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MARKET DEFINITION AND MARKET POWER IN THE PLATFORM ECONOMY



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Table of contents

About CERRE.....	4
About the authors.....	5
Executive summary	6
1. Introduction: Scope, Purpose, Methodology.....	10
2. “Platform” or “Two-Sidedness” as an Analytical and Legal Concept.....	13
2.1. Direct and Indirect Network Effects	13
2.1.1. Direct network effects	13
2.1.2. Cross-group external effects and indirect network effects	14
2.1.3. Combined direct and indirect network effects	15
2.2. Platforms.....	15
2.2.1. A general notion of platform.....	15
2.2.2. Two-sided platforms.....	16
3. Market Definition	19
3.1. Single-Market Approach vs. Multi-Markets Approach.....	22
3.1.1. Is there a “two-sided transaction market” and does it justify a single-market approach?.....	23
3.1.2. Competition practice	28
3.1.3. Conclusions.....	38
3.2. Independent vs. Interdependent Markets.....	39
3.2.1. Are there scenarios in which cross-group external effects are insignificant?.....	39
3.2.2. Implications for competition practice	41
3.2.3. Conclusions.....	46
3.3. Markets Without a Price	46
3.3.1. Why do “zero-price markets” exist?	46
3.3.2. Competition practice	48
3.3.3. Conclusions.....	53
3.4. Market Delineation and Homing Decisions	54
3.4.1. Monopolies in markets in which users multi-home.....	55
3.4.2. Distinguishing single-homing from multi-homing	56
3.4.3. Endogeneity of homing decisions	57
3.4.4. Platform’s contractual obligations imposed on users and market definition	57
3.4.5. Conclusions.....	57
3.5. Multiple Markets on One Side of a Platform	57
3.5.1. Multi-purpose platforms.....	58
3.5.2. Regional markets.....	58
3.5.3. One-stop vs. multi-stop shopping	60
3.5.4. Conclusions.....	61
3.6. SSNIP Test (“Hypothetical Monopolist Test”)	62

3.6.1.	SSNIP test for two-sided platforms	63
3.6.2.	SSNIP test and pass-through	64
3.6.3.	SSNIP test, platform access and usage	65
3.6.4.	SSNIP test and “zero-price markets”	65
3.6.5.	SSNIP test and different business models	66
3.6.6.	Implications for competition practice	66
3.6.7.	Conclusions.....	67
4.	Market Power in Markets with Platforms	69
4.1.	Measuring Market Shares.....	70
4.1.1.	Revenue shares	70
4.1.2.	User shares.....	71
4.1.3.	Market dynamics	72
4.1.4.	Conclusions.....	72
4.2.	Market Shares as an Indicator of Market Power – Mitigating and Aggravating Factors	72
4.2.1.	Tipping	73
4.2.2.	Entry barriers: network effects and beyond.....	75
4.2.3.	Potential competition.....	79
4.2.4.	Competition law should avoid employing “hard” market share thresholds.....	81
4.2.5.	Conclusions.....	82
4.3.	Market Power Without (Proof of) High Market Shares: Alternative Mechanisms to Demonstrate Market Power	83
4.3.1.	Markups/Lerner indices.....	83
4.3.2.	Profitability	86
4.3.3.	Direct evidence	87
4.3.4.	Conclusions.....	89
	References.....	90

About CERRE

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Executive summary

Platforms play a central role as facilitators of interactions and transactions between users. The value of the services they offer often not only depends on the inherent service features provided to the users but is also, and possibly primarily, determined by whether and how often other users are active on the platform, i.e. how prominent network effects are on the platform. In particular, 'two-sided platforms' bring together two different user groups who are linked through cross-group external effects.

With the rise of digital platforms and the natural tendency of markets involving platforms to become concentrated, competition authorities and courts are more frequently in a position to investigate and decide merger and abuse cases that involve platforms. A proper understanding of the ensuing market environments requires an understanding about which products or services should be included in the analysis.


This report provides guidance on how to define markets and on how to assess market power when dealing with two-sided platforms.

Competition authorities and courts are *well advised to uniformly use a multi-markets approach* when defining markets in the context of two-sided platforms. The multi-markets approach is the more flexible instrument compared to the competing single-market approach that defines a single market for both sides of a platform, as the former naturally accounts for different substitution possibilities by the user groups on the two sides of the platform. While one might think of conditions under which a single-market approach could be feasible, the necessary conditions are so severe that it would only be applicable under rare circumstances. Moreover, to recognise that a single-market approach might be applicable under certain conditions would create substantial risks that an authority or a court adopted it erroneously. Based on a critical analysis of cases where a single-market approach has been applied, the report finds this concern is indeed well founded.

Using the multi-markets approach does not spare the competition authorities and courts from incorporating network effects since market definition on one side of the platform depends on user behaviour on the other side as well as on the strength and the direction of external effects. Furthermore, cross-group external effects can appropriately be considered at subsequent stages of a competition law analysis. First, those effects are important to appraise the significance of market shares as an indicator of market power. Second, cross-group external effects may be taken into account, in particular when appraising the existence of anti-competitive effects under Article 101(1) TFEU or the conditions of an exemption under Article 101(3) TFEU, when applying the SIEC test under Article 2 of the EU Merger Regulation, or when ascertaining an abuse under Article 102 TFEU.

An adequate competition analysis of two-sided platforms requires that market definition does not (finally) determine whether or not pro- and anti-competitive effects, or the welfare effects on different groups of consumers, can be balanced. Thus, when it is acknowledged that a weighing of different and diverging effects is allowed or even required if these effects relate to a single market, then it must be allowed or required just in the same way to apply such a weighing if it concerns cross-group external effects on different sides of a two-sided platform that belong to different markets. The EU Commission should clarify these aspects in its publications, in particular in its Guidelines on Article 101(3) TFEU and on the assessment of horizontal mergers.

To fully appreciate business activities in platform markets from a competition law point of view, and to do justice to competition law's purpose, which is to protect consumer welfare, the legal concept of a "market" should not be interpreted as requiring a price to be paid by one party to the other. It is not sufficient to consider the activities on the "unpaid side" of the platform only indirectly by way of including them in the competition law analysis of the "paid side" of the platform. Such an approach would exclude certain activities and ensuing positive or negative effects on consumer welfare altogether from the radar of competition law. Instead, competition practice should recognise straightforwardly that there can be "*markets*" for products offered free of charge, i.e. without monetary consideration by those who receive the product.



While it is well understood that the supply of personal data and/or attention to the platform can be regarded as consideration because it can be monetised by the platform, it is not beneficial to transform this insight into a legal concept of “remuneration”. Consequently, a “market” as a concept of competition law should be understood as consisting of transactions between two or more parties, of which at least one acts for economic purposes. The latter is apparent in cases where a product is provided for remuneration. Moreover, in cases where a product is offered free of charge, it suffices to demonstrate that the activity is part of a broad or a long-term strategy to generate revenue. This definition of a “market” is meant to exclude essentially (only) activities that involve the exercise of power by public authorities and philanthropic activities.

The competition practice of the European Commission and the adjudication of the ECJ appear to be on the right track in this regard. Nevertheless, an amendment of the guidelines on the application of Articles 101 and 102 TFEU is desirable as it can provide guidance also to the Member States’ authorities and courts which apply EU law and as it may also motivate a corresponding interpretation of domestic competition law.

Market definition has to take into account the degree of multi- and single-homing by platform users. The decision to multi-home often depends on the degree of multi-homing on the other side, which in turn may be affected by contractual clauses imposed by platforms. The degree of multi-homing on one side is not only relevant for the substitutability between platform services in this market but also for the substitutability in the market for platform services on the other side. If users on one side of the platform multi-home, while users on the other side of the platform single-home, it is appropriate to define a monopoly market on the multi-homing side as the platform is the unique access provider to its single-homing users on the other side – here the platform can be seen as the gatekeeper to its single-homing users.

There may exist multiple markets on each side of the platform; for example, a platform may offer different categories of services or may be active in different regional markets. However, multiple markets on one side may be linked with each other if users have positive opportunity cost of visiting a platform. Consequently, these markets should not be analysed in isolation; their interdependence should be accounted for.


The *SSNIP test*, used as a concept for market definition, can be applied to two-sided platforms, albeit in an adapted form. It is to be employed on each side of the platform, while cross-group external effects and their interplay must be included. If an increase in price on one side of the platform is likely to cause an adjustment on the other side, this requires an assessment of how the respective platforms optimally adjust their price structure.

Although it is difficult to empirically implement the SSNIP test in the context of two-sided platforms, *the SSNIP test is a useful instrument for competition practice if applied as a thought experiment*: it provides conceptual clarity regarding demand-side substitutability.

