to have the ability to act independently from their competitors, customers and eventually consumers.[64] Although all price related abuses can apply to online platforms just like any other kind of undertaking, an exhaustive analysis of all price related abuses exceeds the scope of this contribution. Instead, the following sections will focus on the abuses where the need for taking into account the use of skewed pricing schemes in order to maintain the soundness of their legal framework is most evident. The insights from these sections can then be transferred to other abuses that generally share a great deal of communalities when it comes to their theory of harm and factual construction.[65]

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63 R. Poolsombat and G. Vernasca (2006) *supra* (n 61).

64 Case C-85/76 *Hoffmann-La Roche v Commission* [1979] ECLI:EU:C:1979:36, para. 38; Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C45/7, paras. 9-11 (hereinafter Commission Guidance paper on art. 102 TFEU).

65 E.g. margin squeeze can shares a great deal of the circumstances with cases concerning predatory pricing, excessive pricing and discriminatory pricing. Similarly, rebates cases can similarly display common circumstances with predatory pricing cases.

5.3.1 Predatory pricing

Predatory pricing is the abuse where taking into account the inherent dependence of online platforms on the implementation of skewed pricing structures will have perhaps the most noticeable impact on the legal analysis of their practices. It is precisely the use of skewed pricing structures which results in price settings, such as zero priced or even negatively priced offers, which may appear suspicious when first observed. Adjusting the current framework for analyzing predatory pricing abuses in the context of online platforms requires, however, first revisiting the conceptual framework of this abuse.

Predatory pricing can be described as the implementation of price settings by a dominant undertaking that entails incurring a loss, or forfeiting a profit, with the aim of eliminating or disciplining existing competitors or deterring potential ones. Accordingly, the main concerns behind such practices are that by setting its prices significantly lower than expected based on existing market conditions, the dominant undertaking is able to: (a) drive financially weaker competitors out of the market; (b) signal to (actual and potential) competitors that price wars are going to be costly; (c) signal that market entry is not profitable.[66] In the context of EU competition law, it would appear that the main focus concerning predation relates to the exclusionary effects of such practices rather than their use for disciplining competitors.[67]

Successfully distinguishing predatory pricing practices from legitimate price competition scenarios is, however, not an easy task and requires diligence as price competition that leads to lower prices is a sought after outcome for competition policy to the benefit of consumers and thus should not be condemned erroneously. In the course of time, several conceptual tests have been developed in economic literature with the aim of correctly distinguishing between legitimate and predatory pricing practices. These tests include the no-economic-sense test and the as-efficient-competitor test, which were later complemented and to some degree replaced by the Areeda

66 See e.g. Easterbrook, Predatory Strategies and Counterstrategies (1981) 48 U. Chicago Law Rev 263, 334; Oliver E Williamson, 'Predatory Pricing: A Strategic and Welfare Analysis' (1977) 87(2) Yale Law Journal at 284 -286; P. Bolton, J. F. Brodley and M. H. Riordam, ' Predatory Pricing: Strategic Theory and Legal Policy' (2000) 88(8) Georgetown Law Journal, 2239; Gunnar Niels, Helen Jenkins and James Kavanagh, *Economics for Competition Lawyers* (2nd Ed, Oxford press publishing, 2016) at 171-178; Roger Van Den Berg, *Comparative Competition Law and Economics*, (Edward Elgar, 2017) at 331-340.

67 Commission Guidance paper on art. 102 TFEU, *supra* (n. 64) paras. 63-73.

and Turner test.[68] Such tests gradually gained the support of the antitrust community around the world including the EU where a dedicated legal test was introduced through case law.[69]

A. Predatory pricing in EU competition law

The EU legal framework for assessing predatory price settings was established by the CJEU in *AKZO v. Commission*,[70] where cost benchmarks resembling those of Areeda and Turner were introduced. Accordingly, when a dominant undertaking's prices are below AVC these are presumed to be predatory. When the pricing of products or services is above AVC but below ATC it can be considered part of a predatory strategy if there is proof of intent to eliminate competition.[71] In this regard the legal test set in *Akzo* can be said to incorporate the insights of the previously mentioned tests. Setting prices below AVC only makes economic sense for predatory reasons, while prices between AVC and ATC may still leave room for price competition by as efficient competitors, at least in the short term.[72] Requesting proof of predatory intent in the latter case is then quite reasonable, as such pricing strategies may stem from legitimate motives and follow a sound economic logic.[73] Remarkably, unlike in the case of US antitrust, the potential for recoupment does not constitute a criterion of the legal test for establishing predatory pricing under EU law.[74]

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68 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n. 66) at 159-160; Robert O'Donghue and Jorge Padilla, *The law and Economics of Article 102 TFEU* (3rd Edition, Hart Publishing, 2020) at 289-294; Philip Areeda and Donald F. Turner, 'Predatory Pricing and Related Practices under Section 2 of the Sherman Act' (1975) 88(4) Harvard Law Review 697.

69 On the implementation of the various predation test around the world see International Competition Network, ' Report on Predatory Pricing' (2007), pp. 10 < http://old.internationalcompetitionnetwork.org/uploads/library/doc354.pdf> accessed 5 Oct. 2020.

70 Case C- 62/86 *AKZO v. Commission* [1991] ECLI:EU:C:1991:286 paras. 70-74; Case T-83/91 *Tetra Pak International SA v Commission* [1994] ECLI:EU:T:1994:246, para. 148-156; Case C-333/94P *Tetra Pak Internaional SA v Commission* [1996] ECLI:EU:C:1996:436, paras. 40-44; Case C-209/10 *Post Danmark* [2012] ECLI:EU:C:2012:172 para. 27; Case C-202/07P, *France Telecom SA v Commission* [2009] ECLI:EU:C:2009:214 paras.108-111.

71 Ibid.

72 The CJEU also seems to believe so, see Case C-209/10 *Post Danmark* [2012] ECLI:EU:C:2012:172, para. 38.

73 Ibid.

74 Case T-83/91 *Tettra Pak* [1994] ECLI:EU:T:1994:246, para 150; Case C- 333/94P *Tetra Pak International SA v Commission* [1996] ECLI:EU:C:1996:436, para. 44; Case T-340/03, *France Telecom SA v Commission* [2007] ECLI:EU:T:2007:22, paras. 226-228 confirmed later in Case C-202/07P, *France Telecom SA v Commission*, [2009] ECLI:EU:C:2009:214 paras.110-113; Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 66) at 171-175; Roger Van Den Berg (2017) *supra* (n 66) at 347-348; Nevertheless, evidence that recoupment is unlikely or unfeasible may still carry some evidentiary weight in cases where the intent of the dominant undertaking cannot be presumed to be anti-competitive, see Case C-202/07P, *France Telecom SA v Commission* [2009] ECLI:EU:C:2009:214 para. 111.

Although *Akzo* is often addressed as the seminal case for predatory pricing abuses, it does not go so far as to require that the AVC and ATC cost benchmarks are applied in all predatory pricing cases. The European Commission notes in its Guidance paper, that it may deviate from the cost benchmarks applied in *Akzo* as other benchmarks may sometimes be more suitable for capturing the logic behind the judgment.[75] Therefore, substantiating a finding of predatory pricing requires sufficient evidence to show either (i) that the financial sacrifice willingly incurred by the dominant undertaking through its price setting is unlikely to be explained by any other reason than eliminating competition; or (ii) that such sacrifice is capable of excluding as efficient competitors in the long term *and* is part of a plan to eliminate a competitor. The manner in which the standard of proof for this test may be met should, however, be form free as each case may involve diverging circumstances that impact the reliability of the evidence and economic cost price test used.[76]

Applying the logic of the test established in the *Akzo* case to the pricing practices of online platforms, therefore, requires taking into account the special characteristics of such undertakings and the nature of competition in the markets they compete in. Doing so requires not only adjusting the mode of application of the Akzo test but also relying on other cost benchmarks that are better suited for assessing the commercial reality of such entities.

B. Applying the legal test of predatory pricing to online platforms

The most important aspect that needs to be taken into account when dealing with the pricing practices of online platforms is that the price charged by the platform for its (matchmaking) services is divided among two or more separate customer groups. It is therefore critical that the entire pricing **structure** and **level** of the (matchmaking) service are taken into account rather than just the side that exhibits a suspiciously low price.[77] As previously discussed, skewed pricing structures are needed for optimizing the balance between the demands of the various customer groups of the (matchmaking) service in a manner that maximizes profit. Where this results in a price setting of zero for a customer group, it means that the cost for the matchmaking services are retrieved from the other customer group(s) of the service.[78] Such circumstances should not be seen as an indication that the

75 Commission Guidance paper on art. 102 TFEU, *supra* (n 64) paras. 62-67.

76 See overview of critique on these tests in Robert O'Donghue and Jorge Padilla (2020) *supra* (n 68) at 279-293.

77 Julian Wright (2003) *supra* (n 4); David S. Evans and Richard Schmalensee (2013) *supra* (n 60) at 33-35; Amelia Fletcher,' Predatory pricing in two-sided markets: a brief comment', (2007) 3(1) Competition Policy International 1.

78 David S. Evans and Richard Schmalensee (2013) *supra* (n 60) at 33-35; Fletcher (2007) *supra* (n 77) at 4-5.

concerned platform is pricing its service in a predatory manner with regard to the zero priced customer group. Finding an indication of abuse in such a situation would entail a flawed interpretation of the logic of the *Akzo* case since providing zero priced access to one customer group does not mean that the platform is providing its services at a loss.

Instead, the *Akzo* test should be applied to the entire pricing level of the matchmaking interaction or functionality provided by the online platform.[79] Accordingly, if the *Akzo* test were to be applied literally, one could speak of predatory pricing if the sum of the compensation, coming in from all the sides of the functionality, is below the AVC of the online platform for providing this service.[80] Making this adjustment to the analysis of predatory pricing will make it better suited for the business reality of platforms and the manner in which they create their profits. It is only when a certain interaction or functionality does not generate sufficient revenue to cover the costs incurred by the platform for enabling such interaction that one can say that a platform is incurring a loss it could otherwise avoid; meaning that such practices will fail the no economic sense test. The manner in which this adjustment to the application of the *Akzo* logic is performed depends, however, on how the relevant market for such interaction or functionality has been defined. In the case of Uber who has been confronted with claims of predatory pricing, this matter is not all too problematic, as Uber only facilitates one matchmaking interaction, namely allowing consumers to book chauffeurs. Therefore, the relevant market would only have to be defined with regard to this interaction and the cost-price analysis will only involve the incurred costs and generated revenue from this functionality. In practice, however, many platforms may facilitate more than one (matchmaking) interaction or functionality such as in the case of Booking.com, which allows consumers to book hotel rooms, attractions and rental cars. Accordingly, if Booking.com were to face a predatory pricing claim from other hotel booking platforms for charging far too low commission fees from hotel owners, the legal analysis of such a claim will have to firstly address the manner in which the relevant market for such service is defined.

The first option is that each of the interactions facilitated by Booking.com is considered part of a separate (related) market. In such a case the cost-price analysis will be performed for each of the separate services offered by Booking.com provided that dominance can be established with regard

79 Stefaan Behringer and Lapo Filistrucchi, Areeda-Turner in two-sided markets' Tilec Discussion paper No.2014-024 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2454392> accessed 22 Sep. 2020. The authors also show the consequences of not following this approach based on previous cases on newspapers. The author make their findings with regard to newspaper markets which are two-sided, these can however be applied by analogy to online platforms which are often multi-sided.

80 Fletcher (2007) *supra* (n 77) at 4-5.

to one of them. When dominance is established in a different market than the one where the alleged predatory practices take place, an element of leveraging and / or cross-subsidization should be provided.[81] The second option would be to define the relevant market for Booking.com's services as a package, the market than being that of online hotel portals.[82] In this second scenario, the cost-price analysis would assess the profitability of all the offered services and dominance would have to be established with regard to the hotel portal market. Although the application of the predation threshold, namely offering a service at a cost bellow AVC, is the same in both scenarios, the intervention moment may differ, as establishing dominance will require different market conditions. Furthermore the predation analysis will also differ significantly as the second approach allows undertakings to pile together the costs and profits of their various services.[83] This second approach should therefore be applied with caution and in market conditions that display signs of competition on packages of services or functionalities. Otherwise, undertakings that only provide comparable services on a standalone basis may be unduly disadvantaged as they may not be able to viably sustain similar price levels.[84] In situations where the market has not clearly shifted to competition among bundles it is advisable to apply the cost price test to each of the services and /or products offered by the platform individually as well as collectively across two or more services and/or products.[85] This approach is particularly relevant in the case of platforms that offer multiple products or services that share a significant amount of common costs, as it otherwise enables these platforms to allocate their costs in manner that allows them to avoid legal scrutiny.[86]

In addition to adjusting the mode of application of the predation test to include the various sides of the platform and / or some of its services, the cost measurements used for assessing predation may also require adjustment and the extension of the *Akzo* predation presumption to other cost

81 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 66) at 180-181.

82 See in this regard the market definition in Bundeskartellamt Prohibition decision 20 Dec. 2013 in the case of HRS, B9-66/10; Bundeskartellamt Prohibition decision, 22 Dec. 2015, in the case of Booking.com B.V, B9-121/13; Competition Commission COMCO prohibition decision, 19 Oct. 2015, Online-booking Platforms for Hotels.

83 In practice this is a common strategy. For example supermarkets often offer known value-items such as eggs, bread and milk at a loss to draw in more customers and cover these costs with other high margin items in the store.

84 Cyril Ritter, 'Does the Law of Predatory Pricing and Cross-Subsidisation Need a Radical Rethink?' (2004) 27(4) World Competition, at 622-626; Robert O'Donghue and Jorge Padilla, *The law and Economics of Article 102 TFEU* (2nd Edition, Hart Publishing, 2013) at 319-320.

85 See Willieam J. Baumol, 'Predation and the logic of the Average Variable Cost Test' (1996) 39(1) The Journal of Law & Economics, 49. Although Baumol advocates in favor of a different cost test in his paper, the AVC test is the logical basis of his arguments.

86 Ibid, at 60-61; Robert O'Donghue and Jorge Padilla (2013) *supra* (n 84) at 319-320; Cyril Ritter (2004) *supra* (n 84) at 622-626.

benchmarks. The need for adjustments stems from the fact that online platforms will often display low variable costs and multiproduct offers.[87] These two characteristics are considered to be the main drawbacks behind the AVC benchmark used in *Akzo* when assessing predation.[88]

Creating a platform may involve some significant fixed costs,[89] however, once the platform is created the variable costs of offering certain (matchmaking) services online may be negligible.[90] For example, in the case of Booking.com listing additional hotels in its existing data base and reservation system may entail little to no extra cost. By contrast, adding apps to an app store may involve higher variable costs as quality control and review mechanisms need to expand together with the number of apps.[91] Sticking to the cost measurements in *Akzo* in all cases would mean that pricing practices by platforms are likely to escape the presumption of predation since prices can easily be set above AVC.[92] Consequently, finding predation in such cases would often require proof of intent in line with the findings in *Akzo*.[93] Furthermore, when multiple services are offered through on the same platform the concerned platform would be able to allocate the common costs of such services in a manner that may circumvent legal scrutiny.[94]

In order to deal with such situations economic literature has indicated that average avoidable cost (AAC) and long run incremental cost (LRAIC) would be better measurements for assessing predation.[95] The Commission appears to share these views as it indicated that it might deviate from the AVC cost benchmark in favor of AAC and LRAIC when these are better

87 See e.g. Bruno Jullien, 'Two-sided markets and Electronic Intermediaries' (2005) 51(2-3) CESifo Economic Studies 233; Néstor Duch-Brown, 'The Competitive landscape of Online Platforms, JRC technical reports, Digital Economy working paper 2017-04, at 4- 10< https://ec.europa.eu/jrc/sites/jrcsh/files/jrc106299.pdf> accessed 23 September 2020.

88 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 84) at 319-320; Cyril Ritter (2004) *supra* (n 84) at 622-626.

89 E.g. software and system development, purchasing IT hardware and/or virtual computing power, renting or buying office space. See e.g. Anastasia Kompaniets, ' How much does it cost (and the cost structure) to build an app like UberEats' (Uptech) < https://uptech.team/blog/how-much-to-build-app-like-ubereats> accessed 2 Oct. 2020.

90 This is a common characteristic of high technology and network markets. See e.g. Temple Lang, 'European Community Antitrust Law: innovation markets and high technology industries' (1996) 20(3) Fordham International Law Journal 717.

91 See e.g. the review policy in the case of the Apple App Store where Apple reviews all apps and app updates approved for commerce in the App Store < https://developer.apple.com/app-store/review/> accessed 7 Oct. 2020.

92 Robert O'Donghue and Jorge Padilla (2013) *supra* (n 84) at 328-329.

93 Case C- 62/86 *AKZO v. Commission* [1991] ECLI:EU:C:1991:286, paras. 70-71.

94 Robert O'Donghue and Jorge Padilla (2020) *supra* (n 66) at 388-400.

95 Cyril Ritter (2004) *supra* (n 84) at 613; Willieam J. Baumol (1996) *supra* (n 85) at 49; Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 66) at 165-171.

suited for assessing predation.[96] In *Deutsche Post* and *Telefónica* the Commission chose to rely on the LRAIC and explained the logic of choosing this alternative benchmark.[97] The current case law of the EU courts also confirms the possibility of relying on different cost measurements.[98] Accordingly, based on current practice is can be assumed that deviating from the *Akzo* cost benchmarks in the case of online platforms in a manner which captures their economic reality is possible within the existing legal framework. It is unclear, however, whether current practice on the use of alternative cost price benchmarks also implies extending the indication of predation from *Akzo* to such benchmarks, which will be higher than AVC.[99] Extending the scope of the *Akzo* indication by the EU courts to an alternative cost benchmark would require showing that pricing bellow such benchmark can serve no other purpose than predation.[100]

According to the Commission, this assumption can be made in most cases with regard to prices bellow AAC,[101] which indicate that the concerned undertaking would be better off not producing anything than perusing such pricing policies.[102] In the specific case of sectors that involve very high fixed costs and near zero variable cost, the Commission indicated that it may opt for using LRAIC and the benchmark for predation instead.[103] Which of the two benchmarks is best suited to be applied will then depend on the ratio between fixed and variable costs in each case. It remains to be seen whether the EU courts share these views, as not extending the indication

96 Commission Guidance paper on art. 102 TFEU, *supra* (n 64) para. 26; European Commission, 'Discussion paper on the application of Article 82 of the Treaty to exclusionary abuses (2005), at section 6 < https://ec.europa.eu/competition/antitrust/others/discpaper2005.pdf > accessed 6 Oct. 2020; European Commission, 'Notice on the application of competition rules to access agreements in the telecommunication sector – framework, relevant markets and principles [1998] OJ C265, 114-115.

97 *Deutsche Post Ag*, (Case COMP/35.141) Commission decision of 20 Mar. 2001 paras. 35-48; *Wanadoo España v Telefónica* (Case COMP/38.784) Commission decision of 4 Jul. 2007, paras. 319-325.

98 Case C-209/10 *Post Danmark* [2012] ECLI:EU:C:2012:172 paras. 31-44; Case T-340/03, *France Telecom SA v Commission* [2007] ECLI:EU:T:2007:22, paras. 131-154.

99 Both the AAC and the LRAIC benchmarks include the all variable costs and part of the fixed costs involved in offering the product or service subject to the predation investigation.

100 Case C- 62/86 *AKZO v. Commission* [1991]ECLI:EU:C:1991:286, para. 71. The wording of the CJEU clearly states that a dominant undertaking will have no interest in pricing its products or services under AVC except for purpose of eliminating competitors. This was later repeated in Case C-202/07P, France Telecom SA v Commission [2009] ECLI:EU:C:2009:214 para. 109.

101 Commission Guidance paper on art. 102 TFEU, *supra* (n 64) paras. 64-65.

102 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 66) at 166.

103 European Commission, 'Discussion paper on the application of Article 82 of the Treaty to exclusionary abuses (2005) *supra* (n 96) at section 6, para. 127; this is also the suggested solution in academic literature. See e.g. P Bolton, JF Breadly and MH Riordan, ' Predatory Pricing: Strategic Theory and Legal Policy' (2000) 88(8) Georgetown law Journal 2239.

of predation to other cost benchmarks may entail in the case of platforms that proof of intent will often, if not always, be required. Such an outcome is undesirable since it would make the finding of predatory practices more difficult and de facto create a category of undertakings that enjoy more legal protection due to a higher standard of proof for predation. Finally, on the matter of assessing intent, to the extent that such evidence may be required, it is also important that such evidence is assessed in a manner that takes into account the two or multisided nature of the concerned platform.[104]

Similar to pricing, the anti-competitive intent with respect to one side of the platform may be materialized through predatory or exclusionary behavior on other sides of the platform. For example, in the context of mobile app stores, eliminating the option of third party app stores for Android or iOS allows the incumbents in these markets to obtain (quasi) monopoly power with respect to users and app developers. Such an outcome can, however, be achieved via predatory practices on either side of the app store platform such as: reduced transaction fees for app developers, payments to device producers to ensure pre-installation or credits and discounts for users.[105] Accordingly, when dealing with evidence of alleged anti-competitive intent, the impact of the pursued practices should be analyzed within the context of the multisided business model of the concerned platform. In this regard, the Commission indicates that when looking to establish an anticompetitive intent it will take into account both direct and indirect evidence of predatory strategy.[106]

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104 Stefaan Behringer and Lapo Filistrucchi *supra* (n 79) at 5, 19-20. The authors indicate that predation does not have to entail two- sided below cost pricing practices but may also involve other two-sided predatory strategies. On this see also Fletcher (2007) *supra* (n. 77), discussing predatory price structures rather than levels. This can occur for example when a switch is made to zero pricing that did not exist during the early days of the platform launch, adopting such zero pricing strategy can create barriers to entry in some cases and raise such barriers in other cases. Zero priced services goods can also constitute a barrier of entry to the market as well as tool to overcome other barriers of entry. See John M. Newman,' Antitrust in Zero-Price Markets: Foundations' (2014) 164 University of Pennsylvania Law Review 149; Michal S. Gal and Daniel L. Rubinfeld 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (January 2015). UC Berkeley Public Law Research Paper No. 2529425; NYU Law and Economics Research Paper No. 14-44. Available online at: < https://ssrn.com/abstract=2529425> accessed 10 Nov. 2020.

105 Discounts to app developers would facilitate switching to the incumbent app store that in turn will lead to a similar switch pattern by users. Credit or discounts to users would enable the reversed situation where the user switch triggers a switch by app developers. Finally payments to device producers (in the case of Android) can facilitate the pre-installation of the incumbent app store and prevent the pre-installation of third party app stores. All three practices would lead to the same outcome, namely the foreclosure of third party app stores.

106 Commission Guidance paper on art. 102 TFEU, *supra* (n 64) para. 66; European Commission, ' Discussion paper on the application of Article 82 of the Treaty to exclusionary abuses (2005) *supra* (n 96) at section 6, paras. 113-123.

Direct evidence of a predatory strategy will of course be difficult to find, particularly now that companies have learned to avoid the use of incriminating language.[107] Accordingly, indirect evidence of intent is more likely to play a role in future predatory pricing cases. Such evidence should ideally indicate whether the pricing strategy makes sense commercially given the circumstance on the market. In the context of platforms, evaluating whether setting low prices makes sense commercially would require looking at the competitive relation between such actors, which is indicated by the participation patterns described earlier. Accordingly, prices bellow ATC may make sense in situations where multisided single homing patterns are identified since these are often an indication of highly competitive markets.[108] By contrast, pricing bellow ATC in multisided multi-homing or competitive bottleneck scenarios would be at the very least suspicious since such market conditions are associated with relaxed competition and relatively higher prices.[109]

In cases where such assessment leads to inconclusive outcomes further evidence concerning the likelihood of foreclosure will be required.[110] In the context of platforms, such additional evidence should indicate the likelihood that equally efficient competitors can reach and / or maintain critical mass when confronted with the potentially predatory pricing strategy[111]. The inability to reach or maintain critical mass indicates the competing platform cannot viably co-exist with the dominant platform. Similarly to the different kinds of evidence discussed above, such additional evidence should always take into account the multi-sided nature of the concerned platform.

5.3.2 Excessive pricing

Excessive pricing can be said to be the most controversial forms of undesirable practices in the context of competition policy. When viewed through the lens of (EU) competition policy, excessive prices can be considered a

107 See e.g. Adrianne Jeffries,' To Head Off Regulators, Google Makes Certain Words Taboo' (The Markup, August 7 2020) < https://themarkup.org/google-the-giant/2020/08/07/google-documents-show-taboo-words-antitrust> accessed 8 Oct. 2020.

108 See e.g. R. Poolsombat and G. Vernasca (2006) *supra* (n 61).

109 Ibid.

110 Commission Guidance paper on art. 102 TFEU, *supra* (n 64) para. 66; European Commission, ' Discussion paper on the application of Article 82 of the Treaty to exclusionary abuses (2005), at section 6, paras. 117-123.

111 This suggestion is based on the assumption that the affected markets in such a case are markets where only platforms are active. In cases where the markets involved entail a mix of platform and non platform entities the assessment of foreclosure should combine a mixed approach that covers the foreclosure of both platform and non-platform entities in in light of their respective legal and economic context. For an extensive discussion on the definition of the relevant market in the case of online platforms see

textbook example of an outcome that such policy would commonly aim to prevent.[112] Nevertheless, the intervention in excessive pricing scenarios by competition law authorities and national courts is problematic since it gives the impression that these actors are better than (free) markets at keeping prices below monopoly levels.[113] According to experts, there are numerous practical and substantive reasons for competition authorities and courts to stay away from excessive pricing cases.[114] The main arguments against enforcement are (i) the prohibition of excessive pricing and their enforcement may reduce firms' incentives to invest and innovate;[115] (ii) identifying the excessiveness of prices in practice is difficult to achieve and prone to enforcements errors;[116] (iii) excessive prices are countered and corrected by new market entries triggered by such high prices.[117] Although these arguments appear to represent the prevailing sentiment in academia, they are not undisputed. It has been argued that excessive prices do not trigger entry as such and therefore the self-correcting potential of markets should not be overestimated.[118] The practical difficulties associated with identifying excessive pricing were found to overlap greatly with exclusionary pricing abuses such as predatory pricing. Furthermore, the weight of the claim that enforcement intervenes with the incentives investments and innovation has been called into question.[119] This difficult debate on enforcement priorities led to the development of multiple additional tests that would

112 For an extensive discussion about the intentions behind the formulation of art. 102 TFEU see Pinar Akman, 'Searching for the Long-Lost Soul of Article 82 EC' (2009) 29(2) Oxford Journal of Legal Studies 267. According to Akman the primary goal of the drafter of art. 82 EC (now 102 TFEU) was to tackle exploitative practices.

113 Thomas Ackermann, 'Excessive pricing and the goals of competition law' (2012) in Daniel Zimmer (ed.) *The Goals of Competition Law* (Cheltenham, UK, Edward Elgar Publishing) at 349.

114 See e.g. Ariel Ezrachi and David Gilo, 'Excessive Pricing, Entry, and Investment: Lessons from the Mittal Litigation' (2010) 76(3) Antitrust Law Journal 873; Liyang Hou, 'Excessive Prices within EU competition Law' (2011) 7(1) European Competition Journal, 47.

115 See e.g. M. Motta and A. de Streel, Exploitative and exclusionary pricing in EU law in Claus-Dieter Ehlermann and Isabela Atanasiu (eds), *European Competition Law Annual 2003, What Is an Abuse of a Dominant Position?* (Oxford, Hart, 2006).

116 See e.g. David S. Evans and A. Jorge Padilla, 'Excessive Prices: Using economics to Define Administrable Legal Rules' (2005) 1(1) Journal of Competition Law and Economics 97.

117 See e.g. A. Fletcher and A. Jardine, 'Towards an Appropriate Policy for Excessive Pricing' in Claus-Dieter EHLERMANN and Isabela ATANASIU (eds), European Competition Law Annual 2007: A reformed approach to Article 82 EC (Oxford, Hart Publishing, 2008) 534.

118 Ariel Ezrachi and David Gilo, Are Excessive Pricing Really Self-Correcting?' (2009) 5(2) Journal of Competition law and Economics 249.

119 See Ariel Ezrachi and David Gilo (2010) *supra* (n.111) at 894-896. According to these authors, not prohibiting excessive pricing due to this reason would translate into creating an investment and innovation defense argument. Since such an argument would not hold with respect to exclusionary practices, there is no reason why it should be accepted for excessive pricing.

help minimize undesired enforcement outcomes.[120] While the tests vary in their strictness, they share some core criteria such as the presence of high (and lasting) barriers to entry,[121] very significant market power,[122] and the absence of sector regulation.[123] Despite their merit, these tests did not become part of practice.[124] However, the reluctance and caution towards intervening in excessive pricing cases, which they seem to echo, represents to a great extent the ruling sentiment in both practice and academia.

A. Excessive Pricing in the EU

The enforcement of excessive pricing at the EU level has not been given the priority one would expect from an abuse that can be said to be explicitly mentioned in art. 102 TFEU. This is particularly true with regard to exploitative excessive pricing,[125] which seem to fall outside the priority scope of the European Commission.[126] Nevertheless, case law on this topic can be found on the EU as well as at the Member State level.

The first case to deal with excessive pricing before the EU courts was General Motors where the Court introduced the possibility that a dominant undertaking may abuse its position of power when it imposes a price '*which is excessive in relation to the economic value of the service provided*'.[127]

120 See some of the main ones in David S. Evans and A. Jorge Padilla, 'Excessive Prices: Using economics to Define Administrable Legal Rules'(2005) 1(1) Journal of Competition Law and Economics 97; L.H Roller, 'Exploitative Abuses' in Claus-Dieter Ehlermann and Isabela Atanasiu (eds), *European Competition Law Annual 2007: A reformed approach to Article 82 EC* (Oxford, Hart Publishing, 2008), 525; E. Paulis, 'Article 82 and Exploitative Conduct' in Claus-Dieter Ehlermann and Isabela Atanasiu (eds), *European Competition Law Annual 2007: A reformed approach to Article 82 EC* (Oxford, Hart Publishing, 2008), 515; M. Motta and A. de Streel, 'Excessive Pricing in Competition Law: Never Say Never?' in Swedish Competition Authority (ed.), *The Pros and Cons of High Prices* (Stockholm, Konkurrensverkt, 2007).

121 Common to all tests.

122 M. Motta and A. de Streel (2007) require super dominance; Evans and Padilla (2005) require near monopoly power; Paulis (2007) does not include this as a requirement but assumes super dominance is evident in such cases.

123 Shared by M. Motta and A. de Streel (2007), Evans and Padilla (2005) and L.H Roller (2007). On this see also Thomas Ackermann (2012) n. 121 which uses this criteria to indicate the logic behind the different approaches to excessive pricing in the EU and US.

124 OECD report on Excessive pricing of 7 Feb. 2012 DAF/COMP(2011)18 at 53.

125 Margin squeeze can also be considered an excessive pricing abuse with the aim of excluding the competitor of the dominant undertaking in related markets. Due to its exclusionary nature it has been considered as one of the enforcement priorities of the EU commission; See Commission Guidance paper on art. 102 TFEU, n. 61, para. 75-90. Nevertheless, case law on this practice also remains limited.

126 See Commission Guidance paper on art. 102 TFEU *supra* (n 64) paras. 1-8. The Commission limited its guidance paper to exclusionary abuses that is also specifically mentioned in the title of the guidance paper itself.

127 Case 26/75, *General Motors Company v Commission* [1975] ECLI:EU:C:1975:150, para 12.

This qualification was repeated in *United Brands*,[128] which is considered the guiding case for dealing with excessive pricing abuses under art. 102 TFEU. The notion of economic value in this context represents a legal qualification encompassing an accumulation of elements that varies from case to case.[129] In order to establish whether the price imposed by the concerned undertaking meets this description, the Court in *United Brands* introduced a two-stage test.

The first stage of the test, further referred to as the excessiveness stage, requires assessing the profit margin of the concerned undertaking is excessive when looking at the difference between the production cost of a product (or the provision of a service) and its selling price.[130] If the profit margin can be considered excessive, the second stage of the test, further referred to as the fairness stage, requires assessing whether the price is unfair in itself or in comparison with the prices of competitors.[131] The two stages of the test are cumulative,[132] however, the fairness stage does not require undertaking both comparison methods.[133]

Adducing sufficient evidence for the *United Brands* test in practice entails relaying on a combination of measurements and comparators all pointing in the same direction. According to the Court in *United Brands*, there is no specific form requirement for the evidence type used in each case.[134] Broadly speaking, however, the case law of the EU and national courts as well as the enforcement practice of the Commission and national competition authorities across the EU exhibit a tendency to rely on the combination of two methods: (i) Price -cost comparisons; and (ii) price comparators. Both methods have been utilized in order to help construct a benchmark price, which would be expected to be charged in a competitive market, against which the price of the dominant undertaking can be measured.

128 Case 27/76, *United Brands Company v. Commission* [1979]ECLI:EU:C:1978:22,, para. 250.

129 See e.g. ATTHERRACES Ltd & Anr v. The British Horse Racing Board & Anr, [2007] EWCA Civ 38.

130 Case 27/76, *United Brands Company v. Commission* [1978]ECLI:EU:C:1978:22, para. 251.

131 Ibid, para. 252.

132 *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004, paras. 147-149 and *Sundbusserne v Port of Helsinborg* (Case COMP/ A.36.568/D3) para. 85.

133 Case C-159/08 P *Isabella Scippacercola and Ioannis Trezakis v Commission* [2009] ECLI:EU:C:2009:188, para. 47. Nevertheless, both comparison methods may need to be considered where the concerned undertaking adduces evidence in it favor based on different method than the one used to establish the infringement. See e.g. Flynn Pharma Limited v. Competition and Market Authority and Pfizer Inc. v. Competition and Markets Authority, Nos. 1275-1276/1/12/17, [2018] CAT 11, paras. 265-268.

134 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 253.

The price-cost comparison was introduced in *United Brands* and later applied in multiple cases.[135] Although utilizing this comparison is not formally obligatory,[136] not engaging in a price-cost analysis at all may be fatal for a case when the possibility to use this method exists.[137] The application of this method in practice can be, however, very challenging. The definition of cost has no predefined meaning in the case law and there is no agreement as to what constitutes a reasonable or conversely an excessive profit margin.[138] Therefore, when attempting to construct a price-cost comparison in practice, the first choice to be made is selecting the correct measurement of costs.[139] Due to the differences in cost structures and business models across sectors the relevance of measurements benchmarks will vary across cases.[140] In the absence of clear requirements, the best approach would entail combining multiple methods with the hope that their results point in one direction.[141] Like in the case of predatory pricing, the choice of the cost benchmark also requires deciding what to do about fixed and sunk costs as well as common costs,[142] leading to a similar recommenda-

135 See e.g. Case 298/83, *CICCE v Commission* [1985] ECLI:EU:C:1985:150; Joint Cases 110/88, 241/88, 242/88, *Lucazeau v SACEM* [1989] ECLI:EU:C:1989:326 and others.

136 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 253.

137 Ibid, paras. 254-267. The Court pointed out that the Commission could and should have attempted at least to provide such a price cost analysis. By failing to do so and relying only on territorial comparators the CJEU found that the Commission did not have sufficient evidence to find an abuse.

138 Alla Pozdnakova, 'Excesive Pricing and the Prohibition of the Abuse of Dominant Position under Article 82 EC' (2010) 33(1) World Competition, at 124-126; It is only in the exceptional situation of cases involving sector specific regulations that legal guidelines for cost calculations may be found in a more concrete form. See e.g. Case 66/86, *Ahmed Saeed Flugreisen and Silver line Reisburo GmbH v Zentrale zur Bekampfung unlauteren Wettberbs e. V*. [1989] ECLI:EU:C:1989:140, para. 43.

139 In *United Brands* the Court considered that to be the total cost of production is a suitable benchmark when the undertaking produces a single product, see Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 254-255.

140 See e.g. *Albion Water Limited v Water Services Regulation Authority* [2009] CAT 31. In this case the CAT assed the evidentiary value of several cost benchmarks including: Average accounting Cost plus, Local Accounting Costs and Long-Run Incremental Costs. The latter was considered to be unsuitable due to facts and circumstances of the case.

141 Robert O'Donghue and Jorge Padilla (2020) *supra* (n 68), pp. 931-932, 947-948.

142 See e.g. *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004 paras. 115-121 where the Commission had to make a full allocation of HHAB's common costs; a method also criticized in the context of predatory pricing for lacking accuracy.

tion to use LRAIC as a suitable benchmark.[143] Once the choice is made, the next step is establishing what profit margins are required in order to qualify a price as excessive under the first step of the *United Brands* test.[144] For the profit margin to be abusive it needs to be sufficiently significant and persistent in context of the market(s) under investigation.[145] Only then can it be said that such prices are likely to be a result of opportunities arising by virtue of the position of dominance possessed by the concerned undertaking.[146] It is interesting to note in this regard that in situations where the cost-price analysis is not possible due to the circumstances of the case, the CJEU in *SABAM* would appear to be willing to accept the abusive nature of pricing practices based on the methodology used to set prices by the concerned undertaking.[147]

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143 OECD report on Excessive pricing of 7 Feb. 2012 DAF/COMP(2011)18, pp. 67-69; In practice see e.g. The Competition Appeal Court of South Africa, Case No. 70/CAC/Apr07 in the matter of Mittal SA, paras. 48-49. The CAC applied the LRAIC benchmark as a floor price of an efficient firm above which the suspicion of excessiveness may arise, however, no guidance was given as to how much should this floor be exceed in order for its to be abusive. Despite the case being for non-EU jurisdiction the legislative similarities between EU and South African competition law allow to draw parallels on this matter. For a more extensive discussion see Claudio Calcagno and Mike Walker, 'Excessive Pricing: Towards Clarity and Economic Coherence' (2010) 6(4) Journal of Competition law & Economics, 891.

144 On this see also *Albion Water Limited v Water Services Regulation Authority* [2009] CAT 31, para. 263.

145 Case C-177/16, *Latvian Copyright*, [2017] EU:C:2017:689, paras. 55-56; See also the opinion of AG Wahl in this case on this matter in Case C-177/16, *Latvian Copyright,* [2017] EU:C:2017:286, para. 107; Robert O'Donghue and Jorge Padilla (2020) *supra* (n 68) at 929; To help with the challenge of producing such evidence in practice complementary evidence concerning rates of return of capital as well as return of sales have also been used to establish the excessiveness of profits (with varying success). See OECD report on Excessive pricing of 7 Feb. 2012 DAF/COMP(2011)18, pp. 63-66 and in practice e.g. *Deutsche Post Ag – Interception of cross border mail* (Case COMP/C-1/36.915) Comission decision of 25 Jul. 2001, paras. 159-165; *Albion Water Limited v Water Services Regulation Authority* [2009] CAT 31, pp. 76-79. ; Flynn Pharma Limited v. Competition and Market Authority and Pfizer Inc. v. Competition and Markets Authority, Nos. 1275-1276/1/12/17, [2018] CAT 11, para. 311; *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004, para. 152.

146 See Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 249. The fact that an undertakings' revenues exceed the costs of one or more of its products or services does not suffice to find an abuse as a reasonable profit should be acceptable in any sector. See e.g. *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/A.36.568/D3) Commission decision of 23 July 2004, para. 142.

147 Case C-372/19, *Belgische Vereniging van Auteurs, Componisten en Uitgevers CVBA (SABAM) v Weareone.World BVBA and Wecandance NV* [2020] ECLI:EU:C:2020:959. If the methodology has little or no rational links to the economic value of the product or service provided by the dominant undertaking such pricing practices my still be considered unfair for the purpose. Accordingly, the prices from such methodology are considered by the CJEU to fulfill both prongs of the United Brands test.

In addition to the cost- price assessment method, price comparators have also played an important role in the assessment of excessive prices. Generally speaking,[148] these comparators entail: (i) comparisons across competitors;[149] (ii) geographic price comparisons;[150] and (iii) comparisons over time.[151] These comparison methods can be used for both stages of the United Brands test.[152] The comparisons can be made with respect to products or services that are either in or out of the relevant market defined for the product or service subject to the abuse analysis.[153] In terms of reliability, the former are more valuable than the latter, however, in both cases any use of comparisons needs to be done on a consistent basis.[154] The selection of comparison elements needs to be done based on objective, appropriate and verifiable criteria.[155]

148 OECD report on Excessive pricing of 7 Feb. 2012 DAF/COMP(2011)18 at 62-63, 70-71.

149 This method of comparison concerns offers made by competitors of the dominant undertaking that is particularly relevant for the second stage of the United Brands test. However, since markets with dominant undertakings inherently display a limited number of competitors, the data needed for this comparison often misses in practice.

150 This form of comparison concerns an assessment of the prices set by concerned undertaking across various geographic areas, see e.g. Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, paras. 238-239. The selection of areas must be done on a consistent basis and must take account of the objective dissimilarities between the compared territories of the concerned Member States, see Joint cases 110/88, 241/88 and 242/88 *Francois Lucazeu and Others v SACEM* [1989] ECLI:EU:C:1989:326, para. 25; Case 395/87, *Ministeire Public v Tournier* [1989] ECLI:EU:C:1989:319, paras. 38-46; Case C-177/16, *Latvien Copyright*, [2017] EU:C:2017:689, paras. 38-51. During such comparisons the difficulty always arises of selecting the correct territory as the one displaying the competitive benchmark price. In United Brands the Commission chose UBC's prices for Ireland, which were the lowest in the EU, as benchmark price. This selection that was not supported by the Court because it was not well motivated. See Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, paras. 260-265.

151 Such comparisons require looking at price increases introduced by the concerned undertaking over time. Depending on the circumstances such increases can be found to be either justified or evidence of abusive conduct. See e.g. Case COMP/D3/38469 Complaint relating to charges levied by AIA SA and the Olympic Fuel Company SA, Commission decision of 02 May 2005, para. 71-76; Case 226/84 *British Leyland Public Limited Company v Commission* [1987] ECLI:EU:C:1986:421, para. 28. Such a comparison can be extended to interchangeable products or services offered by the concerned undertaking, see e.g. Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 240-245 and Case 226/84 *British Leyland Public Limited Company v Commission* [1986] ECLI:EU:C:1986:421, para. 28 or products or services in related markets that share a great deal of common costs see e.g. *Deutsche Post Ag – Interception of cross border mail* (Case COMP/C-1/36.915) (2001/892/EC) Commission decision of 25 Jul 2004, paras. 159-165. Due to a lack of other data, the Commission estimated DP costs for cross boarder post-delivery based on its cost for domestic post-delivery.

152 Peter Davis and Vivek Mani,'The Law and Economics of Excessive and Unfair Pricing: A Review and a Proposal' (2018) 64(4) The Antitrust Bulletin at 414, 423.

153 Liyang Houn (2011) *supra* (n 114) at 63.

154 Case C-177/16, *Latvien Copyright*, [2017] EU:C:2017:689, para. 44.

155 Ibid, para. 51.

Finally, it is important to recall that the purpose of applying all these methods is to prove that the prices charged by the dominant undertaking exceed the economic value of the product and/ or service it offers.[156] It is against his final benchmark that the evidence produced based on the above-mentioned methods needs to be assessed.[157] In this regard it is important to keep in mind that the concept of economic value encompasses more than the accumulation of costs incurred by the dominant undertaking in order for it to offer the product or service under investigation. According to the Commission, the economic value of a product or service may also include non-cost related factors such as the demand for the product or service.[158] Therefore, when reaching the final ruling with regard to the permissibility of the investigated prices, competition authorities have quite some discretion when accounting for the specific characteristics of the respective products or services offered by the dominant undertaking.[159]

B. Applying the EU prohibition on excessive pricing to online platforms

The application of current practice on excessive pricing to online platforms will entail a cumbersome process due to the skewed pricing schemes that are inherent to them and make the United Brands test inapplicable in its current form. The respective practical and conceptual challenges must, however, be overcome as the dynamics of the markets in which platforms operate are often prone to concentration and high barriers to entry that constitute the primary grounds for enforcing the prohibition of excessive prices. Ensuring that the United Brands test and the case law on excessive pricing remains operational requires translating the rationale behind such test and case law to the characteristics of online platforms and the dynamics of the markets in which they operate.