The application of competition law often requires an assessment of market power. Using *market shares as indicators of market power*, in addition to all the difficulties in standard markets, *raises further issues for two-sided platforms*. When calculating revenue shares, the only reasonable option is to use the sum of revenues on all sides of the platform. Then, such shares should not be interpreted as market shares as they are aggregated over two interdependent markets. Large revenue shares appear to be a meaningful indicator of market power if all undertakings under consideration serve the same sides. However, they are often not meaningful if undertakings active in the relevant markets follow different business models.

Market shares can be based on the number of active users. If multi-homing is pronounced on one side of the platform, there may be little competition among platforms for these multi-homers. The ratio of users on this side of the platform relative to all users of this and comparable offers provides then a lower bound on a platform’s market share on this side.

If the user number is growing over time, an even more conservative approach is to relate the actual size of the platform on one side to the potential overall market size. Then, the market share on one side is



calculated as the number of users active on this platform relative to the total number of active and potential users.

Other than revenues and user numbers, market shares can be based on usage volume. In particular, if users on one side are heterogeneous regarding the intensity of use of a platform, it is preferable to consider usage volumes rather than number of users. Both revenue-based and quantity-based market share data are relevant information for competition authorities.

However, given potentially strong cross-group external effects, market shares are less apt in the context of two-sided platforms to indicate market power (or the lack of it). Therefore, where market shares are used as a measure of market power, the law should abstain from defining “hard” thresholds. Instead, market shares should either be considered as (only) one out of a plurality of factors that determine market power. Or, where it seems nevertheless appropriate to specify market share thresholds in order to facilitate the application of the law, thresholds should be accompanied by substantive and/or procedural mechanisms that prevent under- or over-inclusiveness through the application of the thresholds.

High market shares may, at least partly, be the result of positive direct and indirect network effects. In extreme cases, monopolisation takes place, so that all interactions take place on a single platform and there is market tipping. While tipping suggests that the market is concentrated, it is not necessarily an indication of market power. Yet, market tipping gives rise to persistent market power if potential competitors are unlikely to challenge the incumbent platform.

Barriers to entry are at the core of persistent market power and, thus, the entrenchment of incumbent platforms. They deserve careful examination by competition authorities. Barriers to entry may arise due to users’ coordination failure in the presence of network effect. On two-sided platforms, users on both sides of the market have to coordinate their expectations. Barriers to entry are more likely to be present if an industry does not attract new users and if it does not undergo major technological change. Switching costs and network effects may go hand in hand: consumer switching costs sometimes depend on the number of platform users and, in this case, barriers to entry from consumer switching costs increase with platform size.

Since market power is related to barriers to entry, the absence of entry attempts may be seen as an indication of market power. However, entry threats may arise from firms offering quite different services, as long as they provide a new home for users’ attention and needs.

Besides market shares and barriers to entry and their manifestation, other measures may be used as indicators of market power. An adjusted Lerner index on each side reflects the pricing power of a two-sided platform on the respective side. The pricing equations are based on opportunity costs that include cross-group external effects. A high Lerner index on one side is an indication of market power on this side.

High overall profitability is an indication that a platform has market power in some of the markets in which it is active. However, initially low overall profits or losses should not be seen as proof of a lack of market power. It may, however, be difficult to obtain reliable information on Lerner index and profitability.

In some cases, *there may exist direct evidence of market power*. In light of the difficulties of calculating and interpreting other measures of market power, such evidence is of particular importance. For instance, if a platform deliberately reduces the strength of (positive) network effects or reduces the quality of the service it offers to users on at least one side, this can be seen as an indication of market power.

01

INTRODUCTION: SCOPE, PURPOSE, METHODOLOGY

1. Introduction: Scope, Purpose, Methodology

With more and more economic activities taking place on the internet, competition policy is facing the problem of defining markets and assessing market power in environments in which network effects play an important role. Platforms are firms that create and manage such network effects through the use of price- and non-price instruments.

Platforms are not a new phenomenon. Trade fairs, flea markets, traditional media, and shopping malls are some of many examples of platforms. However, digital platforms have gained more prominence because their business model is often scalable and, thus, raises more public interest, as well as the interest of competition authorities.

The presence of network effects raises important questions, in particular for those platforms that cater to different groups and who are linked through cross-group external effects from one group to the other. In this case, we speak of a two-sided platform. For market definition purposes and the assessment of market power, two-sidedness is important if, for at least one undertaking, the decisions of users in one group are materially dependent on the decisions of users in another group and the undertaking has the opportunity to significantly influence those decisions.

For a start, we should make clear that we use the term “two-sided platform” as an analytical tool which helps us to address a certain set of competition policy questions and to identify the competition law and practice, as implemented and endorsed by legislatures, authorities and courts which is related to those questions and which we will analyse and assess (evaluate) in this report.¹ Many platforms cater to more than two groups that are linked through cross-group external effects and should therefore be called “multi-sided”. Since the term “two-sided platform” is widely used, we follow this convention with the understanding that at least two groups are involved. And the set of competition policy questions which we would like to address is mainly motivated by the challenges (by difficulties) to competition analysis in the case of network effects.

In this report, we synthesise existing views on how to define markets and how to assess market power. It has been claimed that:

in the case of platforms, the interdependence of the markets becomes a crucial part of the analysis whereas the role of market definition traditionally has been to isolate problems. Therefore, [...] less emphasis should be put on the market definition part of the analysis, and more importance attributed to the theories of harm and identification of anti-competitive strategies.²


While we agree with the premise, we do not necessarily agree with the conclusion. The interdependence makes market definition more challenging, but, to the extent that market delineation is the starting point of a competition investigation, more effort and emphasis may in fact need to be put on market definition. Starting with the wrong relevant market would have important repercussions for the subsequent assessment of a case. Given the complexity of the market environment in which many platforms operate, particular care is therefore needed not to go down the wrong track.

We draw on the economics literature to work out the economics of the issues involved (pointing out several misperceptions) and look at competition law practice to gather to what extent practice has been in line with insights derived in the economics literature. In light of what we consider to be the right approach to tackle some of the issues, we develop recommendations on how guidelines are to be formulated to provide a consistent approach to dealing with two-sided platforms from a competition policy perspective.

Our recommendations are clarifications about how to apply competition law in the context of platforms; we believe that no new “competition law for platforms” is needed. The essential provisions of the current law, i.e. at the EU level and Articles 101 and 102 TFEU as well as Article 2 of the EU Merger Regulation, are well suited to cope with the challenges posed by the rise of digital platforms. Therefore, as a matter of

¹ To address a different policy question, a different definition of “platform” might be appropriate.

² Crémer, de Montjoye and Schweitzer (2019, p. 46).



principle, we advise against the introduction of competition law rules that specifically applies to platforms. We acknowledge, however, that certain amendments to the legal framework may be indicated.³ For example, we consider it indeed reasonable to broaden the scope of application of the merger control regime in order to capture mergers that may constitute a risk to the competitive structure but concern firms that do not yet have a monetisation strategy or deliberately decide to forgo profits in the short run and whose relevance for competition therefore is not reflected by turnover figures.⁴ With regard to the topic of this report, we recommend certain clarifications concerning the application of the competition law concepts of “market definition” and “market power” to platform markets. At Member State level this can (but does not necessarily have to) be done through legislative changes;⁵ at EU law level, this should primarily be done by way of guidelines issued by the Commission, although clarifying changes to secondary legislation, e.g. to the EU Merger Regulation, is also an option.

Our analysis is based on competition practice in the European Union. Only occasionally do we point to practice in the U.S. This has an analytical and a normative implication. We selectively analyse competition practice in regard to platform markets of legislatures, authorities and courts at EU level and at the level of the Member States. As a note on methodology, the analysis of the practice of competition authorities takes into account not only their decisions (“what they do”) but also policy papers which they have issued (“what they say they (will) do”). We assess this practice based on economic insights into the way platform markets work.

³ Such proposals have been made, e.g. by Schweitzer et al. (2018) and Furman et al. (2019). It is outside the scope of this report to review these proposals.

⁴ See, e.g., the newly introduced thresholds for merger control pursuant to Section 35(1a) of the German Competition Act and Section 9(4) of the Austrian Competition Act (Kartellgesetz).

⁵ See in particular the reasoning behind the Ninth Amendment of the German Competition Act 2017 by way of which the legislature provided guidance to competition authorities and courts dealing with cases involving platforms. In the explanatory memorandum that accompanied the draft bill, the German government stressed repeatedly that the amendments that were intended to do justice to the rise of the platform industries and to the economic insights into their functioning had to be regarded as providing (only) *clarification* and insights that “have not yet *explicitly* been considered” in the law. See Deutscher Bundestag, Drucksache 18/10207, 07 November 2016, Gesetzentwurf der Bundesregierung, Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen, p. 49 (“Bisher sind solche wettbewerbsökonomischen Konzepte, die empirisch durch die kartellbehördliche Praxis bestätigt werden, *nicht explizit* im Gesetz berücksichtigt worden. [...] Die *klarstellende* Ergänzung erfolgt insoweit vor dem Hintergrund, dass die wirtschaftliche Bedeutung mehrseitiger Märkte und Netzwerke zugenommen hat” (emphasis added)). Thus, in particular those amendments that regard the concept of a “market” and the identification of market power have to be understood as clarifying statements which the competition authorities and courts in any case should have deduced from the preexisting concepts of general competition law.

02

**“PLATFORM” OR
“TWO-SIDEDNESS” AS
AN ANALYTICAL AND
LEGAL CONCEPT**

2. “Platform” or “Two-Sidedness” as an Analytical and Legal Concept

In digital markets, undertakings play an important role in influencing the interaction possibilities of users. The value of the services offered often not only depends on the inherent service features provided to a user but is also and possibly primarily determined by whether and how intensively they are used by other users. When such a connection exists between individual benefits and others’ decisions, one speaks of external or network effects. Central to the understanding of many undertakings in digital markets are network effects that describe the relationship between the value of a service from the user’s perspective and the behaviour of other users. In light of the increasing importance of digital markets, the concepts of “networks” and “multi-sided markets” were introduced into the German Competition Act,⁶ emphasising the special role of network effects. We subsume “networks” and “two-sided markets” under the term “platform”. Our definition of platform is as follows: a platform is an undertaking that brings together economic agents and actively manages external effects between them. These external effects are typically network effects. But what exactly are network effects? In the economics literature, a distinction is made between direct and indirect network effects.

2.1. Direct and Indirect Network Effects

2.1.1. Direct network effects

Direct network effects occur when the utility of a user depends on the decisions of other users and all of these users belong to a group.⁷ Direct network effect can be positive or negative. Consider the case of positive direct network effects. Typical examples are communication networks in which everyone can communicate with everyone. Here, the benefit of a user depends significantly on the participation decisions of other potential users.⁸ Examples include instant messaging apps like WhatsApp or Snapchat, and social networks like Facebook and LinkedIn.

It is less obvious that there can be direct network effects, even if, at first sight, no dependency of one’s own benefit on the decisions of the other users in the group is apparent. One example is direct network effects due to rating and recommendation systems for products such as Amazon. Having more product searches and purchases on Amazon allows Amazon to provide better recommendations to users. In addition, with more purchases, the number of reviews will increase and, therefore, each user can make a better-informed purchasing decision (assuming that a larger number of ratings leads to better information). Thus, *ceteris paribus*, more participation leads to a higher benefit.

Organic searching on horizontal search engines such as Google also features direct network effects. Since the content that Google accesses in the organic query is freely available, we also speak of direct network effects here, even though a user is only interested in more users because a larger number of users lead to more search queries. This allows Google to provide a better service to each user because, on average, the results of search queries better meet users’ relevance criteria. Users are interested in the accuracy of search queries, but this accuracy increases in the total number of search queries.

Negative direct network effects occur when users suffer from increased participation from other users. This may be due to overloading of the platform. For example, the quality of transmission in mobile networks suffers when certain nodes are overloaded. Another example is traffic congestion for users of an internet service provider (ISP).⁹

⁶ See *infra* note 15 and accompanying text.

⁷ For an introduction to the economics of network effects, see, e.g., Belleflamme and Peitz (2015, chapter 20; 2018b). When there are multiple groups, within-group external effects refer to direct network effects that apply to a particular group.

⁸ Network effects are to be distinguished from economies of scale. A firm enjoys economies of scale if its average costs decrease with the number of units produced.

⁹ This issue plays out in the economic analysis of net neutrality. For an economic analysis, see Peitz and Schuett (2016).

2.1.2. Cross-group external effects and indirect network effects

Positive cross-group external effects and positive indirect network effects

In contrast to positive direct network effects, the presence of positive indirect network effects describes a situation in which users have greater benefit from increased participation of other users only because of the interaction with the participation (or usage) decisions of another group of users. Positive indirect network effects are often found on e-commerce platforms. Here, sellers represent one group of users and buyers the other group of users. If, all else being equal, more buyers attract more sellers and more sellers attract more buyers, there are positive indirect network effects on both sides of the market. In other words, if the two groups are mutually connected by cross-group external effects, there are positive indirect network effects on both sides of the market. In such a case, positive feedback takes place between the two sides of the market.

Examples of companies that bring together two groups or two sides can be found especially in companies that offer a matching service.¹⁰ There are positive indirect network effects on both sides. This applies, for example, to job platforms (such as Monster), heterosexual dating platforms (such as Tinder or Meetic), e-commerce platforms such as Amazon Marketplace or eBay or more specialised platforms such as hotel booking platforms or platforms for special product categories such as Etsy.¹¹ Members on one or both groups on the platform are not necessarily natural persons; B2B platforms are also typically characterised by positive indirect network effects.

Positive feedback often does not appear on attention platforms that engage advertisers with potential buyers. While, all else being equal, more potential buyers attract more advertisers, buyers often find more advertisements disturbing. In this case, there is a negative feedback loop and, thus, there are negative indirect network effects¹² on both sides of the platform: from the point of view of an advertiser, more advertising leads to fewer buyers, which is viewed negatively by the advertiser; from the point of view of a buyer, more buyers *ceteris paribus* lead to more advertising, which is judged negatively by the buyer.¹³

Negative indirect network effects

Thus, it should be noted that positive external effects from the first to the second group (or market side) and negative external effect from the second to the first group lead to negative indirect network effects on both market sides. In this case, network effects tend to decrease the concentration in the market. However, platforms bringing together advertisers and viewers do not always feature negative indirect network effects.¹⁴ In particular, for customised advertisements that increase in precision with a larger user base, it may be possible for the indirect network effect to be positive on the user side, even on an attention platform. In such a case, more users lead to an increased accuracy of advertising that may also benefit the users. An interaction between two market sides already exists, if one market side exerts an external effect on the other side of the market but not in the opposite direction. This is the borderline case between positive and negative indirect network effects in which there is a positive cross-group external effect from one group to another, but no such external effect in the other direction.

¹⁰ Evans and Schmalensee (2016) document a number of examples from a business perspective.

¹¹ Such matching platforms are always virtual. Examples of two-sided platforms in the physical world are shopping malls, which bring together businesses and customers; night clubs, which bring together women and men; and real estate agents, which bring together buyers and sellers. Virtual platforms did not even come into being with the spread of the Internet. For example, electronic payment systems (e.g. American Express, Visa, MasterCard) have been around longer. These platforms enable payments between merchants and consumers, making them two-sided platforms. Diners Club was introduced back in 1950 and initially allowed cashless payments from wealthy clients to select restaurants. See Evans and Schmalensee (2016, p. 13).

¹² We use the term "indirect network effects" in its original meaning and different from cross-group external effects. This is different from a large part of the policy literature in which the two terms are used interchangeably.

¹³ Digital platforms have improved the targeting of advertising to viewers with particular characteristics. If this results in a win-win for advertisers and viewers, viewers may actually view such advertising as positive. The more advertisers that are active on a platform, the more often viewers are exposed to advertising they like. In this case, there are mutual cross-group external effects. This would be an instance in which the platform's investment in the matching technology between advertisers and viewers changed the nature of the network effects. More generally, platform design affects the strength of network effect. Thus, treating the strength of network effects as a characteristic feature of the market environment, as most economic theory does, from a competition perspective should be questioned if it is not only short-term effects that are to be evaluated.

¹⁴ See, e.g., Kaiser and Song (2009) who find that viewers appreciate advertising in some types of magazines.

2.1.3. Combined direct and indirect network effects

Whether there are direct or indirect network effects requires in some cases a closer examination. At first sight, one may identify direct network effects, which, upon closer inspection, become a mix of direct and indirect network effects. Earlier we pointed out that rating systems can generate direct network effects on a platform. Users may be different in their willingness to give reviews. Consider a stylised example in which there are two types of users, those who never give a product rating (readers) and those who rate every purchase (writer). Users from each type decide if they are active on the e-commerce website. The number of users will be positively influenced by the information content of the rating system, which depends positively on the number of ratings. In addition, we assume that participation will be more attractive to writers if there are more users on the e-commerce website, regardless of the type of user, because that will increase the overall number of people reading their reviews. We identified two groups of users who are active on an e-commerce website with a rating system. Readers enjoy positive indirect network effects. As the group of readers becomes larger, more writers are attracted and, thus, the ratings become more informative, which is positively valued by readers. Writers enjoy positive direct and indirect network effects. As the group of active writers grows larger, it immediately means that the number of reviews increases, which is positively valued by all users, including fellow writers, so there are direct network effects. As a result of the greater number of ratings, however, the attractiveness of the e-commerce website also increases for readers, so their number increases. This, in turn, has a positive effect on the number of writers, as their reviews find more readers. These are therefore positive indirect network effects enjoyed by writers. We have seen that, by looking more closely at an e-commerce website with rating systems used by different types of users, there can be both direct and indirect network effects between for the different user groups.