The first step in adapting the United Brands test to online platforms is acknowledging that their reliance on skewed pricing schemes means that the prices set by the platforms for each of their customer groups do not necessarily represent the costs of serving such customers. This is due to the fact that such pricing schemes are used to solve the coordination problem involved in attracting multiple customer groups to the platform in order earn a profit on their participation. Since platforms can only derive a profit from their service if they successfully match members from two or more customer groups, their price scheme is set in a manner that increases the

156 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 250.
157 OECD report on Excessive pricing of 7 Feb. 2012 DAF/COMP(2011)18 at 56; Alla Pozdnakova (2010) *supra* (n 138) at 119-120.
158 *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004, paras. 209-212, 226- 228.
159 Ibid, para. 228.

number of members of each group.[160] In this context, it is not important that each customer group covers its own cost as long as the platform generates a profit from each (matchmaking) functionality as a whole. As previously mentioned, this means that in practice some customer groups pay little to nothing for their use of the platform as the costs involved in serving these customers are covered by members of other platform customer groups.

Under these circumstances it quickly becomes clear that applying the United Brands test to each customer group in isolation could lead to misleading results. This is particularly evident with the first prong of the United Brands test. The subsidizing customer groups that are charged for their participation will always be found to be subject to prices that (significantly) exceed the cost involved in serving them the respective platform service. Such an outcome may, however, be solely the result of the costs division across the customer groups of the platform and not a manifestation of abusive use of market power by the platform. Applying the test in isolation to such parties would make it impossible to distinguish the pricing practices that truly deserve to be caught by the prohibition of excessive pricing and those that simply reflect a legitimate business practice in the commercial context of platforms. Furthermore, following such an approach would lead to an opposite result for the subsidized customer group that is not charged for using the platform. Such a group would never be able to claim that it is subject to excessive pricing since the cost of serving such a group is always more than zero. This result may appear sensible at first sight; however, it excludes the possibility that such customer groups could be harmed by the exploitative pricing practices of a platform, which is not always true as will be discussed.

The intuitive solution for these complications would be to look at the total price charged by the platform for each of its functionalities as a whole in a similar fashion to the case of predatory pricing. Such an approach may, however, be incorrect because it would ignore the difference between the natures of the harm to be prevented by these two abuse grounds. Predatory pricing strategies aim at undermining the ability of undertakings to compete with the dominant undertaking.[161] When assessing the potentially abusive nature and anti-competitive effects of such practices it is then

160 Such increases will however be done in a controlled manner so as to optimally make use of the direct and indirect network effects between the respective customer groups of the platform. Accordingly, platforms would avoid facilitating a disproportional increase of members of a subsidizing customer group where negative direct network effects are present in such a group because it would limit the cross subsidizing of cost between the *subsidized* and *subsidizing* customer group(s). See e.g. Jean J. Gabszewicz, Diedier Laussel, Nathalie Sonnac (2005) *supra* (n 41).

161 By implementing loss making pricing dominant undertakings are able to fend off any competitors which do not have access to similar funds or are not able to significantly cut down on costs.

sensible to look at the entire pricing level of a (matchmaking) service provided by the concerned platform to (some of) its customer groups. In this context it is more important to understand whether the implemented pricing level is commercially viable rather than how such price level is divided across the platforms' customer groups. If the total level of prices is not viable competitors will not be able to enter or remain on the market regardless of the dominant platforms' pricing structure.

The prohibition of excessive prices concerns preventing an entirely different kind of harm, namely the exploitation of the dominant undertakings' customers. Assessing the harm caused by such practices requires looking at the commercial relation between the dominant undertaking and such customers. In the case of platforms, this may entail several separate customer groups that make use of the matchmaking functionalities offered by the platform. For example, on Youtube, the platform customer groups consist of consumers, content creators and advertisers. Since each customer group is subject to a separate set of governance rules and pricing levels, they can all be subject to excessive prices separate from each other. Accordingly, the assessment of the pricing levels applied to each of these customer groups needs to be done individually while taking into account the greater context of the respective functionality. After all, the prohibition on excessive pricing intends to protect all of the dominant undertakings' customers equally. Thus such an abuse should be possible establish (at least in theory) with respect to only one or some of the customer groups the use a specific platform functionality.

Performing the assessment with regard to the pricing level for each matchmaking functionality or platform as a whole, would mean that an abuse needs to be found with regard to all the customer groups included in the assessment simultaneously. Finding an abuse based on such a broad approach would mean instead that the dominant undertaking prices its match-making functionality higher than its economic value to all the customer groups interconnected by such functionality. In the case of Booking.com such an approach would mean that the commission levied from hotels could be considered excessive only if it exceeds the economic value of Booking.com's room reservation functionality for both hotels and consumers. A comparable approach would therefore be undesirable as it excludes the possibility that a platform can abuse its market power with respect to only one or some of its customer groups. This would increase the standard of proof needed for finding excessive pricing significantly and ignore the commercial reality of online platforms in which their market power and ability to abuse it may vary across their various customer groups.[162]

162 See e.g. David S. Evans and Richard Schmalensee (2014) *supra* (n 27).

In light of the above it is evident that applying the United Brands test to the customer groups of the platform in isolation from each other or in a collective manner leads to undesired outcomes. The suggested solution to this legal challenge lies, as will be discussed below, entails in essence a combination of the two approaches so as to allow for the individual assessment of each customer group in the greater context of platform pricing schemes.

a) The relevant calculations for the first prong of the United Brands test

Adapting the United Brands test to the reality of online platforms would require applying it to each of the customer groups individually while taking into account their interrelations. In practice, such an adaption would mean inserting another assessment step in the first prong of the United Brands test. Under such a suggested modification, the first part of the assessment would, as previously, indicate whether the price charged by the platform from one of its customer groups exceeds the costs of serving such group with the matchmaking functionality. In the case of the Booking.com for example, this would mean assessing whether the commission fee charged from hotels exceeds the costs involved in serving them the hotel room booking service. In the case of the subsidizing customer groups,[163] this would inevitably be the case. However, in the context of platforms such a practice would represent the rule rather than the exception and thus does not suffice to indicate that such prices are potentially excessive. Therefore, such a conclusion should preferably only be drawn after a second step is taken within the first prong of the United Brands test. This second step focuses on costs of the customer group that is subsidized by such prices and its relation to the subsidizing customer group. In the case of Booking.com this second step would entail looking at costs involved in offering the hotel booking functionality to consumers and assess the commercial relation between hotels and consumers.

If the relationship between the subsidizing customer group and subsidized customer group displays (significant) positive indirect network effects, it is reasonable to assume that the former group is willing to cover costs of the latter group for using the platform functionality. This is because such a relation indicates that the subsidizing customer group is interested in an increase in the usage of the platform functionality by the subsidized customer group. In the case of Booking.com, it is evident that hotels are interested in having consumers use the platform and benefit from an increase in such usage as it translates into more bookings for their hotel

163 These are for example hotels on hotel booking platforms (e.g. Booking.com), travel agents and air travel providers on search engines for plane tickets (e.g. Skyscanner.com), professional content providers on video platforms (e.g. YouTube , Vimeo), sellers on online market places (e.g. Amazon or Aliexpress), merchants on payment platforms (e.g. PayPal) app developers on app store (e.g. Apple App Store or google Play Store).

rooms. Consequently, it is commercially sensible to expect that such hotels are willing to cover some or all of the costs involved in providing consumers with the room booking functionality for free, which would attract more consumers to the platform. The ratio of costs that the subsidizing customer group(s) can be expected to cover on behalf of the subsidized customer group will vary per sector and business model.[164] The remaining margin, between the price paid by the subsidizing customer group and the costs expected to be covered by such group,[165] will be subject of assessment in the second prong of the United Brands test.

If, however, an assessment of a platforms' pricing scheme shows that the subsidizing customer group covers the costs of one or more additional customer group on the platform that it may not be interested in financing, the situation will be different. In such situations, the commercial relation between the subsidizing customer group and one or more subsidized customer group will not display (mutually) positive indirect network effects. Accordingly, it means that the subsidizing group does not benefit from the participation of such subsidized group(s) on the platform and thus such group cannot be considered to willingly cover such additional costs partly or in full. This could be the case if, for example, the commission fees of hotels on Booking.com would not only cover the platform participation costs of consumers but also of car rental agencies active on the platform. In such a scenario, the participation costs of such 'undesired' subsidization would also form part of profit margin assessed in the context of the second prong of the United Brands test. This is because such subsidization may go against the commercial interests of the subsidizing customer group and is in essence the result of the market power wielded by the concerned platform in its own best interest.

Similarly, when part of the members of the subsidizing customer group are required to subsidize members of their own group, which do not cover their own costs such additional costs should be treated in the same manner as when negative direct network effects exist between members of such a group. In such a scenario, the paying members of the subsidizing customer group are in fact required to subsidize their (potential) competitors, which is evidently contrary to their commercial interest. This can be said to exist in the context of app stores, where only some of the app developers are subject

164 Peer-to-peer platforms and Business-to-Consumer platforms will often have very different business models and cost-price divisions. For example, on hotel room booking platform like Booking.com and Expedia hotels fully subsidize the platform usage costs of consumers whereas on Airbnb such costs are split between the property owners and consumers.

165 I.e. the costs involved in providing the subsidizing customer group the platforms' matchmaking functionality as well as part or all of the costs involved in serving one or more additional customer groups that the former group can be expected to be willing to subsidize.

to the full fee scale of the app store while other contribute little to nothing at all for their usage of the app store platform. While such pricing schemes are hugely profitable for the app stores to maintain, they display a clear misalignment of interests that is made possible thanks to the bottleneck role app stores play in app distribution markets. In this regard it can be said that Apple's App Store (as well as Google's Playstore) pricing structure may pass the first stage of the United Brands test with respect to app developers that are subject to the 15-30% commission fees, as these actors are paying fees that go beyond what can be expected from them to pay even in the context of platform pricing structures.[166]

Although price-related complaints will evidently stem from the subsidizing customer group(s) of the platform, the subsidized customer group(s) of a platform may sometimes also be confronted with similar issues. The theory behind the use of skewed pricing structures by platforms for the purpose of coordination and profit growth often presumes that there will be little to no passing over of costs between the subsidizing and subsidized customer groups of the platform.[167] In practice, however, this assumption may not hold under all market conditions. In situations where there is multi- homing by both subsidizing and subsidized customer groups of the platform the passing on of costs may be possible due to the reduced degree of competition associated with such settings. This can be seen, for example, in the case of hotel room booking platforms like Booking.com and meal delivery platforms like Uber eats. In these sectors it is quite common for hotels and restaurants (the subsidizing customer group) to pass on their platform usage costs to consumers (the subsidized customer group) by charging a higher price for their hotel room or meal via the platform than via their own sales channel.[168] This is despite the fact that the pricing rules of these platforms would give the impression that hotels and restaurants constitute the subsidizing customer groups of the platform and consumers constitute

166 For an extensive discussion on platform pricing in the case of App Stores see F. Bostoen and D. Mandrescu, 'Assessing Abuse of Dominance in the Platform Economy: A Case Study of App Stores' (2020) 16 (2-3) European Competition Journal 431.

167 See e.g. Jean Charles Rochet and Jean Tirole (2003) *supra* (n 9). The authors consider this characteristic to be imported for the qualification of a two-sided market / platform.

168 In the case of hotel booking platforms, such passing-on practices were limited in the past by the price parity clauses that hotel owners had to live up to when using a hotel-booking platform. However, since such clauses were often found to be anti-competitive in various Member States and other regions of the world, they were removed from the contracts between platforms and hotel owners. In the case of credit cards, Amex prohibited merchants that agreed to accept the Amex credit cards to impose surcharges on consumers due to the higher processing costs of Amex credit cards. In the EU this surcharge prohibition has made its way into secondary legislation in the context of the Directive (EU) 2015/2366 of the European Parliament and the of the Council of 25 November 2015 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, OJ L377/35.

the subsidized customer groups on both platforms. According to these rules, it is the hotels and restaurants that are subject to the commission fees of the platform, not the consumers. In practice, however, this subsidizing -subsidized role division and corresponding fees may nevertheless be circumvented. This would occur when the customer group(s) subject to the platform pricing rules have the ability to pass on their fees (in part or in full) to the other customer groups of the platform that are formally not subject to any platform service fees; commonly the consumers. Similar outcomes can also be observed in situations where subsidizing and subsidized customer groups are locked-in a single-homing setting that neither can easily avoid due to high switching costs or legal and technical barriers. This can be seen for example in the case of app stores where the app store transaction fees imposed on app developers are often passed on to consumers.[169] In the US this practice has even led to a claim against Apple, which is claimed to facilitate inflated app prices with its pricing scheme and the lock-in it imposes on consumers and app developers that buy into the iOS ecosystem.[170]

Therefore, when comparable settings are present it is possible that the (formally) subsidized customer group of the platform, which is typically brought to the platform with a zero priced offer, may nevertheless be subject to excessive pricing practices. In instances where such an abuse is investigated, the selection of the relevant costs for the first prong of the United Brands test should be done in the same manner as described previously with respect to the subsidizing group(s) of the platform. In this context, it is worth noting that despite the fact that such scenarios are quite realistic in practical terms, the exploitation of the subsidized customer groups of platforms through excessive pricing is often covered in the literature with respect to excessive **data** charges.[171] This latter possibility has been left out of the analysis in this section for three reasons.

First, an approach to excessive pricing based on data 'charges' further strengthens the erroneous view that zero priced offers always remain zero priced since the possibility of pass-on is rarely or never discussed. Second, exploitation through data 'over-charges' in the EU will often be covered by art. 6 the GDPR and thus does not truly require an additional legal enforcement route via competition policy.[172] Thirdly, addressing (excessive)

169 See e.g. the case of Spotify, which priced its annual membership fee for the premium service for iOS users in the App Store in a way that covers Apple's transaction fee of 30%.

170 Apple, Inc. v. Pepper, 587 U.S. ___ (2019); for an extensive discussion on the case see S. Konstantinos, '*Apple v Pepper*: the unintended fallout in Europe' (2019) 7(3) Journal of Antitrust Enforcement 457.

171 See e.g. Aleksandra Gebicka, Andreas Heinemann, 'Social Media & Competition Law' (2014) 37(2) World Competition 149.

172 By contrast, data related abuses concerning exclusionary effects are suitable for enforcement through competition law mechanisms as the distortion of competition by (dominant) undertakings is not part of the objectives of the GDPR.

data sharing requirements under the scope of an excessive pricing abuse entails significant practical difficulties due to the lack of established tools that would allow quantifying data in a similar manner as monetary transaction.[173] This is in turn problematic for both stages of the United Brands test. Furthermore, even if such tools existed, benchmarking data sharing requirements against the economic value of the platform service would be far from straight forward. How can one evaluate whether 'too much data is charged' in cases when those who must pay with their data do not care so much about the volume of data gathered but rather about the kind of data and the purpose for such data is gathered and used. For this reason data overcharges seem to be more to be appropriate to deal with under the scope of unfair trading conditions instead.[174] This type of abuse entails a more flexible framework for dealing with exploitative behavior that does not involve a clearly defined test making it more suitable for unconventional forms of exploitation such as data overcharges.[175] Ideally however, such matters are best to be addressed under the scope of other legal frameworks, which unlike competition law specifically target the interests of data subjects.

When dealing with the selection of the relevant cost benchmark for the first prong of the United Brands test, it is imperative to take into account the common attributes of platform cost structures. As discussed in the context of predatory pricing, platforms often display low variable costs and rather high fixed and sunk costs. Accordingly, when applying the first prong of the United Brands test, it is important that the cost-price test includes more costs than the mere average variable costs of providing the matchmaking functionality to the customer group(s) affected by the platforms' pricing practices. Similarly to the case of predatory pricing, it would appear that the recommendation for cost-price comparisons in comparable circumstances is to use the LRAIC benchmark for assessing the profits made by the dominant undertaking with the pricing practices under investigation.[176] Whether the use of such cost benchmark is sufficient or requires additional evidence concerning the profitability of a specific platform will vary from case to case. What remains true to all cases however, is that the assessment

173 For an overview of potential measurement methods see OECD (2013-04-02), 'Exploring the Economics of Personal Data: A Survey of Methodologies for Measuring Monetary Value', OECD Digital Economy Papers, No. 220 http://dx.doi.org/10.1787/5k486qtxldmq-en accessed 3 Jul. 2021; On the difficulties with the United Brands test for data see also Viktoria H.S.E. Robertson, 'Excessive data collection: Privacy considerations and abuse of dominance in the era of big data' (2020) 57(1) Common Market Law Review, 161.

174 Marco Botta and Klaus Wiedemann,'Exploitative Conducts in Digital Markets: Time for a Discussion after the Facebook Decision' (2019) 10(8) Journal of European Competition Law & Practice 465, 465-472.

175 On the rather undefined character of framework of unfair trading conditions abuses see Robert O'Donghue and Jorge Padilla (2020) *supra* (n 68) at 1033-1045.

176 Ibid, at 927-922.

of profitability in the first prong of the United Brands test must take into account the commercial reality of many platform businesses in terms of cost structures,[177] profit margins and market dynamics.[178] Accordingly, high profit margins as such will not necessarily always be sufficient for the excessiveness stage of the United Brands test as these may be reasonable in cases concerning platforms that require high risks and significant upfront investments.

Once the relevant costs and prices have been identified and weighed against each other, the assessment can move on to the second prong of the United Brands test which also requires adapting to the realities of online platforms.

b) The second prong of the United Brands test – the use of comparators

The second prong of the United Brands test can be said to rely greatly on a series of comparison exercises concerning the commercial practices of the dominant undertaking itself as well as that of its (potential) competitors. Although there is no reason why such assessment should be any different in the case of online platforms, the manner in which the various comparators are used in such cases does require some guidance.

The temporal comparison where the pricing practices of the dominant undertaking are studied over a specific period of time needs to take into account the commercial stage in which the platform was during such period. In the launch phase of the platform it can be expected that the pricing of the platform is relatively low as it must attract as many members as it can on its two or more sides; sometimes with the help of loss making prices. Such strategies may persist until the platform has sufficient members to reach a critical mass and thus eventually become viable.[179] As the platform becomes viable and continues to grow its pricing will change as well. Such changes will be driven by the constant need for coordination, increase in costs and pursuit of higher profits (that at times are needed to recover past losses). When assessing such temporal comparison it is important that the time between the launch of the platform up until critical mass can be said to have been reached is not taken as a strict reference point for **fair** pricing. This period is likely to display rather unprofitable commercial practices that were adopted to facilitate fast growth.

177 E.g. high fixed cost and low variable costs.

178 The cost structure combined with high profit market that are often observed in the case of platforms may given a distorted impression that prices are relatively very high. However, when put in the context of markets with high risks and barriers to entry which also characterize platforms, such high profit margin may seem commercially reasonable in light of the effort and risk involved in creating certain platforms.

179 David S. Evans and Richard Schmalensee (2016) *supra* (n. 43) at 91-98; Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary (2016) *supra* (n 43) at 123-127; Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2006) *supra* (n 46) at 3-6.

Past this period it is important that price raises are studied in parallel with a potential growth in the volume of members in the various platform customer groups. Given the direct and indirect network effects at play between the various customer groups of the platform, a growth in the size of their members will have an effect on the value that such platform offers them. In this regard, price increases that are not implemented in parallel to any increase in value to the respective platform customer group(s) may be considered potentially unfair. By contrast, price increases adopted while the dominant platform was growing in volume or technical sophistication may be indicative of perfectly legitimate practices. In other words it is important that the historical records of price changes are evaluated against the (growing) ability to capture network externalities. On this last point, there is one caveat that needs to be addressed. From a theoretical perspective platforms can indeed constantly increase their quality and volume and therefore also raise their prices, as they would provide their customers a potentially higher economic value. Even when such evolvements are proportionate to the increase in prices, if they are perused systematically for a long period of time, such practices may also indicate the possibility that the dominant undertaking is 'extracting' an unfair amount of funds from its customers to finance its own investment plans. Although the economic value of the platform service for customers may rise in such instances, the practice as such, may entail a situation wherein a dominant undertaking makes use of an opportunity that its would not be able to obtain in a competitive market, which is the core rationale behind the prohibition of excessive pricing in EU competition policy.[180] Finally, a second caveat on price raises is worth mentioning. While price changes may often trigger initial suspicion, unchanged prices or transaction fees should not be perceived as per se fair. This is particularly true when the growth of the respective platform results in significant increases in the profitability of the platform. Accordingly, a fixed transaction fee can overtime become excessive and unfair in light of changing market conditions and circumstances. Therefore, the fact that Apple did not change the transaction fees for its App Store since its launch does not necessarily mean it can never be found to be excessive under art. 102 TFEU as the market affected by and related to the App Store have undergone significant changes since its introduction.

The use of territorial comparators, as done in the past, will likely be more limited due to the extensive territorial scope covered by platforms in general, which is in most cases covered by one set of governance rules and pricing schemes. Territorial comparison with (potential) competitors can similarly be expected to have a rather limited scope of application because the markets in which online platforms are active are prone to concentration. Accordingly, in markets that have a limited number of competitors,

180 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 249.

it can be expected that the prices of the dominant platform and those of its competitors be at similar levels, especially when they rely on similar business models. Nevertheless, when making such comparison between the dominant platform and its (potential) competitors, it is important that comparisons are made solely with other platform entities that have a similar or identical business models. Non-platform entities may at times compete with platforms, however, the absence of a two or multi-sided character makes any price comparison irrelevant. Furthermore, when making this selection it is important that the nature and intensity of the direct and indirect network effects on such platforms are also observed as different settings may justify different price settings.[181] Similarly, the single and/ or multi-homing patterns of platform customers must also be accounted for in any territorial comparison. Differences in such settings indicate a difference in the intensity of competition among platforms that was found to lead to relative differences in the pricing levels of platforms.[182]

Finally, when attempting comparisons with comparable services offered either by the dominant platform or other undertakings, it is important that all the previously mentioned aspects are also similar or identical in the context of such comparable services. Failing to follow such steps would prevent such comparisons from being consistent as indicated by EU case law on excessive pricing.[183] In this regard, the many examples used in the debate of Apple's App Store pricing are not equally valuable for the purpose of finding an abuse of excessive pricing. Not all other app stores can be compared with the Apple App Stores in a meaningful way as they may concern very different legal and economic contexts.[184] The mere fact the all app stores rely on a rather similar business model does not make them directly suitable for use as a comparator in the context of the United Brands test as the price setting of platforms is, as previously discussed, affected by a myriad of factors.

c) Economic value in context

Once the first and second prongs of the United Brands test are performed, the last reality check concerns the question of the economic value provided by the dominant undertaking in return for its price. At this stage, according to the Commission, there is room to look beyond the mere cost-price and

181 See *supra* (n 41).

182 See *supra* (n 61); Richard Schmalensee and David S. Evans (2007) *supra* (n 60) at 173-175.

183 Case C-177/16, *Latvien Copyright*, [2017] EU:C:2017:689, para. 44.

184 See e.g. Sven B. Völcker & Daniel Baker, 'Why there is no antitrust case against Apple's App Store: a response to Geradin & Katsifix' (2020) at 65-71 <https://ssrn.com/abstract=3660896> accessed 21 Jul. 2021. The authors appear to compare Apple's Apps Store fees to those of all existing app stores regard less of their respective characteristics and economic context.

profitability comparisons.[185] In the context of platforms, it is important that discussions about the economic value of the service offered by the platform take into consideration the manner in which value is created as well as increased by platforms. At their core, the value offered by all online platforms is some form of matchmaking functionality between two or more separate customer groups. Therefore the better such functionality works, the more value the platform can be said to offer its respective customer groups. The most evident kind of improvements that can be made by platforms is reducing the search and transaction costs of its customer groups.[186]

Platforms that provide more of these efficiencies and other benefits can be expected to be able to capture more network externalities by becoming more popular among customers that may also be willing to pay a higher price for using the platform. Of course such improvements will inevitably involve constant investments that entail additional costs for the platform. Comparable improvements can also lead to another type of value increase that the platform can facilitate, which is to increase the number of members of its various customer groups. Increased participation on the platform can in turn also increase the potential volume of successful matchmaking interactions on the platform that can lead to higher profits for both the platform and its customer groups.[187] Accordingly, when assessing the pricing practices of a dominant platform it is important that their evaluation includes an analysis that covers such platform qualities as they represent a great deal of the economic value that platform customers receive. In other words, it is important that the relationships between the network externalities created and captured by platforms are studied in tandem with their price setting practices. This is particularly important in the context of the second prong of the United Brands test that relies greatly on the use of comparators. Any comparison effort should also take into account changes in the economic value provided by the platform to its customer groups over time, in various regions as well as compared to other platform undertakings. For example, while all marketplaces provide the same core service, the quality and thus value of such service for the consumers and merchants may change over time and differ across actors. This is because some platforms may be better than others at capturing network externalities and by doing so deliver more value to their respective customer groups which in turn would allow them to charge higher fees. Taking into account such capability in practice would entail looking at the efficiencies, cost reductions and commercial oppor-

185 *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004, paras. 209-212, 226- 228.

186 Andrei Hagiu, 'Multi-sided platforms: From micro foundations to design and expansion strategies' (2007) Harvard Business School Strategy Unit Working Paper (09-115), pp. 3-7. <https://ssrn.com/abstract=955584> accessed 14 Aug. 2020.

187 Examples of successful matchmaking interaction are: more clicks on ads, more bookings of hotel rooms, more purchases of products, more orders order of food, more payments made etc.

tunities facilitated by the concerned platform for its respective customer groups. The more of these the platform can deliver (overtime) the more it can be expected to charge its customers as it delivers more value to them. This remains true even in the event that the costs of the platform do not necessarily increase in similar proportions. Accordingly, an innovative platform that finds a 'cheap' way to create significantly more value for its customer groups should not be expected to price its services similar to its competitors that cannot deliver such value even if these offer the same core matchmaking service. As long as the differences in fees between the concerned undertaking and its competitors correspond with a comparable difference in value created for their respective customer groups, it cannot be said that the dominant undertaking is pursing abusive strategies; better products and services should be able to deliver better returns even in the case of dominant undertakings.

In terms of measurement, such achievements can be assessed based on a combination of data that represents the platform service value. Such data can include for example evidence of service improvements, the cost saving value of such improvements for the platform customers, changes in the volume of customers (depending on the nature of network effects in each case), the volume of successful and profitable interactions on the platform per customer (i.e. conversion rates), customer loyalty data, and (when transactions are enabled on the platform) the returns generated per platform customer. The specific combination of such value indicating data parameters and their relevance will vary across business models depending on the nature of the service they seek to provide.[188] Failing to take into account the aspects that determine the value of the matchmaking functionality for the platform customers would entail treating the matchmaking functionalities provided by platforms, including dominant ones, as both homogenous and static, which is contradictory to their commercial reality that demands constant innovation and differentiation to survive.[189]

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188 E.g. for a discussion on value perception by platform customers, with specific emphasis on C2C platforms see Clauß, Thomas & Peter Harengel, Marianne Hock-Döpgen, (2019)'The perception of value of platform-based business models in the sharing economy: Determining the drivers of user loyalty' (2019) 13(3) Review of Managerial Science; See also See Commission, Staff Working Document Accompanying the document Report from the Commission to the Council and the European Parliament Final report on the E-commerce Sector Inquiry, COM (2017) 229 final for the parameters of price on quality which determine competition for consumers and commercial customers between players in this sector. The parameters of competition determine in essence a great part of the (economic) value such platform can deliver to their respective customer groups.

189 See e.g. Andrei Hagiu (2007) supra (n 186); Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne, 'Platform Envelopment' (2011) 32(12) Strategic management Journal 1270; Alina S Staykova & Jan Damsgaard, Platform Expansion Design as Strategic Choice: The Case of WeChat and Kakaotalk (2016). Research Papers 78 <https://aisel.aisnet.org/ecis2016_rp/78 >accessed 5 Sept. 2020.

5.3.3 Discriminatory pricing

Price discrimination commonly refers to the situation where an undertaking is selling identical goods or offering identical services to different customers for varying prices for reasons unrelated to costs.[190] Generally speaking, from a competition policy perspective, price discrimination concerns two main categories: competitor discrimination and (non-competing) trading party discrimination. Trading party discrimination entails discriminatory (pricing) practices adopted by an undertaking towards its commercial trading parties in one or more markets where it is not active. Competitor discrimination entails a similar setting, however, in this latter setting (some of) the undertakings' trading parties are also its competitors in a vertically related market. From a competition policy perspective the two types of price discrimination scenarios bring about different concerns. In the case of trading party discrimination, the (potential) adverse effects on competition resulting from such practice occur in a relevant market where the dominant undertaking is not active. The monopolist or dominant undertaking in such cases essentially interferes with competition between its respective trading parties. In the case of competitor discrimination, the discriminatory pricing of the monopolist or dominant undertaking results in (potentially) adverse effects on competition in a (vertically related) relevant market where it is active. Although the outcomes of both types of discriminatory practices are undesirable form a competition policy perspective these two types of practices are not addressed with the same degree of gravity and suspicion; for good reason. A monopolist or dominant undertaking has an evident incentive to discriminate against its competitors when these are its customers since it will often benefit from their downfall. By contrast, the incentives for a dominant undertaking to discriminate against its trading parties with which it does not compete are far less evident. In the absence of exceptional circumstances it is hard to see how an undertaking would benefit from having one or more of its trading parties struggling to compete in a market the concerned undertaking itself is not active on.[191]

The ability of implementing discriminatory pricing strategies requires, however, more than simply being in a position to offer goods or services to competitors and other trading parties. From an economic perspective implementing discriminatory pricing requires that the concerned under-

190 See e.g. OECD Roundtable on Price Discrimination – Background note from the Secretariat DAF/COMP(2016)15 at 6-7 < https://one.oecd.org/document/DAF/COMP(2016)15/en/pdf> accessed 10 Dec 2020.

191 When confronted with such a scenario, the CJEU also cast doubt on the rationale of such a practice from the perspective of the dominant undertaking. See Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, para. 35.

taking has market power,[192] is able to sort its customers based on their valuation for the good or service offered and it is able to prevent arbitrage through re-trades between its customers.[193] When considering the criteria discussed in economic literature, it is evident that online platforms often have the ability to implement discriminatory pricing strategies. For example both Google's Play Store and Apple's App store provide various kinds of pricing for various categories of apps despite providing them with essentially the same platform service.[194] Similarly, hotel booking platforms implement various pricing options depending on the property type listed and its desired ranking in the search results.[195] The question is off course when will such practices, which are commonly adopted by platforms, be abusive since the use of price discrimination as such is not per se prohibited under art. 102 TFEU. In order to answer this question it is important to first revisit the current legal framework for dealing with discriminatory pricing under this provision.

192 Damien Geradin and Nicolas Petit,' Price Discrimination under EC Competition Law: The Need for a case-by-case Approach' GCLC Working Paper 07/05, pp. 4 < file:///Users/danielmandrescu/Downloads/gclc_wp_07-05.pdf> accessed 10 Dec. 2020; OECD Roundtable on Price Discrimination, Background note by the Secretariat DAF/COMP(2016)15, pp. 9 < https://one.oecd.org/document/DAF/COMP(2016)15/en/pdf> accessed 10 Dec. 2020. The exact degree of market power needed for this task is however unsettled, see e.g. Michael E. Levine, ' Price Discrimination Without Market Power' (2002) 19(1) Yale Journal on Regulation, 2. The author argues that the ability to discriminate is not an indication of monopoly market power necessarily.

193 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 66) at 181.

194 See Apple's information for developers based on the business model they intend to implement in their app < https://developer.apple.com/app-store/business-models/> accessed 7 January 2021; see Google's pricing guidelines for app here < https://support.google.com/googleplay/android-developer/answer/6334373?hl=en> accessed 7 January 2021. The respective market power of the currently prominent app stores is discussed in F. Bostoen and D. Mandrescu (2020) *supra* (n 166).

195 See Booking.com's pricing information for property owners here < https://partner.booking.com/en-us/help/commission-invoices-tax/how-much-commission-do-i-pay> accessed 7 January 2021. The market power of such players was considered sufficient to dictate price in the past in the context of the decisions against hotel room booking platforms for the use of MFN clauses that showed their ability to dictate prices without necessarily always being labeled as dominant, see e.g. Bundeskartellamt Prohibition decision of 20.12.2013 in the case of HRS, B9-66/10 and Bundeskartellamt Prohibition decision of 22 December 2015 in the case of Booking.com B.V, B9-121/13.

A. *Discriminatory pricing in EU competition law*

In the context of EU competition law, the implementation of discriminatory pricing by dominant undertakings is covered by art. 102(c) TEFU.[196] According to this provision dominant undertakings are prohibited from '*applying dissimilar conditions to equivalent transactions that places their trading parties at a competitive disadvantage*'. Unlike many abuses under art. 102 TFEU the formulation of art. 102(c) TFEU describes quite accurately the legal elements that need to be addressed in the context of each case. Accordingly, a private claimant or competition authority seeking to establish an abuse on this ground must show the existence of: (i) an equivalent transaction to two or more trading parties; (ii) subject to dissimilar conditions; (iii) that creates a competitive disadvantage to such trading parties.[197]

Finding the existence of equivalent transactions requires firstly that the traded goods or services share a great deal of similarity from a physical and/or functional perspective. The most evident case where such a conclusion can be made is when the goods or services offered are identical. This was the situation in *United Brands* where it was noted that all the bananas sold by UBC under the brand 'Chiquita' to traders across multiple Member States were of the same origin, same kind and (almost) the same quality.[198] Similarly, in *British Airways* it was found that the different rebates given to travel agents based on their relative performance meant different terms were applied for equivalent transactions.[199] In *Clearstream* the Commission and EU Courts extended the notion of equivalence also to a situation where the trading parties received a similar offer in a similar commercial context despite the fact that such services were not identical.[200] Nevertheless, where

196 Nevertheless, the discriminatory pricing practices by dominant undertakings has been considered problematic on various occasions in the past and addressed via other specific types of abuses or combinations thereof, e.g. selective discounts combined with tying in Case T-51/89 *Tetra Pak Rausing SA v Commission of the European Communities* [1990] ECLI:EU:T:1990:41 and Case T-30/89 Hilti AG v Commission [1991] ECLI:EU:T:1991:70; the partitioning of the internal market in Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22; the implementation of loyalty rebates in Case C-95/04 P *British Airways plc v Commission* [2007] ECLI:EU:C:2007:166.

197 Of course like with any abuse, the option of objective justification also remains to be considered as well, see Case C-95/04 P *British Airways v Commission* ECLI:EU:C:2007:166, para. 86.

198 Case 27/76, *United Brands Company v. Commission* ECLI:EU:C:1978:22, para. 204.

199 Case T-219/99 *British Airways v Commission* [2003] ECLI:EU:T:2003:343, paras. 234-240; Case C-95/04 P *British Airways v Commission* [2007] ECLI:EU:C:2007:166, paras. 136 -141.

200 In this case it was found that Clearstream's primary clearing and settlement services provided to central security depositors and international central securities depositors entailed equivalent transactions. See *Clearstream (Clearing and Settlement)* (Case COMP/38.096) Commission decision of 2 Jun. 2004, paras. 306-313; In the appeal the GC also agreed with the Commission on this matter Case T-301/04, *Clearstream Banking AG and Clearstream International SA v Commission* [2009] ECLI:EU:T:2009:317, paras. 169-179.

the differences between the offered services were evident the Commission did not shy away from pointing it out and questioning the respective claims of discrimination.[201] Accordingly, a finding of equivalent transactions does not require goods or services to be identical, however, their core functionality and characteristics as well the entire commercial and legal context in which they are offered must show sufficient similarity in order to make them commercially comparable.[202] Once equivalent transactions are found, the identification of dissimilar conditions comes down to a factual assessment of the prices charged by the dominant undertaking with respect to its trading parties. This criterion is fulfilled once price disparities can be traced with regard to the transactions that are considered equivalent.

Where a dominant undertaking does indeed apply different prices to equivalent transactions, finding an abuse ultimately depends on whether such difference placed one or more of its trading parties at a competitive disadvantage. Based on the recent case of *MEO*, reaching such a conclusion requires first that the disadvantaged and privileged trading parties of the dominant undertaking be indeed in competition with each other.[203] Finding a relation of competition would at the very least require such trading parties be in the same relevant market.[204] This relevant market can be, depending on the circumstances of the case, one of two: (i) the output market for which the purchased goods and / or services from the dominant undertaking are used or (ii) the input market for goods and / or services sold to the dominant undertaking.[205] When it comes to the competitive disadvantage in such cases the CJEU in MEO stated that there is not de minimis threshold for finding an abuse, however, not every economic disadvantage resulting from price disparities will lead to a competitive disadvantage.[206] According to the CJEU the ratio between the (higher) price charged by the dominant undertaking from the disadvantaged parties and the total costs of the trading party should be sufficient to impact its interests compared with its

201 See e.g. *Scandlines Sverige AB v Port of Helsinborg* (Case COMP/ A.36.568/D3) Commission decision of 23 July 2004, paras. 252 -254.

202 This is line with AG Wahl's latest opinion in Case C-525/*16 MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2017] ECLI:EU:C:2017:1020, Opinion of AG Wahl, para. 57.

203 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, paras. 26-31; See also Case C-525/*16 MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2017] ECLI:EU:C:2017:1020, Opinion of AG Wahl, para. 67.

204 Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa* [2008] ECLI:EU:C:2008:703, para. 46.

205 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, para. 24.

206 Ibid, paras. 26-27.

competitors.[207] The CJEU did not go into the specificities of a threshold ratio that would be indicative of a prima facie abuse, however, that is in itself not surprising as such ratios and their significance will vary across sectors making it hard to set a single standard for all.

Based on the above it can be said that the current framework provides dominant undertakings with a great degree of flexibility when it comes to discriminatory pricing strategies. Although this is certainly positive in the case of platforms, which relay greatly on skewed pricing structures, the criteria set by this framework can easily lead to erroneous findings when applied to them. Platforms can easily be perceived as providing one or two core services to the members of their various customer groups, which may often view themselves as competitors, at significantly different price points. This overly simplified view is currently in the context of app store due to the differenced pricing applied by both Apple and Google with respect to app developers.[208] The commercial reality of platforms is, however, more intricate and correctly establishing the existence of abusive discriminatory pricing requires translating the criteria of the current legal framework for this abuse to such reality.

B. Applying the EU prohibition on discriminatory pricing to online platforms

Applying the current practice on art.102(c) TFEU to online platforms requires translating the essence behind the criteria of 'equivalent transactions' and 'competitive disadvantage' that constitute the principal criteria of this provision to the commercial reality of these actors.

a) Equivalent transactions for platform users

In the context of online platforms, the criterion of equivalent transactions will in essence concern the commercial relation between the concerned platform and its customer groups that consist of commercial trading parties.[209] The utilization of the platform by these commercial parties can

207 Ibid, para. 30. This position follows to a great extent the position of AG Whal who noted that in order to establish that a competitive disadvantage was caused by discriminatory pricing requires looking into how much the input sold by the dominant undertaking costs in relation to the total costs of the disadvantaged party. See AG Wahl's latest opinion in in Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2017] ECLI:EU:C:2017:1020, para. 105-110.

208 See e.g. Spotify's claim on this matter that describes this price differentiation as objectionable and discriminatory < https://www.timetoplayfair.com/facts/> accessed on 25 Jul. 2021.

209 The customer group(s) of the platform consisting of end consumers will be excluded from such analysis as art. 102(c) TFEU only concerns commercial trading parties.

generally be divided into three categories: (i) as a sales channel;[210] (ii) as an advertisement channel;[211] and (iii) as a data acquisition source.[212] These three forms of utilization can be identified with the most prominent platforms these days, at times even simultaneously. Relaying on a platform as a sales channel is perhaps the most common practice in the context of the e-commerce sector where such services are provided by platforms that enable monetary transactions between consumers and various types of commercial parties.[213] Prominent platforms serving this purpose include Amazon Marketplace, Booking.com, Expedia, UberEats, Google Play Store and many other players. Using platforms as advertisement tools can be observed when platforms enable commercial parties to present their services or goods to consumers without the possibility to directly complete a monetary transaction with regard to such services or goods. This is for example the case with price comparison websites and vertical search engines such as Google or Bing Shopping search, Skyscanner, Trivago and others. Finally using platforms as a source of data acquisition can be seen throughout the entire digital economy where access to most if not all webpages requires accepting the installation of cookies on ones device.

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210 Such use is associated with the category of platforms coined by other authors as 'transaction platforms', where the various customer groups of the platform could conduct monetary transactions via the platform. See Lapo Filistrucchi, Damien Geradin, Eric van Damme & Pauline Affeldt, 'Market Definition in Two-Sided Markets: Theory and Practice' (2014) J. Competition L. & Econ. 293–339 and Bundeskartellamt, Working Paper – Market Power of Platforms and Networks B6-113/15 (2016) at 18-30.

211 Such use is associated with platforms coined by other authors as 'non-transaction platforms', audience providing platforms. See Supra note Lapo Filistrucchi, Damien Geradin, Eric van Damme & Pauline Affeldt (2014) and Bundeskartellamt (2016). In the context of the Google Shopping case it would appear that the Commission also makes that distinction between sales channels platforms and advertisement channel platforms based on whether the concerned platform enables its customer groups to conduct a financial transaction, see *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, paras. 191-250. It worth noting, however, that coining platforms with a specific label for its 'type' has limited value in practice as platform business models are often a result of mixed strategies that do not follow such strict division lines. Any categorization made in their case should be done with respect to the specific practice under investigation and the specific platform functionalities involved in each case. For more on this see Daniel Mandrescu, 'Applying (EU) Competition Law to Online Platforms: Reflections on the Definition of the Relevant Market(s)' (2018) 41(3) World Competition 453.

212 See e.g. the UK Data and Marketing Association guidelines for data collection and usage (subject to the current GDPR framework) < https://dma.org.uk/uploads/misc/third-party-data-guide-1.0.pdf> accessed on 27 Dec. 2020.

213 See Commission, Staff Working Document Accompanying the document Report from the Commission to the Council and the European Parliament Final report on the E-commerce Sector Inquiry, COM (2017) 229 final. In the E-commerce sector the two main utilizations for platforms appear to be advertisement via platform that allow consumers to make price comparisons and platforms that allow consumer to buy various goods from different sellers. In the context of (online) sales, the use of marketplace platforms represent one of the only two avenues merchants have to sell their goods. The other possibility is to sell directly through one's own online web-shop.

The so called 'marketing cookies' collect data on behalf of the respective webpage as well as on behalf of other commercial parties that wish to gain various insights from the activity on the respective website. Of course these three kinds of utilization are not mutually exclusive and often combined. Youtube for example allows commercial parties to place advertisements, sell premium content while collecting various types of cookies as well.[214]

In the context of identifying equivalent transactions between the dominant platform and its trading parties, the equivalence of transactions will predominantly occur within one the three utilization forms rather than across. Although it may be evident that data acquisition is completely different from the other two utilization forms, the distinction between the utilization of platforms as advertisement or as sales channels is far less evident and has been subject to extensive debate. In the *Google Shopping* case that is now pending appeal, the substitutability between the Google Shopping service (an search advertisement tool) and online market places such as Amazon (a sales channel) was at the heart of the market definition debate.[215] At the end the Commission found these two types of platform utilization as non-substitutable from the perspective of both commercial users and consumers.[216] Similar conclusions can also be found in the context the MFN clauses cases against various hotel room booking platforms.[217] Therefore to the extent that the conclusions on the definition on the relevant market for such platform utilization forms are not overturned, these should not be treated as equivalent under the scope of art. 102(c) TFEU. Accordingly, platforms that offer functionalities for these two types of utilization may be able to price them differently without having to worry about infringing art. 102 (c) TFEU.

214 See more on Youtube's policies in this respect at < https://support.google.com/youtube/answer/7636690?hl=en> accessed 12 Jan 2021. In the case of third party cookies that were often used by third parties on the platform in order to gather information on the platform users it would appear that a change of sector strategy is on the rise as the main internet browsers (Monzilla, Safari, Chrome) will by default block third party cookies. The acquisition of comparable users information will not however be eliminated as such but rather facilitated through other technologies. For more see Dieter Bohn, Google to phase out third party cookies in Chrome, but not for two years' (The verge, 14 Jan. 2020) < https://www.theverge.com/2020/1/14/21064698/google-third-party-cookies-chrome-two-years-privacy-safari-firefox> accessed 12 Jan 2021.