2.2. Platforms

2.2.1. A general notion of platform

In order to meet the challenges of competition practice in the digital era, the German legislature introduced the terms “networks” and “multi-sided markets” in Section 18(3a) of the German Competition Act.¹⁵ As an element of the analysis of market dominance, these concepts have thus become legal terms. The term “network” captures the idea that users are connected with each other and derive benefits from these connections. Because of such connectedness, the value of a service to a user depends possibly on which and how many users also use the services.¹⁶ In other words, the undertaking takes the role of a platform that enables or facilitates interactions between users.

Facebook is a prime example of a social network. It allows the tracking and commenting of posts from members of the social network identified as “friends” (as far as these posts are displayed just to such friends). A user finds participation on Facebook all the more attractive, the more people that a user knows are active on Facebook. A possible confusion when using the term “network” is that a network of friends exists even without the services provided by the social network (it may look different though). Such confusion can be avoided by simply using the term “platform” when an undertaking facilitates interactions among users.

¹⁵ Section 18(3a) of the German Competition Act reads: “In particular in the case of multi-sided markets and networks, in assessing the market position of an undertaking account shall also be taken of:

1. direct and indirect network effects,
2. the parallel use of services from different providers and the switching costs for users,
3. the undertaking's economies of scale arising in connection with network effects,
4. the undertaking's access to data relevant for competition,
5. innovation-driven competitive pressure.

Act against Restraints of Competition in the version published on 26 June 2013 (Bundesgesetzblatt (Federal Law Gazette) I, 2013, p. 1750, 3245), as last amended by Article 1 of the law of 1 June 2017 (Federal Law Gazette I, p. 1416). Unless otherwise indicated, translations are taken from https://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0024.

¹⁶ In the explanatory memorandum that accompanied the draft bill, the German government emphasised that networks were characterised by direct network effects. Indirect network effects were mentioned as a characteristic of “multi-sided markets”. See Deutscher Bundestag, Drucksache 18/10207, 07 November 2016, Gesetzentwurf der Bundesregierung, Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen, pp. 48–49.

2.2.2. Two-sided platforms

The notion of “two-sided markets” comes from economic theory and describes situations in which a social value arises through the interaction of different groups and in which this interaction takes place via an intermediary that brings the two groups into contact with each other.¹⁷ For example, product markets may be organised in such a way that intermediaries facilitate the buyers’ product search, and products are offered by sellers active on these intermediaries. In this case, intermediaries operate as two-sided platforms matching products to buyers and allocations depend on the functioning of the platforms and demand-side characteristics on the buyer and the seller side.

The two sides are connected through cross-group external effects. In particular, positive mutual cross-group external effects lead to positive indirect network effects. Economic theory typically postulates that the function of how participation and usage on the other side effects a user is given and the same across platforms offering similar services to the same two sides.¹⁸ While this is a useful starting point to gain a better understanding of some of the economic forces at play in such environments, for real-world analyses it is important to keep in mind that it is part of the ingenuity of many intermediaries that they found a way to generate positive external effects on their platform, for instance by recommending better matches between the two sides of the market than what has been available, even for a given pool of users.¹⁹ This illustrates that the strength of network effects is affected not only by the level of participation or usage, but also by the ability of the intermediary to facilitate interaction between the two sides. This ability is specific to the intermediary and may determine the success of one intermediary vis-à-vis others. And it is not only the intermediary’s ability to facilitate the interaction, but also possibly a decision how to resolve trade-offs between different user interests. For example, certain restriction on trade on a platform may be favourable to some types of users, while it may be less attractive for others.

The term “two-sided market” is widely used in economic theory but less practical than the competition policy discourse would suggest. At the very least, it must be ensured that the “two-sided market” applies when undertakings with different business models compete with each other for some users and at least one of them is characterised by two-sidedness.²⁰ For instance, what is the competitive situation in which a sales portal competes with a seller? For example, in some product categories, this is a description of e-commerce involving eBay and Amazon, though at a time when Amazon was not yet offering a marketplace and thus did not constitute a two-sided platform while eBay already allowed professional sellers on its e-commerce platform. Owing to mutual cross-group external effects between sellers and buyers, since its launch, eBay constitutes a two-sided platform, while Amazon pursued a traditional one-sided retailer model.²¹ The example makes it clear that the chosen business model decides whether a company is a two-sided platform or not. A two-sided market could then be described as a market in which at least one undertaking operates as a two-sided platform. However, we think it makes more sense to leave the definition of two-sidedness at the firm level. Thus, a firm is a two-sided platform if a company distinguishes between different user groups and these groups are linked through cross-group external effects.

Whether a platform is one-sided or two-sided can often not be judged at first glance. In some practical examples, this may slowly or drastically change over time. For example, at the beginning, Facebook was a social network connecting members of a rather homogeneous group with each other (namely Harvard students). However, over time more people from different strands of life joined. In particular, the nature of Facebook changed when celebrities started using Facebook to engage with their followers. Non-celebrities use the social network to maintain communication with Facebook friends and to receive news from celebrities. Celebrities essentially use Facebook as a media platform, namely to send messages to


¹⁷ The term has been coined by Rochet and Tirole (2003). For instance, Evans and Schmalensee (2007) provide an informal introduction and several examples from industry.

¹⁸ Starting with Rochet and Tirole (2003, 2006) and Armstrong (2006), several contributions then explore the pricing structure that emerges on these platforms.

¹⁹ See Belleflamme and Peitz (2018a).

²⁰ As Evans and Schmalensee (2016, p. 215) write, “The term ‘two-sided market’ has fallen out of favor, as it has become clear that two- or multi-sidedness is an attribute of individual businesses, not necessarily of all businesses in a market”. Evans and Noel (2005) provide a hypothetical example of the competitive constraints a two-sided platform may face.

²¹ Hagiu and Wright (2015) provide an economic analysis about the factors that make it for an undertaking more attractive to choose one or the other business model.



fans (and, to a limited extent, to receive feedback). This means that there are positive direct network effects among non-celebrities due to their friends' network on Facebook and positive indirect network effects due to celebrities on Facebook. From the point of view of celebrities, there are no direct but only positive indirect network effects. Limiting attention to the social network of non-celebrities, Facebook is a one-sided platform. Extending the consideration to celebrities, it is a two-sided platform. Advertising on Facebook adds another side to the platform, which we did not look at here and where a priori it is unclear whether feedback effects tend to be negative or positive (since advertising is targeted, some users may enjoy it).

The more general lesson from our discussion of Facebook is that identifying user groups and their interaction is a snapshot and that over time a platform may respond to the heterogeneity of users by tailoring its offerings to subgroups. Similarly, an e-commerce site may start to offer rewards for consumer reports and thus distinguish between users who provide these contributions and those who do not.

We conclude that the term "platform" as defined above can be used to subsume "networks" and "two-sided markets", as used in the ninth amendment of the German Competition Act.²² The term "two-sided platform" is used if different and economically important groups are identified that are linked through cross-group external effects and participation or usage is actively managed by an undertaking – here it is sufficient that cross-group effects in one direction are present.²³ Some of the market definition issues are specific to two-sided platforms.

²² Our terminology coincides e.g. with the one used by Crémer, de Montoye and Schweitzer (2019, p. 22). See also Belleflamme and Peitz (2018b).

²³ See also Evans (2003, p. 325).

03

MARKET DEFINITION

3. Market Definition

The legal concept of a “market” is used to assess whether a firm enjoys market power, and calculated “market shares” are viewed as an indicator in this regard.²⁴ Therefore, the definition of a market should lead to the identification of the competitive constraints that those involved face.²⁵ Moreover, market definition is relevant to identify barriers to entry, which, in turn, are important to assess the market power of incumbent firms.²⁶

From the point of view of the EU institutions, market definition is considered *mandatory* in cases where market power has to be measured in order to determine whether or not:

- Agreements between undertakings give rise to restrictive effects on competition pursuant to Article 101(1) TFEU,²⁷ and whether these effects are appreciable.²⁸ In contrast, where an agreement has by its very nature the potential to restrict competition, and thus has to be regarded as an restriction of competition by object, it is not necessary to examine the effects of this agreement on the market and, consequently, no market definition is required to ascertain an infringement of Article 101(1) TFEU.²⁹
- Agreements between undertakings afford these undertakings the possibility of eliminating competition in respect of a substantial part of the production in question and thus are prohibited even though they fulfil the other requirements of an exemption under Article 101(3) TFEU.³⁰
- An undertaking is below the market share thresholds which define the scope of application of block exemption regulations.³¹
- An undertaking is market-dominant pursuant to Article 102 TFEU.³²

²⁴ Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, para. 2.