215 *Google Search (Shopping)* (Case AT.39740) Commission decision of 27 Jun. 2017, paras. 191-250.

216 Ibid, paras. 216-227.

217 See in this regard the market definition in Bundeskartellamt Prohibition decision 20 Dec. 2013 in the case of HRS, B9-66/10; Bundeskartellamt Prohibition decision, 22 Dec. 2015, in the case of Booking.com B.V, B9-121/13; Competition Commission COMCO prohibition decision, 19 Oct. 2015, Online-booking Platforms for Hotels.

When zooming into one specific type of platform utilization it is important to keep in mind that many platforms may often offer various service packages to their commercial customers. This is most visible in the case of platforms that serve as sales and/ or advertisement channels. In such cases the pricing menu for the trading parties of the platform often includes a number of options that specify different variations of the core service sought after by the platform's trading parties. The most common variation or upgrade to the core services offered these days platforms that serve as sales and/or advertisement channels is the placement or ranking of goods or services placed on the platform.[218] Other common service upgrades may also include product fulfillment service, transaction management and digital payment solutions as well as search engine optimization. When comparing transactions it is imperative that such additional options are accounted for. Trading parties that are charged extra because they chose to make use of such options and have indeed been provided with such options cannot claim to have been discriminated when compared to trading parties that have no made use of such options. This is due to the fact that 'upgraded' services and 'basic' services cannot be considered equivalent.[219] Claims of discrimination in such instances can only arise when the trading parties that chose for the 'default' service were charged the same or more than the trading parties that chose for the 'upgraded' service.[220] Beyond such circumstances it is important to note that such forms of price differentiation will not fall under the scope of art. 102(c) TFEU, as it does not concern a situation of discrimination in the sense of this provision.[221]

Finally, in cases where the commercial trading parties of the platform are utilizing the platform in the same way and have chosen the same kind of service, they may still be considered to be subject to non-equivalent transactions. This can occur for example when the economic benefit that such parties can (potentially) derive from the platform differs, for example because they have different revenue models. This was indicated by the

218 See e.g. Tripadvisor's service page specifically dedicated to ranking and placement results upgrade on the Tripadvisor booking platform at < https://www.tripadvisor.com/business/sponsored-placements> accessed on 17 January 2021.

219 This type of pricing scales / menus is commonly referred to as second degree discrimination in economic literature, however, this kind of pricing practices may not be considered discriminatory from a legal perspective as the provided good or service for each pricing category will have different traits (quality, size, volume, etc.). See e.g. Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 63) at 181-182; OECD Roundtable on Price Discrimination (2016) supra (n 192) at 7.

220 This occurred for example in The Netherlands in the case of Funda, a real estate advertisement platform, where one of two groups of real estate agents (VBO) were charged a higher platform membership fee than a second group of real agents (NVM) that were also systematically given a better ranking in the search result in on Funda. See Funda Decision *supra* (n 14).

221 Robert O'Donghue and Jorge Padilla (2020) *supra* (n 68) at 962.

CJEU and AG in *Kanal 5*.[222] In the case of platforms this can be seen, for example, with ad-based and membership based apps offered in the Apple and Google app stores. If the platform input (matchmaking functionality) is being capitalized in various proportions across different trading parties it is reasonable for the platform to price its services differently at times.[223] Therefore, in the case of app stores, if various competing app developers obtain a different value from the app store by virtue of their own business model it would not be unreasonable to calculate their fees in a different manner as long as the difference in the total fees paid by such parties does not put some of them at a competitive disadvantage. Problems may arise, however, in situations where the business models of the platforms' trading parties are different but their capitalization of the platform service is similar, e.g. producers and retailers, which may chose to sell goods via an online marketplace. In such a scenario it would difficult to argue that these two types of trading parties are subject to non-equivalent transactions since both parties are likely to obtain a similar commercial benefit from using the platform as a sales channel. In practice, many of the difficulties associated with making the above mentioned distinction will be alleviated by the competitive disadvantage criterion which requires that the compared customers of the dominant undertaking are indeed competitors.

b) Competitive disadvantage and dissimilar conditions

The requirement that the favored and disfavored customers (consisting of commercial trading parties) of the dominant undertaking are competitors will play a significant role in filtering out misinterpreted cases of discriminatory pricing. In their role as intermediaries, online platforms seek to attract various groups of customers to use the platform. The customer groups formed by commercial trading parties can consist of either homogeneous or heterogeneous members. In the case of UberEats, for example, the customer group formed by commercial trading parties is quite homogenous as it consists of restaurants that offer food suitable for home delivery. By contrast, in the case of app stores the commercial customer group is very

222 Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa* [2008] ECLI:EU:C:2008:703, para. 45; Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa* [2008] ECLI:EU:C:2008:491 Opinion of AG Trestenjak para. 101. Where the customers of the dominant undertaking monetize the input (or service) they acquire from it differently it can be said they derive different economic values from this commercial relationship which may mean they may be subject to dissimilar conditions it they are subject to the same fees.

223 E.g. membership based apps gain access to a user pool that may provide that app enterprise with a steady revenue stream whereas ad based apps can expect far more variable revenues from their apps as such revenue depends on the interaction of their users with the ads presented in the app. For more info on business model oriented pricing in app stores see Apple's pricing guidelines in this regard at:< https://developer.apple.com/app-store/review/guidelines/> accessed 14 January 2021.

heterogeneous as it consists of app developers that operate in numerous different markets. In cases where the platform attracts heterogeneous commercial parties, these can be at times divided into multiple homogenous groups by the platform each being divided into a separate matchmaking functionality. This can be seen in the case of online booking platforms in the tourism sector such as Booking.com or Expedia, that serve as a sales channel for airlines, hotel owners, taxi companies and rental companies, which can offer their services in the section of the platform specifically dedicated to their type of service.

The differentiation in the commercial sphere in which the commercial customer groups of the platform operate often means that their demand for the platform and the respective benefit they can derive from it will vary across such groups. Therefore, in terms of pricing, platforms are very likely to set their pricing for such groups in a manner that gets as many of their members on board as possible. As previously discussed, this form of coordination by the platform results in a skewed pricing structure.[224] This skewedness will generally occur, however, across homogenous customer groups rather than within such groups as members of such groups are expected to have a similar demand for the platform and benefit similarly from using it. This in turn, would often imply that getting the members of each homogenous customer group on board would be possible with similar value propositions by the platform. Offering similar value propositions does not mean all members will pay the same fees but rather that they will be subject to similar fee calculation methods. For example, the restaurants on UberEats are subject to the same commission fee structure, which includes different percentages based on whether or not they make use of the delivery service facilitated by the platform.[225] Where the commercial customer group consists of one group of heterogeneous members, like in the case of app stores, price differences are likely to occur within such a customer group due to the differences of demand for the platform by such members and the benefit that they can derive from using it.

In the case of platforms that have chosen to divide their commercial customers into multiple homogenous groups, it can generally be said that such customer groups will not compete with each other. Accordingly, price differences identified across such groups fall outside the scope of art. 102(c)

224 Marc Armstrong (2006) *supra* (n 9); Jean Charles Rochet and Jean Tirole (2003) *supra* (n 9); Richard Schmalensee and David S. Evans (2007) *supra* (n 35); Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyn (2006) *supra* (n 46).

225 See UberEats' pricing policies for restaurants at< https://restaurants.ubereats.com/us/en/pricing/> accessed 15 January 2021. Similarly see Tripadvisor's pricing details for hotel room bookings which offer two routes for all hotels that offer their rooms via the Tripadvisor booking platform < https://www.tripadvisor.com/InstantBooking> accessed 15 January 2012.

TFEU. Similarly, when the commercial customers of the platforms consists of one heterogeneous group of members, price differences amongst such members will often fall outside of art. 102(c) TFEU because such members will often not compete with each other. For example, the differences in pricing indicated in the case of app stores are based primarily on the business model of the concerned app. This differentiation criterion for pricing, however, also entails often an important characteristic for competition among such parties. Parties that rely on fundamentally different business models, even when active in the same sector, may at times not be considered direct competitors in which case such practices will fall outside the scope of art. 102(c) TFEU. This possibility is visible in the current practice of the Commission and NCA's in the case of platforms, which appears to give significant weight to the business model of undertakings when defining the relevant market in which they operate.[226] Nevertheless, there is no guarantee this will always be the case, nor is it possible to exclude that competition among business models may develop overtime.[227]

In light of the above, when going back to the example of app stores, the objections made by Spotify against Apple's pricing should be addressed with caution, as these may not be entirely founded if brought under art. 102(c) TFEU. The fact that companies that offer physical goods or services outside of the app, such as Uber, Booking.com and Zalando, do not pay (almost) any fees for their respective iOS compatible apps cannot serve as evidence of discrimination against Spotify in the sense of art. 102(c) TFEU since these parties are not its competitors.[228] As mentioned previously, this aspect of Apple's pricing is best addressed under the scope of excessive pricing.[229] By contrast, if pricing differences were to be established amongst

226 E.g. a hotel room booking app of a hotel network like Hilton would not be in the same relevant market as a hotel room booking app like Booking.com based on the findings in Bundeskartellamt Prohibition decision 20 Dec. 2013 in the case of HRS, B9-66/10; Bundeskartellamt Prohibition decision, 22 Dec. 2015, in the case of Booking.com B.V, B9-121/13; a marketplace app like amazon marketplace will not compete with Google's Shopping app based on Case AT.40099 Google Android Commission decision of 17 July 2018.

227 See e.g *Universal Music Group/ EMI Music* (Case No COMP/M.6458) Commission decision of 21 Sep. 2012, para. 139. The Commission considers that the present segmentation between music downloading and music streaming, despite their many difference will change in the course of time; Similarly the changes in the trends in consumer retails goods has also been observed by the commission when it comes to the substitutability of online and offline retailers in *OTTO/ PRIMONDO ASSETS* (Case No COMP/M.5721) Commission decision of 16 Feb 2010, paras. 16-30.

228 As would is required by the CJEU for the purpose of applying this provision, see Case C-52/07 *Kanal 5 Ltd and TV 4 AB v Föreningen Svenska Tonsättares Internationella Musikbyrå (STIM) upa* [2008] ECLI:EU:C:2008:703 , para. 46.

229 For more in this regard see For an extensive discussion on platform pricing in the case of App Stores see F. Bostoen and D. Mandrescu (2020) supra (n 166).

various music streaming apps in the App Store (including Apple's own native app), this could, at least, prima facie fall under the scope of this provision.

Accordingly, platforms that deal with an undivided group of heterogeneous commercial customers should constantly review and adjust their pricing rules and structures so as to function in tandem with the relation of (potential) competition between their commercial customers. If the differentiation criteria applied by platforms with respect to such a group of heterogeneous commercial customers do not exclude the possibility of competition between such members, the pricing practices of these platforms may fall under the scope of art. 102(c) TFEU. A final finding of infringement will of course depend on whether such difference is sufficiently significant to create a competitive disadvantage.

In the case of homogenous commercial platform customers, offering different prices to such members is more likely to fall under the scope of art. 102(c) TFEU since such members are expected to operate in the same sector and rely on similar business models. In such situations the pricing practices of the platform may nevertheless fall outside the scope of this provision when such pricing difference corresponds with the different sub-segments of the market where its customers are active in.[230] In other instances, the adoption of different prices for such customers should be considered at the very least to be suspicious, especially when such pricing strategies include criteria that are external to the trade relation between the platform and its customers. This would occur, for example, if a platform would offer lower prices to its single homing commercial customers compared to its multi-homing customers.[231] Although this would be rational from an economic perspective because single-homing customers are considered more valuable than multi-homing ones, this would be the equivalent of exclusivity rebates from a competition policy perspective.

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230 E.g. see *AHOLD/ FLEVO* (Case No COMP/M.6543) Commission Decision of 7 May 2012, paras. 10-16. The Commission found that the market for sales of books to final consumers can be sub-dived based on sales channel and book category; in *SONY/ MUBADALA DEVELOPMENT/ EMI MUSIC PUBLISHING* (Case No COMP/M.6459) Commission decision of 19 Apr. 2012, paras. 27-43. In this later decision the Commission found the market for online exploitation of rights can be sub-divided based on: retail model, genera's and access device.

231 A similar practice have been observed in the case of Expedia that was claimed to be demoting the placement of properties offered on its platform if the same properties were also listed on other platforms for lower prices. In such a scenario competing property owners would be subject to the same fees but get less for their money due to their choice to multi-home. Such a construction is in essence a work around the prohibition imposed on booking platforms to use MFN clauses while attempting to achieve the same effect.

Following the identification of competing commercial trading parties that are subject to dissimilar pricing imposed by the concerned dominant platform, the effect of such prices on competition remains to be assessed like in any other case. The manner in which such effect should be assessed may differ, however, based on the way in which these commercial customers utilized the platform. Where the platform commercial customers use the platform as a sales channel, the competitive disadvantage of dissimilar pricing should be assessed with respect to the competitive relation among such parties **on** the platform. This in line with the requirement of current practice that the competitive disadvantage of the disfavored customer(s) should be assessed in the market where the input of the dominant undertaking is used to compete.[232] Although the impact on competition as such may at times be rather limited,[233] such an approach would be in line with the current case law on art. 102 TFEU, which excludes the possibility of a de minimis threshold.[234] When the dominant platform is used by its commercial customers as an advertisement channel or a source of data acquisition, the competitive disadvantage should be assessed with respect to the market(s) where these are active on outside of the platform. Accordingly, such markets would be those for the advertised product or service, or the market(s) of the product or service for which the data was acquired. In practice this may also mean that platforms will have a varying degree of maneuvering space when it comes to price discrimination depending of the functionalities they offer and their corresponding form of monetization.[235]

5.4 Conclusion and final remarks

This discussion and analysis in this chapter addressed the fourth subquestion of this research, namely: *How can abusive pricing practices by online platforms be assessed under art. 102 TFEU in light of their inherent reliance on unconventional price settings resulting from their multisided nature?*

The discussion covered in this chapter depicts the complex nature of platform price settings when being assessed as potential price-related abuses under art. 102 TFEU. It was shown that ensuring effective enforcement

232 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, para. 24.

233 E.g. when the sales via the dominant platform may represent a very small part of the total sales of certain customers.

234 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, paras. 29; Case C-23/14 *Post Danmark* [2015] ECLI:EU:C:2015:651, paras. 70-73; Case C-85/76 *Hoffmann-La Roche v Commission* [1979] ECLI:EU:C:1979:36, para. 123.

235 For example a 5% difference in transaction fees charged by platforms that facilitate monetary transactions may have a greater impact on competition on the platform than a 5% price difference on pay-per-click ads on competition outside the platform.

of such abuses in practice, although possible, requires that the multisided character of online platforms be taken into account in the scope of the legal and economic analysis of their price settings. This entails at times adjusting the legal tests to the commercial reality of online platforms. Accordingly, such adjustments may require relying on price assessment benchmarks that are better suited for the cost and price structures of online platforms and extending the price analysis to more than one customer group at a time. Such adjustments, despite being quite significant at times, can be accommodated to a great extent within the current frameworks for price related abuses discussed in this chapter. Therefore, applying this provision to platforms when dealing with price-related abuses does not necessarily require any modification to its wording.

In practice, the manner in which the respective platform characteristics are taken into account for the legal analysis under art. 102 TFEU will vary per type of abuse and corresponding legal tests depending on the theories of harm these intend to tackle.

The prohibition of predatory pricing under art. 102 TFEU aims at preventing exclusionary loss-making pricing strategies. Accordingly, applying this form of abuse to online platforms means assessing whether the prices set by the platform for (each of) its various matchmaking functionalities is loss-making. Doing so in practice will require establishing whether such matchmaking functionalities constitute one or more separate services offered by the platform. Where the platform is considered to provide a single service, the loss making assessment will be made with respect to all the platform costs. By contrast, where the various matchmaking functionalities are considered to constitute separate stand alone services, the assessment of loss- making will be made with respect to each of these functionalities separately as well as for the platform as a whole in order to also identify eventual cross-subsidization. This latter option that is possible under art. 102 TFEU in principle requires overriding the current discussion on the relevant market with regard to platforms, which commonly considers platforms to offer a single (matchmaking) service. Furthermore, the assessment of loss-making prices should rely on price – cost benchmarks that are suitable for the cost structure of platforms, which often involves significant fixed costs, relatively low variable costs and common costs.

In the case of excessive pricing the needed adjustments for the current framework to apply to online platforms are more significant. The prohibition of excessive prices under art. 102(a) TFEU is aimed at preventing the dominant undertaking from exploiting its customers by extracting supra-competitive prices from them. In the context of online platforms such exploitation can occur with respect to their various customer groups, including consumers. The assessment of excessiveness and unfairness of the platform prices, as required by the cases law on excessive prices, would

therefore have to be applied with respect to each of its customer groups. In order to so adequately, however, an expansion of the legal test introduced it in *United Brands* would be recommended. Such an expansion would entail looking at the network effects and their respective homing patterns in order to assess the economic value their receive from the platforms' matchmaking functionality. This additional step could then help filter out the noise created by the skewed pricing structures of platforms, which give the impression that the commercial customer group(s) of the platform always pay an excessive price. This is because such parties typically also cover the costs involved in serving the respective platform functionalities to consumers. The additional step helps reduce the scope of the excessiveness of the price paid by such parties. By doing so, the adjusted test prevents the over-enforcement of excessive pricing abuses with respect to such customers. At the same time the framework of this abuse needs to account for the possibility that some of the platform supra competitive fees may be passed-on (in part or in full) between the various customer groups. By doing so, the adjusted framework could help prevent under-enforcement in the case of customers that are attracted to the platform with very low or even zero priced offers, and are commonly not considered to be potential victims of excessive pricing. When making the excessiveness and unfairness assessment, similar to the case of predatory pricing, the price-cost benchmarks used need to be suitable for the cost structure of platforms.

Finally, in the case of discriminatory pricing practices, the aim of art. 102 (c) TFEU is to prevent the distortion of competition between the commercial customers of the dominant undertaking. Adapting the current framework of this abuse to online platforms is easier than in the case of the predatory or excessive pricing and primarily requires translating of the legal test for this abuse to the (commercial) setting of platforms and their commercial customers. This entails acknowledging that the intermediary role played by platforms which means that they can serve multiple separate customer groups with more than one matchmaking functionality at a time. Accordingly, it requires at times assessing whether the various matchmaking functionalities offered by the platform to its commercial customer groups constitute equivalent transactions. Where equivalence is established it is then important that the competitive relation between the respective platform commercial customers is identified, so as to assess whether the different fees that may have been charged by the platform from them could indeed put some at a competitive disadvantage. The manner in which this disadvantage is assessed and measured (i.e. on the platform of outside of it) depends in turn on the way the commercial customers of the platform utilized the platform functionalities.

In light of the above it would appear that the current framework of art. 102 TFEU is to a great extent capable of dealing with future claims concerning price related abuses. This is a (very) positive outcome given that fact that

such practices do not appear to be covered by the recent proposal of the DMA. Accordingly, the pricing practices of platforms with significant market power will remain for the time being to be addressed in an ex-post manner under art. 102 TFEU. Therefore, as showed and explained, the enforcement of price-related abuses in practice will require a dynamic approach to the current legal tests of such abuses that would allow for their adaption to the characteristics of online platforms.

6 Designing Remedies for Abuse of Dominance by Online Platforms

6.1 Introduction

The application of the current EU competition law framework to online platforms will entail multiple challenges for competition authorities and courts at both the national and EU level. The identification of such challenges has focused primarily on the various distinguishing characteristics of online platforms and the nature of competition in the digital markets where these are active. It was noted on multiple occasions that the characteristics of online platforms, such as network effects, economies of scope and scale, together with the growing importance of data for competition in such markets, enable platforms to acquire significant degrees of market power at a fast pace.[1] Such settings may create a shift from competition *in* the market to competition *for* the market with a winner-takes-all as a prospect outcome.[2] These insights have channeled most of the debate and research on platforms and competition law to the accumulation of market power and the utilization of such market power by platforms in practice.[3] Such aspects were have also been addressed throughout the previous chapters of this dissertation. This focus is justified by the fact that resolving such matters is instrumental for the application of the current framework to online platforms. Nevertheless, the application process is not limited to the ability to correctly identify and qualify harmful practices with the framework of (EU) competition law. An equally, yet often neglected, aspect of the application process is designing suitable remedies to tackle undesired practices once these are identified. Identifying competitive harms and condemning undesired business practices could do little good if such actions are not followed by an adequate remedy.

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1 Jaques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, 'European Commission – Competition Policy for the Digital Era (2019), pp. 14-15 < https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> [hereinafter Expert report] accessed 17 Feb. 2021; Stigler Center for the study of the economy and state, ' Stigler Committee on Digital Platforms (2019), pp. 28-58 < https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> [hereinafter Stigler report] accessed 17 Feb. 2021.

2 Ibid.

3 See e.g. OECD Round table on two-sided markets [2009] DAF/COMP/WD(2009)69; Bundeskartellamt, Working Paper – The Market Power of Platforms and Networks, Ref. B6-113/15, June 2016; OECD (2018) Rethinking Antitrust Tools for Multi-Sided Platforms, 57.

In the context of online platforms, the matter of remedies often does not get the attention it deserves and commonly constitutes the smallest part of the broader discussions about the competitive concerns of digital markets.[4] When it comes to abuse of dominance cases, it would appear that the topic of remedies is explored mainly when it concerns an actual case where an infringement has been identified and condemned. In such circumstances the discussion on remedies does not concern, however, the possibilities for future remedies but instead it serves as an after-fact critique on the concerned competition authority or court that has already implemented a remedy for such practices. This is best demonstrated by the recent case of *Google Shopping* and previously by the *Microsoft* cases that have been subject to extensive ex-post critique.[5] Such an approach is unfortunate as there is much to be gained from examining potential theories of harm in tandem with the envisaged remedies that would be suitable to offset the potential or actual competitive harm associated with business practices of the concerned dominant undertaking.[6] The parallel exploration of remedies and theories of harm allows constructing more robust cases against the concerned undertaking(s) that are more likely to survive the stage of judicial review and have a meaningful impact in practice. To some extent, it can be even said that the outcome of the parallel study of theories of harm should also be taken into account when it comes to the prioritization, especially when enforcement resources are limited. Pursuing cases which cannot be effectively remedied may reduce the capacity of competition authorities as well as courts to deal with cases that can be effectively resolved, which in turn may lead to an even greater competitive harm.

Against this backdrop, this chapter seeks to address the matter of remedies for abuse of dominance cases by online platforms for current and future cases. By focusing on future design choices while building on the insights of past experiences, this chapter helps prepare the ground for cases where the legal boundaries and objectives of competition law remedies will have to incorporate considerations concerning the multisided nature of platforms.

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4 See e.g. the discussion on the challenges posed by online platforms on competition policy that is mainly focused of identifying and qualifying market power and competitive harm in Expert report (2019), n. 1; Stigler report (2019) n.1; Monopolkommission, ' Competition policy: the challenge of digital markets' special report no. 68 (2015) http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf accessed 17 Feb. 2021.

5 See e.g. Philip Marsden, ' Google Shopping for the Empress's New Clothes – When a Remedy Isn't a Remedy (and How to Fix it) (2020) 11(10) Journal of Competition Law and Practice, 553; Dan Gore, Ashwin van Rooijen, '*Ex-Post* Assessment of European Competition Policy: The *Microsoft* cases (2021) < https://www.coleurope.eu/system/tdf/uploads/page/gclc_report_draft_-_the_microsoft_cases.pdf?&file=1&type=node&id=5829&force=> accessed 15 Feb 2021.

6 Williem E. Kovacic, 'Designing Antitrust Remedies for Dominant Firm Misconduct' (1999) 31(4) Connecticut Law Review, 1285.

In this regard addressing the topic of remedies in this chapter also allows complementing the previous chapters of this dissertation that is needed in order to complete painting the entire picture of the application process of art. 102 TFEU. Accordingly, the remedy design discussion addressed within the scope of this chapter concerns the price and non-price related abuses that have been thoroughly explored in chapters 4 and 5. The insights derived from these previous chapters and well as this one will then extend to the other price and non-price related abuses not covered by this dissertation that have at their core similar theories of harm.

With these considerations in mind, this final chapter seeks to address the question of how should remedies for abuse of dominance by online platforms be designed in light of their multisided nature. In this regard it should be noted that the term remedies in the context of this chapter covers only public enforcement remedies that directly intervene in the commercial conduct of the concerned undertaking. Accordingly, financial penalties such as fines or periodical payments or private enforcement remedies imposed in the context of civil claims are not addressed. In order to answer this question and to provide guidance for current and future practice in a coherent manner, this chapter is structured as follows. The first section following this introduction will present the current EU legal framework for remedies in abuse of dominance cases. The second section will be divided into three parts. The first part of the section will discuss the specific attributes of platforms that require consideration in the process of remedy design. The second part will address the design of remedies in the specific case of tying and bundling abuses by online platforms in light of these attributes and the legal boundaries of the current legal framework. The third part of the section will address the design of remedies in the case of price related abuses in a similar fashion while focusing specifically on predatory, excessive and discriminatory pricing. The third section will look into the recent proposal of the EU Commission for the Digital Markets Act that regulates many of the business practices of online platforms. This section will discuss the impact of this regulation on the remedy design choices for the abuses discussed in the second and third sections followed by some final remarks and conclusions.

6.2 Aims, means and limitations

6.2.1 Aims

Designing appropriate remedies for abuses of dominance entails a challenging task. Designing legal remedies requires a clear vision of the functions and objectives pursued by their implementation. In the context of competition law, it can be argued that the main objectives of remedies are: terminating the infringement, prevention of re-occurrence and restoring or

re-establishing the state of competition.[7] Adequate remedies are therefore expected to address all these objectives in order to be considered effective, while at the same time they should not be so strict so as to dis-incentivize fierce competition.[8] This challenging recipe, with no clear instructions,[9] has been used with varying success by the Commission and national competition authorities ('NCAs') throughout the years. This is partly due to the fact that the number of abuse of dominance cases remains relatively low and the cases often involve different circumstances, which limits in turn the value of each case as precedent. It is therefore not hard to imagine that implementing remedies in the case of online platforms that operate in new and dynamic markets, and make use of unfamiliar and complex business models and practices will be very challenging. The cumbersome character of this task is clearly displayed by the *Microsoft* cases in the past and the *Google Android* case presently, where the adopted remedies have had varying degrees of success despite the similarities between such cases.[10] Therefore, it is worth shortly revisiting these objectives before moving on to considering how these should translate in the context of online platforms.

Bringing an unlawful practice to an end is the objective that is commonly considered the first step that needs to be taken in each case. Doing so in practice typically entails requiring the concerned undertaking to conduct

7 See e.g. Spencer Weber Weller, 'The past, Present and Future of Monopolization Remedies' (2009) 76(1) Antitrust Law Journal, 11, 12; Giorgio Monti, 'Behavioral Remedies for Antitrust Infringements- Opportunities and Limitations' (2013) European Competition Law Annual, 185, 187; Erling Hjelmeng, ' Competition Law Remedies: Striving for Coherence or Finding New Ways?' (2013) 50(4) Common Market Law Review, 1007-1008; Ioannis Lianos, 'Competition law remedies in Europe' in Handbook on European Competition law (Edward Elgar, 2013), 362, 376. By comparison financial penalties and remedies imposed in the context of private enforcement can be said to pursue additional objectives such as: deterrence, compensation and punishing bad practices. For more see OECD Policy Roundtable – Remedies and sanctions in abuse of dominance cases (2006), at 20-25 < https://www.oecd.org/competition/abuse/38623413.pdf> accessed 23 Feb. 2021; Erling Hjelmeng (2013) *supra* (n 7), at 1027.

8 Thomas E. Sullivan, 'Antitrust Remedies in the U.S and EU: Advancing a Standard of Proportionality (2003) 48(2) Antitrust Bulletin, 377,394.

9 Spencer Weber Weller (2009) *supra* (n 7); OECD Policy Roundtable – Remedies and sanctions in abuse of dominance cases (2006), *supra* (n 7).

10 Both Microsoft cases involved tying practices with respect to OEM's however the remedies implemented took different approaches. In Microsoft I the remedy was offered to OEM's that could choose between a version of Windows OS with WMP and one without. In the case of Microsoft II the remedies were directed at consumers, which were given the option of choosing their default web browser instead of the previously tied Explorer. This second approach in Microsoft seems to have been implemented also in the recent Google Android case. However, despite the similarities, the remedy appears to have created some undesired effects in the web browser market. For more see Michael Ostrovosky, ' Choice Screen Auctions' NBER Working paper Series, WP28091 < https://www.nber.org/papers/w28091> accessed 23 Feb. 2021.

itself in a manner that mirrors the abuse of dominance.[11] Putting an end to the undesired practice may, however, often not be sufficient if the concerned undertaking can resume such practices or similar ones at a later stage. Therefore, terminating the abusive behavior is commonly paired with a mechanism that is intended to prevent the concerned the undertaking from doing exactly that. For example, in *Tetra Pak II* the Commission indicated that Tetra Pak must put to an end all the behaviors the Commission found to be abusive and avoid repeating such actions or actions having a similar effect. To achieve this, the Commission provided a specific list of practices Tetra Pak must implement and/ or avoid together with a reporting obligation for a period of five years after the decision.[12]

The third objective, namely restoring or re-establishing competition, is concerned with eliminating or reducing the harm created by the concerned undertaking, which would otherwise continue to benefit from its abusive actions. If the dominant undertaking, by virtue of its abusive behavior, has accumulated significant market power ordering it to cease its abusive behavior may not be sufficient to restore the state of competition in the short and long term. For example, in the case of predatory pricing or loyalty rebates, if the dominant undertaking managed to put its competitors out of business restoring the pricing to a non-predatory level as well as converting the rebate scheme into a quantitative one would still allow the dominant undertaking to reap the benefits of its abuse. This in turn may even motivate the dominant undertaking to pursue comparable strategies in the future.[13] Therefore, together with preventive orders, additional indications may be provided with the aim of restoring the state of competition to what it was prior to the abuse or at least re-establishing a state of competition that was previously impeded by the concerned undertaking. This can be seen, for example, in the case of *Akzo* where the Commission indicated that Akzo was prohibited from offering the clients of its rivals lower prices than it offered its own customers. This prohibition applied to the customers that Akzo unlawfully took from its competitors, as well as to the existing customers of its rivals.[14] By imposing such measures, the Commission and EU courts allowed the rivals of Akzo to win back the clients they lost to

11 E.g. in the case of Magill which was found ITP, BBC and RTE to abuse their dominant position by refusing to grant access to their weekly program listings, the Commission required these undertakings to provides such information to any party whishing to use such information commercially. See *Magill TV Guide/ ITP, BBC and RTE* (Case IV/31.851) Commission decision of 21 Dec. 1988, art. 2.

12 See *Tetra Pak II* (Case IV/31043) Commission decision of 24 Jul. 1991, art. 1-4.

13 This is particularly so when the benefits of the abuse exceed significantly the potential financial penalties and damage payments that such an undertaking would risk facing in the event of a repeat offence.

14 *ECS/AKZO* (Case IV/30.698) Commission decision of 14 Dec. 11985, art. 3; Case C-62/86 *Akzo Chemie BV v Commission* [1991] ECLI:EU:C:1991:286, paras. 155-156.

Akzo due its predatory practices and so restore the state of competition that was present prior to Akzo's implementation of its abusive practices.[15]

When considered together, it is not hard to see why the tri-fold combination of objectives is a sensible approach for competition law infringement and particularly abuses of dominance. Admittedly, however, the restorative aspect of remedies may at times not appear to be as high of a priority as the other two objectives. In fact the inclusion of restorative measures in the context of abuses of dominance in not often seen in practice despite their evident importance. Nevertheless, in the context of this chapter such object will be treated as being on equal footing with the other two. The reason for this is that, as will be explained further in this chapter, not addressing this objective in the context of online platform will run the risk of market tipping in favor of the dominant platform even after it abandoned its abusive practices. The ability to combine and translate such objectives into concrete remedies in practice depends, however, greatly on the legal framework that facilitates the possibility of imposing remedies following a finding of abuse. The legal framework not only determines the means through which such objectives can be pursued, but also the legal boundaries for using such means. Therefore, just as finding an abuse of dominance in the case of online platforms requires exploring the boundaries of art. 102 TFEU so does the design of remedies for such abuse requires looking into the legal framework that shapes such remedies.

6.2.2 Means and limitations

A. The legal basis of remedies

The legal framework that regulates the imposition of public enforcement remedies for abuse of dominance infringement in the EU is found in Regulation 1/2003.[16] Art. 7 of the Regulation provides for the Commission's power to impose remedies that ideally combine the above-mentioned objectives. The formulation of art. 7 mentions only the ability of the Commission to require the concerned undertakings to bring their practices to an end in the event they are found to infringe art. 101 or 102 TFEU. However, both the decision making practice of the Commission and the case law of the EU Courts have clarified that this provision also enables the Commission to include preventive and restorative aspects within the scope of its remedies, albeit subject to some limitations. The termination of the respective prohibited practices can entail in practice an order to cease a certain form of undesired behavior as well as the imposition of positive duties on the dominant

15 Case C-62/86 *Akzo Chemie BV v Commission* [1991] ECLI:EU:C:1991:286, para. 155.

16 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 (Text with EEA relevance) OJ/L 1.

undertaking that are needed to bring the infringement to an end.[17] The implementation of prevention mechanisms is possible, however, it is limited in terms of scope and concerns only the repetition of the practices that were found to be abusive.[18] Prevention in this regard refers to a situation where future practices would entail *de facto* a continuation of the established infringement and not other practices that may raise some concerns as well.[19]

Although many remedy provisions often include orders for the concerned undertaking not to repeat infringements that have *similar effects*, such orders are considered to have a merely declaratory character.[20] Accordingly, purely preventive orders that encompass more circumstances than the established infringement fall outside the scope of the Commission's powers under art. 7.[21] The manner in which the preventive mechanism or orders take form in each case will of course depend on the nature of the abusive behavior. In the case of an exclusionary practice targeting a competitor in a vertically related market, such as a margin squeeze, preventive measures would concern the future commercial relationship between the dominant undertaking and the harmed competitor(s).[22] In situations where the exclusionary behavior of the dominant undertaking targeted the customers of its competitors, such as predatory pricing, the preventive measure will concern adjusting the commercial relationship between the dominant undertaking and the past, present and sometimes future customers of its competitors.[23] In the case of exploitative practices, such as excessive pricing, the preventive aspect of the remedy would deal with future-proofing the commercial relationship between the dominant undertaking and its own customers.[24]

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17 Joined cases 6 and 7/73, *Commercial Solvents v Commission* [1974] ECLI:EU:C:1974:18, para. 45; Case T-228/97 *Irish Sugar v Commission* [1999] ECLI:EU:T:1999:246, para. 298.

18 Giorgio Monti (2013) *supra* (n 7), at 189. When such mechanisms have the effect of going beyond such scope this may be allowed only when such measures are the only available means for preventing the initial infringement. This can occur for example in the context of structural remedies, which may have a wider effect than solely preventing a specific kind of abusive behavior.

19 Ibid.

20 Case T-136/94 *Eurofer v. Commission* [1999] ECLI:EU:T:1999:45, para. 226; Case T-34/92 *Fiatagri v Commission* [1994] ECLI:EU:T:1994:258, para. 39.

21 Erling Hjelmeng (2013) supra (n 7) at 1015.

22 E.g. in *Deutsche Telekom AG* (Case COMP/C-1/37.451, 37.578, 37.579) Commission decision of 21 May 2003; *Wanadoo España v. Telefónica* (Case COMP/38.784) Commission decision of 4 Jul. 2007, art. 2. In the latter decision no clear indications were given, however, the finding of infringement was due to a disproportion between wholesale and retail prices. Accordingly, adjusting this would require tackling this disproportion with respect to the customers of the dominant undertaking with whom it also competed.

23 E.g. in *ECS/AKZO* (Case IV/30.698) Commission decision of 14 Dec. 1985, art. 3.

24 This can be read in General Motors where the Court found that no unfair pricing abuse took place as the GM readjusted its prices to a level that was in line with the economic costs it bore for its operation. See Case 26/75 *General Motors v Commission* [1975] ECLI:EU:C:1975:150, para. 22.

Similar considerations apply with regard to restoring or re-establishing the state of competition, where the nature of the abuse determines the competitive relation that needs restoring. In this regard, it is worth noting that while the objectives of preventing repetition and re-establishing competition may be considered separate, this distinction is often not visible in practice as measures that are required to prevent repetition are also required in order to bring the situation to its status *ex-ante*.[25] Similar to preventing repetition, the restoring or re-establishing the state of competition is possible under art. 7, however, this possibility is limited in scope. Accordingly, the restorative aspect of the remedy should be restricted to curing the distortion caused by the infringement and its persisting effects and not extent to measures that create a different market dynamic than the one prior to the abuse. This could have occurred in *Akzo*, for example, if the prohibition to align its prices to those of its competitors was extended to the customers it had prior to its abusive practices.[26] Such an extension would have put the competitors of Akzo that were harmed by its predatory practices in a better position than they had prior to the abuse since it would prevent Akzo from competing with them even with regard to non-predatory price settings.

In addition to the power conferred to the Commission in art. 7 to impose compulsory remedies upon the dominant undertaking following the establishment of abuse, Regulation 1/2003 includes the possibility for the implementation of remedies also in situations where a final finding of abuse has not been made. Accordingly, based on art. 8 the Commission can adopt interim measures in the event of a *prima facie* finding of an abuse where non-intervention risks irreparable damages to competition. In this context a *prima facie* infringement can be said to exist if there is clear evidence indicating that a certain practice is quite likely or probably prohibited under EU competition law rules.[27]This requirement does not go so far as to require the same likelihood as in the case of a final decision establishing an infringement.[28] Nevertheless, it has been argued that such findings would be more suitable in clear-cut cases concerning established theories of harm

25 E.g. setting the conditions for supply of an essential input is required for preventing future abusive refusals as well as restoring competition to the state prior to the refusal of supply.

26 This is precisely what the Court indicated was not the manner in which the Commission's remedies should be interpreted. See Case C-62/86 *Akzo Chemie BV v Commission* [1991] ECLI:EU:C:1991:286, paras. 155-156.

27 There are diverging formulations with regard to the strictness of the standard of proof in such situation. Nevertheless all formulation point in the direction of dealing with a situation that is more likely than not to entail an infringement based on the evidence gathered by the Commission in a given case. See Case T-23/90 *Peugeot v Commission* [1990] ECLI:EU:T:1990:31, paras. 21,63; Case T-44/90 *La Cinq v Commission* [1992] ECLI:EU:T:1992:5, paras. 32, 59-66; *ECS v Akzo: interim measures* Case IV/30.698) Commission decision of 29 Jul. 1983, para. 23.

28 Case T-44/90 *La Cinq v Commission* [1992] ECLI:EU:T:1992:5, para. 61.

compared to cases concerning novel situations,[29] which an interpretation that EU courts also seem to support.[30] The pre-emptive character of interim measures makes this kind of remedy advantageous from the perspective of restoring or re-establishing competition. In this regard interim measure enable the Commission to prevent situations that cannot realistically be restored if intervention is permitted only once the infringement procedure is completed.[31]

The implementation of interim measures in the case of (potential) abuse of dominance cases has been done in a variety of situations including predatory pricing,[32] discriminatory trading conditions and tying. Given the preliminary nature of such measure the remedies adopted in the context of those procedures were concerned only with stopping the potentially prohibited behavior.[33] This use of interim measures predates, however, the implementation of Regulation 1/2003 that specifically regulates this option.[34] In fact, the use of interim measures by the Commission following the implementation of Regulation 1/2003 only occurred once in the recent case of *Broadcom*.[35] The halt in the use of this option can to some extent be explained by the legal changes that occurred with the implementation of Regulation 1/2003.[36] First, the implementation of interim measures was restricted to an *ex officio* initiation by the Commission in contrast to previous practice where potentially harmed parties (competitors or customers) could request the Commission to adopt such measures.[37] Second, the benchmark for urgency in art. 8 concerns situations where *irreparable harm to competi-*

29 Despoina Mantzari, 'Interim Measures in EU competition Cases: Origins, Evolution and Implications for digital Markets' (2020) 11(9) Journal of European Competition Law & Practice 487, 487-489; Alexandre Ruiz Feases, 'Sharpening the European Commission's tools: interim measures' (2020) 16(2-3) European Competition Journal 404, 422.

30 Case T-184/01 R, *IMS Health Inc. v Commission* [2001] EU:T:2001:259, paras. 30-31, 128-131.

31 E.g. in the context of social media where direct and indirect network effects are present once the potentially abusive practices of the concerned undertaking (such as tying) have managed to attract a large amount of consumers it may trigger a snow ball effect that would persist to fuel growth that can hardly be halted or reversed. Restoring competition in such cases would require forcing consumers to unsubscribe from the respective social media channel or switch to their previous channel, which is not administrable.

32 *ECS v Akzo: interim measures* (Case IV/30.698) Commission decision of 29 Jul. 1983.

33 See e.g. *ECS v Akzo: interim measures* (Case IV/30.698) Commission decision of 29 Jul. 1983, art. 1-3. Akzo was prevented to engage in predatory practices, which were assessed based on the figures annexed to the interim measures decision. In the final infringement decision these obligation were further extended with the aim of restoring the state of competition. See

34 Ekaterina Rousseva (ed.) *EU antitrust Procedure* (Oxford University Press, 2020) at 295-296.

35 *Broadcom* (Case AT.40608) Commission decision of 16 Oct. 2019.

36 Supra (n 34) at 295-300.

37 Art. 3 of Regulation No. 17; Despoina Mantzari (2020) *supra* (n 29) at 490-491; Alexandre Ruiz Feases (2020) supra (n 29) at 411-413.

tion would be caused in the absence of interim interventions. This is a higher threshold than its predecessor that could have been met if the risk of irreparable harm could be proven with respect to a specific party affected by the potential infringement.[38] These changes to the legal framework of interim measures have also been said to make it more difficult to implement them in the case of the digital economy,[39] despite the fact that the Commission has explicitly noted it is interested in using interim measures in such specific context. Accordingly, such measures may become a valuable option in situations where restoring or re-establishing the state of competition with remedies under art. 7 will be challenging, as will be discussed further in this chapter.

Finally, art. 9 also provides that the Commission, in situations where it intends to implement an infringement decision establishing the existence of an abuse, can accept commitments offered by the concerned undertaking with the aim of removing the competitive concerns identified by the Commission. Although such commitments inevitably entail making design decisions, such decisions are predominately made by the concerned undertaking(s) in each case whose cooperation in such procedures is a prerequisite for their use.[40] The Commission's main role in such decisions is primarily to adequately describe the competitive concerns it identified and indicate whether the commitments offered are capable of alleviating such concerns so that further pursing the potential infringement in no longer needed.[41] Due to the voluntary character of commitment-based remedies this procedure will not be further addressed within the scope of this paper. Nevertheless, the insights of the following sections concerning the design of remedies in the case of abuse of dominance by online platforms remain relevant for such procedures in the context of the review and approval of commitments by the Commission and EU Courts.[42]

38 Ekaterina Rousseva (2020) *supra* (n 34) at 255-6, 265-278; Alexandre Ruiz Feases (2020) supra (n 29) at 416-420.

39 Alexandre Ruiz Feases (2020) *supra* (n 29); Despoina Mantzari (2020) *supra* (n 29); Peter Alexiadis and Alexandre De Streel, 'Designing an EU Intervention Standard for Digital Platforms' [2020] EUI Working Paper RSCAS 2020/14, at 44–45 <https://ssrn.com/abstract=3544694 > accessed 5 Jan. 2021.

40 Ekaterina Rousseva (2020) *supra* (n 34) at 255-6, 265-278.

41 Recital 13 of Regulation 1/2003.

42 This could help avoid situations like the one in Microsoft where the suggested remedies by Microsoft went further than the final remedy imposed by the Commission which turned out to be rather ineffective. See Spencer Weber Weller (2009) *supra* (n 7) at 28; Gunnar Niels, Helen Jenkins and James Kavanagh, *Economics for Competition Lawyers* (2nd Ed, Oxford press publishing, 2016) at 388-390.

B. Remedy types

Generally speaking, the implementation of remedies in abuse of dominance cases can be said to include two possible types of remedies, namely behavioral and structural remedies.[43] Behavioral remedies concern, as their name implies, measures that seek to regulate the commercial behavior of the dominant undertaking. Such measures can, for example, address the pricing strategies and contractual terms of the dominant undertaking with respect to its customers and/or competitors.[44] When implemented, behavioral remedies can concern both the abusive behavior that needs to be brought to an end as well as further steps that need to be taken in order to prevent the repetition of the respective infringement(s) and restore or re-establish competition to the situation *ex-ante*.[45] Accordingly, in practice behavioral remedies will often impose both negative and positive obligations upon the dominant undertaking.[46] Structural remedies concern interventions in the corporate structure of the concerned undertaking by requiring it to sever the links from certain assets it holds. In practice, this may translate into the divesture of one or more the divisions operated by the dominant undertaking. Structural remedies therefore attempt to change the competitive structure of the market(s) affected by the abusive behavior. Such actions can then achieve all three objectives of remedies with one maneuver. In the case of margin squeeze for example, if the dominant undertaking is required to sell its downstream entity it will no longer have a clear interest of distorting competition on this market,[47] which in turn also allows the re-establishment of competition.

When it comes to the implementation of remedies in practice, both behavioral and structural remedies have their respective advantages and disadvantages. Behavioral remedies that target the conduct of the concerned undertaking entail a very flexible and accurate tool for curbing the undesired practices to fit within the lines of competition policy. By addressing

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43 Some authors however also refer to remedies concerning access to an input or facility as a third type of remedies that does not fit in squarely within the two categories of behavioral and structural remedies. This is particularly a view takes with in the context of the merger review procedure under the scope of the Regulation Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings OJ L 24/1. See Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 OJ C267/1, para. 17; Thomas E. Sullivan (2003) *supra* (n 8) at 400 onwards.

44 OECD Policy Roundtable (2006) *supra* (n 7) at 38-39.

45 Ibid.

46 The power to impose positive actions in the context of competition law remedies was established in Joined cases 6 and 7/73, *Commercial Solvents v Commission* [1974] ECLI:EU:C:1974:18, para. 45.

47 Admittedly, the dominant undertaking may still have the incentive of exploiting its customers however such competitive harm concerns a different type of (potential) abuse than the ones remedied by such measure.

solely the harmful behavior of the concerned undertaking, behavioral remedies are capable of re-establishing compliance with competition policy with minimal collateral damage for third parties.[48] At the same time, since such measures concern the restriction of conduct they also require continuous monitoring by the respective competition authority or courts. This is due to the fact that constraining an undertaking's behavior does not eliminate necessarily its incentives to continue with its prohibited practices. Therefore, designing behavioral remedies requires taking into account the various manners in which the concerned undertaking may attempt to minimize the extent to which such remedies constrain its commercial practices.[49] This can occur, for example, in cases concerning discrimination, input foreclosure, refusal to grant access to a facility which require very strict and accurate measures to prevent the concerned undertaking from undermining the pursued effects of the remedies.[50] The more complex the abuse, and the greater the scope of harm created by it, the more complex such remedies and their monitoring mechanisms would likely have to be.[51]

Structural remedies, on the other hand, can be said to offer a one-off solution to infringements. Once the divesture of certain assets of the concerned undertaking has been required and the restructure is completed there is little need for further compliance monitoring. This is because such remedies are capable of removing the incentives as well as the ability of the concerned undertaking to continue pursuing its anti-competitive practices. This is turn also reduces the possibilities of minimizing the effect of the remedy by the concerned undertaking. At the same time, the possibility to order a divesture depends greatly on the corporate structure of the concerned undertaking. If such structure is relatively modular, meaning

48 E.g. by requiring the dominant undertakings customers to renegotiate their supply contracts for an input once the entity of the dominant undertaking responsible for such input is sold off in context of a structural remedy.

49 Frank P. Maier-Riagaud, ' Behavioral versus Structural Remedies in EU competition Law' (2016) in Philip Lowe, Mel Marquis and Giorgio Monti (eds.), *European Competition Annual 2013, Effective and Legitimate Enforcement of Competition Law* (Hart Publishing, 2016) at 210.

50 E.g. in the case of discrimination the concerned undertaking can modify the criteria for differentiation in a manner that achieves a similar outcome for itself. In the case of input foreclosure, capacity throttling can be implemented in a manner that undermines vertically related competitors. In the case of refusal to grant access, the terms of access may be set in a way that continues to disfavor vertically related competitors.

51 See e.g. Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, paras. 1268-1279. In the context of the refusal to supply abuse an external review committee was considered necessary by the Commission to keep a track on the remedies imposed. The General Court however found that the Commission did not have the authority to delegate its monitoring powers in the manner it did, which in turn made it more difficult for the Commission to monitor compliance with the remedy and intervene in the case of non-compliance.

that the various subsidiaries and divisions of the concerned undertaking are spread across separate commercial entities, divesture would be a more realistic than in a case where the concerned undertaking is vertically integrated throughout the entire supply chain. In the latter case, divesture is not only more difficult to administer but there is also a higher risk that the efficiencies gained through integration may be lost, which in turn may diminish incentives to innovate.[52] Furthermore, a successful divesture also requires that the market conditions support such changes. If the market will not support the creation of an additional player that is supposed to arise following the divesture then there is little sense in ordering it. Divestures that lead to the creation of unviable businesses can do little to improve the state of competition in the markets affected by the prohibited practices of the dominant undertaking and are also more likely to produce undesired effects for third parties.[53] This logic can also be seen to some extent in the context of EU merger control where divestures require that the severed entity is a viable business that should be acquired by a buyer capable of turning it into a genuine player on the market where it is active.[54] Finally, since structural remedies primarily entail severing some the ties between the dominant undertaking and its assets relating to presence in different markets, such measures would commonly make more sense in situations with leveraging-type of abuses than single market abuses. Therefore, while structural remedies may tackle infringements in a more sweeping manner than behavioral remedies, they are not the most suitable for implementation in the context of all abuses or market conditions. Consequently, in practice the suitability of each of the two options will depend greatly on the specific circumstance of the case.

In the context of EU competition policy the division between behavioral and structural remedies is provided specifically in art. 7 of Regulation 1/2003, however, these two options are also available to some extent in the context of art. 8 and 9 procedures. The temporal nature of interim measures, as well as their objective to prevent irreparable harm from occurring, makes them less suitable for structural remedies, although from a purely theoretical perspective there is no reason why this would never be possible.[55] In the

52 Williem E. Kovacic (1999) *supra* (n 6) at 1294.

53 E.g. third parties that serve as suppliers of a divested entity may be worse off if post divesture such entity fails to survive alone or under the wings of the new buyer.

54 Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 OJ C267/1, paras, 22-34.

55 The main limitation concerning the strictness of the measure is that it should not entail a remedy that goes beyond what would be allowed under art. 7 following a final infringement decisions. Nevertheless, a structural intervention would have to be easily lifted after a short period of time or if suspended following judicial review; meaning that a traditional divesture of corporate restructuring would not be possible.

case of art. 9 commitment procedures, both options have been implemented in practice and in general it can even be said that structural remedies are more common in such settings than in the case of art. 7.[56] The choice between behavioral and structural remedies as well as between the possible variations of measures within each type of remedy or combination thereof is, however, not entirely subject to the Commission's discretion in practice. The selected remedy must be both effective and proportionate or else it risks being overturned at the stage of judicial review.

C. *Limitations – effectiveness and proportionality*

Article 7 of Regulation 1/2003 indicates that in case of an infringement (of art. 102 TFEU) the Commission has the power to impose on undertakings any behavioral or structural remedy that is proportionate and necessary to bring the infringement effectively to an end. Structural remedies should, however, be implemented only in cases where behavioral remedies are not equally effective or are more burdensome for the concerned undertaking. A similar formulation is also included in Recital 12 of the Regulation, which adds that changes to the structure of the undertaking as it was prior to the infringement are only proportionate in situations where the is a risk of lasting or repeated infringement stemming from the structure of the undertaking. Therefore, it can be said that there is an initial preference for behavioral remedies in practice; however, it is limited to situations where structural and behavioral remedies are equally effective.[57]

When designing a remedy, the Commission must make sure that it is *proportionate* with respect to the infringement and is necessary to bring it *effectively* to an end. Effectiveness in this context should be read as the ability to stop the abusive behavior, the repetition thereof and re-establish competition.[58] The wording of Regulation 1/2003 together with the fact that structural remedies When it comes to the matter of proportionality, EU law indicates that EU measures are considered to be proportionate when they do not exceed what is appropriate and necessary in order to achieve the objective pursued.[59] When there is a choice between several possible measures the

56 In the case of merger control the situation is even more pronounced and remedies often tend to be structural rather than behavioral. See data on both trends in Benjamin Loertscher and Frank Maier-Rigaud, ' On the Consistency of the European Commission's Remedies Practice' (2020) in Damian Gerard and Assimakis Komninos (eds.) *Remedies in EU Competition Law- Substance, Process and Policy* (Wolters Kluwer, 2020) at 67-70.

57 See e.g. Frank P. Maier-Riagaud, ' Behavioral versus Structural Remedies in EU competition Law' (2016) in Philip Lowe, Mel Marquis and Giorgio Monti (eds.), *European Competition Annual 2013, Effective and Legitimate Enforcement of Competition Law* (Hart Publishing, 2016); Ioannis Lianos (2013) *supra* (n 7) at 406.

58 Frank P. Maier-Riagaud (2016) supra (n 57) at 216.

59 Case T-65/98 *Van den Bergh Foods v Commission* [2003] ECLI:EU:T:2003:281, para. 201.

least burdensome should be selected and the disadvantages must not be disproportionate to the aims pursued. In cases concerning compulsory remedies under art. 7 of Regulation 1/2003 or under the older art. 3 of Regulation 17/63 similar definitions for this principle were provided.[60] Although not specifically addressed in the context interim measures under art. 8, these remain of course EU measures and are thus inherently subject to this threshold as well. Nevertheless, since art. 7 and 8 pursue different objectives the application of the proportionality principle in the context of both procedures will look different.[61]

In order for remedies to be proportionate it is important that these correspond with the nature as well as the scope of harm caused by the abuse of dominance. The remedy selected must be linked to the theory of harm identified in each case so as to be considered appropriate and necessary.[62] The importance of this link has been observed in practice in cases where the remedy imposed by the Commission was annulled for going beyond the scope of the infringement and the theory of harm behind it.[63] At the same time, this correlation should not be interpreted to mean that the Commission must impose identical remedies in all cases that deal with the same type of abuse. Such a requirement would negate the circumstantial differences that can occur across various cases. Nor should the link between the remedy and theory of harm be considered to determine the legal test of abuse that needs to be applied in the first place. According the the GC in *Google Shopping* the remedy selected by the Commission does not dictate which test of abuse should be applied to the practice at hand.[64] Therefore it is only in cases where a significant discrepancy between the theory of

60 Case T-260/94 *Air Inter v Commission* [1994] ECLI:EU:T:1994:265 para. 141; Case T-65/98 *Van den Bergh Foods v Commission* [2003] ECLI:EU:T:2003:281, para. 201; Case T-7/93 *Langnese-Iglo v Commission* [1995] ECLI:EU:T:1995:98 para. 209; A slightly different formulation can be found in Joined cases C-241/91 P and C-242/91 P *RTE and ITP v Commission* [1995] ECLI:EU:C:1995:98, para. 93. In the case of commitments decisions under art. 9 of Regulation 1/2003 this same principle was interpreted in a manner that leaves more discretion to the Commission when approving offered commitments which are considered proportionate once these are suitable for removing all the competitive concerns identified by the Commission.

61 The objective of interim measures under art. 8 is to prevent irreparable harm to occur due to practices that appear to constitute a prima facie infringement that could not be restored at the stage of a final decision. See Case C 792/79R *Camera Care v Commission* [1980] ECLI:EU:C:1980:18, paras. 14-15 and Case T-44/90 *La Cinq v Commission* [1992] ECLI:EU:T:1992:5, para. 28. Accordingly, interim measures are primarily concerned with bringing the potentially prohibited practice to a halt.

62 See e.g. Damien Gerard and Assimakis Kominos (eds), *Remedies in EU Competition law: Substance, Process and Policy* (Wolters Kluwer, 2020).

63 E.g. Case T-310/94 *Gruber + Weber v Commission* [1998] ECLI:EU:T:1998:92, paras. 177-179.

64 See Case T-612/17 *Google and Alphabet v Commission* [2021] ECLI:EU:T:2021:763, paras. 244-245.

harm and the imposed remedy can be identified that such remedy can be questioned with regard to its suitability. This is for example one of the main critiques expressed in the context of the *Google Shopping* case.[65] Deviations from previous practice, as such, should, however, not be sufficient to consider a remedy inappropriate and thus disproportionate as long as the circumstances of the case are also different. This would follow the Commission's practice for the past few decades where the same kinds of abuses were subject to different remedies that attempted to address the specificities of each case.[66]

In the case of online platforms, allowing for deviations from previous practice while at the same time insisting on a close fit between the theory of harm and the designed remedy is imperative for the correct application of EU competition law to these actors. Online platforms and their respective commercial practices entail significantly different circumstances from the conventional market setting from where the majority of the Commission's practice originates. Addressing the competitive concerns and harm that may arise in the context of such circumstances will therefore almost inevitably require deviating from previous practice in order to avoid economically unsound outcomes. Such deviations should, nevertheless, always maintain the consistency between the remedy and identified theory of harm in each case. In order to do so, it is imperative that The multi sided nature of online platforms and the particular dynamics of competition in the markets in which they operate are accounted for.

Although this task may sound straightforward, the Commissions' experience in the *Microsoft* cases as well as recently in the *Google Android* case show that performing it in practice is far from easy.[67] The next sections will therefore cover some of the main considerations that need to be addressed for when designing remedies for abuses of dominance by online platforms, as well as the manner in which they could be incorporated into practice.

65 See e.g. Pinar Akman, 'The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law' (2017) 1(2) Journal of Law, Technology and Policy 301; Philip Marsden, ' Google Shopping for the Empress's New Clothes- When a Remedy isn't a Remedy (and how to fix it)' (2020) 11(10) Journal of Competition Law & Practice 553.

66 See e.g. Ioannis Lianos (2013) *supra* (n 7) at 407.

67 All three cases dealt with tying in the context of platform markets, the remedies used in each case were different and resulted in different outcomes. In the case of Microsoft the remedies adopted through commitment decision proved to be more effective that the imposed remedy following the infringement decision. At the same time the remedy adopted in Google Android resembles the remedy in Microsoft (tying) very much however has led to some initial unexpected undesired outcomes.

6.3 Remedy design in context

6.3.1 Platform considerations

In the context of competition law policy, online platforms are commonly discussed in relation to their multisided market character, which places them in different commercial reality compared to non-platform undertakings.[68] Such reality requires that both the methods of assessing competitive harm as well as the means to mend it be adjusted in a manner that accounts for the differences between platform and non-platform market settings.[69] Broadly speaking, the different commercial reality stems from the fact that platforms create value by successfully facilitating a matchmaking interaction between two or more separate customer groups.[70] Consequently, the success of platforms depends on their ability to bring the right customer groups 'on board' and co-ordinate the interaction between such groups in a profitable manner.[71] Therefore, when competing with other (platform) undertakings, platforms compete on attracting the customers members they wish to get on board in optimal proportions depending on their business model.[72] An online marketplace platform, for example, competes with other comparable marketplaces with respect to both consumers as well as sellers since not having one of the two customer groups 'on board' means it cannot deliver the value it seeks to create, namely facilitate transactions between these two groups.

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68 Bertin Martens, 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological Studies Digital Economy working paper 2016/05, pp. 12. https://ec.europa.eu/jrc/sites/jrcsh/files/JRC101501.pdf (accessed 9 Jun 2020).

69 This is to a great extent the main theme discussed in expert reports concerning the application of competition policy to online platforms see e.g. Export Report, n. 1; Stigler Report n.1; OECD (2018) Rethinking Antitrust Tools for Multi-Sided Platforms; Digital Competition Expert Panel, ' Unlocking digital competition, (2019) < https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf> accessed 8 Mar. 2021 [hereinafter Furman Report].

70 Jean-Chalres Rochet and Jean Tirole, 'Two-sided markets: a progress report' (2006) 37(3) The RAND Journal of Economics 645.

71 Bernard Caillaud and Bruno Jullien, 'Chicken & Egg: Competition among Intermediation Service Providers' (2003) 34(2) The RAND Journal of Economics 309.

72 E.g. an online booking platform for restaurant reservation would want to keep a specific balance between consumers looking to make a restaurant reservations and the number of restaurants available on the platform for this option. Such a balance may be different for example when compared to a hotel room booking platform or an online marketplace.

In practice, successfully getting members from different separate groups on board can and has been achieved through the use of various strategies.[73] Generally speaking, because each customer group may often have a different degree of demand for the matchmaking service offered by the platform, the platform often has to make different value propositions for such customer groups to join the platform.[74] This commercial reality manifests in the adoption of a skewed pricing structure where (at least) one customer group of the platform (the subsidizing group) pays more for participating on the platform than another group (the subsidized group).[75] Such skewed pricing structures can be implemented through all the monetization possibilities that platforms have in order to make a profit on the matchmaking interaction they facilitate, such as pay-per-click, membership and transaction fees as well as combination thereof. Similar to the pricing structure, the monetization mechanism is also important for enabling different kinds of customer groups to get on board.[76] Once members of two or more separate customer groups join the platform, the (positive) indirect network effects at play between such customer groups is said to enable the growth of the platform to viability (also referred to as critical mass) and in the long run even help secure a monopoly position.[77]

Going back to the example of the online marketplace, once some consumers and sellers are attracted to the platform, growth will proceed due to a positive feedback loop; the more consumers it attracts, the more attractive it becomes for sellers and vice versa. In order to manage such growth

73 E.g. some platforms started off as non-platform entities. YouTube first created its own content in order to attract viewer before opening up to third parties. Similarly Apple initially exclusively developed its iOS compatible apps before creating third party developer tools for app developers to use for free in order to create apps for iOS. Tripadvisor started off as a review site for consumer's experience of hotels, restaurants and attractions and transformed at a later stage into a booking platform for these experiences. By contrast Booking.com started of as platform that allowed consumers to make hotel room reservations online.

74 Marc Rysman, 'The Economics of Two-sided Markets', (2009) 23(3) Journal of Economic Perspectives 125, 129-131.

75 Bernard Caillaud and Bruno Jullien (2003) supra (n 71).

76 E.g. in the case of app stores, by expanding the monetization possibilities of the app stores both Apple and Google enabled the emergence of new kinds of apps such as subscription based apps (e.g. news, music and movie streaming). In the absence of such monetization tools such apps would perhaps not exists as the neither company would be interested to invest extensively in their app store tools in the absence of prospect profits from such activities.

77 David S. Evans and Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses* in Roger Blair and Daniel Sokol, (eds.), *Oxford Handbook on International Antitrust Economics* (Oxford University Press 2014); D.S. Evans and R. Schmalensee, 'Failure to Launch: Critical Mass in Platform Businesses' (2010) <https://ssrn.com/abstract=1353502 > accessed 3 Jul 2017; Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary, *Platform Revolution* (W.W. Norton & Compnay, 2016) at123-127.

patterns, platforms will implement governance rules that are aimed at reinforcing such indirect network effects, as well as preventing undesired practices on the platform that may diminish or reverse such effects. In the case of the marketplace, the platform owner can choose to accept more payment methods, which may attract more consumers and merchants as well as remove merchants that sell counterfeit goods since they may cause consumers to stop using the marketplace, which in turn will also cause 'good' sellers to leave thus triggering a downward spiral to failure.[78] Accordingly, when it comes to nurturing the growth of the platforms and thus their (relative) market power, platform undertakings will focus their efforts on price and non-price commercial practices that amplify the positive (direct and) indirect network effects at play on their platform as well as their ability to internalize and capitalize such effects. This in turn would mean that the anti-competitive behavior pursued by platform undertakings will seek to achieve this same goal while consisting of means that do not entail *competition on the merits*.[79] Therefore, when seeking to address the harm created by such practices, the remedy should seek to bring to a halt the self-reinforcing positive feedback loop generated by such network effects. Failing to do so would entail in practice that the concerned platform may continue to grow and gain market power at the cost of its competitors (and at times customers) even if the anti-competitive practice is abandoned. In this regard its worth noting, however, that the remedy should not aim at setting the network effects in reverse as this may drive the concerned undertaking to a state that was worse off prior to the abuse and even to market exit, which would be considered disproportionate.

In addition to amplifying the network effects at play, platform entities can seek to obtain more market power through curbing the participation of their customer groups into a pattern that provides them with the greatest degree of (relative) market power. In the context of platforms such participation patterns are referred to as single or multi-homing patterns,[80] and are considered to be one of the main criteria for establishing the existence of market power.[81] Single-homing occurs when a platform customer group

78 Ibid; Sangeet Paul Choudary, *Platform Scale: How an Emerging Business Model Helps Start-Ups Build Large Empires with Minimum Investment* (1st ed. Platform Thinking Labs Publishing 2015).

79 Competition on the merits refers to competition on parameters such as price, choice, quality or innovation rather than a through means that are only made possible due to significant market power. See further discussion in OECD 'Competition on the merits' (2006) DAF/COMP(2005)27.

80 Amrit Tiwana, *Platform Ecosystems* (Elsevier, 2014) at 36.

81 Bundeskartellamt, 'The Market Power of Platforms and Networks', Working Paper Ref. B6-113/15, June 2016; OECD (2018) Rethinking Antitrust Tools for Multi-Sided Platforms, at 87-100.

uses a single platform to fulfill one of its specific demands for a product or service. This would be the case, for example, if consumers would use only Booking.com to make their online hotel reservations. Multi-homing occurs in the opposite scenario where a platform customer group uses multiple platforms to fulfill the demand for the same service or product offered by the platform. This occurs for example when consumers use multiple online marketplaces to purchase retail goods. As platforms inherently cater to two or more customer groups such participation patterns can be observed with respect to each of these groups. Generally speaking, the settings that can then be observed are: (i) multisided single-homing;[82] (ii) multisided multi-homing;[83] and (iii) single-homing on one side and multi-homing on another side of the platform,[84] also referred to as a (competitive) bottleneck scenario. From a market power perspective, the platform owner would commonly have the incentive to ensure that at least one of its customer groups is single homing as this provides the platform with a monopoly power with respect to the other platform customer groups that are interested in interacting with such single homing group. If consumers, for example, would only (or primarily) turn to Booking.com for reserving their hotel room, then Booking.com would have significant power over hotel owners that want to reach consumers. This in turn would allow Booking.com to charge higher fees from such hotels in return for getting access to the platform. Where single-homing is achieved on all sides of the platform, such market power would be even greater as it would apply, in principle, to all groups simultaneously.[85]

By contrast, in a multisided multi-homing scenario the market power of the platform with respect to its customer groups and competitors is constrained by the ability and willingness of such customer groups to make use of alternative solutions. Getting one or more customer group to single home through practices that entail competition on the merits requires, however, prevailing under the very intense competitive conditions associated with single homing tendencies.[86] Achieving this would require consistently

82 This occurs for example in the case of the Apple App Store, where both consumers and app developers use solely the App Store to buy and sell iOS compatible apps.

83 This occurs for example in the case of hotel room booking platforms where both consumers and hotel owners utilize multiple platforms to make reservations possible.

84 This occurs for example in the case of payment card where consumers usually opt for one credit card while merchants accept multiple kinds.

85 This occurs for example in the case of the Apple App Store which technically ensures the single-homing of both consumers and app developers, meaning the both have to comply with Apple's App Store policy and prices as long as they wish to make use of the iOS ecosystem.

86 See e.g. R. Poolsombat and G. Vernasca, 'Partial Multihoming in Two-sided Markets' (2006) Discussion Papers, Department of Economics, University of York,< https://EconPapers.repec.org/RePEc:yor:yorken:06/10 >accessed 20 December 2020.

providing customers with the most innovative service with the best quality at the (relative) lowest price. In the absence of high switching and /or multi-homing costs, there is in principle nothing preventing customers from using competing services simultaneously.[87] Given the decisive role played by the single or multi-homing patterns of platform customers for in the accumulation and preservation of market power by platforms, it is sensible to assume that the competitive and anti-competitive behavior of such of dominant platforms will aim at curbing such patterns in their favor through price and non-price practices. Accordingly, anti-competitive practices by online platforms will likely aim at getting at least one of their customer groups to single-home and/or reducing the potential impact of multi-homing on their respective market power.[88] Therefore, when seeking to address harm (potentially) created by abusive practices of dominant platforms targeted at influencing the single and multi-homing patterns of platform customers, the envisaged remedy should aim at preventing such patterns from steadily shifting in favor of the concerned undertaking and restoring them to their previous setting prior to the abuse.

At this point, it should be noted that the above-mentioned insights on network effects and platform customer homing patterns concern settings in which the competitive harm is of an exclusionary nature. In situations where the competitive harm has an exploitative character the network effects at play on the platform as well as the platform customer participation patterns would play a different role and thus may require a different approach when considering remedies. In such a context, the manner in which network effects manifest allows the platform owner to know which of its customer groups is more likely to generate higher rents as network effects have been identified as one of the main determines of platform pricing.[89] In situations where the dominant platform undertaking seeks to exploit the customer group it considers most susceptible to such practices, the remedy may not have to aim at addressing the network effects. In such cases the remedy could aim at preventing the concerned platform from making use of an opportunity that its would not be able to obtain in a competitive market *vis-a-vie* the respective customer group.[90] By doing so,

87 In such cases direct network effects, as in the cases of social media, may prevent multi-homing but in the case platforms that display primarily indirect network effects there would be little reason for consumers not to multi-home.

88 E.g. the use of broad MFN clauses in the context of hotel booking platforms can be said to limit the impact of multi-homing by hotel owners since it reduces the possibility that better offers will be made on separate platform which in turn also reduces the chances that consumers will switch between platforms due to price differences.

89 See Feriha Zinngal and Frauke Becker, 'Drivers of optimal prices in two-sided markets: the state of the art' (2013) 63(12) Journal für Betriebswirtsch 87.

90 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 249.

even cases where the exploitative practice assists the platform in amplifying the (indirect) network effects on the platform may be resolved as removing the exploitative element from such practices essentially takes away (some of) the fuel needed to sustain such undeserved advantages.[91]

In such cases, as noted above, the remedy should not aim as reversing the positive feedback loop(s) amplified by the concerned platform through its abuse since such actions may lead to disproportionate outcomes. Similarly, the participation patterns of platform customers will determine to a great extent which customer group is likely to generate the highest participation fees. Generally speaking, single homing customers are considered more valuable than multi-homing customer groups, and thus the latter are more likely to be subject to higher participation fees.[92] In the case of abusive practices with an exploitative character, the remedy would in principle not have recalibrate the participation patterns of platform customers but instead target the exploitative practice. This is, however, conditional on the fact that the exploitative practice did not also assist the platform in shifting the participation patterns of its customer groups in its favor. This could occur, for example, were the unfair pricing and/ or trading conditions also rise the switching and/or multi-homing costs of the harmed customer group or helped the concerned platform to secure single homing by other customer groups. In such a case, the remedy may also need to aim at enabling such participation patterns to return to their pre-abuse state. Doing so would in essence require intervening with the practices that accompanied the implementation of excessive prices and caused such patterns to shift. For example, if the additional rents extracted from one customer group were used to finance a lock-in mechanism intended to secure the single homing of a different customer group the envisaged remedy should tackle both aspects. This would entail intervening in the price setting of the concerned dominant platform as well as dismantling the lock-in mechanisms financed by such abuse that would allow for multi homing to resume. Not addressing such participation patterns may otherwise lead to a situation

91 For example, if Booking.com would be charging hotel owners excessive commission fees that it would then partly use in order to attract more consumers to the platform, then the hotel owners could end up getting stuck in a fee rising spiral. The higher the fees charged from hotel owners the more offers can be made to attract consumers. The more consumers eventually use the platform the higher the fees may become in order to support the additional costs of the growth and further stimulate additional growth. By imposing a remedy which limits such fees, the funds needed for sustaining such growth will no longer be available thus diminishing the possibility of the platform to further pursue such growth strategy that was previously financed by the hotel owners. Determining, however, when such a spiral must be halted and which fees charges from the hotel owners would be considered abusive will be an extremely difficult task that is likely to deter competition authorities from engaging with such cases.

92 See Feriha Zinngal and Frauke Becker (2013) *supra* (n 89).

where the harmed customer group will continue to be subject to relatively higher participation costs even once the exploitative practice was brought to a halt.

In light of the above, it is therefore important that at the phase of remedies not only the immediate harm to competition is observed and addressed but also the future implications of the anti-competitive behavior for the competitive process. In this regard, addressing the impact of the anti-competitive practices of the concerned dominant platform on the network effects at play in each case, as well as on the participation patterns of platform customers will also prevent market conditions from *tipping* in its favor. Market tipping refers to the situation where a platform succeeds in securing an (impassable) advantage over its competitors that persists until such platform becomes a (quasi) monopoly.[93] The tendency of market tipping in the context of platforms has been identified as one of the main challenges of competition policy currently and objectives for improving it, as the current framework may not always posses the tools to prevent its occurrence.[94] This is particularly so in situations where tipping is a result of legitimate competition.[95] In such cases the changes in the network effects on the respective platform as well as the homing patterns of its customer groups may occur following well-planned legitimate business practices. Consequently, despite the undesirable outcome of such practice the result of tipping, as such, will not justify legal intervention under art. 102 TFEU even when it involves a dominant platform.

When, however, the tipping effect or tendency is amplified through anti-competitive practices adopted by a dominant platform, the grounds for intervening are present and tackling such an undesired outcome can be done at the remedy phase. The manner in which this will have to take place in practice will differ from case to case based on its specific circumstances. Nevertheless, this objective is unlikely to be attained without addressing the effects of the anticompetitive behavior on the network effects at play in each

93 Michael L. Katz and Carl Shapiro, 'System Competition and Network Effects' (1994) 8(2) Journal of Economic Perspectives 93, 106; Jean-Pierre Dubé, Günter J. Hitsch and Pradeep Chintagunta, ' Tipping and Concentration in Markets with Indirect Network Effects' (2008) (Chicago GSB, Research paper No.08-08), 1-5 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1085909> accessed 14 Mar. 2021.

94 This has been communicated by Executive Vice–President of the Commission, Margrethe Vestager, see European Commission Press Release of 2 Jun. 2020 < https://ec.europa.eu/commission/presscorner/detail/en/IP_20_977> accessed 5 Jan. 2021.

95 In such scenario's intervening in the process of tipping is problematic because it would in essence means that competition policy must prevent the accumulation of market power as such. Such interventions would go against the premise and case law of EU Courts indicating that possessing a position of dominance is not as such prohibited thus such a fact alone would not justify legal intervention on competition policy grounds.

case and the homing patters of platform customers. This is due to the fact that these two aspects constitute perhaps the two most important factors for assessing the facilitating and mitigating circumstances for the occurrence of tipping, which are applicable to all platforms regardless of the sector in which they operate.[96] As previously mentioned, the network effects at play on a platform can ignite a positive feedback loop provided that the correct customers are brought 'on board' and managed adequately. This positive feedback loop allows the platforms to grow quickly. Once an initial market share advantage is secured this same feedback loop, if managed properly, will sustain and gradually enlarge such advantage to the point where the initial frontrunner prevails as the undisputed winner.[97]

This outlook is particularly relevant in market settings where (at least) one of the platform customer groups is prone to single homing. In such a scenario, if the market tips on the single homing side of the platform in favor of one player, it essentially means such player becomes the gatekeeper for the entire single homing market. For example, if consumers would generally use only one platform to make their hotel room reservations, then hotel owners would have to make sure to list their properties on that same platform if they want to reach consumers. By doing so, the hotel owners would reinforce the tendency of consumers to stick to the respective platform as it will have all or the most offers compared to other platforms. In the long run this can also reduce the incentive for hotel owners to list properties on other platforms, leading to a situation of single homing on both sides of the platform, which provides the platform with a near monopoly position with regard to both customer groups.[98]

Therefore, by addressing these factors in each platform related case, the envisaged remedies will be better able to obtain their common tri-fold objective as well as address the rather new challenge of market tipping which has been identified a major concern in the greater context of digital markets.

6.3.2 Remedies in tying and bundling cases

Tying and bundling practices in the case of multi sided platforms entail several variables that need to be considered for the purpose of remedy design. Firstly, as discussed in chapter 4, when it comes to the manner in which tying practices are most likely to manifest two options exist, namely

96 See e.g. Özlem Bedre-Defolie and Rainer Nitsche, ' When do markets tip? An overview of some insights for policy' (2020) 11(10) Journal of Competition law and Practice 610; Jean-Pierre Dubé, Günter J. Hitsch and Pradeep Chintagunta (2008) *supra* (n 93).

97 Ibid.

98 Such monopoly power depends however, also the existence of additional barriers to entry other than the presence of (significant) indirect network effects and a lack of competition with other non-platform entities.

on-platform tying or *cross-platform* tying.[99] On-platform tying refers to situations where the matchmaking functionalities offered on a platform are tied to one another.[100] Cross-platform tying, by contrast, refers to situations where (at least) two separate platforms are tied to each other.[101] Secondly, the multisided nature of platforms means that the tying practices can be implemented with respect to more than one customer group. For example, Amazon could in theory tie the Amazon Pay platform with regard to both consumers and merchants using the Amazon Marketplace. Thirdly, the intermediary role played by platforms can cause the tying with respect to one customer group to extend across the platform to other customer groups. This occurred, for example, in *Microsoft* and *Google Android* where the tying practices that were applied to OEMs also resulted to tying in the case of consumers.[102] Accordingly, when dealing with abusive tying practices of a platform, the remedies need to take into account these variables as they might impact the scope of competitive harm caused and thus also the kind or remedies required for tackling it. In order to address this in a comprehensive manner *on-platform* tying or *cross-platform* tying will be discussed separately.

A. On-platform tying

On-platform tying, involving two or more matchmaking functionalities of a platform, will most likely concern only the consumer side of the respective platform. This is because the various matchmaking functionalities on a platform involve bringing together consumers and one or more commercial customer groups. So while consumers could perhaps be required to utilize more than one match-making functionality the same is often not possible

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99 D. Mandrescu, 'Tying and bundling by online platforms- Distinguishing between lawful expansion strategies and anti-competitive practices' (2021) Computer Law and Security Review, 1. While platforms can also chose to tie single-sided product or services in either type of tying, such a strategy would not provide such platform with the monetary and strategic advantages that tying of can achieve. This is because the tying of single-sided products or services to a multisided platform would not help amplify the network effects on such platform but rather serve as an additional source of revenue. On the strategic importance of multisided tying or leveraging strategies see also Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne, 'Platform Envelopment' (2011) 32(12) Strategic management Journal 1270.

100 This would occur for example if consumers would only be able to make a hotel room reservation on Booking.com if they also have to book their means of transport for such destination through it as well.

101 For example, in order use an Oculus VR device, consumers must login to this console type of device with their Facebook account. See the terms of use of Oculus on this matter online at < https://www.oculus.com/blog/facebook-accounts-on-oculus/> accessed 10 Jan. 2021.

102 *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, paras.754-834, 877-915; *Microsoft* (Case COMP/C-3/37.792) Commission decision of 24 Mar. 2004 paras. 792- 834.

with regard to the commercial customers of the platform since it would essentially mean that these would have to offer more than one service to consumers. For example, Booking.com could tie its match making functionalities with respect to consumers and thus require them to make use of the hotel reservation service when reserving an airline ticket on the platform. Since consumers would commonly need both when going on vacation or a business trip, such a requirement would not be unrealistic from a commercial perspective. Applying the same strategy with respect to the commercial customers of the platform would, however, be unrealistic since it would entail requiring airlines to also offer hotel rooms on Booking.com. Consequently, this type of tying is also unlikely to extend to other customer groups.

When dealing with abusive on-platform tying the competitive harm that needs prevented will commonly concern the markets of the tying and tied matchmaking interactions and potentially also the emersion of a new market.[103] In order to prevent harm to occur in such markets, the tying obligation of the platform must be removed. When such an obligation is contractual and thus forms part of the terms and conditions of the concerned platform, the remedy should firstly require its removal as was done in the case of *Tetra Pak* and more recently in the case of *Google Android*.[104] When the tying of matchmaking interactions is facilitated through technical means,[105] such technical elements should be removed so that the usage of one matchmaking functionality does not automatically trigger or depend on the usage of a second functionality. Such requirements would in principle put an end to the practice that directly harms competition in markets of the tying and tied matchmaking functionalities. In the absence of the tie, competitors of the concerned platform in either market could resume competing for consumers on a stand-alone basis. However, if such practice helped the platform fuel the positive feedback loop on the platform, meaning it has attracted a larger consumer and commercial customers base, removing the tying vehicle may not suffice to remove harm

103 See by analogy with the concerns identified in non-platform settings e.g. Ward S. Jr. Bowman, 'Tying Arrangements and the Leverage Problem' (1957) 67(19) Yale Law Journal 19; Dennis W. Carlton and Micheal Waldman,' The strategic use of tying to preserve and create market power in evolving industries' (2002) 33(2) The RAND Journal of Economics 194; Jay P Choi and Christodoulos Stefanidis, 'Tying, Investment and the Dynamic Leverage Theory' (2001) 32 (1) The RAND Journal of Economics 52. The extent to which such competitive concerns translate into practice depends, however, on the circumstances of each case and the market conditions present for this see For the difference see Robert H. Bork, *The Antitrust Paradox*, (New York, Basic Books, 1978) at 378-379 and Michael D. Whinston, 'Tying, Foreclosure and Exclusion' (1990) 80(4) The American Economic Review 837.

104 *Tetra Pak II* (Case IV/31043) Commission decision of 24 Jul. 1991, art. 1-4; *Google Android* (Case AT.40099) Commission decision of 17 Jul. 2018, art. 1-3.

105 For example though an automatic launch of a flight search functionality on Booking.com once consumers are in the process of making a hotel room reservation via the platform.

created by it. This is because the (indirect) network effects at play may still make it difficult for competitors to compete for consumers. If Booking.com manages to get more consumers, airlines and hotel owners on board by tying their hotel room reservation and airline ticket search functionalities with respect to consumers, removing this tie does not necessarily mean consumers will quickly consider switching to competitors in the markets of either functionality. Therefore the positive feedback loop accelerated by the tying practice may proceed even after the tie is removed.[106]

The perseverance of the positive feedback loop would be most evident in cases where the tying practices lead to the formation of a consumer bias in favor of the concerned platform with respect to the (previously) tying and tied matchmaking functionalities.[107] Consumer bias in this regard refers to a situation where the consumers internalize the choices previously imposed by the tying practices as their default choice. Once such a bias is created, the positive feedback loop will not only continue to fuel the growth of the platform as such, but may also gradually drive the participation patterns of the customer groups previously involved in the tie towards single-homing and market tipping. Such an outcome may give the concerned platform more market power with respect to both its competitors and customers. Breaking through such a self-reinforcing consumer bias can be, however, very challenging, as it requires making consumers re-consider their default choices.[108] In order to do so a remedy would have, in addition to removing the tie, also prevent the concerned platform from engaging in practices that re-enforce such bias. This could occur for example, if the tying of two matchmaking functionalities is replaced by constant nudging strategies that aim to preserve the same consumer behavior previously imposed by the tie.

Going back to the example of Booking.com, this would occur if Booking.com would stop tying its hotel room reservation and airline ticket search functionalities and display instead constant reminders to consumers to use such functionalities in tandem, and perhaps even link such use to some promotional fee. Furthermore, actions that are targeted at making multi-homing by consumers as well as by the commercial customers of the platform more difficult should also be prohibited as these may have a similar effect of preserving the bias and driving platform participation towards single-homing. This would occur, for example, if hotel owners that add their property listing to other platforms would receive a less favorable ranking

106 The positive feedback loop in the example of Booking.com refers to a situation where the more consumers are remaining or join the platform after the tie is removed the more hotel owners and airlines will remain or join the platform and vice versa.

107 On the types of bias the can arise see Amalia Fletcher and David Hanse, 'Chapter 2: The Role of Demand Side Remedies in Resolving Competition Concerns' in Damien Gerard and Assimakis Kominos (eds), *Remedies in EU Competition law: Substance, Process and Policy* (Wolters Kluwer, 2020) at 22-24.

108 Ibid, at 20-21.

on Booking.com. If such actions are however not sufficient to halt or at least slow down the positive feedback loop ignited by the tying practices, there is little room for resolving such a situation with a behavioral remedy. The last resort in such a scenario would be to reduce the visibility of the tied functionality on the platform when consumers are using the tying functionality and vice versa, so as to really nudge consumers into reconsidering their default choices actively. Although, such a measure may raise some of the search and transaction costs experienced by consumers temporarily,[109] the benefit of healthy competition may outweigh such considerations in the long run. Of course as with any behavioral measures, constant monitoring of compliance with such requirements would be needed and given their subtle and complex nature would likely be costly.

Furthermore, minimization by the concerned platform can be expected, as it would have an incentive to look for other means to keep reinforcing the consumer bias it managed to create. If, despite these measures, the consumer bias remains persistent and the positive feedback loop is not halted or slowed down there is little that can be achieved through other behavioral measures. Consequently the last resort option would be to require the two functionalities to be split across two separate platforms. Such a structural separation does not need to go as far as to request the divesture of the commercial division behind a certain functionality. In fact, a genuine divesture in such a case would likely be disproportionate as a change of ownership would not be necessary for influencing consumer behavior. The structural separation would only concern the manner in which the functionalities are offered to consumers, namely on two standalone platforms instead of one platform covering both functionalities. Such an approach would certainly have the potential of impacting consumer behavior and be suitable for dealing with consumer's bias scenarios, however, it could only be considered to be proportionate in the most severe cases involving on-platform tying where the prospect of market tipping is almost imminent. This is because the previously mentioned behavioral measures may, at times also suffice while being less cumbersome for the concerned undertaking, and impose fewer additional costs on consumers. This could occur, for example, in cases where the network effects on the platform are moderate and multi-homing by the platforms customer groups persists despite the tying practices. Such circumstances mitigate the possibility of the concerned platform to aggregate market power and its ability to make the affected markets tip in its favor.[110]

109 The raise in costs is in this regard not monetary, however, consumers would likely take more time to utilize the previously tied functionalities than in a situation where such functionalities are displayed clearly on the platform.

110 David S. Evans and Richard Schmalensee, 'The Industrial Organization of Markets Based on Two-Sided Platforms' (2007) 3(1) Competition Policy International 151, 163-166; Özlem Bedre-Defolie and Rainer Nitsche (2020) supra (n 96) at 610.

The ability to assess whether the suggested behavioral remedies will be effective is, however, very limited in practice. Although platform participation patterns can be studied with relative ease, correctly assessing the nature of the network effects at play on each platform and measuring their intensity is far more complex. Despite the extensive literature on network effects, there is currently no consensus on the manner in which such effects should be measured and evaluated in the context of competition policy. Similarly, there are very limited tools for predicting and assessing the tipping tendency of platform markets.[111] In the absence of legal tools that can convincingly show that a respective case displays the most alarming anti-competitive character, it is hard to see how the structural remedy such as the one previously mentioned could be considered a proportionate first pick solution. Recital 12 of Regulation 1/2003 indicates that changes to the structure of the undertaking would be proportionate when the anti-competitive risk from its structure as such. However, such a conclusion would be hard to reach in the absence of legal tools capable to assessing the nature and intensity of the network effects at play and the market-tipping tendency in a given case. Consequently, although structural remedies may be needed to prevent the anti-competitive harm caused by on-platform tying to progress after such behavior is brought to an end, the current legal framework makes it very cumbersome to adopt such measures under art. 7 of Regulation 1/2003. Developing new legal tools for assessing network effects and market tipping tendencies is therefore certainly desired, however, it is not the only way of resolving this impasse.