²⁵ *Id.*

²⁶ OECD (2012, pp. 28–29).

²⁷ See European Commission, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ 2011 C 11/01, para. 28 (“Restrictive effects on competition *within the relevant market* are likely to occur where it can be expected with a reasonable degree of probability that, due to the agreement, the parties would be able to profitably raise prices or reduce output, product quality, product variety or innovation. This will depend on several factors such as [...] the extent to which the parties individually or jointly have or obtain some *degree of market power*, and the extent to which the agreement contributes to the creation, maintenance or strengthening of that market power or allows the parties to exploit such market power.” (emphases added)). See also ECJ 28 February 1991, C-234/89, *Delimitis v Henninger Bräu*, EU:C:1991:91, paras 14–16. The Court requires that “the relevant market must first be determined” to analyse the effects of, for instance, beer supply agreements, including the cumulative effect of similar agreements, under Article 101(1) TFEU. However, this is not so much a matter of determining market power but of narrowing down an area to which the analysis of effects on market parameters can be constrained.

²⁸ See European Commission, Notice on agreements of minor importance which do not appreciably restrict competition under Article 101(1) of the Treaty on the Functioning of the European Union (De Minimis Notice), OJ 2014 C 291/01, para. 8.

²⁹ See, e.g., ECJ 8 July 1999, C-235/92 P, *Montecatini v Commission*, EU:C:1999:362, para. 132 (“The Court of First Instance rightly added that [...] the Commission did not have to analyse the effect on competition because there was no doubt that an agreement to fix prices, to limit production and to share out markets constitutes an infringement per se. In other words, by reason of the highly damaging nature of such an infringement as regards competition, there is no need to inquire whether there are positive circumstances counterbalancing the negative effects”). Note that, in these constellations, market definition is also not required in order to assess whether or not the restrictive effect is appreciable. ECJ 13 December 2012, C-226/11, *Expedia*, EU:C:2012:795, para. 37 (“It must therefore be held that an agreement that may affect trade between Member States and that has an anti-competitive object constitutes, by its nature and independently of any concrete effect that it may have, an appreciable restriction on competition”). See also European Commission, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ 2011 C 11/01, paras 24–25.

³⁰ See, e.g., Court of First Instance 28 February 2002, T-395/94, *Atlantic Container Line and Others v Commission*, EU:T:2002:49, para. 300 (“it should be noted that the possibility of eliminating competition in respect of a substantial part of the services in question must be assessed as a whole, taking into account in particular the specific characteristics of the relevant market, the restrictions of competition brought about by the agreement, *the market shares of the parties* to that agreement and the extent and intensity of external competition, both actual and potential. In the context of this comprehensive approach, those different elements are closely interlinked or may balance each other out. [...] the larger the market shares of the parties to the agreement, the stronger the potential competition must be” (emphases added)).

³¹ See, e.g., Article 3 of the Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) TFEU to categories of vertical agreements and concerted practices, OJ 2010 L 102/1.

- A concentration would (not) significantly impede effective competition, in the common market or in a substantial part of it, in particular as a result of the creation or a strengthening of a dominant position pursuant to Article 2(2)(3) EU Merger Regulation.³³

Due to the rise of the digital platforms, competition authorities and courts had in many cases the opportunity to deal with market definition issues that concerned two-sided platforms. It suffices to mention here some of the pertinent decisions handed down during the last decade by the European Commission:

- *Google/DoubleClick*. The Commission identified *inter alia* a market for the provision of online advertising space. The Commission left it open whether search and non-search advertising have to be considered separate markets.³⁴
- *Microsoft/Yahoo! Search Business*. The Commission defined *inter alia* a market for online advertising, leaving open whether search advertising or mobile search advertising had to be considered separate markets.³⁵ As above, the Commission left it open whether internet search constituted a separate market.³⁶
- *Microsoft/Skype*. The Commission considered the market for consumer communications services which it separated from the market for enterprise communications services. It investigated whether the market for consumer communications services should be segmented by functionality, by platform or by operating system, but ultimately left this open.³⁷
- *WhatsApp/Facebook*. The Commission decided to analyse the effects of the merger: first, on the market for consumer communications apps for smartphones because it considered this the narrowest relevant product market for consumer communications services;³⁸ second, on the market for social networking services, it left the exact boundaries open, in particular on whether consumer communications apps fall within the scope of this market;³⁹ and, third, on the market for online advertising, leaving open whether segments of this market constituted relevant product markets in their own right.⁴⁰
- *Randstad Holding/Monster Worldwide*. The Commission considered *inter alia* a market for online job board services, i.e. online services which seek to match employers to job seekers, which includes job board advertising, search functionalities through candidates' resumes and so forth, but ultimately left the exact definition of the product market open.⁴¹

³² ECJ 13 February 1979, C-85/76, *Hoffmann-La Roche v Commission*, EU:C:1979:36, para. 21 ("In order to determine whether Roche has the dominant position as alleged, it is necessary to delimit the relevant markets both from the geographical standpoint and from the standpoint of the product"); Court of First Instance 6 July 2000, T-62/98, *Volkswagen v Commission*, para. 230 ("For the purposes of Article 86, the proper definition of the relevant market is a necessary precondition for any judgment as to allegedly anti-competitive behaviour, since, before an abuse of a dominant position is ascertained, it is necessary to establish the existence of a dominant position in a given market, which presupposes that such a market has already been defined"); Court of First Instance 11 December 2003, T-61/99, *Adriatica di Navigazione v Commission*, EU:T:2003:335, para. 27; European Commission, December 2005, DG Competition discussion paper on the application of Article 82 [now Article 102] of the Treaty to exclusionary practices, para. 11 ("The concept of dominance contained in Article 82 of the Treaty relates to a position of economic strength on a market. In the application of Article 82 it is therefore necessary to define a relevant market").

³³ ECJ 31 March 1998, C-68/94, *France and Société commerciale des potasses and de l'azote and Entreprise minière and chimique v Commission*, EU:C:1998:148, para. 143 ("The Court notes, to begin with, that a proper definition of the relevant market is a necessary precondition for any assessment of the effect of a concentration on competition"); Court of First Instance 6 June 2002, T-342/99, *Airtours v Commission*, para. 19; Court of First Instance 7 May 2009, T-151/05, EU:T:2009:144, para. 51; European Commission, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ 2004 C 31/5, para. 10 ("The Commission's assessment of mergers normally entails: (a) definition of the relevant product and geographic markets").

³⁴ European Commission 11 March 2008, Case M.4731, *Google Doubleclick*, paras 44–56.

³⁵ European Commission 18 February 2010, Case M.5727, *Microsoft/Yahoo! Search Business*, paras 62–81.

³⁶ *Id.*, paras 85–86.

³⁷ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, paras 10–63.

³⁸ European Commission 2 October 2014, Case M.7217, *Facebook/WhatsApp*, para. 34.

³⁹ *Id.*, para. 61.

⁴⁰ *Id.*, para. 79.

⁴¹ European Commission 26 October 2016, Case M.8201, *Randstad Holding/Monster Worldwide*, paras 7, 18–20.

- *Microsoft/LinkedIn*. The Commission considered *inter alia* online communications services and decided to assess a separate product market for enterprise communications services.⁴² Moreover, it considered social networking services and opted for an assessment of the market for professional social networks as it constituted the narrowest possible product market.⁴³ In addition, it defined a market for online recruitment services⁴⁴ and for online advertising services.⁴⁵
- *Verizon/Yahoo*. The Commission considered eight different product markets, leaving the exact definition and further segmentation open in each case: search services,⁴⁶ online advertising,⁴⁷ data analytics services,⁴⁸ consumer communications services,⁴⁹ consumer email services,⁵⁰ digital content,⁵¹ hosting and colocation services,⁵² and cloud computing services.⁵³
- *Google Search (Shopping)*. The Commission defined a market for general search services⁵⁴ and for comparison shopping services.⁵⁵
- *Google Android*. The Commission considered Google to be dominant in the national markets for general internet search throughout the EEA, in the worldwide market (excluding China) for licensable smart mobile operating systems, and in the worldwide market (excluding China) for app stores for the Android mobile operating system.⁵⁶

In the case of two-sided platforms, market definition raises a number of issues that do not arise on conventional markets. In market environments with two-sided platforms, the question arises whether the relationship between the platform and the respective market sides can be considered separate markets or whether there is a single market. There is also the issue as to whether there are circumstances under which a market can be viewed in isolation of the other side, or whether the interplay between both sides is always to be taken into account. Another question is how to treat a side on the platform that does not need to make a monetary payment to consume the platform's service and effectively pays a zero price.