The implementation of suitable behavioral and structural remedies in the case of on-platform tying can be achieved presently through a more strategic use of interim measures. Accordingly, when practices that may qualify as abusive on-platform tying are identified, an interim measure consisting of the above-mentioned behavioral remedies can be imposed. The period from the implementation of the interim measure to the point where a final decision on the existence of abuse can be made would then serve as a trial period for the remedy. If, during such time, the remedy fails to achieve its desired effect, a structural remedy requiring the separation of the previously tied functionalities across two stand-alone platforms could be considered more seriously. Following such an approach would make the eventual implementation of structural remedies more likely to be proportionate as the trial period following the interim measure would serve as evidence that behavioral remedies are not effective for tackling the competitive harm caused by the tying practices as required by art. 7

111 E.g. Özlem Bedre-Defolie and Rainer Nitsche (2020) *supra* (n 95); Gautam Gowrisankaran, Marc Rysman and Minsoo Park, ' Measuring Network Effects in a Dynamic Environment' (May 1, 2010). NET Institute Working Paper No. 10-03 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1647037> accessed 3 Feb. 2021.

of Regulation 1/2003. If, however, the behavioral remedy imposed in the context of the interim measure appears to deliver the desired effect, it can be kept or slightly tweaked when the final decision on abuse is delivered under art. 7. Such an approach would be in line with previous Commission practice where final decisions in abuse of dominance cases were preceded by interim measures.[112] Using interim measures under art. 8 of Regulation requires, however, showing the risk of *irreparable harm to competition* and a *prima facie* finding of abuse. Although proving the existence of *irreparable harm* to competition would normally be quite cumbersome, one could argue that tendency of platform markets to result in winner-takes-all outcomes where the market tips in favor of one platform entails such a risk.[113]

If a prohibited practice is indeed capable of causing the market to tip in favor of the concerned undertaking not intervening at an early phase in such a process may result in the elimination of competition in at least one market.[114] If that occurs, even a structural separation of the concerned platform at the stage of a final decision under art. 7 may not suffice re-establish a state of competition.[115] This is because new entrants to markets that have tipped would face significant barriers to entry due to the network effects that remain in place even after the structural separation.[116] The seriousness of this outcome can be said to be acknowledged by the GC in *Microsoft* where the Court indicated that reversing the anticompetitive effects of competition law infringements in markets characterized by network effects is extremely difficult.[117] The likelihood and urgency concerning the manifestation of such harm, which would justify intervention prior to a final decision, would depend on the effects on the investigated tying practices on the platforms growth pattern following their implementation. If the introduction of the tying practices results in a clear surge in the volume of both consumers and commercial customers on the platform compared to the situation prior to the tying, it could be argued that the manifestation of (irreparable) anti-competitive harm is sufficiently foreseeable.[118] This is particularly so if such changes are observed in combination with a shift in

112 Ekaterina Rousseva (2020) *supra* (n 34) at 291-295.

113 Alexandre Ruiz Feases (2020) *supra* (n 29); Despoina Mantzari (2020) *supra* (n 29); Peter Alexiadis and Alexandre De Streel (2020) *supra* (n 39).

114 Case T-184/01 R *IMS Health v Commission* [2001] EU:T:2001:259, para. 121.

115 Case C 792/79R *Camera Care v Commission* [1980] ECLI:EU:C:1980:18, paras. 14-15 and Case T-44/90 *La Cinq v Commission* [1992] ECLI:EU:T:1992:5, para. 80.

116 Evidence concerning barriers to entry should show that the post abuse market conditions would make it almost impossible for competitors to penetrate such markets see by analogy Case C-471/00 P(R) *Commission v Cambridge Health Care* [2001] ECLI:EU:C:2001:218, para. 111.

117 Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289, para. 192.

118 Case C-149/95 P(R) *Commission v Atlantic Container* [1995] ECLI:EU:C:1995:257, para. 38; Case C-471/00 P(R) *Commission v Cambridge Health Care* [2001] ECLI:EU:C:2001:218, para. 108; Case T-184/01 R *IMS Health v Commission* [2001] EU:T:2001:259, para. 116.

the homing patterns of these actors.[119] The finding of a *prima facie* infringement in such a context would require that the investigated practice at least appears to fulfill the criteria for which the Commission carries the burden of proof in tying cases.[120]

Seeing as the theories of harm in the context of abusive tying practices have been extensively studied in academic literature and covered on several occasions in practice by both the Commission and EU Courts, they can hardly be considered novel. Accordingly, finding a *prima facie* infringement in such a context should be less likely to be struck down as the stage of judicial review in a similar fashion to what happened in *IMS Health*.[121] The availability of such evidence will, however, depend on the specific circumstances of each case. Utilizing interim measures in tandem with infringement decisions in this fashion when dealing with platforms will help transform structural remedies into a feasible and effective solution in the most extreme cases of abuse of dominance cases. This will not only be valuable to platform cases, but to the enforcement of competition policy as such, as it would help revive the interim measure procedure and the use of structural remedies which are currently considered as theoretical rather than practical options. Putting such theoretical options, even if desirable, into practice will be, however, far from easy. Admittedly it is quite possible that such an approach will remain a theoretical one for the near future. This is not only because of the legal limitations mentioned with respect to art. 8 but also because it would require the Commission to use interim measures for a related yet different purpose than these were intended to serve. Accordingly, utilizing this option of remedy implantation strategy would likely first require that the Commission re-evaluates the purpose and approach it indents to adopt with regard to interim measures in the context of digital markets in general and online platforms in particular.

Luckily, however, an alternative solution that could achieve a similar result has already been discussed and to some extent applied in the context of EU merger control in the form of so called 'flexible remedies'. Such remedies entail in practice a more extensive menu of measures consisting of multiple intervention layers that are triggered depending on the manner in which market conditions evolve after the moment when the remedy was

119 If platform growth spikes and homing patterns shift towards single homing two of the main indicators of market power aggregation and market tipping can be said to manifest. See e.g. Özlem Bedre-Defolie and Rainer Nitsche (2020) *supra* (n 96).

120 Apart from establishing dominance, these criteria are (i) the tying of two *separate products;* (ii) coercion, and (iii) *foreclosure* in either the tying or the tied market. See Case T-30/89 *Hilti v Commission* [1991] EU:T:1991:70 and Case C-333/94 P *Tetra Pak v Commission* [1996] EU:C:1996:436; Case T-201/04 *Microsoft v Commission* [2007] ECLI:EU:T:2007:289.

121 Case T-184/01 R, *IMS Health Inc. v Commission* [2001] EU:T:2001:259, paras. 30-31, 128-131; On the importance of have non-novel theories of harm for the purpose of interim remedies see Despoina Mantzari (2020) *supra* (n 29).

imposed.[122] By introducing remedies, which consist of measures that apply only if and when certain competitive concerns materialize or at least become clearer, the Commission (or NCAs) would be better able to deal with the dynamic nature of competition in the context of online platforms. Accordingly, following an abuse of dominance the Commission could impose a remedy that has a behavioral measure as a starting point. In the event that the concerned abuse triggered amplification of network effects and caused changes in the homing patterns of the platforms' customer groups, which do not appear to be affected by the respective measure a more intrusive measure may be triggered at a later point in time. Such a mechanism can proceed to introduce more intrusive measures in correspondence with the growing tendency of the affected market to tip in favor of the concerned dominant platform as a result of its abusive behavior. Such an intensifying scale going from the least intrusive measure to the most intrusive one could include both behavioral and structural measures which are triggered based on the developments in the affected markets over time.

Therefore, from a theoretical perspective the structural and most radical forms of intervention would only be imposed at the moment where market conditions justify their use, namely where market tipping appears imminent. Implementing such kind of mixed flexible measures, although certainly unconventional, could be accommodated within the existing framework of art. 7 of Regulation 1/2003. Firstly, the provision itself is not formulated in a way that would prevent the implementation of such a mixed remedy nor would such remedies be entirely exceptional. In the context of EU merger control commitments made in order to enable a transaction to go through commonly include both behavioral and structural measures. Secondly, such a mix would also be more compatible with the principals of effectiveness and proportionality than a rigid measure as it would allow for a more customized approach to the harm created by the abuse until it is removed. Accordingly, it would also increase the chances of such remedies to achieve their tri-folded objective. Furthermore, the innovation related concerns often voiced with regard to competition law interventions in the case of platforms as well as digital markets in general, would be mitigated as such intervention would only be reserved to the cases where it is necessary and its scope limited correspondingly.

The theoretical potential of such measures does not mean, however, that these can easily be implemented in practice. Designing remedies with multiple layers that apply depending on different market considering or developments entails inevitable predefining an exhaustive set of circumstances that would be attached to each of the respective layers. This in turn

122 OECD, 'Merger Control in Dynamic Markets' (2020) at 32 < http://www.oecd.org/daf/competition/merger-control-in-dynamic-markets.htm>.

requires that the Commission must have a clear view on the potential future concerns it whishes to tackle but is unsure whether these will materialize. Otherwise, if such scenarios are vaguely described and defined legal certainty concerns may arise with respected to the concerned dominant platform, as it would not be able to assess when additional, more intrusive, measures may be triggered. Furthermore, to the extent that such scenarios can be predefined corresponding effective and proportionate remedy layers must be designed. In this regard, it is also important that the remedy should also be flexible enough to deal with unforeseen developments, which may make the initial remedy inapt. This could be done by introducing a review clause that would allow reviewing the impact of the imposed remedy layer(s) together with the market conditions at the time of review. This would avoid situations where the predefined measures are undermined by market changes not foreseen at the time when the remedy was defined as occurred in the case of *EDF/Segebel*,[123] where the alternative options included in the remedy were de facto diminished by unforeseen market developments.[124] Despite such difficulties and the inevitable challenge involved in ongoing monitoring comparable measures, the added value of utilizing flexible remedies in the context of online platforms (and even beyond) would be significant.

When comparing this alternative solution to that of a strategic use of interim measures as previously mentioned, it can be argued that flexible remedies would offer a more suitable enforcement tool that is more likely to achieve the tri-fold objective of competition law remedies. Nevertheless, the lack of precautionary intervention as done with interim measures may mean that the harm that must be addressed in such context may end up being relatively greater. In this regard, perhaps the best approach would be to utilize both means in tandem. Interim measures would then be used, as intended, to prevent market conditions for significantly deteriorating and the flexible remedies introduced at the stage of the final decision on abuse would strive to bring the infringement to an end, prevent its repetition and restore or reestablish the state of competition.

123 *EDF/Segebel* (Case COMP/M.5549) Commission decision of 12 Nov. 2009. In this case the concerned parties were allowed to choose between divesting certain assets or increase investment in them so as to make them viable.

124 F. Bure and L. Bary, 'Disruptive Innovation and Merger Remedies: How to Predict the Unpredictable?' (2017) 3 Concurrences 1, 6-7. When the point in time came when for the parties to make their choice the market conditions did not allow the concerned undertaking to divest their assets and were thus required to make the additional investments they did not intend or wish to make in accordance to the commitments.

B. *Cross-platform tying*

Cross-platform tying, where two or more stand-alone platforms are tied with respect to one platform customer group that is using both platforms will, similarly to on-platform tying, primarily occur with respect to consumers. This is because cross-platform tying with respect to the commercial customer groups of the platform would normally mean in practice that such parties would be required to offers consumers at least two different services on the tied platforms. However, if the matchmaking functionalities offered by the tied platforms concern complementary services from the perspective of both consumers and the commercial customers of the platform, tying could be possible with respect to both such parties. For example, Amazon may be able to tie its digital payment platform, Amazon Pay, to its marketplace platform with respect to either or both merchants and consumers. This is because such a payment platform is a very suitable complement for enhancing the services provided on a marketplace platform. By contrast, trying to achieve the opposite is highly unlikely to succeed, as a marketplace cannot be considered an important complement of a digital payment platform. Accordingly, cross-platform tying can at times occur with regard more that one platform customer group. In such situations, the tying of two or more platforms with respect to one customer group may extend to another customer group. As previously mentioned, if Amazon Pay would be tied to the Amazon marketplace for consumers, merchants would likely accept such a payment method as well. Such an outcome can be expected even in the case where the tie does not require consumers to use Amazon Pay as their exclusive payment method. Therefore, when considering remedies, the variations in the manner in which cross-platform tying can manifest should be taken into account, as they may require slightly different types of interventions.

The competitive harm that can be expected in the case of cross-platform tying would commonly concern the exclusion and deterrence of competition in the markets of the stand-alone tying and tied platforms. Where cross-platform tying is applied with respect to consumers and does not extend to other platform customer groups, a behavioral remedy that removes the tie would go a long way toward bringing such an infringement to an end, preventing its repetition and allowing for the state of competition to return to its pre-abuse status in principle. The removal of the tie should of course be complemented by the prohibition to adopt other means aimed at preserving and reinforcing the joint use of the previously tied platforms by consumers. Such actions could include some form of preferential treatment between the previously tied platforms such as providing monetary incentives, undermining interoperability with third parties and nudging notices constantly pulling consumers back to their previous behavior. Although tying two platforms can certainly contribute to reinforcing the positive feedback loops of each platform, removing the tie in such a situation would

remove a great deal of such effects across platforms. Accordingly, once the tie is removed, the network effects on each platform may perhaps continue to fuel platform growth on each platform separately, however, the two platforms would not continue to feed off each others success as in the case of on-platform tying. Going back to the example of Amazon, if Amazon Pay would no longer be tied to Amazon Marketplace, an increase in use of Amazon Pay by both consumers and merchants would not necessarily translate to a similar effect on Amazon Marketplace and vice versa.

Nevertheless, the persistence of the positive feedback loop on each separate platform can still lead to changes in homing patterns and eventually even in the tipping of markets in favor of each separate platform. This is particularly so if after the removal of the tie, the customer group that was subject to the tie continues to make use of the previously tied platforms in parallel. Where the tie and its effects can extend across more than one customer group due to the complementary relationship between the previously tied platforms, tackling such an outcome is even more challenging since it requires changing the behavior of multiple customer groups simultaneously. For example, in the early days of EBay following its acquisition of PayPal, the use of PayPal was tied to the use of EBay for both consumers and merchants. Recently this obligation has been modified into an optional choice for both, meaning that the tie has been removed. However, getting consumers and merchants on EBay to switch from PayPal, requires overcoming the indirect network effects present on PayPal and igniting such effects on a separate payment platform. This can prove to be very difficult in practice. If consumers choose to continue using PayPal on EBay there is no reason for merchants to stop accepting it, which in turn further reinforces the preference of consumers to stick to PayPal and vice versa. Such a lingering effect would be particularly strong where the tying practices created a consumers bias concerning the joint use of the previously tied platforms. This reality has been clearly understood by EBay, which voluntarily started actively phasing out PayPal from EBay a few years after the platforms split into two separate public companies.[125] Accordingly, instead of letting consumers and merchants switch to other payment platforms, EBay chose to actively exclude the possibility that PayPal would remain the default choice for such parties as was previously intended by EBay's tying practices.

The previous practice of the Commission in the Microsoft (WMP) and Google Android cases can be said to have dealt with similar circumstances although the remedies implemented in these cases were far less intrusive than the steps taken by EBay. The remedies in these cases, equally attempted

125 See Jason Del Rey, ' After 15 years, eBay plans to cut off PayPal as its main payment processor' (Vox, 31, Jan. 2018) https://www.vox.com/2018/1/31/16957212/ebay-adyen-paypal-payments-agreement> accessed 10 Jan. 2021.

to remove the tie imposed by the dominant undertaking and prevent the preservation of the effect of the tie on the platform customer groups after its removal, albeit not always successfully. In *Microsoft* the remedy requiring Microsoft to allow OEMs to choose between a version of Windows OS with Windows Media Player (WMP) and a version without it, did not bear any success since both versions priced identically. Accordingly, OEMs had little incentives to choose the version without WMP, which in turn meant that consumers also continued to receive (and expect) their PC's to come with WMP. Consequently, the remedy failed to reset the status quo created by the tying practices as it failed to remove the effects created by the tie on OEMs and ignored the potential role that could have been played by consumers for this purpose.[126] Ironically, the remedy offered by Microsoft itself in the course of the proceeding would have likely been far more efficient. Microsoft offered removing WMP from Windows OS and providing consumers with a CD containing multiple media players they could choose to install.[127] Such a remedy would have removed the tie with respect to OEMs and at the same time allow consumers to reconsider their previously imposed default choice of having WMP thereby potentially breaking free form their bias.[128] In Microsoft (tying) it would appear that the Commission was more aware of the interdependencies between consumers and OEMs and their impact on the effectiveness of the remedy. In this second case, concluded via a commitment procedure, the remedy implemented required Microsoft to present consumers with a multiple choice screen that would require them to choose the internet browser they wanted to have installed on their PC once they turn it on for the first time.[129] This remedy tackled the consumer bias created by the pre-installation of Internet Explorer on every Windows OS run PC, which proved to be quite effective, particularly in the point in time where multiple alternatives for Internet Explorer were introduced. Nevertheless, the implementation of this remedy did not always go smoothly as Microsoft was later accused for minimizing its implementation for which it was also fined.[130]

The relative success of these measures seems to have led the Commission to accept a similar remedy in *Google Android* where consumers are presented with a comparable multiple choice screen in order for them to choose their default internet browser.[131] By introducing this additional choice moment to

126 Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 42) at 387-390.

127 See Spencer Weber Weller (2009) supra (n 7) at 28; Gunnar Niels, Helen Jenkins and James Kavanagh (2016) *supra* (n 42) at 388-390.

128 Ibid.

129 *Microsoft (tying)* (Case COMP/C-3/39.530) Commission decision of 16 Dec. 2009, paras. 7-18 of the commitments.

130 See *Microsoft (tying)* (Case COMP/C-3/39.530) Commission decision of 6 Mar. 2013, paras. 21-25, 38-46.

131 See how this implemented on Google's website at < https://www.android.com/choice screen/> accessed 10 Jan. 2021.

consumers the remedy helps eliminate advantage Google would normally have as the default choice on Android devices due to its tying practices with respect to OEMs.[132] While the same choice could have been posed with respect to OEMs, they may be less likely to switch to avoid the risk of consumer dissatisfaction. Pursuing similar remedies in the case of online platforms will require, however, adjusting such solutions to their different technical and commercial characteristics.

In cases concerning tying across platforms, the tie can take several forms. The tie can be technical in the sense that the use of one platform requires signing in with another platform. This would occur for example when using Instagram would require signing in with a Facebook account. In such a case removing the tie would require creating other sign-in possibilities for Instagram for users to choose from, including through platforms competing with Facebook. Another form of tying would entail the data generated on the tying and tied platforms. This would occur if using Instagram would require agreeing with the sharing of data generated on Instagram to be shared with Facebook.[133] In such a case removing the tie would require allowing users to choose whether they wish to do so actively, thus without a pre-programed opt-in or out of such an option. A third way of tying would combine the previous two by requiring user to create a profile account that automatically creates additional profiles on a separate platform and enables the sharing of data across such platforms to feed the profiles made on both platforms. In such a case, removing the tie would require giving users the possibility to refuse this cross-platform creation of profiles and data sharing across platforms when joining one of the platform as well as allow such users to change their choice in this regard at any point in time.

Finally, the fourth option for implementing a tie between two separate platforms in requiring using two (complementary) platforms in tandem, as was the case with EBay and PayPal. In such a case removing the tie would entail requiring that other platforms that provide the complementary service as the tied platform be accepted for integration and /or use with the tying platform. In the case of EBay and PayPal this would mean requiring EBay to accept other payment solution and that this choice can be made during every separate transaction. In the case of this last type of tie, where the tie also extends to other customer groups, it is important that the remedy does so as well. Accordingly, in the example of tying a payment platform

132 In practice, however, this new opportunity for consumers to make another choice does not always result in the most desirable outcome. See Natasha Lomas, ' Europe's Android 'choice' screen keeps burying better options' (Techcrunch, 8 Mar. 2021) <https://techcrunch.com/2021/03/08/europes-android-choice-screen-keeps-burying-better-options/> accessed 10 Jan 2021.

133 Currently, this possibility is only made optional in practice, as consumers are able to limit the data sharing between the two platforms. For more see Instagram's Data Policy Portal < https://www.facebook.com/help/instagram/519522125107875> accessed 12 Jan. 2021.

to an online marketplace, allowing either consumers or sellers to use other payment platforms needs to occur simultaneously. Implementing such remedies in the case of cross-platform tying would entail translating the remedies accepted by the Commission in Microsoft (tying) and in Google Android to the context of online platforms. Although this increases the chances that such remedies will also be considered to be proportionate in future cases,[134] it does not mean these will always be equally effective. This is particularly so in situation where the markets of the tying and tied platforms have tipped in favor of the dominant undertaking due to its tying practices.

In cases where tipping has occurred or is at the verge of occurring, solely removing the tie and presenting the platform customer groups with the possibility to make different choices actively, may not bring much change in practice. If, by virtue of the tie, the concerned undertaking has become the undisputed leading platform in the product market of either the tying and tied platforms, presenting its customers with alternatives may not have much value. In such a scenario more far-reaching solutions may be required. These solutions can be either a full divesture of the tied platform to a third party or temporarily ceasing interoperability between the previously tied platforms. A divesture solution would prevent the concerned undertaking from continuing to profit from the positive feedback loops it managed to fuel through its tying practices. Once the previously tied platform is sold to a third party the positive feedback loop between the two platforms will no longer provide the dominant undertaking with the strategic competitive advantage its previous tying practices would.[135] In the example of Amazon Marketplace, this would mean requiring Amazon to divest Amazon Pay to a third party and thereby prevent it from leveraging its market power from the retail market to the digital payment solutions market. Imposing a comparable measure would evidently require the Commission to take a step it has almost never taken until today,[136] which may cast doubt on the possibility that such measure would be considered proportionate under art. 7 of Regulation 1/2003.

Nevertheless, in cases where tipping has occurred and the effects of the abuse persist even after the tie between the platforms has been removed, one may argue that the structure of the undertaking itself prevents effective enforcement thus justifying a structural intervention. In cases where

134 Although both remedies were not prescribed under art. 7 of Regulation 1/2003 the fact the both undertakings offered similar solutions indicates that both perceived such solutions to be reasonable from both a commercial and technical perspective. Thus having the Commission require a comparable solution in future cases would not appear overly intrusive or disproportionate.

135 Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyne (2011) supra (n 99).

136 David Bailey and Laura Elizabeth John (eds.), *Bellamy and Child: European Union Law of Competition*, 8th edn (OUP, 2018) at 1207.

such structural separations are considered too burdensome or too risky for the Commission to attempt, a technical separation would entail a less permanent form of intervention that may potentially achieve similar results. Such a measure would entail requiring the dominant platform to switch off the interoperability between the previously tied platforms for a specific, reviewable, period of time. Accordingly, in the case of a mutual sign-in system this would require not only allowing the usage of other sign-in option but also removing the possibility to sign-in on the tying platform with an account linked to the tied platform. In the previous example of Instagram, this would mean enabling users to sign-in with their email account, for example, but *not* with their Facebook account. Similarly, where platforms provide complementary services the tying platform should be open to be used together with other complementary platforms but not with the tied platform. In the example of Amazon Marketplace this would mean requiring Amazon Marketplace to accept various payment systems but not Amazon Pay.

Although, quite radical, such a remedy would effectively prevent the concerned undertaking from continuing to profit from the positive feedback loops it managed to fuel through its tying practices, without intervening in its corporate structure. By imposing a technical separation of the two platforms the positive feedback loops present on such platforms can no longer feed off each other. Furthermore, by obligating the concerned undertaking to link the tying platform to competitors of the tied platform, the market power of the concerned undertaking in the tying market can be used to leverage the position of existing small players or new entrants in the product market of the tied platform. Furthermore, similar to the situation post divesture, this option also allows existing and potential competitors to compete with the tying platform without necessarily having to enter the market of the tied platform as well.[137] By doing so, a comparable remedy would possibly bring changes to the homing pattern of the platform customers, which in turn may make the tipped markets contestable once more. This can occur particularly when consumers opted for the tied platform solely because they wanted to make use of the tying one. In the absence of the link between the previously tied platforms such customers can be expected to abandon the tied platform. This is turn will also likely reduce the adoption the tied platform by other customer groups that opted for the tied platform only in order to reach such consumers.

137 These risk are considered to represent the main competitive harms in the case of tying. See e.g. Dennis W. Carlton and Micheal Waldman,' The strategic use of tying to preserve and create market power in evolving industries' (2002) 33(2) The RAND Journal of Economics 194; Jay P Choi and Christodoulos Stefanidis, 'Tying, Investment and the Dynamic Leverage Theory' (2001) 32(1) The RAND Journal of Economics 52.

Consequently, such a separation may contribute greatly to reducing (at least some of) the undeserved growth achieved by the dominant undertaking on both platforms. It is worth noting, however, that despite the intrusiveness of this remedy, a technical separation does not mean it would put the tied platform out of business. EBay's permanent separation from PayPal does not appear to stand in its way to further growth following the announcement that EBay will no longer support it.[138] Therefore, a similar measure, which is only temporary, is less likely to be disproportionately detrimental to the commercial state of the dominant platform. The period for which such a remedy should apply would differ for case-to-case depending on the nature of competition in the affected markets, and should preferably include review possibilities where the Commission can withdraw the measure.

Imposing a remedy that requires the dominant undertaking to divest one of its platforms or remove the interoperability between two of its platforms goes admittedly very far. However, such a solution would be reserved and suggested only for the most extreme cases where the removal of the tie and preventing actions that aim at preserving its function is not sufficient to end the effects of the abusive tying, which appear to tip the market in favor of the concerned platform. Consequently, implementing such a measure should be attempted also in a gradual fashion as in the case of on-platform tying, namely through the strategic use of interim measures or the implementation of flexible remedies. Accordingly, the removal of the tie together with a prohibition to take actions that seek to preserve the effect of the tie would best implemented thought an interim measure under art. 8. If such actions do not bear fruit until the stage of the final decision on the matter of abuse, the finding of abuse can then be followed by a remedy requesting a divestment or a removal of interoperability between the previously tied platforms under art. 7. By contrast, when the interim measures appear to deliver the desired effects, such measures can be then also prescribed at the stage of the final decision. However, where the evidence available in a respective case does not suffice to show an immediate, urgent concern of irreparable harm to competition such a combination of remedies is not possible. This in turn would likely entail that remedies at the stage of a final decision under art. 7 will not go so far as to require a divestment or the suspension of interoperability between the previously tied platforms if not done as part of a flexible remedy which starts off with the behavioral measure that would otherwise be implement in the scope of interim measures. Otherwise seeking to impose such a far reaching obligations as a first pick would potentially be qualified as disproportionate given the possibility that other, less intrusive measures may also lead to the desired

138 It would appear that PayPal's revenues have continued to rise in the past few years following the announcement. See David Curry, PayPal revenue and usage statistics 2021' (Business of Apps, 18 Mar. 2021) < https://www.businessofapps.com/data/paypal-statistics/> accessed 25 Mar. 2021.

effects. Therefore, in such cases it is not likely that the final remedies would go beyond what is required to translate the remedies implemented in *Microsoft (tying)* and *Google Android* to the setting of online platforms. This can unfortunately be a problematic outcome, since, as provided above, some cases may require more far reaching interventions. Fortunately, however, some of these cases may be caught by the newly proposed Digital Markets Act (DMA),[139] as will be discussed later in this chapter.

6.3.3 Remedies for price related abuses

Abuse of dominance cases concerning prohibited pricing strategies can be said to deal with the clearest manifestation of undesired use of market power. The ability of an undertaking to price its products and services irrespective of its competitors, customers and consumers in a manner that may even be detrimental to them exhibits the exact type of market dynamics competition policy aims to prevent. The use of predatory pricing, where the prices set by the dominant undertaking are too low to cover its costs for the respective service or product, is capable of leading to the market exit of competitors as well as the deterrence of new market entrance.[140] Similarly, discriminatory pricing strategies can undermine the ability of third parties to compete with the dominant undertaking as well as distort competition among such third parties.[141] Finally, the implementation of excessive pricing allows the dominant undertaking to extract rents it would normally not be able to under competitive market conditions to the detriment of its consumers.[142] In some instances such prices can even be used to eliminate competition and deter market entrance.[143] In order to address the remedy design considerations for these abuses in a comprehensive manner these abuses will be discussed separately.

A. Predatory pricing

The implementation of remedies in cases concerning these price-related abuses has generally been quite straightforward in the sense that the remedies primarily mirrored the abusive behavior. In the case of predatory pricing the dominant undertaking found guilty of abuse, was commonly

139 European Commission, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final.

140 P. Bolton, J. F. Brodley and M. H. Riordam, ' Predatory Pricing: Strategic Theory and Legal Policy' (2000) 88(8) Georgetown Law Journal 2239.

141 Robert O'Donghue and Jorge Padilla, *The law and Economics of Article 102 TFEU* (3rd Edition, Hart Publishing, 2020) at 856-866.

142 Ibid, at 893-894.

143 E.g. this occurs in the case of margin squeeze where or standard essential patents where the competitors of the dominant undertaking depend on their commercial relationship with the dominant undertaking and therefore the prices imposed by it.

required to raise its prices above predatory levels, i.e. to a non-exclusionary level. Such an approach can be seen in *Tetra Pak*,[144] *Akzo*,[145] *Wanadoo*,[146] and the most recent case of *Qualcomm*.[147] Although the level of detail of the imposed remedies in this respect varies across these cases quite significantly, the scope of the abuse analysis in all cases provided the concerned undertakings with quite a clear view about the manner in which the Commission viewed the predatory nature of the implemented prices. Such analysis, in turn, could have also guided the concerned undertakings with regard to the steps they need to take to avoid repetition. Furthermore, in some of these cases the Commission imposed additional obligations to make remedy compliance monitoring easier and prevent the minimization by the concerned undertaking.[148]

When applied to the context of online platforms, similar strategies could also be pursued provided that these account for their multisided nature. Accordingly, when requiring a dominant platform to raise its prices above exclusionary levels it is important that the adjustment in price means that the dominant platform does not offer its matchmaking functionality at a loss. In cases concerning platforms that offer a single functionality, like Uber, this should not be any different than non-platform cases, as what matters in such a case is whether the revenue generated by the platform is sufficient for the platform to operate profitably. Where multiple matchmaking functionalities are offered, as in the case of Expedia, requiring such an adjustment to prices could result in a requirement that the entire price level of the platform as well as the individual price level of each functionality are to be set at a non-exclusionary level. Such an extensive requirement could be required to make sure that the dominant platform does not allocate costs across its various matchmaking functionalities in a manner that allows it to operate bellow cost with respect to one or more of its functionalities. This in turn would require a monitoring mechanism similar to the one implemented in *Wanadoo* where the Commission required Wanadoo to provide it with yearly revenue accounts for each of its different services.[149]

144 *Tetra Pak II* (Case IV/31043) Commission decision of 24 Jul. 1991, art. 1-4.
145 *ECS/AKZO* (Case IV/30.698) Commission decision of 14 Dec. 1985, art. 3.
146 *Wanadoo Interactive* (Case COMP/38.233) Commission decision on 16 Jul. 2003.
147 *Qualcomm (predation)* (Case AT.39711) Commission decision of 18 Jul. 2019, art. 1-3.
148 In *Wanadoo* the Commission required yearly reporting on its revenue accounts for the various ADSL services it provided; In *Akzo* the Commission required yearly pricing reports for the period of five years following the prohibition decision; In Tetra Pak a bi-annual reporting obligation was imposed for a period of five years following the prohibition decision. Interestingly, in Qualcomm such a monitoring and reporting scheme was not required at the remedy stage.
149 *Wanadoo Interactive* (Case COMP/38.233) Commission decision on 16 Jul. 2003, art. 3.

In the most extreme situations where the concerned platform has a complex structure that would make such monitoring and reporting too difficult due to too many overlapping common costs, a structural solution could be considered. Such a structural intervention would require the dominant undertaking to split the different divisions responsible for the various matchmaking functionalities into separate legal entities. A comparable remedy was implemented in *Deutsche Post* where the letter mailing business was separated from the parcel mailing service following an investigation on predatory practices.[150] Such a solution would allow platforms to keep their multisided character in the sense that they can continue to provide all their functionalities on the same platform, while at establishing a legal structure that allows for separate accounting for each of the functionalities. In cases concerning multisided platforms, implementing such a structural solution can be very effective for bringing the infringement to an end at it tackles the constant incentive of such undertaking to cross-subsidize their functionalities as was the case in *Deutsche Post*. While such a separation would not eliminate the incentive of taking such actions, as a divesture would, it does restrict the *ability* of the concerned platform to do so for the duration of the (monitoring) remedy. In this sense, such a solution would be more effective than allowing a multisided platform to provide an accounting report of all its functionalities that could allow it to shift costs in ways that may support artificially low prices. By doing so, a comparable measure is better capable of terminating the abuse, preventing its repetition and reestablishing the state of competition to the situation before the abuse. Despite its structural approach it's worth noting that since such a separation does not require a true divesture of assets to third parties, it can be argued that it would constitute a proportionate measure in situations involving platforms with significant common costs.

In other cases, however, involving relatively transparent cost structures and a limited number of functionalities, as in the case of Uber, a behavioral measure would likely suffice. In such cases, the structure of the undertaking constitutes less of a hurdle to ensuring compliance with EU competition law policy thus not likely requiring or justifying the use of structural remedies even in the less intrusive form as previously mentioned.[151] Finally, in the case of either the behavioral or structural remedies suggested above, the selected remedy could ideally be supplemented by a requirement not to match the prices of competitors for a given period of time.[152] This strategy that was implemented in *Akzo*, would allow competitors to regain the

150 *Deutsche Post Ag*, OJ 2001 L 125/27, art. 2-4.

151 Recital 12 of Regulation 1/2003.

152 Such an obligation would commonly concern the prices of the platform with respect to the commercial customers of the respective platforms, as consumers are often able to make use of the matchmaking functionalities of platform without charge.

costumers they lost to the dominant platform and to some extent bring to a halt the positive feedback loop that may have been created by the predatory pricing strategy. This in turn will help restore the state of competition to what it was prior to the abuse and thus inevitably also reduce the chance of market tipping to occur and become permanent. The parties with respect to whom such an obligation would apply will likely have to be broader than in the case of Akzo and cover potentially all the customers that joined the dominant platform following the implementation of the predatory pricing. This is due to the chain reaction that can be caused by (indirect) network effects that are at play on platforms.

For example, if Expedia, assuming it has a dominant position, were to charge predatory commission fees from hotels it can be assumed that the (most) price sensitive hotels will switch to it from other platforms, which in turn will likely attract more consumers due to the indirect network effects between these two platform customer groups. The attraction of new consumers to Expedia may then also cause less price sensitive hotels to switch, as now Expedia's offer for them is not only low commission fees but also a wider scope of potential clients. Such switching can start off as multi-homing by hotels and consumers and gradually move towards single homing on both sides. By extending the price matching limitation to all the customers that joined post abuse, the remedy would allow competitors to reverse the impact of the abusive practices and restore the state of competition to the situation prior the abuse. In this respect, such a limitation should also be complemented by a prohibition to take actions that would prevent or discourage multi-homing as switching back of platform customers may start with multi-homing rather than a genuine switch. Furthermore, even if the competitors of the dominant undertaking are not able to fully regain their customers, illegally taken by the dominant undertaking, getting such parties to multi-home would significantly reduce the market power gained by its abusive practices and reduce the possibility of market tipping. Nevertheless, it should be noted that the suggested price matching limitation should be temporary. This is because such a measure may, in theory, create in the long run a negative feedback loop on the dominant platform as more customers choose to switch back or over to competitors. If pursued for too long, such a measure could run the risk of driving the dominant undertaking out of the market, which would evidently be disproportionate.

B. Excessive pricing

The adoption of excessive prices in the case of online platforms entails a situation where one or more platform customer groups pay a price for the matchmaking functionality provided by the platform that does not correspond to economic value of such functionality. In practice this situation is most likely to occur with respect to the commercial customer groups of the

platform (commonly the subsidizing customer group) that are often subject to some type of fee rules.[153] Nevertheless, in special circumstances where single homing is enforced by the dominant undertaking and/ or where the pricing structure of the platform and its commercial customer group is not transparent, such supra competitive prices can be transferred in full or in part to consumers as well.[154] The test for establishing such an abuse, introduced in *United Brands*, requires that (i) the price charged by the dominant undertaking (significantly) exceeds the costs relating to the production of the product sold by it or the provision of the services offered by it; and (ii) that such price is either unfair in itself or in comparison to the prices of competitors.[155] Consequently, in practice, remedying such practice would commonly entail requiring the dominant undertaking to reduce (some of) the excess of its prices, as this would prevent future pricing practices from fulfilling both steps of the test. Such a requirement can then target the specific level of the fees charged and/or the calculation method used by the dominant undertaking that resulted in excessive fees with respect to certain customers.[156] Unlike in the case of predatory pricing where removing the abusive element essentially requires that the dominant undertaking does not engage in loss-making pricing, indicating what a non-excessive price would be is far more complex.

Coming up with such an indication would essentially require that the Commission (or NCA) comes up with a hypothetical price that would have been charged in a certain markets if such markets were competitive, which would be a herculean task. Therefore, when the level of the price charged by the dominant undertaking from its customer is at the heart of the abuse, the remedy will not likely indicate a specific indication as to how such prices should be adjusted. Instead, it would appear that the remedy in such scenarios commonly involves an instruction to abandon the unfair prices

153 E.g. pay-per-click advertisements, transaction fees, membership fees and various combinations hereof.

154 E.g. in the case of meal order platforms it is quite common that the platform commission fee is added on top of the meal price and charge in full from consumers as comparing meal prices outside such platforms is not feasible. In the case of Apple's App Store, which requires single homing with respect to both consumers and app developers, the App Store commission fee is often passed on to consumers.

155 Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, paras. 251-2.

156 See e.g. Case C-372/19, *Belgische Vereniging van Auteurs, Componisten en Uitgevers CVBA (SABAM) v Weareone.World BVBA and Wecandance NV* [2020] ECLI:EU:C:2020:959 where the Court indicated that prices can be considered as unfair when the methodology for their calculation bares no account to the economic value provided to the respective customers of the dominant undertaking. See also *DSD* (Case COMP D3/34493-DSD) Commission decision of 20 Apr. 2001, art. 3 where DSD was prevented from charging fess for services not fully provided.

identified in the course of investigation together with a reporting obligation for the dominant undertaking to communicate its price adjustment for a specific period of time after the final decision on abuse.[157]

In the context of online platforms, similar approaches to excessive pricing remedies would be suitable and in fact quite important to follow given the central role played by the platform price structure and level for the viable existence of the platform.[158] As previously mentioned, the price scheme of online platforms is principal to their ability to attract multiple separate customer groups to the platform and solve the chicken-and-egg problem also platform face at their launch as well as keeping such customers on board at later stages of the platforms' lifetime.[159] Accordingly, the platform price level and price structure determine to a great extent the volume of members of each of its customer groups. Therefore, any interventions that directly concern requirements to adjust these elements will very likely have an impact on the level of participation on the platform. Consequently, imposing a specific price level or price structure on the dominant undertaking will likely have a much more significant impact on its commercial viability in the context of platforms than in non-platform settings. In turn, this entails that the consequences of enforcement errors are greater and thus the role of the competition authority as price regulator should be even more limited.

In situations where the excessive pricing concerns relate to a pricing structure or calculation method that yields undesired results with respect to one or more platform customer groups, which are chosen as the subsidizing customer group(s), the remedy should be limited to a requirement to adjust such structure or method. The manner in which such adjustments are to be made should be left to the concerned platform, as it is best placed to choose the least detrimental change for its commercial viability. Of course, such adjustments must take into account the considerations of the Commission (or NCA), which led to the conclusion that the platform prices are excessive. For example, in the case of the Apple App Store approx. 16% of app developers cover the costs of the App Store for both consumers and

157 See e.g. *Chiquita* (Case IV/26699) Commission decision of 17 Dec. 1975, art. 1-3; In the UK a similar approach was taken in Case CE/9742-13 Phenytoin, 7 Dec. 2016, Annex B.

158 Price level refers to the total remuneration charged by the platform and price structure refers to the division of remuneration across the platforms' customer groups.

159 Andrei Hagiu, 'Multi-sided platforms: From microfoundations to design and expansion strategies' (2007) Harvard Business School Strategy Unit Working Paper (09-115) <https://ssrn.com/abstract=955584> accessed 22 Feb. 2021; Andrei, 'Pricing and Commitment by Two-Sided Platforms' (2006) 37(3) The RAND Journal of Economics 720; Thomas Eisenmann, Geoffrey Parker and Marshall van Alstyn, 'Strategies for two-sided platforms' (2006) 84(10) Harvard Business Law Review, at 3-6.

other (non-paying) app developers.[160] While it can be expected that such parties are willing to carry the financial burden of serving the App Store service to consumers, it may not be so with respect to other developers. If the Commission were to find this pricing structure of the App Store abusive because it leads to excessive prices for the paying developers, the remedy should not go further than requiring an adjustment to the structure in a manner that better corresponds with the economic value provided by the App Store to all the customer groups using it. Such a requirement would then be coupled with a monitoring mechanism that would require Apple to communicate its structure adjustments periodically. During such periodical reporting moments it would be up to the Commission to make sure that the adjusted pricing structure corresponds with the economic value provided by the platform to its customer groups. This in turn also requires that the Commission looks at whether such adjusted structure and the level of fees charged from each customer group takes better account of the network effects at play on the platform and the homing patterns of the platforms' customers groups which would commonly affect the platform pricing scheme.[161]

While the platform would commonly take into account these factors due to the role of price schemes in the context of platforms, the outcome in practice can nevertheless be less desirable when the market conditions in a case support supra competitive prices. This could occur in scenarios where homing patterns display a bottleneck setting or multisided single homing with (significant) barriers to multi-homing. In such situations the dominant platform would have significant degree of market power over one or more of its customer groups allowing it to achieve relatively higher prices than in situations of multisided multi-homing.[162] Consequently, in certain market conditions prices may remain supra competitive even when adjustments to the price structures are made. For example, in the case of Apple App Store if the fee charged from paying app developers would be redistributed differently across all app developers the total level of such prices would still remain relatively higher than in a situation where both consumers and app developers could use third party app stores (i.e. multi-home); something which is not possible at the moment as Apple (technically and contractually) prevents it.

160 This is according to Apple's own data, see < https://www.apple.com/ie/ios/app-store/principles-practices/> accessed 2 Feb. 2021.

161 These settings are considered to have a significant impact on the pricing scheme of the platform see e.g. Feriha Zinngal and Frauke Becker (2013) *supra* (n 88); Evans and Schemalensee (2014) *supra* (n 77).

162 Ibid.

Accordingly, in cases where adjustments are required, these should also be coupled with a prohibition to take actions that will drive the platform customers into homing patterns that are characterized by (relatively) higher prices. Where such patterns existed at the time of the abuse, the remedy should require that the dominant platform also cease to take actions that encourage and solidify such patterns. This would occur, for example, if Apple would give a poorer ranking to apps that are also available in other app stores.[163] While such an obligation would attempt to bring the market to a different setting than the one prior to the abuse, which may be considered as going too far, it may be nonetheless required in order to prevent repetition. In the absence of changing homing patterns the (structural) market problem in such cases will continue to enable the concerned platform to extract supra competitive prices from its customers. Furthermore, where the supra competitive prices are used to increase participation on the platform through more significant cross-subsidization such an abuse may help fuel the positive feedback loop on the platform and lead in the long run to market tipping with respect to one or more of the platform customer groups. For example, if Uber Eats, assuming it has a dominant position, would start charging excessive transaction fees from restaurants in order to finance more generous promotions for consumers this is likely to attract more consumers which in turn will attract more restaurants, despite the higher fees of Uber Eats, and so on. Nevertheless the higher fees of Uber Eats in such a case may, in the long run, also prevent restaurants from multi-homing that inevitably will involve extra costs, possibly resulting in single homing and market tipping on both sides of the platform. Accordingly, in such situations solely requiring the dominant platform to reduce its fees may not be sufficient to eliminate the competitive harm created by such practices if multisided multi-homing is undermined by the concerned platform following its pricing adjustments.

In extreme cases, for example where consumer biases are formed,[164] the homing patterns achieved by the dominant platform may persist even after its price adjustments, indicating that the market has tipped or is in the process of tipping in its favor. These situations could require turning to the remaining last resort option of imposing a structural remedy. In such

163 A similar strategy was adopted by Expedia in Australia with respect to hotels that wanted to have a listing on multiple hotel reservation platforms. See Natalia Drozdiak, ' Hotel site accuses Booking, Expedia of EU Antitrust breaches' (Bloomberg, 11 Jun. 2019) < https://www.bloomberg.com/news/articles/2019-06-11/hotel-site-accuses-booking-expedia-of-breaking-eu-antitrust-law> accessed 10 Jan. 2021.

164 E.g. in the case of Uber Eats this could occur when consumers keep using the platform since they got used to, even when they no longer receive very generous offers as they did in the past when the excessive fees charged from restaurants financed such offers. This in turn will also keep restaurants on Uber Eats, particularly once fees are lowered post the finding of abuse.

cases the structural remedy would need essentially to strip away the illegitimate competitive advantages gained by dominant undertaking, which in practice may translate to vertical or horizontal divestures depending on the business model(s) of the concerned undertaking. For example, in the case of platforms that operate on a stand-alone basis such as Amazon marketplace, Uber, Uber Eats, Booking.com and others, a horizontal divesture into several (competing) entities separated across several national markets would dilute the competitive advantage gained by the abusive actions and prevent repetition in the future. In the case of app stores, which form part of a vertical construction typically owned by a single undertaking, a vertical divesture where the app store is sold to a third party would remove the competitive advantage gained by dominant undertaking and eliminate its ability and incentive to repeat such actions in the future.

Admittedly, however, such measures would go very far and should be reserved for scenarios where clear evidence of market tipping is available. Moreover, such outcome should not be susceptible for challenges by the behavioral remedies described above due to the indirect network effects at play and the potential consumers bias created through the abusive practices of the platform. Furthermore, such evidence should be complemented by evidence that the market conditions make it (highly) unlikely that the prices imposed by the dominant platform could self-correct.[165] Accordingly, the respective market should display high and lasting barriers to entry, significant market power and absence of sector regulations.[166] Finally, if such far-reaching measures are considered in the process of investigations, it is best that these are implemented following the strategy of mixing interim measures and flexible remedies following a final decision as previously described in the context of tying. This is not only so as to avoid imposing disproportionate remedy as such, but also in order to prevent the undesirable effect that (over-) enforcement may have on investments in innova-

165 Although excessive prices are commonly believed to self-correct, it has be argued that such an outcome may not alywas take place. See e.g. Ariel Ezrachi and David Gilo, Are Excessive Pricing Really Self-Correcting?' (2009) 5(2) Journal of Competition law and Economics 249.

166 These criteria has been considered to be the necessary filter for intervention in excessive pricing scenarios, which are meant to prevent over-enforcement and the undesirable effects thereof. See e.g. David S. Evans and A. Jorge Padilla, 'Excessive Prices: Using economics to Define Administrable Legal Rules' (2005) 1(1) Journal of Competition Law and Economics, 97; L.H Roller, 'Exploitative Abuses' in Claus-Dieter Ehkermann and Isabela Atanasiu (eds), *European Competition Law Annual 2007: A reformed approach to Article 82 EC* (Oxford, Hart Publishing, 2008), 525; E. Paulis, 'Article 82 and Exploitative Conduct' in Claus-Dieter Ehkermann and Isabela Atanasiu (eds), *European Competition Law Annual 2007: A reformed approach to Article 82 EC* (Oxford, Hart Publishing, 2008), 515; M. Motta and A. de Streel, 'Excessive Pricing in Competition Law: Never Say Never?' in Swedish Competition Authority (ed.), *The Pros and Cons of High Prices* (Stockholm, Konkurrensverkt, 2007).

tion.[167] In the absence of prospect high (and even excessive) returns the incentives of undertaking to invest in innovation will be diminished.[168] While this concern is not always convincing or a legitimate reason to avoid intervention in the pricing practices of dominant undertakings in the case of traditional markets,[169] its validity in digital markets should not be dismissed with too much ease. After all digital markets are characterized by high risks, intense innovation and high (expected) returns.[170] Intervening in the price settings of such undertakings will undoubtedly reduce the attractiveness of entering and competing in such markets, and even more so if such intervention would go as far as to sever the business structure of the concerned undertaking once it reaches its peek commercial success.

C. Discriminatory pricing

Discriminatory pricing practices commonly entail situations where an undertaking is offering identical goods or services to different customers for dissimilar prices for reasons unrelated to costs.[171] Generally, such practices can manifest in three forms: competitor discrimination, customer discrimination and consumer discrimination. The first two forms of discriminations are covered by competition law policy and concern situations where the pricing practices of the dominant undertaking either distorts competition between its customers in a market where it is not active or distorts competition in a vertically related market where it is active (via subsidiary).[172] The legal test for establishing such an abuse as covered by art. 102 (c) prohibits the dominant undertaking from applying (i) dissimilar conditions to (ii) equivalent transactions and thereby putting some of its trading parties at (iii) competitive disadvantage.[173] In the case of platforms discriminatory price settings will occur where the pricing structure and/or fee calculation method of the platform manifests in different prices applied the various customer groups of the platform whose members may compete with each

167 Ibid.

168 Ibid; In the US the prospect of monopoly prices was even considered to be a driver of competition rather than a manifestation of its failieure. See Verizon Communication Inc v Law Offices of Curtis V Trinko, LLP 540 US, 398, 407 (2004); Pasific Bell Telephone Co v LinkLine Communication, Inc 555 US__ (2009).

169 See e.g. Ariel Ezrachi and David Gilo, 'Excessive Pricing, Entry, and Investment: Lessons from the Mittal Litigation' (2010) 76(3) Antitrust Law Journal 873, 894-896.

170 See e.g. Ebru Gökçe, ' Restoring competition in 'winner-take-all' digital platform markets' (2019) UNCTAD Research Paper No. 40 < https://unctad.org/system/files/official-document/ser-rp-2019d12_en.pdf> accessed 5 Feb. 2021.

171 See e.g. OECD Roundtable on Price Discrimination – Background note from the Secretariat DAF/COMP(2016)15, at 6-7 < https://one.oecd.org/document/DAF/COMP(2016)15/en/pdf> accessed 10 Dec 2020.

172 Robert O'Donghue and Jorge Padilla (2014) *supra* (n 141) at 524-529.

173 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* ECLI:EU:C:2018:270, para. 24-25.

other. For example, such a situation could arise if the commission charged from owners listing their property on platforms like Booking.com differs based on the type of property listed (e.g. hotel, hostel or private villa). When such property owners are in practice competitors, the differences in fees charged by Booking.com may put some at a competitive disadvantage. Such a situation would entail a form of customer discrimination, as Booking.com is not active of the same market as the property owners that list their offers on the platform.

Competitor discrimination could occur, for example, in the cases of the Apple App Store, when apple charges significant commission fees from app developers that offer apps on the App Store which compete with those of Apple or its subsidiaries, which are not subject to such commission fees. In some cases concerning platforms, both types of discrimination can occur simultaneously. In the example of Apple, this would occur if Apple's App Store price structure, which is based on business model type, also results in charging different prices from competing apps offered in the App Store.

In the context of EU competition policy, cases concerning discrimination were commonly resolved by requiring the removal of the discriminatory trading condition of the dominant undertaking.[174] In the case of pricing, such a requirement would lead the dominant undertaking to offer the disadvantaged parties similar prices (and terms) to those offered to the previously favored parties. Such adjustments do not necessarily require a lowering of the prices for the harmed parties as art. 102 (c) is not concerned with the level of prices but rather with the effects of price discrepancy.[175] Furthermore, the adjustment to the prices of the dominant undertaking, when considering the test for this abuse, would also not appear to require the dominant undertaking to offer identical prices to all its trading parties.[176] The decisive aspect concerning the discrepancy in prices is whether such discrepancy is capable of creating a competitive disadvantage.[177] Since not every difference in price may translate into a competitive disadvantage,[178] it would also not be required for the dominant undertaking to apply identical prices to its trading parties once an abuse is established. The remedy in such cases should focus primarily on ensuring that the competitive disadvantage can no longer be caused by the concerned undertaking's pricing. In this

174 Robert O'Donghue and Jorge Padilla, *The law and Economics of Article 102 TFEU* (3rd Edition, Hart Publishing, 2020) at 1184-5.

175 Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, para. 24-25.

176 David Bailey and Laura Elizabeth John (2018) *supra* (n 136) at 917.

177 Jonathan Faull & Ali Nikpay (eds) *The EU Law of Competition* (3d ed., OUP 2014) pp. 536.

178 See Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270, para. 26.

regard a remedy requiring identical prices *per se* would go beyond what is needed to bring practices of the concerned undertaking in line with EU competition law policy,[179] making such a requirement disproportionate.

When dealing with discriminatory pricing by online platforms a cautionary approach to price adjustments should be taken due to the previously mentioned role played by platform pricing. Accordingly, instructions as to how price levels and/ or structures should be adjusted are best kept at a general level where the concerned platform is required to adjust its price levels and/or structures to settings which do not create a competitive disadvantage to some of its trading parties (i.e. commercial customers). In order to do so, a remedy should also require a detailed explanation by the dominant platform on its pricing mechanisms and a simulation of such mechanisms for its various customer groups. When reviewing such information, the competition authority should firstly check whether the pricing mechanism of the platform works along the lines of competition with respect the platform customer groups. This entails assessing if the price mechanism of the platform is based on criteria that effectively divide the (commercial) customers of the platforms into non-competing groups of customers. This occurs, to some extent, in the case of the Amazon Marketplace, where the commission fee charged by Amazon, per transaction, from sellers depends on the type of products they sell.[180]

Consequently, sellers that offer similar goods will be subject to similar fees while sellers that offer different categories of products will be subject to different fees. To the extent that there is no competition between the product categories defined by Amazon, the price differences experienced by sellers should not impact competition between sellers on the platform. When the platform adjusts its price mechanisms in a manner that effectively works along the lines of competition, meaning the mechanism criteria prevent a situation where competing customers are subject to different fee rules, any price discrepancies between the platform customers will no longer fall under art. 102 (c) TFEU. A remedy that leads to such an adjustment would effectively bring the infringement to an end, prevent its repetition and re-establish a healthy sate of competition between the trading parties on the platform.[181] This outcome could also hold when the abuse also concerned

179 Such a requirement would imply that the wording of art. 102(c) with regard to competitive disadvantage can be disregarded, as it would equate discrimination with the presence of competitive disadvantage contrary to what the current formulation and interpretation by the CJEU would indicate.

180 For Amazon's pricing scheme see <https://sell.amazon.com/pricing.html> accessed 12 Feb. 2021.

181 Prevention in this regard is limited to situations where the adjustment is done in a future proof manner that takes into account the evolution of the business models of the platforms' commercial customers.

an element of competitor discrimination as long as the concerned platform does indeed apply (at least to a certain extent) the fee rules also to its own entity active in the vertically related market of one of the platform customer groups. Of course like in the case of most pricing abuses, a monitoring element that obliges the concerned platform to provide the competition authorities with periodical updates concerning its pricing rules should be included in the remedy.[182]

Although a comparable adjustment to the pricing rules of the platform would be desirable, imposing such a specific adjustment at the remedy stage may not be possible as it essentially requires that the concerned platform charges identical fees from its competing trading parties (i.e. commercial customers), which in turn goes beyond what is required by art. 102 (c) TFEU.[183] Accordingly, in practice, the concerned platform will have a choice between making such comprehensive adjustments and more pin pointed adjustments that address solely the specific factors of its fee rules that lead to a detrimental price discrepancy between its competing commercial customers. In the latter cases, it is imperative that the monitoring mechanism of the remedy enables the competition authority to accurately examine all the factors impacting the platform fees and evaluate the impact of the changes made to these factors by the platform. This is particularly important in cases where the adjustment concerns multiple factors, which may not entirely overlap with the factors examined by the competition in the phase of establishing that abuse.[184] Such examination would require simulations of the new fee factors with respect to all platform customers,[185] as well as detailed reporting of their effect in practice with respect to the commercial customers of the platform previously harmed by the abusive platform pricing. Such monitoring mechanisms should run for a period of time that reasonably correlates with the nature of competition between the commercial customers of the platform. For example, if competition between the commercial customers of the platform concerns yearlong contracts,[186] the monitoring obligations should run for several years in order to be enable the Commission to assess whether the changes made by the platform were sufficient.

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182 See *supra* (n 148).

183 On this see Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* ECLI:EU:C:2018:270, para. 23-28. Nevertheless, achieving such an outcome in could be possible if the Commission (or NCA) would indicate that such a solution would constitute the preferred option for such cases, which in turn may stir platform towards implementing such adjustments.

184 This can occur for example when the concerned platform introduces a new factor to its fee rules that previously did not exist.

185 In order to avoid having such changes distort competition among other commercial customer than the ones identified at the stage of abuse.

186 E.g. this can occur on a platform where mobile phone operators can offer consumers to sign-up to their call and data plans which commonly concern one or two year contracts.

In cases concerning customer discrimination, where the dominant platform is not active on the market where its prices distort competition, there will not likely be a need to go beyond the mentioned behavioral remedies. In such cases the incentive and interest of the dominant undertaking to continue with its abusive pricing practice and/or to repeat such practices in the future are limited.[187] This is particularly so in the case of platforms, which commonly seek to increase the number of customers they aim to get on board as this in turn increases the chances that more profitable matchmaking interactions take place on the platform.[188] Distorting competition between customers in such circumstances would therefore risk undermining the ability of the platform to get and keep the desired kind of commercial customers on board.

In situations where competitor discrimination takes place, however, the situation may be different as the interest of the platform to get and keep certain customers on board may conflict with its own interests in a vertically related market. Under such circumstances, the dominant platform may continue to have the ability and incentive to pursue its abusive pricing practices even after having a behavioral remedy imposed on it. This is turn will allow the dominant undertaking to leverage its power from the market of the platform to the vertically related market where it competes with some of the platform's commercial customers. Consequently, in comparable cases structural remedies may be required in addition to a requirement to adjust the price settings of the platform. Structural remedies in such context do not necessarily need to entail full-fledged vertical divestures. A corporate separation between the platform and the division that competes with the platforms' commercial customers in a vertically related market may suffice. Such a separation will create more transparency in the accountancy of the platform and allow the competition authority to monitor compliance with the requirement imposed on it to bring its pricing in line with art. 102(c) TFEU. A comparable combination of behavioral and structural elements would likely effectively bring the abuse to an end, (help) prevent its repetition and reestablish a state of competition on the platform as existed prior to the abuse. To some extent one may even argue that such a combination will be the most effective remedy, and thus likely to be considered proportionate given that behavioral measures alone are not likely to achieve the same result when the platform and its vertically related entity are fully integrated.

187 Robert O'Donghue and Jorge Padilla (2020) supra (n 174) at 953-958; Both the AG and the CJEU seemed to have doubts with regard to such anti-competitive incentive in the case of MEO because of the commercially unsound consequences of such practices. See Case C-525/16 *MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2018:270 , para. 35 and Case C-525/*16 MEO — Serviços de Comunicações e Multimédia SA v. Autoridade da Concorrência* [2018] ECLI:EU:C:2017:1020 Opinion of AG Wahl, para. 80.

188 E.g. more clicks on ads, more sales of goods or content, more service memberships, more reservations, etc.

In cases where a corporate separation already exists between the platform and its vertically related entity a full-fledged vertical divesture may constitute the next stage. However, such a radical remedy should be reserved to situations where the previously mentioned solutions are undermined by the concerned platform and/or repetition of abusive competitor discrimination is established.

When it comes to the manner in which the above mentioned remedies are best applied, using interim measures before reaching the final decision of abuse would help reaching the most effective, proportionate, remedy as previously discussed with respect to other abuses. This is particularly important in cases where structural remedies are considered as these will be hard to defend as a first choice remedy given that the suggested behavioral remedies may also suffice. Admittedly, however, meeting the threshold of *irreparable harm to competition* as required by art. 8 of regulation 1/2003 would be quite challenging in situations concerning price discrimination on a specific platform as it would imply that competition on the affected market occurs only or primarily on the concerned platform. Accordingly, when it comes to structural remedies, it may entail that such measures will likely only be possible as part of the more advanced stages of a flexible remedy. Otherwise, in the context of current practice, structural remedies could be expected to be implemented as a first choice pick only in cases where repeated abuses have been established. In other scenarios it could always be argued that behavioral remedies are capable of achieving the same or similar results, thus making structural remedies often disproportionate as a first choice.

6.4 Remedy design and the Digital Markets Act

On the 15th of December 2020, the Commission published its long awaited proposal for a regulatory framework for the digital sector, referred to as the Digital Markets Act (DMA).[189] According to the Commission the aim of the DMA is to complement competition policy and help create fair and contestable markets in the digital sector, which at times may be undermined by the business practices of providers of platform services that posses a high degree of market power.[190] For this reason, the DMA is also designed to apply solely to actors which have control over the gateways to the digital sector. Accordingly, the application scope of the DMA is limited to providers of a *core platform service* that have reached the status of *gatekeeper*. The term *core platform service* does not cover all platforms as such, nor is it limited

189 European Commission, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final.

190 Ibid, recitals 1- 10.

solely to services that meet the criteria of multisided markets as defined by economic literature.[191] Instead, the term *core platform service*, defined in art. 2 of the DMA, refers to a non-exhaustive list of commercial services that are commonly provided by multisided platforms. A provider of a *core platform service* may qualify as a gatekeeper when it (i) has a significant impact on the internal market, (ii) serves as an important gateway for both consumers and business users to reach each other, and (iii) enjoys an entrenched and durable position in its operations or it is foreseeable that it may reach such a position in the near future.[192]

These criteria require in essence reaching similar findings as those required for establishing dominance under art. 102 TFEU. However, unlike a finding of dominance, the threshold of *gatekeeper* does not require defining the relevant market, which is problematic in the case of platforms because of their multisided nature.[193] Instead, the DMA relies on predefined quantitative criteria that are assumed to capture significant degrees of market power. Accordingly, the criteria defining *gatekeepers* are presumed to be met when (i) the undertaking providing the core platform service has an EEA annual turnover of EUR 6.5 billion or a market value of at least EUR 65 billion, and provides its core service in at least three member states, (ii) has more that 45 million monthly active end users and more that 10,000 yearly active business users, and (iii) fulfills the previous two points for the past three financial years.

Once it is established that the concerned undertaking meets both jurisdictional thresholds, it will become bound to the obligations set out in art. 5 and 6 of the DMA. Both articles cover far-reaching obligations that limit the commercial (and technical) freedom of *gatekeeper* platforms significantly. A great deal of such obligations concerns the prohibition of various forms of cross-platform tying.[194] Such provisions, while far-reaching, are, however, limited to scenarios that can arise with respect to the specific commercial services covered by the DMA for the pursue of defining the meaning of the term *core platform service*. Nevertheless, such obligations can be complemented by new ones as both the list of *core platform services* and art. 5 and 6 of the DMA can be updated at a later stage.[195] By contrast, on-platform tying issues do not appear to be addressed at all. The obligations selected

191 E.g. art. 2(h) refers to cloud computing services as a core platform service, however, such services are not necessarily multisided. Cloud computing services may at time simply entail renting out computing capacity for customers that are unable to have such capacity in-house. In such situations there is the platform does not serve two of more separate customer groups, nor are there any network effects at play as is commonly required in order for a service to be considered multisided.

192 Art. 3(1) of the DMA.

193 Supra note (n. 4).

194 Cross-platform tying is covered in art. 5 (a), (e) and (f), and art. 6 (b), (c).

195 Art. 10 of the DMA.

with regard to tying, entail situations that can only take place in relations across platforms. This can be explained to some extent by the fact that the formulation of the DMA seems to imply that each platform provides a single *core platform service* with the exception of advertisement services, which may be combined with another *core platform service*.[196] Therefore, a multisided platform like LinkedIn would be considered to provide at best two services, namely advertising and online social networking services.[197] Such an approach inevitably reduces the possibility of observing on-platform tying as is limits such scenarios to situations were of a *core platform service* of an undertaking is tied with its advertisement service offered on the same platform. Consequently, it also means that such on-platform tying would occur solely with respect to the commercial customers of the platform as consumers do not acquire such services from platforms. If this indeed proves to be the approach taken in the context of the DMA this will be a difficult situation to adjust as the possibility to update the DMA concerns primarily the obligations in art. 5 and 6 which are bound by the term *core platform service*.[198]

If a platform cannot be considered to provide more than one of such services, other than advertising, then updating art. 5 and 6 can change little with respect to *on-platform* tying situations. If, however, it would be possible to read the DMA in a manner that allows to finding that a platform can provide more than one *core platform service*, on-platform tying could be included at a later stage in the context of an eventual update. In such a situation, it would be quite reasonable that obligations concerning on-platform tying were not included as the DMA indicates specifically that the obligations for gatekeepers are based on past legal and economic experience on such practices.[199] This can indeed be argued in the case of cross-platform tying as this occurred in *Microsoft* and *Google Android*. On-platform tying, however, has not been subject to previous competition law scrutiny, and thus would not fulfill this experience criterion of the DMA.

When it comes to platform pricing, a similar picture is painted. Accordingly, the current DMA proposal appears to tackle very few potential pricing problems that could arise in the context of platforms. The most prominent pricing related practice concerns the prohibition to use wide price parity clauses,[200] which has been the subject of many procedures in the EU in the context of hotel room booking platforms and the investigation of the

196 Art. 2 (2)(h) of the DMA.
197 Art. 2 (2)(c) and (h) of the DMA. This would off course be at odds with the market definition for LinkedIn that was previously explored when it was acquired by Microsoft. See *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016
198 Art. 10 of the DMA.
199 Recital 33 of the DMA.
200 Art. 5(b) of the DMA.

Commission on this matter in the case of Amazon.[201] Beyond this, the matter of pricing primarily concerns access to the data generated by and/ on the platform providing the *core platform service*.[202] Such matters can be said to relate to the Commission's past experience in previous merger cases where the respective concentrations gave raise to potential concerns with regard to the data possessed by the concerned undertakings.[203] Obligations that would simulate more 'traditional' price related abuses under art. 102 TFEU are, however, not included. Similar to situations of on-platform tying, such cases have not been part of the Commission's experience arsenal in the context of platforms and could therefore not be included without resistance at this stage. Accordingly, such aspects can be expected to be included once the respective abuse of dominance cases in the case of platforms have been covered by the Commission.

Under the circumstances described above, it can be argued that the DMA may indeed play a role when it comes to the design of remedies in the context of art. 102 TFEU procedures. However, due to the high jurisdictional thresholds and specific scope of application of the DMA this role will likely be limited in practice. Firstly, the threshold of *gatekeeper* used by the DMA entails that the DMA will only be relevant for abuse of dominance cases and/ or investigations where the dominant platform fulfills this criterion as well. In practice, this means that the DMA will be irrelevant for platforms, which do not provide a *core platform service* as defined by the DMA. Furthermore, even when the dominant platform provides such a service it would need to meet the quantitative thresholds of the DMA described above. Having a dominant market position under art. 102 TFEU does not require, however, meeting such (significant) thresholds. Dominance is established based on the *relative* market power of the concerned undertaking in relation to its direct and potential competitors.[204] Accordingly, in practice, where the markets in which the dominant platform is active are relatively narrow or evolving, it may not meet the threshold of *gatekeeper* thus falling outside

201 See e.g. Bundeskartellamt Prohibition decision 20 Dec. 2013 in the case of HRS, B9-66/10; Bundeskartellamt Prohibition decision, 22 Dec. 2015, in the case of Booking.com B.V, B9-121/13; Decision of the Competition and Markets Authority, Price comparison website: use of most favoured nation clauses Case 50505, 19 Nov. 2020; Competition Commission COMCO prohibition decision, 19 Oct. 2015, Online-booking Platforms for Hotels; *E-book MFNs and related matters (Amazon)* (Case AT.40153) Commission decision of 4 May 2017.

202 Art. 5(g) and art. 6 (g), (i) and (j) of the DMA.

203 See e.g. *Microsoft/LinkedIn* (Case COMP/M.8124) Commission decision of 6 Dec. 2016; *Facebook/ WhatsApp* (Case COMP/M.7217) Commission decision of 3 Oct. 2010; *Google/ Double Click* (Case COMP/M.4731) Commission decision of 11 Mar. 2008; *Sanofi/ Google/ DMI* (Case COMP/M.7813) Commission decision of 23 Feb. 2016; *Apple/ Shazam* (Case COMP/M.8788) Decision of 6 Sep. 2018.

204 This communicated to a great degree by the CJEU's interpretation of the term dominance, see Case 27/76, *United Brands Company v. Commission* [1978] ECLI:EU:C:1978:22, para. 65; Case C-85/76 *Hoffmann-La Roche v Commission* [1979] ECLI:EU:C:1979:36, para. 38.

the scope of the DMA. Where markets are very large, the opposite may be true, meaning that platforms that fulfill the threshold of *gatekeeper* may not be considered dominant for the purpose of art. 102 TFEU investigations. With these considerations in mind, the relationship between the DMA and art. 102 TFEU can be divided into three possible scenarios: (i) the dominant platform is also a gatekeeper, (ii) the dominant platform is not a gatekeeper (yet), and (iii) the gatekeeper platform is not dominant.

In the first scenario, the DMA will be the most relevant in terms of remedy design. In such situations the DMA will introduce specific obligations that may complement the obligations that have been imposed following an abuse of dominance or otherwise contribute to the design of remedies that need to be imposed once an investigation of abuse reaches the final stage. Accordingly, if an abuse of dominance is caused by a platform that is also a *gatekeeper*, the remedy imposed for such an abuse is found will have to take into account the obligations that already apply to it under the DMA. The competition law remedy could then complement the DMA's (general) obligations by more tailor made measures directed, for example, at the consumer bias that may have been created by the abusive practice. This may allow an overall more comprehensive package of measures, which would otherwise perhaps not be possible as a competition law remedy under art.7 of Regulation 1/2003. Where the abuse of dominance concerns a practice that was meant to be covered by the DMA, such as a specific form of cross-platform tying, the competition remedy for such an abuse may take the eventual shortcomings of the DMA into account. This in turn may increase the likelihood that structural remedies will be considered proportionate in the context of art.7 of Regulation 1/2003. If a dominant platform abused its position despite the behavioral obligations it faced under that DMA, it would be harder to argue that similar behavioral remedies in the context of competition law proceedings would be effective, consequently making a stronger case for the implementation of structural remedies.

In the second scenario where the dominant undertaking is not (yet) a *gatekeeper*, the DMA may serve as a safety net or reinforcement for the competition law remedies, in the long run. Accordingly, the behavioral or structural remedies implemented following a final decision of abuse may be reinforced or reintroduced at a later stage under the DMA.[205] Of course, such a development may not always be a positive outcome since it implies that in some situations the already dominant platform has continued to grow, following its abusive practices and corresponding remedies, to the point it

205 E.g. if behavioral remedies concerning cross-platform tying are adopted only for a given period of time these may be reintroduced by the DMA once the dominant undertaking also qualifies as a gatekeeper.

also became a *gatekeeper* under the DMA.[206] Nevertheless, if the dominant platform qualifies as a gatekeeper because the service matchmaking functionality it offers counts a (new) core platform service under art. 2 of the DMA, this transition may not necessary imply a worsening of competition in the market(s) where the concerned platform is active. Accordingly, when such a specific evolvement takes place the obligations in the DMA may complement the effectiveness to the competition law remedies to the extent these are not the same.

In the third scenario, where the *gatekeeper* platform is not dominant for the purpose of an art. 102 TFEU investigation, the DMA will not directly be relevant for remedy design, as in the absence of dominance no legal intervention is possible under this provision.[207] The prospective value of the DMA in such cases would be potentially two-fold. First, the obligations imposed on gatekeeper platforms may prevent such platforms from abusing their market power even when these become dominant as the DMA preemptively prohibits practices that could constitute abuses of dominance. Second, the effects of the DMA's obligations can be used as material for the purpose of imposing remedies on the gatekeeper platform in the event that it also becomes dominant and its business practices breach art. 102 TFEU. In this regard, if the DMA's obligations for the dominant platform, which applied due to its earlier *gatekeeper* status, did not prevent it from abusing its market dominance at a later stage, it could be argued that a more intrusive and perhaps structural remedy under art. 7 of Regulation 1/2003 may be easier to justify. In this regard, the period of application of the DMA's obligation on the *gatekeeper* platform can be seen as a test period to the effectiveness of similar (behavioral) remedies that could be imposed in the event an abuse once the *gatekeeper* platform becomes dominant. Consequently, such cases will require less experimentation with interim measures in order to find the most effective remedy at the stage of a final decision.

Finally, it should be noted that the above-mentioned implications of the DMA for remedy design, concerning abuse of dominance cases, are currently primarily relevant for cross-platform tying practices. Such implications may, nevertheless, gradually extent to other potentially abusive practices following future updates of the DMA in terms of its application scope and arsenal of obligations for gatekeeper platforms. However, such expansions would firstly require the Commission to have experience with

206 This would occur if the dominant platform did not fulfill the art. 3(2) thresholds of the DMA at the time of the abuse.

207 Only dominant undertakings have a 'special responsibility' under art. 102 TFEU. See Case 322/81 *NV Nederlandsche Banden Industrie Michelin v Commission* [1983] ECLI:EU:C:1983:313, para. 57; Case T-65/98 *Van den Bergh Foods v Commission* [2003] ECLI:EU:T:2003:281, para.159; David Bailey and Laura Elizabeth John (2018) *supra* (n 132) at 896-897.

such additional abuses in the context of multisided platforms. In practice this may take a significant amount of time as such experience requires not only reaching the stage of a final decision on abuse by the Commission but also that such a decision survives the stage of judicial review by EU courts.

6.5 Conclusion and final remarks

Similar to the finding of infringements, the design of effective and proportionate remedies in the case of online platforms is a complex matter. Although the nature of the competitive concerns that can arise from the abusive behavior of dominant platforms is similar to traditional market settings, the manner in which such concerns manifest in practice is quite different. Accordingly, the competitive harm that needs to be addressed in such cases will commonly extend to more than one market due to the multisided nature of platforms. Furthermore, the indirect network effects that are commonly at play on every multisided platform may at times amplify and prolong the competitive harm caused by the abusive practices of platform undertakings. This will occur in situations where the abusive practice triggers or further fuels the positive feedback loop such network effects create between the customer groups of the platform. Amplifying this feedback loop may mean that the dominant platform could continue to grow even after abandoning its abusive practices. In the most extreme cases, such persisting growth may even lead to a change to the participation patterns of platform customers, which will confer the already dominant platform even more market power. Such circumstances, if left unaddressed, may lead to the markets in which the dominant platform is active to tip in its favor. Once that occurs, competing platform (and non-platform) undertakings will no longer be able to successfully compete with the dominant platform even when the latter does not resort to other strategies than competition on the merits. Consequently, in order for competition law remedies to be effective they need to be able to tackle the anti-competitive harm caused across multiple markets and prevent any of them from tipping in favor of the dominant platform.

The current legal framework of EU competition policy does, in theory, provide the Commission with tools it requires in order to design effective remedies in the case of platforms, despite the challenges posed by such actors. However, the manner in which this framework has evolved and has been used in practice can make the implementation of effective remedies in the case of platforms very challenging, particularly when structural remedies would be required. As abuses of dominance by platforms will often involve competitive harm across multiple related or interrelated markets, preventing such harm from persisting to the benefit of the dominant platform will at times require structural separations. The adoption of such measures is, however, limited to situations where behavioral remedies

cannot attain similar results, and of course subject to the principle of proportionality that requires that such measures be necessary and not overlay burdensome in relation to the aim pursed. This combination of requirements makes the implementation of structural remedies as a first choice solution highly unlikely, even in the case of platforms. This is confirmed by the Commission's past practice, which shows little to no traces of structural interventions in the case of abuses of dominance, in stark contradiction to its practices in the case of EU merger control. Consequently, to the extent that the competitive harm caused by platform would require a structural intervention, it is quite unlikely that such a step would indeed be taken in practice, as it is difficult to argue upfront that behavioral remedies will not be (as) effective. This is particularly so when considering that almost the entire practice of the Commission consists of behavioral measures, even when dealing with multi-sided markets in the cases of *Microsoft* and *Google Android*.

Proving that structural measures are indeed better suited to deal with a specific case would require more experimentation by the Commission with regard to interim measures. The use of interim measures could serve as a preliminary stage before the final finding of abuse during which the effectiveness of behavioral remedies could be tested. Behavioral measures that appear to deliver the desired effects could be kept or slightly modified at the stage of the final decision on abuse. However, in cases where such behavioral measures have little effect on the competitive harm caused by the dominant undertaking, such outcome could serve as evidence in favor of implementing structural remedies at the phase of the final decision on abuse. Although, this approach to remedies is theoretically possible, the current practice of the Commission and EU courts on interim measures makes such use of interim measures quite unlikely. The implementation of interim measures, requires namely evidence of a *prima facie* infringement and a risk of (potential) *irreparable harm to competition*, which are high thresholds for a Commission to meet as evidenced by the fact the it only used interim measures once in the past twenty years.

Although finding a prima facie infringement is not as difficult as establishing an abuse, meeting this threshold is only likely to be possible in the case of established theories of harm, which may not always be the case with regard to platforms. Furthermore, while it can be argued the risk of market tipping in the case of platforms entails a genuine example of irreparable harm to competition, it is unclear whether EU courts are willing to interpret this criterion in a comparable fashion. Therefore, despite the theoretical potential of the current EU policy framework to deal with platforms it would appear that the choices made by previous practice do not allow the Commission to utilize this potential to its fullest extent. In this regard opting for the option of flexible remedies, which incorporate a trial-and-error mechanism through an intensifying scale of behavioral and

structural measures triggered in accordance with market developments, may constitute a more feasible solution. Of course such an option brings along a different set of challenges concerning associated with predefining the specific conditions and market developments that would trigger the respective layers of a flexible remedy. Nevertheless, from a formal legal perspective such a solution appears to face fewer challenges associated with previous practice provided that it is pursued in a manner that also account for the legal certainty concerns such dynamic remedies may create for the concerned undertakings in each case.

Given the challenging dynamics of the current legal framework, it can be said that the arrival of the DMA would entail a welcome addition. The DMA could complement the remedies that the Commission would impose following a finding of abuse by a dominant platform and at times even prevent such platforms from implementing abusive behavior. As it would be an entirely new tool, its application in practice may be less restrained than the current competition law framework, which would allow for a more strategic use of the two frameworks in order to deal with challenging cases involving platforms. The complementary nature of the DMA will, however, be often limited in scope due to its jurisdictional thresholds, which concern the supply very specific commercial services by extremely large players, and the substantive obligations imposed by it, which are limited in their scope to a handful of competitive concerns. Nevertheless, such complementary relation between the DMA and competition practice may evolve overtime as the DMA can be periodically updated. Accordingly, the adoption of the DMA may help increase the effectiveness of competition law remedies that currently appears to be restrained by choices made in the past.

7 Overall Conclusions and Recommendations

7.1 Answers to the sub-questions of the research

The previous chapters have addressed the sub-questions of this research as noted in Section 1.2 of this dissertation. This section covers the insights provided in the respective chapters that are then merged in order to answer these sub-questions. The answers to the sub-questions are used to set the background note for providing an answer to the main research question addressed by this dissertation, which will be provided in the subsequent section.

7.1.1 Sub-question 1

What are the challenges posed by the inherent characteristics of online platforms for the application of the current EU antitrust law to these actors and what is the nature of the adjustments required in order to tackle them?

This sub-question has been addressed throughout the entirety of the dissertation. Each of the previous chapters has addressed this question from a different perspective and provided an answer to it in varying degrees of depth.

In chapter 2 that provides an overview of challenges posed by online platforms for the application of competition policy it was shown that such challenges appear not to originate from the wording of the treaty provisions (art. 101 and 102 TFEU) but rather from their practical application. Thus the nature of the adjustments or solutions required to overcome these challenges concerns for the most part changes in the practical application of the existing frameworks of art. 101 and 102 TFEU. The challenges identified concern three main steps of the application process of art. 101 and 102 TFEU. These steps are jurisdictional thresholds for legal intervention, the qualification of business practices as prohibited under their scope and the possibility of applying justifications and derogations under these provisions. When it comes to triggering intervention based on art. 101 TFEU the main challenge that arises in the context of online platforms stems from the fact that coordination and collusion among undertakings presupposes the presence of human intervention which may not always be present in fully automatized pricing processes. Such processes are made possible by the great degree of transparency that digital markets display that allows for

constant monitoring between competitors. Furthermore, even when coordination is a result of human intervention but implemented through digital communication means the current notions of agreement and particularly concerted practices may fail to cover such practices as these require a form of conscious human awareness with regard to such actions, which may be very difficult to prove in digital settings.

In the case of art. 102 TFEU intervention requires firstly the finding of dominance which must be reached by defining the relevant market in each case according to the CJEU. Performing this process in the case of platforms is however difficult due to their multisided nature which may require defining several separate yet related markets in which the market power of the concerned platform must be assessed. This entails also that the SSNIP test, which is often used as the main quantitative tool for delineating relevant markets, will have to be applied simultaneously across several markets. Some of these markets will entail products or services which are offered without charge (also referred to as zero priced) as is common in the case of platforms, which will require revisiting the price centered nature of this test. Past these thresholds for intervention, the assessment of the business practices of online platforms and their qualification as permissive or prohibited under art. 101 or 102 TFEU will require a more elaborate analysis than in the past.

While the qualification of business practices as a restriction of competition by object (or effect) or as a form of abuse remains possible, the manner in which such findings are reached requires an analysis that accounts for the multisided nature of platforms. This entails in practice that the assessment of (potential) anti-competitive effects of the investigated practices may need to extend across more than one (relevant) market. Extending the scope of the analysis in such a way is possible under the scope of both provisions and even required to some degree by the CJEU in its judgment in *Groupement Cartes Bancaires* where it noted that cross market analysis is required when two separate, yet related, markets display indirect network effects. The manner in which this should be done, however, is not entirely clear, as the case is the first of its kind, and provides relatively little guidance in this regard. This is unfortunate in the case of online platforms, as these will inherently display a degree of indirect network effects between the various customer groups they serve. Similarly, when evaluating the efficiency arguments put forward by online platforms suspected of engaging in prohibited practices such evaluation must extend to efficiencies generated across multiple separate yet related markets. Although such possibility is feasible under both provisions, the practice of Commission and the recent judgment of the CJEU in *Mastercard* indicate that the success of such arguments depends greatly on the manner in which such efficiencies are accounted for. While cross or out of market efficiencies may be taken into account, the primary focus of the analysis is on the efficiencies that can be identi-

fied with respect to the same parties that are subject to the infringement. In the case of online platforms which operate across multiple markets this requirement may prove to be burdensome as the prohibited practices and corresponding efficiencies may not manifest directly in the same (relevant) market but, nevertheless, still arise by virtue of the indirect network effects that are at play on such platforms. If restricting competition with respect to one customer group of the platform creates efficiencies for a second customer group such efficiencies may (at least partially) benefit the former when the two customer groups display indirect network effects.

Chapter 3 that focuses on the market definition process provides a prime example of how the challenges posed by online platforms for the application of art. 102 TFEU stem primarily from the practical application of this provision. The market definition process is perhaps one of the most difficult challenges that result from the multisided nature of online platforms. It can even be said that it is one of the main drivers behind platform specific regulation initiatives including the recent proposal of the DMA. Nevertheless, this challenge stems from the fact that this process has been made mandatory for the finding of dominance by the CJEU in *its case law.* The provision as such does not mention this requirement and in fact in the early days of EU antitrust law abuse of dominance cases were handled without a market definition. Similarly, in some jurisdictions, like the US and China, such a requirement is not necessary in cases concerning the unilateral behavior of undertakings with significant market power. Accordingly, if the market definition process would not have been made mandatory by the CJEU such challenge would have been less acute. Admittedly, the lack would still require a change to the common practice of the Commission, which would have likely been met with criticism as in case where it chose not to engage in this process as it normally would. However, taking such a course of action could have been motivated by the specific circumstances of cases concerning online platforms which display significantly different characteristics than non-platform undertakings in such a context. This has been done to a certain extent by the Commission in the recent cases against Google. In *Google Shopping* the Commission chose not to apply the SSNIP test when defining the relevant market due to the use of zero pricing by Google. In *Google Android*, however, the Commission chose to overcome this same issue of zero pricing by modifying the price centered SSNIP test into the quality based SSNDQ that determines interchangeability based on quality reductions instead of price increases.

Chapters 4 and 5 that provide an in-depth discussion concerning the qualification of certain business practices by online platforms as abusive behavior further confirm the initial findings of chapter 2. Accordingly, when it comes to the finding of an abuse, the challenges associated with the multisided nature of online platforms concern primarily extending the scope of analysis beyond one (relevant) market. The manner in which such

analysis takes place is not determined by art. 102 TFEU but rather by the Commission's previous practice and most importantly the past case law of the EU Courts which has established the various legal tests for qualifying anti-competitive business practices as abusive under art. 102 TFEU.

Finally, chapter 6 that covers the last stage of the application process, namely the remedy phase, adds another angle for the answer to this sub-question which was not covered in chapter 2. Similar to the case of finding an abuse, as covered in chapters 4 and 5, this last substantive chapter shows that remedy design considerations become more complex when dealing with the characteristics of online platforms and the nature of competition in the markets in which they operate because it often entails taking into account the effects of remedies across multiple markets. Such difficulties do not relate to the wording of art. 102 TFEU, which does not cover the matter of remedies, but mostly to the Commission's previous practice and the case law of EU courts. Nevertheless, to some extent it can be said that the wording of art. 8 of Regulation 1/2003 which, establishes the legal framework for interim measures, does make the implementation of effective and proportionate remedies more difficult in the case of online platforms. This is primarily due to the fact that according to the text of this provision interim measures can only be implemented by the Commission when there is evidence of a potential risk of irreparable harm to competition. Providing such evidence in the case of online platforms is difficult as these are often considered to operate in highly dynamic markets. Therefore, finding such proof in practice will often entail finding proof of market tipping (or at least a tendency thereof) where the respective platform gains an impassable and constantly growing competitive advantage over its competitors in one or more of the markets in which it is active. Finding proof of market tipping (or a tendency thereof), is however, presently more a theoretical than practical option as current practice has yet to find the tools that are suitable for measuring such an occurrence.

Alternatively, an argument could be made that the damage to competition following the exit of existing competitors cannot be remedied by a later entry or re-entry due to the high pace of innovation in the respective market, as was made in Broadcom. However, it is unclear whether such arguments would always survive judicial review in the case of online platforms as not all such actors offer highly complex and specialized services that entail very demanding and costly R&D processes. In light of such difficulties the possibility of flexible remedies may constitute an alternative that fits within the current framework of art. 7 of Regulation 1/2003. Such remedies would consist several layers of behavioral and structural measures that are triggered based on how competition on the affected market(s) evolves following the final decision of infringement. Such remedies would allow accounting for the competitive harm that can be amplified due the (indirect) network effect at play while not exceeding the boundaries of

proportionality. In this respect, although the challenges observed in the case of remedies relate to some extent to the wording of Regulation 1/2003, tackling such challenges can be done mostly through changes in application and interpretation.

7.1.2 Sub-question 2

How should the definition of the relevant market be performed in the case of online platforms in light of their multisided nature?

This sub-question has been addressed in all the chapters of this dissertation to varying degrees. In chapter 2, as noted above, the difficulties associated with the market definition were identified. The findings in this chapter predominantly concern the theoretical challenge of defining multiple relevant markets for one platform and the use of the SSNIP test in settings where the platform service or interaction under investigation is provided free of charge.

Chapter 3 which is focused on this topic in the most specific way encompassed an in-depth discussion of both these challenges and provided guidance for resolving them in practice. Accordingly, when engaging in the market definition process it was noted that the preferable approach would entail firstly identifying the nature of the service or interaction of the concerned platform. Such interactions would in practice either be single-sided or multi-sided matching interactions. Single-sided interactions can be observed when two customer groups are brought together, however, positive indirect network effects are present only in one direction. This occurs for example in cases where consumers are attracted to the platform to watch videos but must first watch a commercial before being able to do as can be seen on Youtube, which matches advertisers with consumers. The increase in the volume of consumers on Youtube may increase that demand of advertisers for the platform but not the other way around. This limited interdependence between the two customer groups of the interaction means that two separate relevant markets can be defined for these respective groups as these will likely have (very) different views on the substitutability of the platform. Consumers may consider other video sharing platforms without advertisements as substitutes while advertisers may consider platforms that do not offer video sharing services as substitutes, as long as they offer a comparable exposure to consumers.