Market power can refer to a situation in which the buyer (buyer power) or the seller (standard market power) can influence the price. Two-sided platforms facilitate trade by offering a channel by which a transaction is enabled and, in some cases, completed. In a recent report Schweitzer et al. (2018) propose to introduce the notion of "intermediation power". They write:

A greater degree of legal clarity and predictability would [...] be achieved if, in cases where the activity in question is mediated, the conceptual peculiarities of the determination of [market] power would be recognized in principle – by introducing a concept of "intermediary power" in relation to suppliers of goods or services.⁵⁷

While we do not object to give a particular name to market power held by a particular two-sided platform, we do not see a particular need to introduce a new term. A platform offers a service to each side. Thus,

⁴² European Commission 6 December 2016, Case M.8124, *Microsoft/LinkedIn*, paras 74–83.

⁴³ *Id.*, paras 87–117.

⁴⁴ *Id.*, paras 126–147.

⁴⁵ *Id.*, paras 152–161.

⁴⁶ European Commission 21 December 2016, Case M.8180, *Verizon/Yahoo*, paras 11–12.

⁴⁷ *Id.*, paras 22–25.

⁴⁸ *Id.*, paras 32–33.

⁴⁹ *Id.*, paras 41–44.

⁵⁰ *Id.*, paras 51–52.

⁵¹ *Id.*, paras 58–59.

⁵² *Id.*, paras 65–66.

⁵³ *Id.*, paras 72–73.

⁵⁴ European Commission 27 June 2017, Case AT.39740, *Google Search (Shopping)*, Section 5.2.1, paras 155–190.

⁵⁵ *Id.*, Section 5.2.2, paras 191–250.

⁵⁶ European Commission 18 July 2018, Case AT.40099, *Google Android*. A public version of the decision has not yet been made available. But see European Commission, Press Release, 18 July 2018, Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine, p. 2.

⁵⁷ Schweitzer et al. (2018, p. 72): "Ein größeres Maß an Rechtsklarheit und Vorhersehbarkeit würde indes erreicht, wenn die konzeptionellen Besonderheiten der Machtermittlung in Fällen, in denen die fragliche Tätigkeit in der Vermittlung besteht, grundsätzlich anerkannt würde – durch Einführung eines Konzepts der 'Intermediationsmacht' im Verhältnis zu Anbietern von Waren oder Dienstleistungen."

the services offered by a platform are well defined. A platform may have market power on the market on which sellers try to find buyers and on the market on which buyers try to find sellers. However, it may be the case that a platform has market power on only one of those sides. Then, it would be unclear by what we mean when using the term intermediary power.

As in standard competition analysis, for market definition and assessment of market power of a two-sided platform it is essential to investigate the substitutability of the different services offered by a two-sided platform with the services available elsewhere. The economic concept to do so is through cross-price elasticities of demand. In cases where a monetary price is not charged modified concepts will need to be used.

When considering the market power of an intermediary it is important to assess alternatives to carrying out transactions. Such an alternative may be a market place on which products are exchanged without an active intermediary does not constitute an alternative to buying or selling through a platform. However, it requires a case-by-case assessment of the extent to which such non-intermediated trading opportunities constitute a good or bad substitute for the intermediated trade in question. To the extent that a seller offers similar functionalities as the platform, one may consider the offers by the seller to be vertically integrated offers. For example, an airline booking platform may compete with the booking site of an airline (the latter carries only its own offerings, but it also provides search tools and add-ons such as insurance). Also, on a given platform, the platform may sell some products as a vertically integrated seller and provide intermediation services to other sellers. Clearly, on the buyer side such vertically integrated offers are often good substitutes for those products that are offered by independent sellers.

It is standard practice to include two products in the same market if a significant non-transitory price increase of one product would result in a substantial switch of customers to the other product. To this purpose, it is the task of the competition authority to identify the products and services offered by an undertaking and to understand substitute offers. Since two-sided platforms can offer complex and interrelated products, this task is more challenging in the case of two-sided platforms that are under investigation (or that may constrain the behaviour of another undertaking). Particular challenges are that:

- there are multiple connected sides;
- the nature of the product or service not well understood;
- focusing on a particular distribution channel or business model may lead to a definition of the market that is too narrow;
- bundling is a common feature and bundled offers compete with unbundled offers;
- platforms often facilitate a variety of different interaction opportunities.

3.1. Single-Market Approach vs. Multi-Markets Approach

In the context of two-sided platforms, competition practice can basically follow two different approaches when it comes to market definition. One approach is to define a market for each side.⁵⁸ Thus, each of the two markets can be analysed separately while taking into account that they are linked through cross-group effects. This is referred to as the "multi-markets approach". An alternative approach is to define a single market for an intermediation service offered to both sides of the market. This is referred to as the "single-market approach".

Which approach an authority or a court chooses in a given case will often have a decisive impact on the outcome of the legal analysis. The most prominent example in this regard is the recent U.S. Supreme Court's judgment in *Ohio v American Express Co.*⁵⁹ The Court held that the antisteering provisions which American Express imposed on merchants⁶⁰ did not violate Section 1 of the Sherman Act. The Court argued

⁵⁸ This will often require recognising the existence of "zero-price markets"; see on this point *infra* sub 3.3.

⁵⁹ *Ohio v American Express Co.*, 585 U.S. ____ (25 June 2018).

⁶⁰ In the EU antisteering rules are prohibited through payment services regulation. See Article 11(1) of Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment

that “two-sided transaction platforms, like the credit-card market [...] facilitate a single, simultaneous transaction between parties”.⁶¹ Then, the Court adopted a single-market approach, stating that:

we will analyse the two-sided market for credit-card transactions as a whole to determine whether the plaintiffs have shown that Amex’s antisteering provisions have anticompetitive effects.⁶²

This stipulation turned out to be the pivotal move of the majority opinion, which subsequently found that the plaintiffs could not show anti-competitive effects on the credit card market⁶³ and, thus, could not satisfy the first step of the rule of reason.⁶⁴

While the U.S. Supreme Court is certainly not the first to make the argument that the single-market approach is appropriate in the case of so-called transaction platforms, its judgment may have a strong influence on how the concept of market definition will be applied to two-sided platforms.⁶⁵ In the following, we will critically evaluate the arguments which underlie the debate and, more particularly, we will take issue with the position that there is a type of two-sided platform which should be analysed using a single-market approach.

3.1.1. Is there a “two-sided transaction market” and does it justify a single-market approach?

The notion that the single-market approach was preferable for certain platforms has been most prominently put forward by Filistrucchi et al. (2014, p. 302), who have argued that “[i]n two-sided transaction markets, only one market should be defined”. This position has been taken up widely in competition practice and it was followed, as we have seen, by the majority opinion in *Ohio v American Express Co.*

To implement the differentiation, which is presumed by this approach, the term “two-sided transaction market” needs to be defined. According to Filistrucchi et al. (2014, p. 298),

transactions, OJ 2015 L 123/1, and Article 62(3) of Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, OJ 2015 L 337/35. Note, however, that Article 62(4) of the aforementioned Directive stipulates that “Member States shall ensure that the payee shall not request charges for the use of payment instruments for which interchange fees are regulated”. This prohibition of surcharging does not apply, however, to transactions with payment cards issued by three-party payment card schemes, as in the case of American Express (see Article 1(3)(c) of Regulation 2015/751), with the notable exception that payment cards are issued with a co-branding partner (see Article 1(5) of Regulation 2015/751). See on the interpretation of the latter provision ECJ 7 February 2018, C-304/16, *American Express*, EU:C:2018:66, paras 52 et seq.


⁶¹ *Ohio v American Express Co.*, 585 U.S. ____ (25 June 2018), slip opinion p. 13.

⁶² *Id.*, p. 15.

⁶³ *Id.* (“Evidence of a price increase on one side of a two-sided transaction platform cannot by itself demonstrate an anticompetitive exercise of market power. To demonstrate anticompetitive effects on the two-sided credit-card market as a whole, the plaintiffs must prove that Amex’s antisteering provisions increase the cost of credit-card transactions above a competitive level, reduced the number of credit-card transactions, or otherwise stifled competition in the credit-card market” (references omitted).)

⁶⁴ *Id.*, pp. 15–20.