Multi-sided matching interactions occur where two or more customer groups are brought together which display mutually positive indirect network effects. This can be observed most clearly in the case of online hotel booking platforms where, the more hotels a platform has, the more consumers it will attract and vice versa. This relationship between the two customer groups indicates they are quite interdependent when it comes to

their demand for the platform meaning that they will likely have a similar view on substitution. Therefore, in such cases a single relevant market for the platform interaction could be defined. Such a market would consist of alternatives that are considered substitutes for the concerned platform from the perspective of all the customer groups matched by the interaction. In the case of online hotel room booking platforms this would entail a relevant market that consists of outlets that allow both hotel owners and consumers to perform that same task of offering and booking a hotel room. Nevertheless, the demand for the platform interaction or service and views on interchangeability may not always be fully aligned even among the customers of a multi-sided matching functionality. Accordingly, while perspective of all such groups may be required in the context of the legal analysis it is not certain whether a single market approach will always be suitable. Therefore, even in such cases a supplementary substitutability check from the perspective of each of the customer groups interconnected by the respective interaction should be performed.

When the views of the respective customer groups on substitution are (nearly) identical, it can be concluded that the relevant market is most likely the (platform) market consisting of only other platform alternatives that compete with the concerned platform under investigation. In such situations it can be said that the matching interaction or service is indispensable (for the purpose of substitutability) for the respective customer groups connected by it. This would likely occur in situations where the value proposition of the platform for its customer groups is *de facto* access or the ability to interact with (a large volume of members of) another customer group. This is the case with price comparison platforms. Such platforms offer consumers the ability to view offers across numerous sellers and at the same time offer a large scope of exposure to consumers with respect to sellers that place their offers on the respective price comparison website. When the views on substitutability of the customer group vary, it can be concluded that two or more related markets need to be defined covering each of those perspectives. Accordingly, in such cases, the relevant market(s) may consist of non-platform entities that constitute substitutes for the concerned platform from the perspective of one or more of its customer groups. Such outcomes are most likely when the matchmaking interaction or service offered by the platform is not entirely indispensable for meeting the demand of the respective customer groups served by the platform. This can occur for example in the case of online marketplaces as consumers may, under certain circumstances, consider large non-platform retailers as substitutes for the marketplace whereas sellers on the same marketplace cannot consider such players as substitutes since they cannot provide them with the desired access to consumers they seek from the respective marketplace.

The mentioned approach to the market definition for online platforms allows for a process that is more compatible with the commercial reality

of such actors than the current approaches in academia and practice which seem to be based on a platform typology. According to such approaches, the number of markets to be defined in each case concerning online platforms should be determined in accordance with their type. In this regard, the transaction vs. non-transaction platforms, which has been further explored by the Bundeskartelleamt, is perhaps the leading approach. According to this typology the market definition for platforms that facilitate some form of transaction should result in one relevant market consisting only of alternatives that offer such a transaction service. By contrast, platforms that do not facilitate a transaction should lead to the definition of multiple markets. This approach was followed by the US Supreme Court in the recent case of *Ohio v. Amex* where one relevant market was defined for Amex's services with respect to acquiring and merchant banks. Nevertheless, unlike in the case of the Amex payment platform, applying this approach or any approach based on a specific platform typology does not work well in the context of online platforms.

The reason for this limited compatibility is two-fold. First, such approaches will always presuppose a finite number of platform types which is incompatible with the commercial reality of platforms that often display a mix of transaction and non-transaction oriented services. Second, such approaches are concerned with defining the relevant market for the platform as the commonly presuppose that such platforms are predominantly two-sided and the matter of market definition concerns solely a decision between defining one or two markets for the service(s) provided by the platform to its two separate customer groups. Online platforms are, however, often multisided or become multisided at some point, meaning that they provide multiple separate interactions or services that relate to different markets. Accordingly, the market definition in such cases can result in multiple separate relevant markets. In such cases, as discussed in chapter 3, there is no need to define all the (relevant) markets in which the platform is active. Instead, the focus should be on defining the relevant market(s) for the services or interactions associated with the theory of harm that is considered in the context of a specific case as the platform may adopt abusive practices only with respect to some of its services and corresponding customer groups. Such outcome is only possible if the relevant market definition is performed in a manner that is capable of targeting the various platform services separately when needed. This approach can be said to be supported by the Commission's latest practice in *Google Shopping*, approved by the General Court in appeal, where Google's search page was found to consist of multiple services, belonging to separate (search) markets that displayed different degrees of competitive harm.

When it comes to the use of the SSNIP test in the context of the market definition process for online platforms, the discussion in chapter 3 provided that this test will have to be modified in order to remain useful. This modi-

fication is needed in cases where platforms allow some of their customer groups to market use of their services free of charge. In such cases, the SSNIP test cannot be applied to test the substitutability of the platform from the perspective of customers that are provided the service for free as it would lead to a mathematical impossibility; a relative increase of zero with 5-10% will always remain zero. This difficulty has been seen in practice in the *Google Shopping* case where the Commission refused to apply the SSNIP test to Google's search services as these are predominantly offered free of charge. Therefore, in order to maintain the usefulness of the SSNIP test it must be converted into a SSNDQ test where substitutability is tested based on a theoretical decrease of quality rather than an increase in price. This conversion maintains the rationale of the SSNIP test, while making it suitable for circumstances where zero-pricing can be seen in practice in the case of *Google Android*, which was decided after the publication of the articles of which chapter 3 consists.

Adapting the SSNIP into a SSNDQ entails, however, more than simply switching the price parameter with quality parameters. Such a conversion also requires that the legal framework which regulates the use of the SSNIP test is also converted. This means that the Commission would also have to come up with a procedural framework that covers this new test and provides the guidelines for its application. Such guidelines should concern the manner in which quality and the degradation thereof should be tested. As quality, unlike price, is dependent on the service or product that is being assessed, such guidance would in essence have to provide the manner in which the quality criteria for the purpose of the SSNDQ will be selected in each case so as to ensure the legitimacy of the test of its results. This part of the conversion has unfortunately not been addressed by the Commission before, during or after the application of the SSNDQ in *Google Android*. In this specific case, the official decision document indicates that the quality criteria used for the purpose of this test were provided by Google's own developer staff. Beyond this however, no additional information has been provided on how the SSNDQ was performed or on the intentions of the Commission to utilize this conversion in the future. Therefore, the suggestions and concerns addressed in chapter 3 with regard to the procedural aspects of the conversion process of the SSNIP test to the price settings of online platforms remain to be resolved.

Chapter 4, which deals with the assessment of the expansion strategies of online platforms under the test(s) of tying and bundling, displays the importance of an interaction-based approach to the market definition as suggested by chapter 3. In chapter 4 it is shown that expansion strategies, which can be facilitated through tying or bundling practices, can occur on existing platforms as well as across them. Accordingly, an online platform may choose to expand by adding new services or interactions, thereby bringing more customer groups on board. This occurred for example on

Booking.com which started off with a hotel room reservation service and now offers additional booking services such as airplane tickets, rental cars and airport taxis. Alternatively, an online platform can also choose to expand by launching another platform which may be desirable for at least one of its existing customer groups. This can be seen in the case of Uber which launched UberEats at a later stage in time. When online platforms implement such expansions through tying or bundling practices the manner in which the market is defined will determine greatly the scope of anti-competitive practices that can be caught by art. 102 TFEU. Acknowledging that the various interactions or services provided by a platform can constitute separate products, meaning that the market definition process can be performed with respect to each of them, will allow to catch both on-platform and cross-platform anti-competitive expansions implemented through tying or bundling. By contrast, treating the entire range of interactions or services offered by a platform as one product and thus performing the market definition process to the platform as such, based on whether it is a transaction or non-transaction platform, will inevitably fall short of catching anti-competitive on-platform tying or bundling practices.

Similarly, chapter 5 which deals with the assessment of price-related abuses in the case of online platforms further confirms the importance of the suggested approach to market definition covered in chapter 3. Accordingly, when engaging the in assessment of price related abuses the manner in which the relevant market is defined determines greatly the scope of the legal analysis and its outcome. If the relevant market for a multisided platform is defined in a way that treats all of its interactions and services as one single (bundled) service, the legal assessment of its pricing practices will have to address the entire pricing scheme of the platform. Accordingly, if a hotel room booking platform like Booking.com would be accused of charging predatory commissions from hotel owners the assessment of predatory pricing will have to take into account all the costs and profits associated with all the services provided by the platform. By contrast, if the various services or interactions facilitated by Booking.com are considered to be separate, the market definition process would have to be performed with respect to each of these services. At the phase of assessing the potentially predatory pricing behavior of Booking.com with respect to hotel owners, this would entail an analysis that focuses predominantly on the costs and profits associated with the hotel room booking service for which owners are charged. The difference between the two outcomes cannot be overstated. The first approach to the market definition for online platforms allows a lot of room for shifting common costs across the various services of the platform thus making it easier for them to avoid competition law scrutiny. Similar outcomes can also be expected in the case of excessive pricing which constitutes in essence the opposite situation of predatory pricing.

Although not extensively addressed in chapter 6, that manner in which the market is defined with respect to the concerned platform, and its respective services and interactions, will inevitably also have an impact on how remedies will be designed. This is most evident in the case of pricing abuses as the manner in which the market is defined determines the manner in which the corresponding price assessment is made. In the case where an abuse is established, this will also determine therefore what the platform would be required to do in order to be in compliance with art. 102 TFEU. For example, in the case of predatory pricing, whether predation is established with regard to the platform as a whole or only with respect to one of its services or interactions will determine what kind of price adjustment the platform must undertake in order for its pricing practices to be considered non-abusive.

Therefore, the approach to the market definition suggested in chapter 3 will allow performing the market definition process with respect to online platforms in a manner that is compatible with their commercial reality. This in turn will allow competition authorities to scrutinize and remedy their anti-competitive behavior more accurately, particularly when dealing with multi sided platforms that provide or facilitate multiple services or interactions.

7.1.3 Sub-question 3

To what extent is the current framework of non-price related abuses suitable for distinguishing between legitimate expansions and anti-competitive leveraging of market power by online platforms?

This sub-question is addressed in chapter 4 of this dissertation which focuses on the topic of expansion strategies by online platforms and their assessment under the framework of tying and bundling abuses.

A. Expansion strategies

The implementation of expansion strategies by online platforms has been found, by economic and management research, to be an inevitable part of their commercial existence. In the early days of their existence all online platforms will struggle with the same coordination challenge that stems from their multisided nature also known and the chicken-and-egg problem. In order for such actors to exist they must succeed in attracting two or more separate customer groups to the platform in order to provide them with a matchmaking service or interaction which can then be capitalized by the platform. Once the platform is successful in attracting members of two or more separate customer groups, the indirect network effects between such parties will help facilitate growth on the platform to the point when the critical mass needed to make it financially viable is reached. From this commercial milestone onwards the respective online platform will commonly seek to improve and optimize the service or interaction it offers to its respective

customer groups in order to further grow its presence in the market(s) in which it is active and increase its revenue. Such optimization is also referred to as increasing the depth or core base of the platform interaction or service.

In practice such optimization means that the respective platform will try to reduce the various costs incurred by its customer groups when using the platform such as search, information and transaction costs. By doing so the platform is expected to be better able to increase the volume of members of its customer groups and thereby increase the number of profitable interactions on the platform thus generating more revenue. Such optimization can, however, not be pursued in perpetuity and at some point in time the maximum commercial potential of a specific platform interaction or service will have been reached meaning that further optimization is no longer possible or profitable. At that stage the most feasible possibility left for the respective platform to further increase its revenues is to expand.

In practice, expansions can be either on-platform or cross-platform. On platform expansions occur when the respective platform adds another service or interaction to the existing platform. For example, Booking.com started with the hotel room reservation service and now offers also the possibility to book airline tickets, airport taxis and rental cars. Cross platform expansions occur when the owner of the existing platform launches another platform which has a common customer group with the initial platform. For example, after Uber became a known platform for ride sharing and booking it launched UberEats which similarly to the ride-sharing platform also caters to consumers. Such expansions do not only enable platforms to significantly increase their revenues but, and perhaps more importantly, also serve as a valuable strategic tool that allows them to improve their market position. By expanding into another market, whether through on-platform or cross-platform expansions, the respective platform is able to offer at least one of its customer groups a better value proposition and prevent them from switching to competing platforms while also increasing the participation on the platform at the cost of direct and indirect competitors and thus gaining a competitive advantage.

Alternatively, expansions can also be said to be an effective way to fend such strategies, also referred to as 'envelopment attacks', when attempted by established platforms in neighboring markets. For example, vertical search engines like Skyscanner that offer airline tickets price comparison could obtain a competitive advantage over platforms offering a comparable service if it chooses to expand and also allow for hotel room price comparison, which consumers searching for airline tickets are likely to seek as well. At the same time, by adding the hotel room price comparison service Skyscanner would be able to prevent being challenged by an established vertical search engine platform that offers hotel room price comparison which chooses to also offer an airline ticket price comparison service.

In this respect not all expansions are equally effective. From an operational perspective the added service or interaction can involve either a unilateral (or single-sided) matchmaking interaction or a bi or multilateral (or multisided) matchmaking interaction. The former will allow the respective platform to generate additional revenue however it will have limited strategic value. For example, adding a non-search advertising element to a hotel room booking platform may allow the platform to open up to a new stream of revenue, however, it will not attract new consumers to the platform or prevent existing ones from switching since such consumers are not likely to because of such advertisement function. By contrast, by adding a bi-or multilateral matching interaction or service the respective platform will be able to generate more revenue and increase its market power in two or more markets due to the positive network effects at play. For example, if Skyscanner were indeed to add a hotel room price comparison service to its platform such a function would likely also attract more consumers as well as airline companies and hotel owners interested in reaching such consumers to the platform. Such an increase would produce more revenue for the platform and magnify its foothold in the respective markets for airline ticket price comparison tools and the market for hotel room price comparison tools. Therefore, it can be expected that successful expansions, particularly those involving bi-or multilateral matching interactions or services, will have a noticeable effect on competition across multiple markets, which in turn requires ensuring that such strategies are not implemented through anti-competitive practices.

In this regard, the most relevant non-price related abuse that should be considered is that of tying and bundling. This is because such practices offer the greatest potential for the successful leveraging of market power across various markets that is inherently pursued in the context of expansion strategies. Therefore, if platforms were to implement their expansion strategies though anti-competitive practices it is more likely that these would select tying and bundling practices as their preferred vehicle than other types of anti-competitive leveraging. Accordingly, the applicability of the of tying and bundling framework to the practices of online platforms will determine to a great extent the suitability of the framework of non-price related abuses to distinguish between legitimate and anti-competitive expansion strategies.

B. Qualifying expansion strategies as tying and bundling

In order for expansion strategies by online platforms to qualify as tying and bundling practices such strategies must fulfill the criteria set for this form of abuse by the CJEU in Microsoft, namely (i) the concerned platform must have a dominant position in the tying market or the market of one of the bundled products, (ii) the platform must be tying or bundling two separate

products (iii) customers are coerced into obtaining the tied and tying products or the bundled products together.

Fulfilling this test requires firstly that the services or interactions added at the phase of expansion must be considered as separate products or services than those offered by the concerned platform prior to the expansion. This is needed for the first two conditions of the test. In the case of cross-platform expansion this will not be problematic as services or interactions enabled by two separate platforms can hardly be said to constitute one (complex) service. For example, it is hard to see why Uber and UberEats would be considered to constitute parts of one single product or service. An exception to such a finding would require essentially concluding that the respective platforms constitute part of an elaborate ecosystem and the competition across platforms in the markets where they are active predominantly takes place at the ecosystem level rather than at the service level. In the case of on-platform expansion reaching the finding of separate products is more complicated as it requires looking at the various services offered by the platform as separate rather than part of one comprehensive package of services. This in turn requires establishing the nature of competition in the respective markets where the concerned platform is active by virtue of the services or interactions it enables. In practice, this may involve quite some difficult assessment. For example, does Booking.com provide multiple separate services each part of a separate relevant market or does it provide one comprehensive package of services with which it competes as whole against other comparable platforms in one relevant market. In this context the interaction-based approach to the market definition covered in chapter 3 would help make this assessment manageable.

Secondly, a finding of (abusive) tying and bundling practices would require identifying a contractual or technical coercion mechanism with respect to the use of the additional service or interaction. This would occur when an existing platform customer group is pushed into making use (actively or passively) of the newly added service or interaction following the expansion (either on the initial platform or a new one). In practice such actions can take different forms and display different degrees of coercion. The most evident form of coercion would entail making the use of one service or interaction conditional upon the use of a second newly added service or interaction on the respective platform or on a separate platform. For example, this would be the case if airline tickets on Booking.com could only be reserved in combination with a hotel room reservation, or if purchases on Amazon marketplace could only be done with Amazon's own payment system AmazonPay. The dependency across platforms can also be limited to the sharing of data meaning that the use of one platform may entail an obligation to share the generated data with a second separate platform. This can be said to exist to some extent with regard to Whatsapp (outside of the EU) where the use of Whatsapp is conditional upon consumers agreeing to

share their data with other Facebook owned companies. More subtle forms of conditionality and coercion could then be that the use of one platform service or interaction triggers another one on the respective platform. Alternatively, the use of one platform may require the creation of a common profile account on two or more separate platforms which also entails an obligatory sharing of data across such separate platforms. This can be said to occur to a certain extent with regard to the various Google products and platforms that require the use of a Google account that in turn creates a user profile across such services among which data is shared.

Where the respective platform services or interactions help facilitate monetary transactions, the conditionality aspect can manifest in the form of significant monetary incentives. This could occur for example if booking a hotel room on Booking.com would generate a significant reduction for the reservation of an airline ticket on the same platform. Similarly, this would also occur if using Uber regularly would provide consumers with significant discounts on UberEats. Alternatively, the conditionality aspect could also be achieved through 'negative' incentives such as reduced or limited interoperability as well as less favorable contractual terms. For example, this could occur if payments of Amazon Marketplace with AmazonPay would be very easy and offer full buyer protection and payments with other payment solutions would be (significantly) more expensive, technically cumbersome or offer less buyer (or seller) friendly terms. To the extent that such positive or negative incentives are significant these will have *de facto* the same coercive effect as the more evident forms of conditionality mentioned earlier. Finally, the respective platform could use various nudging tactics that drive the respective platform customers into using more than one service of interaction. Although these may achieve in practice the same outcome of getting platform customers to use more than one platform service or interaction (on the same platform or a second one), such action will not fall under the scope of tying or bundling. This is because such actions cannot generally be said to coerce customers into more than a single service or interaction offered by the concerned platform at a time.

Thirdly, in order for expansion strategies to be qualified as anti-competitive these must be able to create a foreclosure effect. The likelihood of such an effect commonly requires looking at the type (technical or contractual) and duration of the tying or bundling practices as well as the market power that the concerned undertaking has with respect to its entire product portfolio. In the case of online platforms these criteria need to be supplemented with two additional variables, namely the customer overlap between the tied or bundled services or interactions and the degree to which these are two or multisided.

The customer overlap between tied or bundled platform interactions requires assessing whether the tied or bundled interactions share a great

deal of common customers. The greater the degree of overlap the more likely it is that the respective platform will be able to leverage its market power from one interaction to another. In practice customer overlap can be evaluated to some extent based on the functional relationship between the interactions that can be one of: complements, weak substitutes and unrelated products. Complements by their very nature are expected to display the greatest degree of customer overlap. For example, in the case of Booking.com the hotel room reservation service and the airline ticket booking service will predominantly serve the same group of customers (mainly consumers) that will often be interested in both. Thus, tying or bundling these services together with respect to this common customer group would allow the platform to leverage its market power from one service to another rather easily.

Weak substitutes may also share a significant degree of customer overlap. Such overlap may be less pronounced than in the case of complements, however, it can nevertheless be very considerable in practice. This can be observed in the case of Whatsapp and Instagram, which were qualified as weak substitutes when acquired by Facebook and can be said to currently all form part of a data-sharing bundle where the customer data generated on one of these platforms is shared with the rest. Finally, a functional relation of unrelated products may also display a less pronounced customer overlap than complement, however, be quite significant nonetheless. For example, Uber and UberEats facilitate two completely different interactions, however, they share a great deal of customer overlap with respect to consumers.

Following this stage, it is important to assess to what extent the respective platform services or interactions are two or multisided. The reason for this check is that the tying or bundling of two sided interactions, which share a great degree of customer overlap, are more effective for market power leveraging than the tying of bundling of single sided products or services. This is primarily due to the indirect network effects at play in the case of two or multisided interactions that may enable a mutually reinforcing relation on the respective interactions as well as between the tied or bundled interactions. For example, when PayPal was tied to Ebay after its acquisition this action benefited the growth of both platforms. Using PayPal made purchases on Ebay safe and more consumer friendly which in turn made Ebay more popular. At the same time as more customers joined Ebay the bigger PayPal became by virtue of the tie, which in turn made it also a more popular payment platform even outside the scope of Ebay that was eventually also implemented by other platforms as well. This example shows that the tying or bundling may not only allow the respective platform to leverage its market power from one interaction to another but also to increase its market power as such. Assessing the degree to which a platform service of interaction is two or multisided requires looking at the nature and intensity of the indirect network effects at play between the separate

customers served by it. Where such effects are pronounced and are mutually positive with respect to the involved customer group(s) the respective potential of a foreclosure effect will be higher.

Expansion strategies that display the above characteristics can be said to qualify a potentially abusive tying or bundling practice in the sense of art. 102 TFEU, at least in a *prima facie* form. With the above in mind it can be said that the framework of tying and bundling under art. 102 TFEU is quite suitable for distinguishing between legitimate and anti-competitive expansion strategies. The main reason behind this suitability stems from the fact that platforms that are expanding will commonly try their best to ensure that their newly added service or interaction (on the initial platform or a new one) is utilized by at least one of their existing customer groups. In practice, this will inevitably mean applying some form of pressure on the freedom of choice of such respective customer groups. Where such pressure is sufficient to be considered a form of coercion such strategies could be analyzed under the framework of tying and bundling abuses and condemned only when producing competitive harm. By contrast where the efforts made by the respective platform leave sufficient room for the respective platform customer groups to opt for competing options for the tied or bundled interaction these will commonly be harmless and also fall outside the scope of the tying and bundling framework due to a lack of coercion. Accordingly, by observing whether the respective platform implements its expansion through coercive leveraging actions, the tying and bundling framework under art. 102 TFEU can serve as a useful filter for distinguishing legitimate expansion strategies from anti-competitive. Furthermore, since the shift to an effects based approach in tying and bundling cases in *Microsoft*, there is also a reduced risk of erroneous qualifications of abuse in such cases. This holds true also in the case of multisided platforms in principle, as the Commission appears to have taken into account the multisided aspects of Microsoft's products when assessing the anti-competitive effects of its practices. Accordingly, to the extent that a similar and perhaps more elaborate analysis of competitive harm is undertaken, wrongful qualifications of expansion strategies as abusive tying and bundling practice would be avoided.

Admittedly, anti-competitive expansion strategies could also be achieved through other means of exclusionary behavior as seen in the case of *Google Shopping* where Google's expansion or entrance to the market of comparison shopping services was coupled with exclusionary behavior in the market of general search. Nevertheless, expansions that entail disfavoring competitors are likely to be met with more apprehension by enforcement authorities and thus less likely to be implemented in practice. For example, the removal of parental control apps from Apple's Apps Store soon after Apple launched its own parental control apps was broadly criticized for being pursued due to potentially anti-competitive motives. Accordingly, strategies targeted

at the decision making process of the platform customer groups are more likely to be implemented in such instances, as they may achieve the same outcome, namely getting platform customers to use more than one platform service of interaction in tandem, but may appear less concerning the eyes of enforcement authorities. Therefore, the current framework of tying and bundling under art. 102 TFEU would be suitable for distinguishing legitimate expansion strategies from anti-competitive ones, at least as an initial mechanism for review.

7.1.4 Sub-question 4

How can abusive pricing practices by online platforms be assessed under art. 102 TFEU in light of their inherent reliance on unconventional price settings resulting from their multisided nature?

This sub-question is addressed in chapter 5 of this dissertation which focuses on the identification of abusive pricing practices by online platforms. The selected abuses for this chapter consist of predatory, excessive and discriminatory pricing which represent the main three forms of competitive harm that can be caused by the pricing strategies of dominant undertakings. Accordingly, the insights gained by the research in this chapter extend to many of the remaining price-related abuses that are not addressed as these share a great deal of communalities in terms of the theory of harm they address and the legal and economic tests they employ.

The assessment of the pricing practices of online platforms in the context of abuse of dominance cases will require overcoming several complexities associated with the distinct commercial reality of these actors that stem to a large extent from their multisided nature. In practice, overcoming these complexities will require adapting the analysis of the various tests and benchmarks used for the purpose of establishing compliance with art. 102 TFEU to fit this specific legal and economic context. The extent of these adjustments will vary across the different types of price related abuses depending on the theory of harm such abuses seek to tackle and prevent from materializing or persisting. This is because the differences in the theories of harm addressed by the various types of price-related abuses often require approaching the price setting of the concerned undertaking from different perspectives and assess their permissiveness with the help of different benchmarks. Nevertheless, some common ground can be found with respect to the adjustments that need to be made in the case of online platforms.

First, it is important to acknowledge that multisided online platforms are in essence a type of multi-product company. As multi product companies create and market a range of different products (or services) so do platforms when these facilitate multiple matchmaking interactions. Accordingly,

when defining the relevant market in each case thought must be given to the question of whether such a market should be defined with respect to the entire set of interactions or rather for each interaction on a standalone basis. The decision taken on this matter will significantly impact the scope and substance of the legal and economic analysis in each case. Second, the fact that platforms, due to their multisided nature, serve several separate customer groups means they may possess diverging degrees of market power with respect to such customer groups. This in turn means that platforms may have the ability and perhaps even the incentive to abuse their dominance only with respect to some of these groups. Such abuses can concern practices which inflict harm upon the competitors of the respective platform as well as to its own various customer groups. This relates to the third common point for adjustment which requires acknowledging that although both the pricing level and pricing structure of online platforms need to be taken into account in the scope of analysis, the manner in which this should be done depends greatly on whether the potential harm is caused to the platform competitors or customers. The implementation of these three common points together with more specific factors that require attention will entail the following.

A. Predatory pricing

In the case of predatory pricing, the theory of harm or the competitive harm that is expected to manifest is that the competitors of the concerned dominant platform are forced out of the market by its loss making pricing that such competitors are not capable of sustaining. In order to assess whether the pricing practices of the concerned platform are indeed capable of producing such an effect several steps need to be taken. First, it is important to establish the nature of competition between the concerned platform and its (actual and potential) competitors. This step is indispensable in cases where the concerned platform is multisided, meaning it facilitates multiple interactions. Accordingly, at this stage it is important to establish whether competition between the concerned platform and its potentially harmed competitors occurs with respect to each of the interactions separately or to the entire range of interactions offered by it as a whole. The decision taken in this regard determines how the relevant market in the respective case is defined. If competition is considered to take place across the individual interactions of the concerned platform with other players offering similar service or interaction, then the relevant market that needs to be defined is primarily that of the interaction with respect to which the concerns of predation have been identified. By contrast, if competition occurs with respect to the entire range of interactions offered by the concerned platform the relevant market that will have to be defined will concern the platform as a whole. This in turn will determine how dominance in each case has to be established and how the assessment of the price settings of the respective platform needs to be performed. Accordingly, when the relevant market in

a case concerning a multisided platform is defined for the entire platform interaction range, dominance will have to be established with respect to such a market which will consist of players that offer a similar range of interactions. The assessment of predation would then be analyzed based on the entire cost and profit structure of the platform so as to evaluate whether competitors offering a similar range of interactions could viably maintain similar price settings.

The division of costs and revenues across the different interactions in such cases is not addressed meaning that the evaluation takes into account the possibility that such competitors, as well as the concerned platform, are able to shift costs and revenues across their various interactions. When competition is found to occur with regard to each individual interaction separately, the relevant market(s) in such cases would have to be defined with regard to such individual interactions followed by a corresponding approach for establishing dominance. The assessment of predation in such cases would then require looking into the costs and revenues associated with each of the individual interactions separately. Such assessment then would also require an overall costs and revenues of the concerned platform. This extension is needed to ensure that the concerned platform does not allocate the common costs associated with its multiple interactions so as to operate below cost with respect to one of them and maintain a price setting that cannot be viably sustained by competing platforms that offer a single interaction. When the assessment of individual interactions is performing it is important that the calculation of costs and profits covers all the costs and profits associated with serving such an interaction to the customer groups it brings together. For example, the hotel room reservation interaction on Booking.com is served to both consumers and hotel owners. Therefore, a predation analysis with respect to such an individual interaction should take into account the costs involved in serving both these customer groups as well as the prices charged from them by Booking.com.

In addition to changing the approach of the legal assessment to the reality of platforms it is also important that the corresponding economic tools and benchmarks are suitable for their cost structure. In this regard current EU practice, established in Akzo, indicates that prices that are not high enough to cover the average variable costs (AVC) of a product or service are presumed to have such an effect and solely serve a predatory purpose. Prices above this level but below average total costs (ATC) of a product or service can be considered suspicious but will only be abusive when supported by additional evidence of a predatory intent. Utilizing the test of predation based on these benchmarks may often not be suitable for dealing with online platforms. This is because online platforms will often have relatively high fixed costs and low variable costs as well as a great deal of common costs when these players offer multiple interactions on the same platform. Accordingly, it is important that the chosen assessment bench-

marks are suitable for establishing the predation potential of price settings that involve such cost structures. Such alternative benchmarks have indeed been mentioned in the Commission's guidance paper on the application of art. 102 TFEU where it was noted that the Commission may replace the use of the Akzo benchmarks with LRAIC and AAC. Therefore, it would appear that the existing tools and benchmarks of the Commission in this regard may be suitable for dealing with the cost structures of online platforms. What remains uncertain however is whether the legal presumptions attached to the findings based on the benchmarks approved by the CJEU in Akzo will also extend to the alternative benchmarks used by the Commission.

B. Excessive pricing

In the case of excessive pricing similar considerations concerning the market definition for the platform or its individual interactions as well as the price benchmarks used for the purpose of assessment will apply as in the case of predatory pricing. The approach to the assessment of the excessive and unfair character of the respective price under investigation will, however, differ due to the theory of harm covered by this abuse type, which is focused on the exploitation of the customers of the concerned platform. Therefore, in such cases it would be suggested that the price assessment of the concerned platform is done with respect to the individual customer group that is believed to be subject to excessive and unfair prices with regard to one of the platform interactions. Nevertheless, in the context of such an assessment, the costs and charges associated with the other customer groups that take part in the same interaction as the allegedly harmed customer group should also be considered. This is because the costs and profits associated with a platform interaction are commonly divided unequally across the customer groups served by such interaction in a manner that may not always appear to correspond to the economic value provided to them by the platform. For example, on hotel room booking platforms or online marketplaces it is common practice that the merchants and hotel owners are the only customer group charged for using the intermediary service facilitated by the platform. Such charges cover not only the platform costs associated with the participation of these hotel owners or merchants on the respective platform but also with the costs involved in attracting consumers to such platforms. This is because having many consumers using such platforms constitutes a great deal of the economic value provided to hotel owners and merchants by them, which in turn justifies charging these parties for the costs (in part or in full) involved in attracting consumers. The manner in which the costs and fees of individual interactions can be expected to be divided depends on the nature and intensity as well and the homing patterns of the respective customer groups interconnect by the platform interaction. These settings provide essentially an insight to the nature of the economic value provided by the platform to such customer groups and thus have been found to constitute important variables for the price setting of platforms.

Therefore, it is suggested that the assessment of potentially exploitative prices also takes such variables into account in the context of the analysis. Doing so in practice will entail introducing an additional step to the first prong of the test introduced by the CJEU in *United Brands*. Accordingly, after assessing whether the fees charged from a customer group exceeds the costs involved in serving it the interaction service, an additional step is implemented which looks at the costs and fees charged from other customer groups served by the same interaction. This second step of the assessment is then aimed at analyzing the nature and intensity of the (indirect) network effects among such customer groups as well as their respective homing patterns. This step is done in order to assess the scope of the interaction costs that can be expected to be covered by each of the customer groups in light of such settings. To the extent that the fees imposed by the platform exceed such costs the second prong of the United Brands test concerning the unfairness aspects of the fees can be performed with respect to such a margin of excessiveness. This second prong of the test can in principle be performed in a similar fashion to non-platform cases, however, it is important the use of comparators for this purpose is done with significant diligence. Accordingly, any use of comparative evidence concerning undertakings that offer similar services to those of the concerned platform should be limited to identical or highly similar market settings. This means that such comparisons would ideally be limited to other platform entities that operate similar cost structures, display similar (indirect) network effects among their customer groups, which also exhibit similar homing patterns as the customer groups of the concerned platform. This specific scope of such a comparison between the concerned dominant platform and other players offering comparable services or interaction is needed in order to be consistent as indicated by the CJEU in *Latvien Copyright*. When the evidence used in the second prong concerns the past or present practices of the concerned platform in the same relevant market or a related one it is important that the platforms' size (volume of its various customer groups) as well as the depth of its respective interactions are accounted for.

The economic value created by platforms is to a great extent determined by these factors. Accordingly, any discrepancies in the prices of the concerned platform across territories, across different points in times or across comparable services should be assessed in light of identified discrepancies in such factors. To the extent that the discrepancies in prices do not correspond with the identified discrepancies in the volume of members of the respective customer groups of the platform, the depth of the interaction(s) served to such customer groups and ratio of successful (profitable) interactions then such evidence can support a finding of abuse. When such factors correspond, however, evidence of price discrepancy will not be equally meaningful as a platform that has a larger customer base and more evolved interactions provides its customer de facto a higher economic value which would justify subjecting them to higher rents. This remains true also in

cases where the concerned platform manages to provide such high value at a lower cost compared to its competitors as efficiency should in principle be encouraged and rewarded, even in the case of dominant undertakings.

Finally, when the claim of excessive pricing is made by customer groups which are attracted by zero-priced offers to use the respective interaction of the concerned platform, such claims should not be dismissed due to such a setting which may misrepresent what factually occurs in practice. For example, consumers are said to be offered hotel room booking services free of charge, meaning these are attracted to the platform with a zero-price offer. The hotel owners on such platforms commonly pay a transaction fee of 15-30% for each room booked through the platform. Nevertheless, in practice such fees can be calculated in the hotel room prices and thus passed on (in full or in part) to consumers. Accordingly, if claims of excessive prices arise with regard to such fees members of both customer groups should be able to substantiate their claims in practice. Therefore, when situations occur where the pass-on of platform charges can occur, claims of excessive prices should be open to members of all the customer groups that utilize the interaction suspected of being excessively priced by the concerned platform.

C. Discriminatory pricing

In the case of discriminatory pricing, finding abuses by online platforms firstly requires acknowledging that the various services or interactions offered by the concerned platform may constitute separate transactions under art. 102 TFEU. Although multisided platforms may facilitate multiple interactions which essentially provide a similar operational function in the sense that they often enable transactions between consumers and commercial parties, such communality is not sufficient in order for such interactions to qualify as equivalent transactions in the sense of art. 102(c) TFEU. Therefore, the fact that platforms commonly attach different price tags to their various interactions should not be perceived as suspicious since such interactions will often not fall under the scope of this provision.

Secondly, when addressing a specific interaction which is priced differently with respect to the commercial customer group(s) of the platform it is important to see whether such price discrepancies occur between competing platform customers. This is because a platform may serve one and the same interaction to one of its commercial customer groups (consisting of heterogeneous members) based on a variable pricing menu. Accordingly, in such cases some members of a customer group may pay more than other members of the same group. Nevertheless, such discrepancies may not fall under the scope of art. 102(c) TFEU to the extent that they do not apply across competing members of the same customer group. In this regard it is important to assess the pricing rules of the concerned platform with respect to its interaction(s). Where the pricing rules entail a

calculation method that works along the lines of competition the outcome of price discrepancy would not entail a potential infringement of art. 102(c) TFEU. In practice this would occur when the differentiation applied for pricing rests on factors that also constitute important determinants of the competitive relationship between members of the same customer group. For example, Amazon marketplace charges merchants selling their goods on the marketplace different transaction fees depending on the goods they sell. This is in itself not problematic as merchants selling shoes do not compete directly with merchants selling consumer electronics. Accordingly, the different fees charged in such cases cannot be considered abusive since they do not concern competitors. In this regard *prima facie* concerns of abuse can only arise where the pricing rules consist of factors that do not effectively exclude the possibility that competing members of a platform customer group are charged different fees.

Thirdly, when cases displaying such *prima facie* signs of abuse the commercial value of the concerned platforms' interaction as an input for its commercial customers needs to be evaluated. This requires assessing what the proportion of the platform fees is from the total costs associated with the commercial activity of the respective platform customers. If the platform fees constitute an insignificant part of the total costs carried by the platform customer groups in their commercial practices, discrepancies in such fees even when applied to competitors are not likely to impact competition among them. Therefore, in such scenarios, it is less likely that dissimilar pricing will lead to a finding of abuses as the CJEU noted in *MEO* the discrimination as such is not sufficient to establish an infringement. By contrast if the platform fees constitute an important share of the total costs carried by the platform customers in their commercial practices any price discrepancies should be further assessed with regard to their potential effect on competition. In this final stage of the assessment concerning anticompetitive effects, such effects should be assessed in the respective markets where the platform customers utilize the platform interaction as an input. For example, where merchants use an online marketplace as a sales channel, the effect on competition should firstly be assessed with respect to competition among the competing merchants on the platform. Alternatively, where merchants use a platform as an advertisement channel such as a price comparison site, the impact on competition should be assessed with regard to the market for which such advertisement is intended outside of the platform. In both cases, the greater the discrepancy in prices charged by the concerned platform, the greater the chance that an impact on competition resulting from it can be established, and with it a finding of abuse.

D. Overall applicability of Art. 102 TFEU to price related abuses

The findings concerning the recommended adjustments that would be required in order to adequately bring potentially abusive pricing practices

of online platforms under the scope of art. 102 TFEU indicate that this provision is overall suitable for this purpose. From a formal perspective, nothing in the wording of art. 102 TFEU, as such, prevents the effective application of this provision to the potentially abusive pricing practices of platforms. Although all three price-related abuses are specifically mentioned in art. 102 TFEU the legal tests developed for reaching such findings have been developed in practice. Therefore, the adjustments required in the context of online platforms do not necessitate any formal changes in the wording of this provision but rather to its implementation in practice.

When addressing the current frameworks and corresponding legal tests used for establishing the various forms of price-related abuses in the case of online platforms it can be said that such frameworks are similarly suitable to accommodate the unconventional pricing practices of online platforms. Although the multisided character and unconventional pricing practices of online platforms were not foreseen by the current frameworks of price related abuses at the time when their respective legal tests were introduced, the manner in which such tests operate in practice leave significant room for taking into account new economic insights. The legal tests developed for the price related abuses covered by this dissertation (as well as those not addressed) entail a set of criteria with respect to which the Commission or NCA (or private claimants) carry their burden of proof. The manner in which the burden of proof is discharged in such cases is, however, often form free. Accordingly, the Commission or NCA are free to make use of any kind of factual or economic, direct or indirect evidence for the purpose of sustaining their finding of abuse. It is only at this stage of the application of such frameworks of abuse that the difficulties associated with the multisided character of online platforms and their corresponding unconventional practices arise and thus require special attention.

In the case of predatory pricing such difficulties concern the manner in which the assessment of predation is approached and the cost benchmarks that are selected for the purpose of analysis. These difficulties equally arise in the case of excessive pricing. Finally, in the case of discriminatory pricing the difficulties associated with platforms concern primarily the approach taken for the assessment of discrimination. All such difficulties concern aspects of the analysis with regard to which both the Commission and NCA have significant discretion as these form part of the complex economic assessment these actors may perform which is only subject to limited review (and guidance) by EU Courts. Therefore, it can be said that the current frameworks of price related abuses under art. 102 TFEU are capable of accommodating the multisided character of online platforms and their corresponding unconventional price setting to the extent the Commission or NCAs are willing to implement the economic insights associated with such special circumstances in the context of their assessment of abuse.

7.1.5 Sub-question 5

How does the multisided nature of online platforms need to be accounted for when making remedy design choices for price and non-price related abuses of dominance and does the European Commission have the legal tools to design effective and proportionate remedies in such cases?

This fifth and last sub-question of the research is addressed in chapter 6 which deals with the topic of remedy design in the case of the price related abuses covered in chapter 5 as well as in the case of abusive tying and bundling practices as covered in chapter 4.

Chapters 4 and 5 which deal with potential price and non-price related abuses in the case of online platforms provide meaningful insights with regard to the manner in which such practices can manifest and the competitive concerns they raise. Such insights are not only relevant for the finding of abusive behavior by online platforms but also for remedying it as remedies often entail in practice imposing the mirror image of the abusive behavior on the concerned undertaking. Therefore, the platform specific considerations relating to their multisided nature that were taken into account for the purpose of adjusting the respective abuse frameworks under art. 102 TFEU must also be taken into account at the phase of remedy design.

These abuse specific insights provide guidance on how to tackle the fundamental factors that dominant online platforms are likely to attempt and impact in the context of their anti-competitive practices which would allow them to obtain a competitive advantage over their competitors and make use of opportunities that would otherwise not be possible in competitive markets. These factors, stemming from the multisided nature of platforms, concern the indirect network effects on or across platforms owned by the concerned undertaking and the single or multi homing patterns of the platform customer groups. The role of indirect network effects in the context of online platforms cannot be overstated as it constitutes one of the core factors which is inherent to their existence. In the context of competition, it is precisely the presence of indirect network effects between the various platform customer groups that is responsible for the positive feedback loop on or across platforms, which facilitates their respective growth. Therefore, a platform that succeeds in amplifying the indirect network effects between its customer groups will significantly increase its growth potential with respect to the interactions where such amplification occurs.

The homing patterns (i.e. single or multi-homing) of the platform customer groups determine the intensity of competition experienced by online platforms with respect to such customers and as such their ability to obtain more market power and utilize it in their own interest, at times to the detriment

of others. Therefore, by implementing strategies which impact the homing decisions of their customer groups, platforms are able to influence the scope of competition they experience with regard to their respective customer groups. Accordingly, given the importance of such factors it can only be expected that the anti-competitive practices of online platforms will target them in practice so as to achieve the most beneficial settings. This is particularly so given that a great synergy exists between the two factors, which, if managed properly, can give a significant competitive advantage to the concerned platform. This synergy can, if left unattended, lead to market tipping in favor of the concerned platform. Such an outcome has been acknowledged to be highly detrimental for competition and extremely difficult to remedy by the Commission or NCAs. Consequently, at the remedies phase it is principal that such factors are also tackled to the extent that these are influenced by the anti-competitive practices of the concerned platform. Failing to do so in practice may render the respective remedies ineffective as the growth of the concerned platform triggered by the changes in such factors will not be brought to a halt. This would mean that the (competitive) harm created by the concerned platforms' abusive behavior may persist even long after such prohibited practices have been abandoned, and depending on the market considerations in each case, may lead to market tipping. This in turn would mean that remedies that fail to account for such factors will unlikely be capable of attaining their threefold policy of objective which entails: bringing the infringement to an end, preventing its repetition and restoring or reestablishing the state of competition harmed by the abuse.

The manner in which such factors must be taken into account when remedying the various price and non-price related abuses explored in chapters 4 and 5 will vary depending on the competitive harm these can create. Tackling such aspects will at times be resolved by similar means implemented in non-platform cases, however, in most cases it will require a more elaborate use of the remedies available to the Commission under Regulation 1/2003 (or NCA under their respective frameworks).

A. Remedy considerations in tying cases

In the case of tying and bundling practices, it was shown in chapter 4 that such abuses can manifest on a single platform or alternatively across two or more platforms owned by the same undertaking. The tying and bundling practices will predominantly (but not exclusively) be applied with respect to the customer group of the platform consisting of consumers as these often constitute the common customer group for multiple interactions on a single platform or across multiple ones. When remedying such practices the first step would entail following the common practice in non-platform settings which entails requiring the concerned undertaking to remove the conditionality aspect (technical or contractual) that ties or bundles two or more of its products or services.