⁶⁵ The simple formal analysis by Carlton and Winter (2018) regarding the *American Express* case sheds some light on the issue. The starting point of the theoretical investigation by Carlton and Winter (2018) is to consider American Express as an input provider to merchants. The alleged anti-competitive behaviour is a vertical restraint that does not allow merchants to condition their prices in the downstream market on whether or not they use the input (vertical MFN or price-parity clause). According to this view, there is a downstream market for the products offered by the merchant (with the possibility to settle the purchase through American Express or to use an alternative form of payment) and an upstream market in which the merchant obtains an input from the payment system. Here, the interaction between consumers and American Express is not explicitly taken into account because the consumer chooses the form of payment when engaging with the merchant; the merchant’s and the consumer’s decision whether to hold the American Express card is taken as given. In such a setting of vertically related markets standard competition logic could be applied (which, in the U.S., assigns the burden of proof of the anti-competitive effect in the upstream market to the plaintiff and that offsetting effects would need to be presented and substantiated by the defendant party). Taking card adoptions as given, network effects do *not* play a role. The Second Circuit Appeals Court (*U.S. v American Express Co.*, 838 F.3d 179 (2d Cir. 2016)) and the U.S. Supreme Court (*supra* note 63) opted for a different path and defined a single market for the intermediation services, which meant that the plaintiffs had to demonstrate “anticompetitive effects on the two-sided credit-card market as a whole” (*id.*), which effectively shifted the burden of proof regarding the potential pro-competitive effects of the restraint (i.e. benefits enjoyed by the cardholders) to the plaintiff. As Carlton and Winter (2018, p. 4) put it, “there is now a different antitrust standard for examining vertical restraints in one-sided versus two-sided markets. We explain that no economic justification exists for this difference in antitrust rules.” Applying a multi-markets approach can avoid such a conflict.



[t]wo-sided transaction markets, such as payment cards, are [...] characterized by the presence and observability of a transaction between the two groups of platform users. As a result, the platform is not only able to charge a price for joining the platform, but also one for using it—that is, it can ask for a two-part tariff.

As their lead example they consider payment systems such as American Express, where:

Everyone would probably agree that a payment card company such as American Express is either in the relevant market on both sides or on neither side, for the reason that either the transaction between the buyer and the merchant takes place using American Express services on both sides, or it does not take place through American Express.⁶⁶

We agree with the assessment that American Express is in many geographic markets either in the relevant market on both sides or on neither side. Filistrucchi et al. (2014, p. 301) then immediately continue to say that:

The analysis of a merger between two payment card platforms should thus consider whether cash or PayPal exert competitive pressure on payment card companies on both sides of the market.

This does not yet settle whether this competitive pressure should be checked on each side defining a separate market or in a single market. Filistrucchi et al. appear to mean the former, as they precede these statements with the following:

One of the consequences of defining only one market is that a firm would be either on both sides of the market or on none. Defining instead two interrelated markets would allow a platform to be on one side of the market but not on the other.⁶⁷

According to Filistrucchi et al. (2014, p. 298), “[o]ther two-sided transaction platforms include virtual marketplaces, auction houses, and operating systems”. The majority opinion in *Ohio v American Express Co.* followed the reason, stating that:

Only a company that had both cardholders and merchants willing to use its network could sell transactions and compete in the credit-card market. [...] Thus, competition cannot be accurately assessed by looking at only one side of the platform in isolation.⁶⁸

Citing Filistrucchi et al. (2014, p. 302), the U.S. Supreme Court immediately concluded: “[i]n two-sided transaction markets, only one market should be defined”. The Court did not provide any reasons as to why considering the alternative approach, namely analysing two interrelated markets, would be inappropriate. Neither do Filistrucchi et al. (2014) explain how they come to this conclusion.

It can be argued that the definition of transaction platform proposed by Filistrucchi et al. (2014) is often satisfied in the industries mentioned. However, as will be argued below, this does not justify a single-market approach. It is not only that a multi-markets approach is always appropriate; the single-market approach is typically not.⁶⁹

Transaction platform as a legal concept?


Our first observation is that, even on platforms labelled to be transaction platforms, transactions are not necessarily observable. For instance, while a system provider may well be able to monitor whether an app runs on the provider’s operating system, the system provider may not necessarily be able to monitor how often an app is installed by consumers. This suggests that the distinction between a transaction platform and a non-transaction platform is not as straightforward as it seems.

⁶⁶ Filistrucchi et al. (2014, p. 301).

⁶⁷ Id.

⁶⁸ *Ohio v American Express Co.*, 585 U.S. ____ (25 June 2018), slip opinion p. 14.

⁶⁹ In this respect, our view is in line with Katz and Sallet (2018, pp. 2153–2158), who summarise their position by stating that “platforms are better viewed as operating in multiple separate, yet deeply interrelated, markets” (id., pp. 2144–2145).



Furthermore, it may well be possible that transaction and non-transaction platforms offer the same kind of matching service. For example, some online intermediaries direct buyers to a merchant's website and do not monitor whether a transaction takes place, whereas others require buyers to complete the transaction on the intermediary's portal. These intermediaries may offer substitute services and, thus, should be put in the same market. For example, some years ago, Airbnb and HomeAway offered short-term rental accommodation based on very different business models. Airbnb charged (and still charges) a percentage fee to tenants and landlords, whereas HomeAway some time ago only charged a fixed fee to landlords. As it is very plausible to assume that customers – both landlords and tenants – regarded the services provided by both firms as largely interchangeable or substitutable for one another, they should have been regarded as being offered in the same "market". A multi-markets approach could easily do justice to the competitive forces that work in such a context. In contrast, it is far from obvious how a single-market approach could have applied in this case and whether it could have coped with the circumstances of this kind.

Let us take a closer look at this. In transaction markets as defined by Filistrucchi et al. (2014), as they acknowledge, platforms may not only charge for usage but also for participation or access to the platform. We note that the listing of a merchant on a platform gives visibility, which may allow the merchant to complete a transaction through a different channel – this is a situation of bypass further addressed below.

It must also be appreciated that the observability of a transaction may be partial. For instance, after the matching service by the platform has been taken advantage of users may bypass the platform. For instance, a tourist may use a hotel booking platform to find the optimal match and then book directly on the hotel website. If a fraction of tourists does so, this means that only a fraction of transactions is actually observed. A platform may use non-price instruments such as price-parity clauses to combat bypass and, thus, affect how often it observes (and charges for) a transaction. This shows that observability of transaction is endogenous, and it is therefore problematic to classify a platform according to a feature that it partially controls. Furthermore, in line with the previous point, different platforms may opt for different strategies how to deal with bypass and, in effect, end up with different degrees of observability (in the extreme, one platform observing all and the other no transactions).

Our first insight is that *there is no sharp dividing line between transaction markets and non-transaction markets*, as transaction and non-transaction platform may offer substitutable services to both sides of the market.

The complex landscape in which transaction and matching platforms may operate

Taking a closer look at the types of activities offered by transaction platforms, it can be observed that they often offer several services to each side of the platform. When the platform caters to merchants and buyers, then, to merchants it provides a service akin to informative advertising and it offers the service to complete a transaction. On the buyer side, it offers the services to learn about different offerings and the service to complete a transaction. In such a case, the platform is active on four markets. Transaction platforms may aim at avoiding bypass and thus offer only bundles of these services on each side (and only charge for completed transactions).⁷⁰ It nonetheless follows that they may compete with other platforms that only offer the former service but not the latter. Merchant and seller may then transact directly among themselves (possibly using the service of payment system to transfer money, which, however, would typically also be involved by transaction platforms offering the bundle). The above example of Airbnb and HomeAway serves well to illustrate this point. We conclude from this that *transaction platforms often provide bundled services to the two sides*. These may compete with unbundled competing offers.

The single-market approach and the risk of excluding substitutes

An important observation is that transaction platforms (or matching platforms more generally) may compete with vertically integrated firms. For example, an e-commerce retailer (such as Amazon prior to the launch of Amazon Marketplace) may compete with an intermediary running a market place (such as eBay). Consumers could choose between the integrated offer by Amazon versus offers on eBay's market place. More generally, a platform may tightly control the access to platform on one side (and possibly use

⁷⁰ For example, platforms may require a platform-specific identity for the merchant so that the transaction has to be completed on the platform. Or the platform may provide ancillary services that make it unattractive to complete the transaction outside the platform.

long-term contracts resembling vertical integration) versus a market place approach in which non-discriminatory fees determine the offerings. Again, the multi-markets approach is well suited to analysing such markets, whereas the single-market approach is not.⁷¹

We would like to elaborate on this point and consider Uber and ride-hailing platforms. These platforms satisfy the definition of a transaction platform (where, in contrast to the standard merchant-buyer examples, the platform fully controls prices on the driver and the passenger side). We could then define a transaction market consisting of all ride-hailing platforms available in a geographic market. Drivers are attracted to the platform to earn a payment from transporting passengers – the more passengers are active, the more attractive the platform; passengers are attracted by the availability of drivers. However, passengers have a number of substitution possibilities: they may rely on a classic taxi service, use their own car, use public transport, or walk.⁷² These are not the substitution possibilities available to a driver. Thus, market conditions on both sides may be drastically different and it is not clear what the single market for a transaction service stands for.