The second step, where the multisided nature of platforms needs to be accounted for, would require zooming into the effects created by the abusive practices on the indirect network effects on or across the concerned platforms and the homing patterns of the customer groups that have been subject to the tying and bundling practices. At this second step, to the extent that such factors were impacted, the imposed remedy should be designed in a manner that halts their shift in favor of the concerned platform and restores their settings to situation prior to the abuse or at the very least create the possibility for such settings to be reset through competition on the merits. Accordingly, if the tying or bundling practices of the concerned platform amplified the network effects at play between its respective customer groups, the imposed remedy should ensure that positive feedback loop caused by such effects, which will fuel the growth of the platform, is brought to a halt. The manner in such a result will be achieved will depend on the nature of the tying and bundling practices (technical, contractual or a combination thereof), the type of tying and bundling (on-platform or cross-platform) as well as the functional relation between the interactions or platforms tied and bundled (complements, weak substitutes, non-related services). This is because these variables, as discussed in chapters 4 and 6, determine to a great extent the impact of the concerned platforms' tying and bundling practices on the indirect network effects at play. Accordingly, these variables will also determine the kind of intervention required at the remedy phase.

Similarly, when the tying or bundling practice caused a shift in the homing patterns of the platform customers in favor of the concerned platform it is important that such shift is reversed as much as possible. This would occur if the concerned platform caused (through its abusive practice) a shift of such patterns from multisided multi-homing, to a competitive bottleneck setting (single homing by some customer groups and multi-homing by others) or the even more favorable multisided single homing. Reversing such shifts at the remedy stage will similarly depend on the nature of the tying and bundling practices, the type of tying and bundling as well as the functional relation between the interactions or platforms tied and bundled. This is because such variables determine the manner in which such a shift is achieved and the extent to which it may persist or progress in the future.

Finally, when the tying and bundling practices concern the customer group of the platform consisting of consumers, it is important to observe whether such practices helped form a consumer bias in favor of the concerned platform. The presence of such a development would mean in practice that even once the conditionality aspect attached to the concerned platforms' interactions is removed, consumers are likely to persist with a behavior similar to that pursued by the abusive practices. This in turn means that the impact caused by the tying or bundling practices on the indirect network effects at play and the homing patterns of the platform customer groups

may continue to persist even once the prohibited practices have ended. As mentioned, in the long run, this can lead to market tipping in favor of the concerned platform which is extremely difficult to remedy ex-post. Consequently, in the event that such consumer bias has been formed it will likely be required that the Commission (or NCA) implements more far-reaching and elaborate measures to weaken such bias by making consumers actively reconsider their default choices and behavior formed by the abusive practices of the concerned platform.

B. Remedy considerations in the case of price-related abuses

The potential impact of price related abuses on the indirect network effects at play and the homing patterns of the platform customer groups can at times be similar to that of tying and bundling cases. The extent of such impact as well as the potential of creating a consumer bias through such abuses will vary based on the respective abuse. The overall approach to remedies will therefore consist of the previously mentioned two main steps. In the first step the abusive aspect of the pricing strategy needs to be removed. In the case of predatory pricing this entails demanding that the price levels or the respective interactions are raised above predatory levels. In the case of excessive pricing this would entail imposing a decrease of price for the respective interaction to a level that better corresponds with the economic value it offers to the customer groups using it. In the case of discriminatory pricing this first step would entail requiring the concerned platform to minimize the price discrepancy applied by it with respect to one or more of its interactions so that it does not impact competition between its customers. The second step, as previously mentioned, will focus on tackling the impact of the abusive practice on the indirect network effect at play and the homing patterns of the respective customer groups affected by the abuse. To the extent that a consumer bias was formed due to the abusive pricing practices of the respective platform, such bias then needs to be tackled as to prevent the (competitive) harm it generates from persisting. As in the case of tying and bundling practices, the nature and degree of the legal intervention at the remedy phase will depend on the impact caused by the abusive practices on such factors.

C. The legal tools of the Commission

Under the current framework of EU competition law, the legal tools available to the Commission for the purpose of imposing remedies in the case of infringements are found in Regulation 1/2003. In this regard, art. 7 and 8 of the Regulation constitute the most important provisions. From a theoretical perspective, the combination of these two provisions would appear to be suitable for coming up with proportionate and effective remedies in the case of online platforms. Art. 7 allows for the implementation of behavioral, as well as structural remedies, which would essentially allow achieving the

tri-fold objective of remedies in most cases. Art. 8 allows for the implementation of interim measures that help prevent the deterioration of competition to non-remediable states in the course of investigations pursued by the Commission. Accordingly, from a formal perspective it would appear that such provisions enable the Commission to take the necessary measures it would need when dealing with platforms. However, when looking at previous practice of the Commission it soon becomes clear that this theoretical potential has been constrained by past choices.

Under art. 7 structural remedies may indeed be theoretically possible, however, that is only under special circumstances where such remedies are more effective and less burdensome than behavioral ones. Accordingly, if the abusive practices of the concerned dominant platform need to be tackled through structural measures such an option is only possible to the extent that the Commission can show that behavioral remedies would not be equally suitable for such purpose. Doing so in practice will be difficult as behavioral remedies can at times indeed produce similar results. The difficulty is, however, that the effectiveness of behavioral remedies cannot be assessed ex-ante and once they are imposed these cannot be switched for structural ones if they do not deliver the desired outcome. Accordingly, if the competitive harm caused by the abusive behavior of the platform persists after the concerned platform ceases its abusive behavior, due to shift in the homing patterns of its customers for example, there is not much that can be done further in terms of remedies. In such cases, it could then occur that the market may tip in favor of the concerned platform after the abusive behavior was terminated in accordance with the Commission's behavioral remedy measures. Nevertheless, such uncertainty with regard to the effectiveness of behavioral remedies is not sufficient in order to make the choice for structural remedies less cumbersome as can be observed by the previous practice of the Commission that consists almost entirely of behavioral remedies. Therefore, implementing structural remedies in platform cases so as to prevent the harm caused by the abuse from persisting and the affected markets from tipping in favor of the concerned platform will require some form of *prima facie* evidence that behavioral measures in such cases may not deliver the desired outcomes. Producing such evidence in practice is theoretically possible however it would require a more strategic use of interim measures under art. 8 of Regulation 1/2003.

The use of interim measures in platform cases where the abusive behavior of the concerned platform shows signs of the above mentioned developments with regard to the indirect network effects homing patterns that may lead to market tipping may prove to be very valuable for effective enforcement. Firstly, such measures would enable the Commission (or NCAs) to intervene in the early stages of such developments which increases the chances that these can be effectively addressed at the phase of the final decision which commonly takes place at a significantly later point in time.

Secondly, the implementation of behavioral remedies at the interim measure phase and their review up to the moment of the final decision on abuse can provide valuable guidance on the scope and nature of the final remedy that needs to be imposed. Accordingly, if the behavioral remedies implemented in the context of interim measures appear to produce the desired effects from the perspective of competition policy these can be maintained to a large extent also at the phase of the final decision on abuse. By contrast if such remedies do not appear to slow down the competitive harm caused by the concerned platform and the risk of market tipping continues to increase such an outcome can serve as evidence supporting the use of structural measures at the stage of the final decision on abuse.

Despite the potential benefits associated with such strategic use of interim measures from a theoretical perspective it is quite questionable to what extent the Commission would be able and willing to do so in practice. On the one hand, recent statements made by the Commission give the impression that there is a growing momentum for the use of interim measures in the case of digital markets in general and even more so in the specific case of online platforms. On the other hand, it is not clear how such intentions will transform into actions. The use of interim remedies under art. 8 of Regulation requires evidence of a prima facie infringement which may cause irreparable harm to competition. Producing evidence that the potentially abusive practices of the concerned platform are capable of producing irreparable harm to competition will constitute a significant impediment for using interim measures. This is due to the fact that adducing such evidence would entail essentially providing evidence that if the practices of the concerned platform are not tackled at an early stage, these will lead to market tipping in its favor which can hardly if at all be remedied at the stage of the final decisions. While this could theoretically be possible to prove, there are currently no available economic or legal tools which can be used for this purpose. Accordingly, even assuming that the concrete risk of market tipping would suffice to meet the criterion of irreparable harm to competition needed for using interim measures, adducing such evidence will firstly require coming up with specific tools capable of measuring such risk.

An alternative approach to achieve the same effect as the strategic use of interim measures would be introducing flexible remedies at the stage of the final decisions of abuse. Such remedies, currently discussed in the context or merger control, would entail imposing remedies consisting of multiple layers of legal interventions which may be triggered according to the manner in which market conditions in a respective case evolve. Such remedies could consist of behavioral measures which would entail the first layer of intervention that would then intensify to the point where structural measures are triggered if the harm caused by the abusive practices persists. In this sense, a comparable combination of behavioral and structural reme-

dies could be highly effective in tackling market tipping which cannot be appraised with certainty *ex- ante*. Furthermore, since the legal intervention imposed by such remedies would work based on a gradual scale it would in principle be considered compatible to a great extent with the requirements of art. 7 of Regulation 1/2003 as structural measure would only be initiated once the behavioral aspects of the remedies have failed to achieve the desired outcome. Thus, implementing structural measures would be made possible for the cases which are required and due to a preliminary phase consisting of behavioral remedies will more likely be considered proportionate under the scope of art. 7.

The implementation of this possibility will however not be free of challenges. Firstly, it would require the Commission to adopt a practice it has never pursued until now which should not be underestimated. Secondly, the implementation of such remedies may give rise to legal certainty concerns as the concerned platforms may not always have sufficient clarity concerning the circumstances that may trigger the initiation of more intrusive measures in each case. This is linked to the third main challenge, which concerns the definition of well-defined market scenarios for each of the remedial steps included in the scope of flexible remedies. Accordingly, when imposing such remedies it is paramount that the Commission defines clear, transparent and measurable conditions attached to the various behavioral and structural measures included in the remedy. Doing so would provide more legal certainty for the concerned platform as well enable EU Courts to better review such measures when contested. By providing clearly defined market conditions attached to each of the behavioral and structural remedial layers, such remedies could be better evaluated with respect to their effectiveness and proportionality. Consequently, when designing such remedies it is imperative that the Commission acknowledges these legal boundaries for remedies for each of the respective remedial layers as well as to their combination as a whole. Despite the difficulties associated with flexible remedies such an option would appear to provide a concrete effective solution within the boundaries of the existing legal framework that would allow the Commission to accommodate the challenges associated with the multisided nature of online platforms at the remedy design phase.

Until the time comes that the Commission starts making a more strategic use of interim measures or introduces flexible remedies it can be expected that the current framework of EU competition law will struggle with implementing effective and proportionate measures for abuses of dominance by online platforms, which adequately tackle the challenges stemming from their multisided nature. In this regard, it can be said that the recently proposed DMA, if implemented, may assist in this respect to a limited extent. Accordingly some of the obligations included in art. 5 and 6 of the DMA cover several forms of structural remedies that would unlikely be implemented as a first choice remedy under art. 7 of Regulation 1/2003.

Consequently in some cases the DMA would allow imposing measures which would otherwise not be possible following a finding of abuse. Furthermore, to the extent that the behavioral and structural obligations included in the DMA fail to achieve the objectives of the DMA, which is ensuring the contestability of markets, this can serve as supporting evidence for more far-reaching remedies with respect to abuses of dominance by platforms that fall under the scope of the DMA. While such an addition to the toolkit of the Commission would certainly be welcome, its added value in practice should not be overstated. The impact of this synergy between competition law remedies and the DMA will predominantly be relevant to cases concerning cross-platform tying as the competitive concerns associated with the other forms of abuse in this dissertation have not been included in the DMA. Furthermore, the scope of application of the DMA is restricted to a predefined selection of platform categories that must also fulfill very high thresholds with respect to their absolute size and turnover. In practice this means that the scope of cases in which the DMA could be of assistance for the purpose of remedy design for abuses of dominance cases under art. 102 TFEU will be quite restricted.

With these findings in mind, it can be concluded that the current framework of EU competition law may provide the Commission to a large extent with the tools it will need in order to design effective and proportionate remedies in the case of online platforms. However, in order to make full use of such tools the Commission must break free of its previous practice and attempt to find more dynamic solutions which are better suited to deal with uncertain market developments. Doing so would not only improve enforcement in the case of platforms but will also benefit the process of remedy design in the cases of non-platform undertakings where similar difficulties may sometimes arise.

7.2 Answer to the main research question and final considerations

The answers to the sub-questions of the research discussed above provide the fundamental insights needed in order to provide an answer to this dissertation's main research question:

To what extent can the current framework of EU antitrust law, and in particular art. 102 TFEU, account for the multisided nature of online platforms and accommodate an application capable of attaining a similar level of enforceability as in non-platform market settings?

In light of the many doubts expressed over the past few years in academia and practice about the ability of the current legal framework of EU antitrust law (i.e. art. 101 and 102 TFEU) to apply to online platforms, it is perhaps best that the answer to this research question starts with the positive note

that the current framework is indeed up to this task. Doing so in practice will by no means be an easy task, however, from a legal formalistic perspective there is no reason why this should not be possible. In essence, applying the current framework of EU competition law and in particular art. 102 TFEU to online platforms requires incorporating the distinguishing characteristics stemming from their multisided nature throughout the entire process of application.

Incorporating such characteristics requires first and foremost extending, or at least considering extending, the legal and economic analysis in each step of the application process to more than one market. As multisided online platforms compete with respect to the various customer groups they bring on board, their respective market position, (anti-competitive) commercial practices and, when needed, corresponding remedies should also be assessed and designed in such a context. Adapting current practice to such context with regard to cases addressed under art. 102 TFEU would entail multiple adjustments. Firstly, it would mean that the outcome of the market definition process might be that multiple relevant markets need to be defined with respect to the concerned platform or one of the services it facilitates. This would also entail that testing interchangeability and market power may have to be done across multiple markets in parallel. Secondly, when assessing potentially abusive behavior, the assessment thereof and the (pro-and) anti-competitive effects it may produce requires looking at such effects across more than one market. Thirdly, in the event that infringements are indeed established, the corresponding remedies should be designed in so as to also apply, if needed, across multiple markets.

When implementing such adjustments, additional, more specific, characteristics will need to be incorporated in the corresponding steps of the application process. The most important ones in this regard would be: the (indirect) network effects displayed by concerned platforms' customer groups, the homing patters of the concerned platforms' customer groups and the use of a skewed pricing structure. These characteristics, which are inherent to online platforms, will significantly impact the legal and economic assessment at each step of the application process.

In the context of the market definition the (indirect) network effects and the homing patterns displayed by concerned platforms' customer groups will determine to a great extent the number of markets that need to be defined for the concerned platform or one of the services it facilitated. In the context of the assessment of non-price related abuses such as tying and bundling practices these characteristics will determine the anti-competitive potential and scope of competitive harm created by such practices. Similarly, when dealing with price-related abuses these characteristics together with the use of skewed pricing structures will help determine anti-competitive potential and scope of exclusionary and exploitative harm caused by the concerned

platforms' price settings. Finally, at the stage of remedies all three characteristics will determine which markets the remedies should address, the nature of the harm that needs to be halted and restored and the manner in which the concerned platform should amend its abusive commercial practices in order to be in compliance with the law.

Incorporating all of these platform characteristics in the application process of art. 102 TFEU will undoubtedly be challenging, however, it will mostly concern adjusting the (economic) tools used by the Commission (or NCAs) in order to discharge their burden of proof with regard to each of the legal steps in the application process. In the case of the market definition, it is not the requirement to undertake this process as such which constitutes the main challenge in the case of platforms but rather the manner in the process is approached, how substitutability is assessed and how the SSNIP test cannot work in zero-price settings. Similarly, in the case of tying and bundling abuses, the legal test developed by the CJEU is not in itself problematic. Instead, it is the ability to ensure an accurate identification of practices which resemble tying and the multi-market assessment of foreclosure effects, which is required for establishing an infringement, that constitute the main enforcement hurdles. In the case of price-related abuses the situation is similar, it is mainly the manner in which the price analyses are performed, the price benchmarks selected and the multi-market analysis of foreclosure which require caution.

To a great extent this is also visible at the phase of remedies, where the main difficulty related to the multisided nature of platforms is designing measures that are capable of tackling anti-competitive effects across multiple markets simultaneously. Admittedly, however, in this latter case it can also be argued to some extent that the legal requirements and boundaries imposed on remedy design choices may be amplified in the case of online platforms. This is most noticeable in the case of interim measures that require proof of irreparable harm to competition, which is far more difficult to prove in dynamic market conditions as those often associated with online platforms. Nevertheless, this difficulty also partly stems from the lack of (economic) tools suitable for assessing market tipping which would otherwise fulfill this legal requirement, as it would represent the equivalent of irreparable competitive harm in the context of platform markets. Similarly, when it comes to the justification possibilities under art. 101 and 102 TFEU it can be argued that the Commission's guidelines and the CJEU's interpretation of these modalities make them less feasible in the context of platforms. However, this difficulty may at times be resolved by the manner in which the relevant market is defined as well as by the manner in which such efficiencies are presented and explained by the concerned parties.

In this regard it can therefore be concluded that the current framework of EU antitrust law and in particular art. 102 TFEU is to a great extent capable of accommodating the distinguishing characteristics of online platforms in a manner that would attain similar outcomes as in non-platform market settings. Making use of this capability depends, however, to a great extent on the willingness of the Commission (or NCA) to incorporate such characteristics in the (economic) tools and methods used to discharge its burden of proof in such cases. These adjustments will therefore mostly form part of the complex economic assessment the Commission is expected to perform in most competition cases. This in turn means that adapting the current framework to the reality of online platforms will for the most part not require additional regulatory intervention or the revision of previous case law by the EU Courts. Accordingly, despite the substantive complexities associated with accommodating the multisided nature of online platforms in the current frame of EU competition law, the adjustments required for this purpose will entail relatively few formal legal hurdles. In this respect the recent proposal of the DMA will do relatively little to alleviate the challenges faced in the context of competition policy as its framework provides little guidance on how the deal with the multisided character of online platforms.

Instead, the DMA offers a way around some of the challenges experienced in the context of competition policy. The most evident examples in this regard are the avoidance of the market definition process and its replacement with predefined volume thresholds, and the ex-ante prohibition of various cross platform tying modalities. This approach may to some extent increase the feasibility of enforcement in the short term. However, the restricted scope of the DMA will limit its relevance in practice. Furthermore, to the extent the parties covered by it will contest the obligations imposed on them by the DMA the Commission and EU Courts will inevitably have to deal with the multisided character of the concerned online platforms in the context of such procedures. While the context of such cases may be slightly different, the legal and economic assessment required will inevitably entail looking into the state of competition in platform markets and the commercial reality of the online platforms active in them. Therefore many of the challenges faced in the context of competition policy will require resolving even in the presence of specific regulatory frameworks such as the DMA. What remains to be seen is whether these challenges will be tackled with the aim of resolving them or whether the Commission (or NCAs) will seek additional manners in order to avoid them all together.

Annex 1 – Legislation

- Commission Guidelines on the application of Article 81(3) of the Treaty (2004) OJ C 101/97
- Commission Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003, (2006) OJ C 210/02
- Commission Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (2009) OJ C 45/2
- Commission Guidelines on vertical restraints (2010) OJ C 130/1
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- Commission Notice on the definition of the relevant market for the purposes of Community competition law [1997] Official Journal C 372/5
- Commission Notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 OJ C267/1
- Commission Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final.
- 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, OJ L 102/1
- Consolidated version of the Treaty on the Functioning of the European Union OJ C 326/ 47
- 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 (Text with EEA relevance) OJ/L 1
- Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings OJ L 24/1
- Directive (EU) 2015/2366 of the European Parliament and the of the Council of 25 November 2015 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, OJ L377/35.
- EEC Council Regulation No 17: First Regulation implementing Articles 85 and 86 of the Treaty (1962) OJ 13/ 3
- 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) OJ L 119/1

Annex 2 – List of Cases

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- Judgment of the Court of 13 November 1975 Case 26/75, *General Motors Company v Commission* [1975] ECLI:EU:C:1975:150
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- Order of the Court of 17 January 1980 in Case C 792/79R *Camera Care v Commission* [1980] ECLI:EU:C:1980:18
- Judgment of the Court of 9 November 1983 in Case 322/81 *NV Nederlandsche Banden Industrie Michelin v Commission* [1983] ECLI:EU:C:1983:313
- Judgment of the Court of 28 March 1985 in Case 298/83, *CICCE v Commission* [1985] ECLI:EU:C:1985:150
- Judgment of the Court of 3 October 1985 in Case 311/84 *CBEM v CLT* [1985] ECLI:EU:C:1985:394
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- Judgment of the Court of 11 April 1989 in Case 66/86, *Ahmed Saeed Flugreisen and Silver line Reisburo GmbH v Zentrale zur Bekampfung unlauteren Wettberbs e. V*. [1989] ECLI:EU:C:1989:140
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- Judgment of the Court of 27 September 1988 in Case C-89/85 *A. Ahlström Osakeyhtiö and others v Commission* [1993] ECLI:EU:C:1993:120
- Judgment of the Court of 6 April 1995 in Joined cases C-241/91 P and C-242/91 P *RTE and ITP v Commission* [1995] ECLI:EU:C:1995:98
- Judgment of the Court of 6 April 1995 in Case C-241/91 P *Magill* [1995] ECLI:EU:C:1995:98

- Order of the Court of 19 July 1995 in Case C-149/95 P(R) *Commission v Atlantic Container* [1995] ECLI:EU:C:1995:257
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Executive Summary

This dissertation assesses the various challenges involved in the application of the current framework of EU antirust law, and in particular art. 102 TFEU to online platforms. The dissertation is based on the combined research that resulted in the publication of six separate articles and a supplementary chapter. Looking into various topics and considering different angles this dissertation addressed the following main research question: '*To what extent can the current framework of EU antitrust law, and in particular art. 102 TFEU, account for the multisided nature of online platforms and accommodate an application capable of attaining a similar level of enforceability as in non-platform market settings?*'.

An inquiry into the economic, commercial and technological characteristics of online platforms reveals that that the application of the current framework of EU antitrust law to such actors will give rise to multiple challenges. Many of those challenges relate to the multisided nature of such players. The multisided nature of online platforms entails that they cater their services to two or more separate customer groups, meaning they operate on multiple separate yet related markets simultaneously. When brought within the ambit of EU antitrust law, these circumstances would mean that the scope of the legal analysis under such framework might also have to be adjusted correspondingly. Accordingly, generally speaking, when assessing the potential anti-competitive effects as well as the efficiencies generated by the practices of the concerned platform(s) in each case, such assessment may have to extend to more than one market at a time. In turn, this may mean that certain cases will require delineating multiple separate yet related relevant markets. Furthermore, where infringements of EU antitrust law are indeed identified, designing effective remedies might equally require measures that extent across multiple markets simultaneously.

In practice, adjusting the application process if EU antitrust law to the multisided nature of online platforms will entail taking into account several core settings that are inherent to this nature. Generally speaking, the most important of such settings will be the network effects at play, the homing patterns of the platform customer groups (single or multi-homing) and the skewed pricing structures of platforms.

Taking into account the network effects and homing patterns of platform customers in each case will have a significant impact on the outcomes of all stages of the application of the current EU antitrust law framework.

When defining the relevant market, the presence and intensity of (indirect) network effects and the presence of multi-or single homing patterns by the platform customers will determine to a great extent the number of markets that should be defined as well as their respective scope. The skewed pricing structures in such cases will also determine whether the SSNIP test needs to be replaced by a non-price centered test if such structures include zero priced offers with respect to certain platform customer groups.

When assessing the anti-competitive effects of the commercial practices of the platform(s) under investigation, the network effects and homing patterns will determine likelihood and scope of harm that can be expected to arise from its actions. Accordingly, when dealing with potentially anti-competitive behavior such an extended assessment may determine whether such practices are legitimate, or otherwise an abuse of dominance under art. 102 TFEU or a restriction of competition under art. 101 TFEU. When designing remedies, taking account of the network effects at play and the homing patterns of platform customers will determine the intrusiveness of the envisaged measure as well as the number of markets that need to be covered by it.

In cases where the investigated behavior of the concerned platforms involves their pricing practices, taking into account the inherent use of skewed pricing structures by platforms will be essential for assessing the permissiveness of their practices. This aspect, taken together with the network effects and the homing patterns of platform customers, will contribute greatly towards establishing whether certain pricing practices concern prohibited exclusionary or exploitative practices when implemented by dominant platforms. The manner in which such skewness needs to be accounted for in each case will depend on the type of infringement that is considered and its corresponding theory of harm. Where abusive practices are indeed identified, this same composition of settings will also provide guidance on how the pricing strategies of the concerned platform(s) ought to be adjusted so as to comply with EU antitrust law while being mindful of the commercial and economic constraints of platform pricing structures.

Finally, throughout the entire application process, is it imperative that the technical aspects of platforms are crystalized and translated into the specific context of EU antitrust law based on their working in practice. Such technical aspects are often given little attention, however their inclusion in the legal and economic analysis will have significant implications for the entire application process. For example, the outcome of the market definition process for online platforms will often depend on the technical characteristics of these actors, which will significantly determine the degree of interchangeability between platform undertakings that are thought to be (potential) competitors.

Furthermore, establishing whether certain practices constitute an abuse of dominance or a restriction of competition will often depend on whether their technical manifestation is adequately identified and understood. This is particularly important in the process of expansion that all platforms go through at a given point in time as such process will inevitably entail some form of cross market leveraging. In such cases anti-competitive leveraging actions such as tying and bundling strategies can easily become obscure when these are technically implemented. This can occur for example through cross platform sign-in obligations (i.e. using platform A requires signing in with an account of platform B) or the unsolicited creation of cross platform profiles (creating an account for platform A automatically creates one for platform B as well), which are often used in practice and are rarely viewed with suspicion. Similarly, with the rise of price monitoring and setting software, understanding the workings of such software together with the manner and context in which it is applied could determine whether the use of such software can be seen as a form of concerted practices or a legitimate practice. Of course, given the logical link between infringements of EU antitrust law and their corresponding remedies, the technical of online platforms will also need to be taken into account when designing remedies. Failing to do so would risk coming up with disproportionate remedies that require technically unfeasible adjustments or otherwise ineffective remedies that may be circumvented or minimized. Therefore, correctly contextualizing the technical architectures and functionalities of online platforms will be indispensable for applying the current EU antitrust law framework to their practices.

Based on the research presented in this dissertation, it is submitted that accommodating all these platform related considerations in the current framework of EU antitrust law is overall possible but requires supplementary efforts in order to be workable. Often such efforts will simply concern additional guidance for existing practice. For example, under the existing framework there is nothing truly preventing the definition of multiple relevant markets in a given case, however, what remains to be developed is a guiding methodology for deciding when and how this should be done. Similarly, there are no legal hurdles that would exclude the possibility of converting the SSNIP test to non-price test carrying the same logic, however, doing so requires also introducing a corresponding procedural framework that determines how such test should be constructed and applied. The assessment of anti-competitive behavior across markets is also certainly possible, and at times even required within the current framework, however, the manner in which such effects should be assessed needs to be established.

In other instances accommodating the current framework to online platforms may require the adjustment of certain existing legal tests for infringements. Although such adjustments may appear more significant they do not

require substantively deviating from existing practice but rather translating such practice to the setting of multisided markets. Accordingly, the respective frameworks can remain intact, however, their mode of application may have to be redefined. In this respect the matter of remedy design entails perhaps the most evident example.

Creating remedies capable of dealing with the fast paced and unpredictable market dynamics of online platforms, will require using the current framework of Regulation 1/2003 more creatively than before. Such creative use would entail a strategic combination of interim measures and final (behavioral or structural remedies) or the introduction of flexible remedies consisting of multiple measures that are triggered based on market developments. Despite being unconventional, these options are feasible within the existing legal framework of Regulation 1/2003 and are imperative for the effective application of EU antitrust to online platforms. Such solutions could prevent network effects, which are inherent to online platforms, from amplifying the competitive harm produced by such actors. In extreme circumstances these may even help prevent markets from tipping or alleviate some of the competitive harm in case of markets that have tipped.

Although the commercial behavior of online platforms is increasingly being covered by newly developed regulatory frameworks, it is noted that such developments are not likely to make the need for adjustments to the existing framework of EU antitrust in practice less acute. This is because platform-specific frameworks, such as the Digital Markets Act (DMA), will apply solely to a sub-set of online platforms and address a (limited) pre-defined scope of undesirable practices. Consequently, the majority of practices implemented by online platforms that are capable of raising competitive concerns will remain to be addressed under the scope of EU antitrust law.

With these insights in mind, the conclusion of my dissertation is therefore that the current framework of EU antitrust can, to a great extent, account for the multisided nature of online platforms and ensure its enforceability with respect to these actors. Achieving this outcome in practice will require, however, translating such framework as a whole, throughout all the stages of its application, to the commercial, economic and technical settings of online platforms. Doing so will often require revisiting the boundaries of such framework and re-defining some of the forms of its application so as to maintain its enforceability in an effective manner. The research covered in this dissertation attempts to provide guidance as to how such task should be performed. Such guidance is not intended to be exhaustive nor exclusive but rather present various possibilities in which the current framework could be adjusted to deal with online platforms. Alternative solutions may, in time, also prove to be suitable provided that the core rationale of this dissertation is followed, namely that the distinguishing multisided nature of online platforms requires being taken into account throughout the entire

application process of the current EU antitrust framework. Treating such process as 'old wine in new bottles' and perusing similar approaches as in the case of traditional non-platform markets will undoubtedly lead to undesired outcomes of over-or underenforcement.

Samenvatting – Dutch Summary

De toepassing van het Europees mededingingsrecht op (dominante) online platforms

Dit proefschrift richt zich op de verschillende vraagstukken die zich aandienen bij de toepassing van het Europees mededingingsrecht, en meer in het bijzonder bij de toepassing van artikel 102 van het Verdrag betreffende de werking van de Europese Unie ("VWEU") op online platforms. Het is gebaseerd op een gecombineerd onderzoek dat heeft geresulteerd in zes gepubliceerde artikelen en een afsluitend hoofdstuk. Vanuit diverse invalshoeken en kijkend naar verschillende aspecten wordt in dit proefschrift de volgende hoofdonderzoeksvraag behandeld: *In hoeverre kan het bestaande Europees mededingingsrecht, en in het bijzonder artikel 102 VWEU, het meerzijdige karakter van online platforms in acht nemen en voorzien in een toereikende toepassing op online platforms op een manier die vergelijkbaar is met de toepassing in non-platform marktomstandigheden?*

Een analyse van de economische, commerciële en technologische eigenschappen van online platforms laat zien dat de toepassing van het bestaande Europees mededingingsrecht op deze spelers meerdere uitdagingen met zich mee brengt. Veel van deze uitdagingen vloeien voort uit het meerzijdige karakter van online platforms. Dit meerzijdige karakter houdt in dat online platforms hun diensten aan diverse gebruikersgroepen aanbieden, waardoor zij gelijktijdig opereren op meerdere separate doch aan elkaar gerelateerde markten. Wanneer deze omstandigheden binnen het kader van het Europees mededingingsrecht worden beoordeeld, zou de juridische analyse derhalve ook moeten worden toegespitst op dit meerzijdige karakter van online platforms. Dit betekent in beginsel dat de analyse van de effecten van zowel de pro-competitieve als de concurrentiebeperkende gedragingen van online platforms zich zou moeten richten op meerdere markten tegelijkertijd. Dit heeft weer tot gevolg dat in sommige gevallen meerdere relevante markten zullen moeten worden gedefinieerd. Indien wordt vastgesteld dat sprake is van een inbreuk op het Europees mededingingsrecht, zullen de remedies tevens betrekking moeten hebben op deze meerdere markten.

Bij het toespitsen van de juridische analyse op het meerzijdige karakter van online platforms, zullen de kerneigenschappen die inherent zijn aan dit karakter bij dit proces moeten worden meegenomen. In beginsel zijn de belangrijkste kerneigenschappen: netwerkeffecten, *single of multi-homing* (het exclusieve dan wel parallelle gebruik van platforms) en scheve prijsstellingen (*skewed pricing structures*).

Het in acht nemen van netwerkeffecten en *single* of *multi-homing* zal een significante invloed hebben op de stappen die centraal staan bij de toepassing van het Europees mededingingsrecht op online platforms. Bij het definiëren van de relevante markt zullen (indirecte) netwerkeffecten en *single* of *multi-homing* bepalen hoeveel markten daadwerkelijk gedefinieerd moeten worden, alsook wat de reikwijdte van deze markten is. Voorts zullen de scheve prijsstellingen van online platforms bepalen of de SSNIP-test dient te worden vervangen door een niet-prijs gerelateerde test. Dit zal met name het geval zijn wanneer de prijsstellingen van platforms inhouden dat sommige diensten door bepaalde gebruikersgroepen zonder betaling van een monetaire prijs kunnen worden afgenomen.

Bij het analyseren van de concurrentiebeperkende effecten van handelspraktijken van online platforms zullen netwerkeffecten en *single* of *multi-homing* bepalen welke nadelige effecten kunnen worden verwacht en wat de aannemelijkheid en omvang daarvan kan zijn. Zodoende kan een dergelijke analyse bepalen of deze praktijken legitiem zijn, dan wel kwalificeren als misbruik van machtspositie onder artikel 102 VWEU of een beperking van de mededinging onder artikel 101 VWEU. Bij het vormgeven van de remedies zullen netwerkeffecten en *single* of *multi-homing* bepalen hoe ingrijpend een voorgenomen maatregel zou moeten zijn, alsook op welk aantal markten de remedies toepassing zouden moeten hebben.

In gevallen waarbij het onderzochte gedrag van online platforms betrekking heeft op de prijsstelling, is het essentieel om rekening te houden met het gegeven dat scheve prijsstellingen inherent zijn aan online platforms. Dit gegeven zal samen met netwerkeffecten en *single* of *multi-homing* in grote mate bijdragen aan het kwalificeren van prijsstellingen van dominante platforms als een eventuele vorm van uitbuitende of uitsluitende praktijken. De manier waarop scheve prijsstellingen van online platforms moeten worden meegewogen in de analyse zal per geval afhankelijk zijn van het type misbruik en de daarbij horende centrale hypothese (‘*theory of harm*’). Indien sprake is van misbruik van machtspositie zal dezelfde samenstelling van beoordelingscriteria leidend zijn bij het bepalen van de wijze waarop de prijsstelling van het platform zou moeten worden aangepast om in lijn te worden gebracht met het Europees mededingingsrecht. Daarbij zal ook rekening moeten worden gehouden met de commerciële en economische onderbouwing van prijssstellingsstructuren van platforms.

Tenslotte is het voor een juiste toepassing van het Europees mededingingsrecht essentieel om de technische functionaliteiten van online platforms te doorgronden en te vertalen naar de specifieke context daarvan. Aan dergelijke technische aspecten wordt vaak weinig aandacht geschonken, terwijl hun rol in de praktijk veelal significante gevolgen kan hebben voor het toepassingsproces. Zo zullen de technische aspecten van online platforms bij de marktdefinitie de substitueerbaarheid tussen platformondernemingen mede bepalen.

Ook bij het vaststellen van een misbruik van machtspositie of een beperking van de mededinging zal een goed begrip van de technische werking van het platform noodzakelijk zijn. Dit is met name van belang in het kader van het groeiproces dat alle online platforms zullen doormaken, aangezien een dergelijk proces onvermijdelijk een marktmacht hefboomeffect (*leveraging*) tussen verschillende functionaliteiten met zich mee zal brengen. In zulke gevallen zullen mededingingsbeperkende gedragingen die het uitbreiden van marktmacht mogelijk maken, zoals koppelverkoop, gemakkelijk verborgen kunnen worden in de technische functionaliteiten van het platform. Dit kan bijvoorbeeld via een inlogverplichting op het platform, waarbij het inloggen op platform A het gebruik van een account op platform B vereist. Een andere mogelijkheid is het automatisch genereren van een account voor meerdere platformen tegelijk, bijvoorbeeld als bij het creëren van een account voor platform A automatisch een account voor platform B wordt aangemaakt. Deze aanmeldingsmogelijkheden komen vaak voor in de praktijk terwijl de legitimiteit daarvan zelden in twijfel wordt getrokken. Evenzo is het noodzakelijk om een goed begrip te krijgen van geautomatiseerde prijsstellingssoftware, alsook de manier waarop en context waarin dergelijke software door een platform wordt toegepast. Dit zal bepalend zijn bij het al dan niet vaststellen van een beperking van de mededinging door het gebruik van dit soort software.

De noodzaak van het doorgronden van de technische aspecten van online platforms is niet alleen van belang voor het vaststellen van schendingen van het Europees mededingingsrecht, maar ook voor het adequaat vormgeven van toepasselijke remedies die geschikt zijn om de concurrentieschade effectief te adresseren.

Gebaseerd op het onderzoek gepresenteerd in dit proefschrift wordt betoogd dat de specifieke eigenschappen van online platforms in acht kunnen worden genomen binnen het kader van het huidige Europees mededingingsrecht, mits een aantal aanvullende stappen worden genomen. Vaak zullen deze stappen enkel bestaan uit het nader duiding geven aan meerdere aspecten van de bestaande praktijk. Zo staat niets er aan in de weg om in een bepaalde zaak meerdere markten te definiëren, maar ontbreekt op dit moment de methodologie rondom dit proces. Ook zijn er geen juridische obstakels voor het omzetten van de SSNIP-test in een niet-prijs gerelateerde test, echter vergt dit wel een daarbij passend procedureel kader omtrent de samenstelling en toepassing van een dergelijke test. Het beoordelen van mededingingsbeperkende gedragingen op meerdere markten is ook mogelijk en zelfs vereist in het kader van het bestaande juridische systeem. De manier waarop een dergelijke beoordeling moet plaatsvinden, moet echter nog worden bepaald.

In andere gevallen zijn verdergaande veranderingen vereist, zoals het aanpassen van sommige juridische toetsen voor schendingen van het Europees

mededingingsrecht. Hoewel deze veranderingen op het eerste oog ingrijpend lijken, leiden dergelijke aanpassingen niet tot het creëren van nieuwe toets criteria, maar slechts tot een aangepaste interpretatie in de context van meerzijdige markten. Derhalve blijft het bestaande kader intact maar zal de toepassing daarvan moeten worden geherdefinieerd. De aanpassingen die nodig zijn bij het vormgeven van remedies, zijn hier illustratief voor.

Bij het vormgeven van remedies die geschikt zijn voor de snel veranderende en onvoorspelbare marktomstandigheden zal een creatieve toepassing van Verordening 1/2003 nodig zijn. Een creatief gebruik van remedies zou in deze context kunnen bestaan uit een gecombineerd gebruik van voorlopige en definitieve maatregelen (maatregelen ter correctie van gedragingen of structurele gedragingen) of het introduceren van flexibele remedies, bestaande uit meerdere maatregelen die afhankelijk zijn van marktontwikkelingen. Hoewel het op deze wijze vormgeven aan remedies ongebruikelijk is, past dit wel binnen het huidige juridische kader van Verordening 1/2003 en is dit essentieel voor een effectieve toepassing van het Europees mededingingsrecht op online platforms. Een dergelijke benadering van remedies kan voorkomen dat de netwerkeffecten, die inherent zijn aan online platforms, de concurrentieschade die door deze partijen wordt veroorzaakt vergroot. In bijzondere omstandigheden kunnen deze remedies er ook aan bijdragen dat wordt voorkomen dat de markt in kwestie kantelt (‘*tipping*’) of dat de gevolgen van een marktkanteling worden beperkt.

Hoewel de gedragingen van online platforms steeds meer gereguleerd worden door nieuwe wetgevingsinitiatieven, dient te worden opgemerkt dat deze ontwikkelingen de noodzaak voor aanpassingen van het huidige Europees mededingingsrecht in de praktijk niet zullen wegnemen. Dit heeft ermee te maken dat platform specifieke regulering, zoals de Wet inzake digitale markten (‘*Digital Markets Act*’), alleen van toepassing is op een zeer beperkte groep online platforms, en alleen een gelimiteerd aantal ongewenste gedragingen adresseert. Derhalve zullen de meeste mededingingsbeperkende praktijken van online platforms alsnog binnen het kader van het Europees mededingingsrecht moeten worden geadresseerd.

Gelet op het voorgaande is de conclusie van dit proefschrift dat het bestaande Europees mededingingsrecht in grote mate het meerzijdige karakter van online platforms in acht kan nemen en kan zorgen voor een effectieve handhaving ten aanzien van deze partijen, op een manier die vergelijkbaar is met non-platformmarktomstandigheden. In de praktijk vereist dit wel dat het bestaande mededingingsrecht als geheel wordt geïnterpreteerd in het licht van de commerciële, economische en technische aspecten van online platforms. Dit zal met zich meebrengen dat de grenzen van het bestaande juridische kader moeten worden herzien teneinde de toepassing daarvan en de effectiviteit van de handhaving te waarborgen. Het onderzoek in dit proefschrift beoogt sturing te bieden aan dit proces.

De voorgestelde mogelijkheden dienen niet als uitputtend te worden beschouwd, maar als een verzameling van mogelijke oplossingen om het bestaande juridisch kader van Europees mededingingsrecht toe te passen op online platforms. Alternatieve oplossingen kunnen te zijner tijd ook passend blijken te zijn, mits de centrale gedachtegang van dit proefschrift wordt gevolgd, namelijk dat het onderscheidende meerzijdige karakter van online platforms in acht moet worden genomen gedurende het gehele toepassingsproces van het Europees mededingingsrecht. Het beschouwen van deze problematiek als 'oude wijn in nieuwe zakken' en het voortdurend benaderen van online platforms op een manier die past bij de 'oude' economie zal ongetwijfeld leiden tot ongewenste uitkomsten van overmatige of ontoereikende handhaving.

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When I first drafted my PhD research plan in 2016, I had set myself the goal of completing my dissertation in no more than four years. Along the way this goal proved a little bit too ambitious as it did not take into account the many unexpected events and opportunities that life brings. Although my academic journey has lasted longer than expected it has also been much richer and more pleasant than I initially imagined it would be. During this time I was able to reflect extensively on my research and adapt it in correspondence to the constant evolvements that took place in practice, which I believe has contributed greatly to the relevance and quality of the end result. Furthermore, I was also able to participate in research exchanges and pursue various academic and professional endeavors that helped to motivate me throughout the different stages of my work. Most importantly, however, this period allowed me to balance my time well between my life in the Netherlands and in Israel, which has made the entire process far more pleasant than envisaged.

Now that this process has reached its final stage, it is appropriate to look back and acknowledge those who have helped make it possible. To begin with, I am very grateful that Prof. Tom Ottervanger was willing to support my PhD idea that was perceived as quite experimental at the time, as online platforms were not given the same enforcement priority as they are today. I am very thankful for Tom's guidance that helped me navigate through the uncharted waters of my topic as well as for the freedom he gave me to explore my own ideas and visions. I am also very grateful that Dr. Ben Van Rompuy joined this project as second supervisor with great enthusiasm and interest. Throughout the writing process we have had countless discussions on my topic and on competition law in general, which have been very valuable for this dissertation.

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Curriculum Vitae

Daniel Mândrescu was born on the 3rd of May 1987 in Galati, Romania. In 2007 he graduated from Hugim High school in Haifa Israel, after which he moved to the Netherlands for his academic studies. In 2008, after obtaining the Dutch language NTII diploma, he started his academic studies at the University of Amsterdam. He obtained his Bachelor of Laws (LLB) degree (Rechtsgeleerdheid) in 2012. Daniel continued his studies at the University of Amsterdam where he also obtained, in 2013, two Master of Laws (LLM) degrees in European and International law (European Competition Law and Regulation track and International Trade and Investment Law track). During his studies, Daniel worked as a student assistant, teaching assistant and member of the curriculum committee of the European Competition Law and Regulation LLM track at the University of Amsterdam. Following his studies, in 2014, Daniel followed two internships in the competition law and regulation departments at the Amsterdam offices of Allen & Overy and Loyens & Loeff.

In October 2015, Daniel started his work and research as a PhD Fellow at the Leiden Law School of Leiden University. In the course of his research project Daniel was a visiting researcher at University College London in 2017. As of 2018 Daniel become a contributing editor of the CoRe Blog of Lexxion and from 2020 also the co-managing editor of Wolters Kluwer European Merger Decisions Digest and the co-creator of the Market Definition Locator. In 2020 he was the editor of the FIDE congress volume on competition law and the digital economy.

In the range of books published by the Meijers Research Institute and Graduate School of Leiden Law School, Leiden University, the following titles were published in 2021 and 2022

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