Our second insight is thus that, if only transaction platforms (but no non-transaction platforms) coexist offering services that facilitate transaction between two sides, these offers may compete with vertically integrated offers to one side. In such cases, it would be erroneous if the competition authority restricted the relevant market to consist of only the transaction service to both sides. Thus, *adopting the single-market approach may lead to neglecting close substitute offers on one side of the market*, which merely shows that there is not a single market since substitutable product offerings are very different for the two sides.⁷³

When is the single-market approach admissible?

One response to the conceptual difficulties that transaction platforms often compete with platforms that do not monitor transactions is to focus on the broader class of platforms that facilitate matches. Such a platform can be called a “matching platform” and it can be left open whether the platform can observe whether a match actually forms. Crémer, de Montjoye and Schweitzer (2019, p. 46) suggest applying the single-market approach to such cases:

To understand the type of cases where one would want to have only one market, consider a dating app which would be a pure matching platform: no ads, no selling of data, no partnership with restaurants for a first date. [...] The only product which it would sell would be the matching process. In this case, the only market in which it would compete would be the one for “matching”, and there would be only one market.


We challenge this view. A matching platform offers services to two groups. In the case of heterosexual dating apps, each app offers to men the opportunity to be matched with women and to women the opportunity to be matched with men.⁷⁴ While one platform may perform well regarding the former, another may do well regarding the latter. This may then imply that platforms have highly imbalanced pools of participants: one with many male users and the other with many female users. Then, for a user considering whether to use a different app, it matters very much whether the user is a man or a woman. Clearly, substitution possibilities are very different on the two sides. In addition, the platform typically has separate price instruments for the two sides. As Crémer, de Montjoye and Schweitzer (2019, p. 46) continue, one should define markets on each side (and thus follow the multi-markets approach) if the answer to the following test is affirmative: “would the platform, when considering the competitive threat, see different competitive threats on both sides?” In a setting with an incumbent dating app being challenged by a new dating app, the competitive threat could be that an alternative app is particularly

⁷¹ This generalises to cases in which one of the platforms is partially vertically integrated, as in the case of Amazon after the launch of its marketplace.

⁷² As O’Connor (2016, p. 12) correctly observes, “[f]or example, a person needing transportation from Washington, DC to New York can drive, fly, take a train or bus, or use an online carpooling app. Consumers decide by evaluating the price, quality and speed of those offerings and will substitute between these options accordingly. A ridesharing app’s closest competitor in this context may be a bus, train, or airplane—none of which looks or operates anything like a ridesharing app.”

⁷³ Such mistakes are also possible under the multi-markets approach, but arguably less likely since it requires to look at substitution possibilities on each side.

⁷⁴ These are qualitatively different services, no matter whether the presentation of possible matches and the pricing are similar for both groups.



attractive for women; owing to feedback effects this is a danger for the overall success of the app, but clearly the original threat would come from one side of the market.

To rephrase this insight, even if we observe a market in which all platforms follow the same business model that can be described as a transaction platform, substitution possibilities may be very different on the two sides.⁷⁵ For example, a merchant has typically different opportunity costs to settle a purchase in cash than does a shopper carrying cash. It is partly this difference in substitution possibilities that determines the profit-maximising price structure. As has been recognised in the economics literature on transaction platforms,⁷⁶ only if there is full pass-through of usage fees does the price structure not matter. Remarkably, Rochet and Tirole (2006) and part of the literature restrict their attention to cases in which there is non-neutrality:

A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and the platforms must design it so as to bring both sides on board.⁷⁷

This implies that only if a platform does *not* satisfy Rochet and Tirole's definition of a two-sided platform is there a single price for the transaction services offered to merchants and sellers such that the price structure can be disregarded.⁷⁸ It is only in this case that one might want to use a single-market analysis. While it is still true that the platform offers complementary services to the two sides, there is a common price for this product. Hence, only if the definition of a two-sided platform by Rochet and Tirole (2006) is violated may a single-market approach be of practical relevance. The issue in the payment card cases is, however, the fear that such contractual restrictions (regarding steering and no-surcharge rule) make the price structure non-neutral.

As the question whether the conduct by the platform has influence on the price structure is an issue that should be discussed in the context of the theory of harm, then the issue of neutrality of the price structure should not be an element that determines the approach used for market definition.

As explained above, in many instances it is the price structure and not some aggregate price that determines market outcomes and, thus, the surplus of the different user groups. To be precise, in a buyer-seller context, only the aggregate price and not the price structure matters if the definition of a two-sided market by Rochet and Tirole (2006) is violated. This is the case if a platform taxed trade and if it did not matter which side is taxed to which extent. Whether a market has this feature often requires closer inspection. In addition, it will often be important to evaluate which side bears the "tax burden", in which case it is important to understand substitution possibilities on each side and the degree of cross-group external effects. For instance, a flat-sharing platform caters to landlords and tenants. Such a platform offers landlords the service to find suitable tenants. The outside option for landlords is not to rent out the place and keep it vacant or use it herself. It offers tenants the service to find suitable apartments. Apart from using a platform with privately owner apartments, the tenant may instead choose hotel accommodation (via a different platform or by contacting a hotel directly). Thus, the set of substitute products and the associated intermediation services on the buyer side is likely to be very different from the set of substitute product on the seller's side.

As recognised by Rochet and Tirole (2003) and others, a two-sided platform is different from a firm selling two complementary goods. In the latter case the firm sells the two products to the same buyers, who typically take into account both prices when making their purchase decision. In the former case, the firm sells products (in particular, transaction services) to two different groups. Thus, two-sided platforms feature external effects that may be internalised by the platform by adjusting its price structure. If a firm sells complementary products to the same buyers, no external effects arise. Note that, even in the case of

⁷⁵ Also, the benefits of using a credit card relative to e.g. using cash for a transaction are different on the two sides. For example, the merchant may benefit from reduced security risks (lower risk of robbery) and the buyer has immediate access to consumer credit.

⁷⁶ See the seminal article by Rochet and Tirole (2003).

⁷⁷ Rochet and Tirole (2006, pp. 664–665).

⁷⁸ We recognise that, even when the price structure is non-neutral, it is possible to work with an overall "price" of a transaction (presuming that the price structure is chosen optimally). One may then consider an overall derived demand for transactions that combines demand functions on both sides, and check for overall substitutability.

complementary goods, competition analysis typically presumes two separate markets.⁷⁹ Only in the special case of perfect complements offered as bundles could a single-market approach be regarded appropriate. A simple example for this special case is a pair of shoes, as people typically wear matching pairs and thus only care for the joint price and only such bundles are offered.

A distinguishing feature of two-sided platforms are cross-group effects. The analogy to a firm selling complements to the same group of buyers is the following: a single-market approach is appropriate and one may define the product as the transaction service offered by the platform only if the overall price for the transaction services offered to the two sides matters for demand on the two sides and a firm necessarily offers these two services. However, demand for this transaction service is determined through the interplay of demand for the services on each side. That is, it only depends on the overall price of the complementary transaction services how many transactions will be completed on the platform. Even in those cases, starting with defining separate markets and understanding the links between markets is at no loss from economic point of view, as the same conclusions obtain.

There is a noteworthy difference between the two cases. In the case of firms selling bundles of perfect complements to the same group of buyers, using the demand for the bundle is a natural starting point and postulating a single market is appropriate. By contrast, a platform that sells a transaction service that is perfectly complementary for two different groups and satisfies price neutrality generates a demand for this transaction service that is not a primitive demand function but a function derived from the interplay of the demands of the two groups related through cross-group effects.

Our view that *the single-market approach is typically unsuitable for competition analysis* is in line with the view expressed by Katz and Sallet (2018) and Katz (2019). In practice, our view comes close to the view taken by Wismer, Bongard and Rasek (2017), who state that the single-market approach:

seems reasonable for services which mainly aim at enabling a direct (observable) transaction between different groups, e.g. in case of a trading platform that brings together sellers and buyers. However, this approach seems feasible only if (i) a firm's service necessarily involves all groups and (ii) substitutability of the service from the perspective of each customer group does not differ substantially.

Condition (ii) essentially means that the two groups are symmetric regarding different offers as well as regarding an outside option, which is a theoretical possibility, but appears to be of little practical relevance.⁸⁰

Hence, we conclude that the limitations and conditions under which a single-market approach could be considered feasible are so severe – and, consequently, the risks of creating false positives – that, as a general guidance, courts and authorities are well advised to consistently base their analysis on a multi-markets approach. The linkage between those markets through cross-group effects should be considered separately, in particular when assessing if a firm enjoys market power.

3.1.2. Competition practice

European Union

It is, first of all, worth mentioning that the European Commission's guidelines on the definition of the relevant market do not contain any indication on how the concept should be applied to two-sided platforms.⁸¹ Yet, given that the relevant notice was published in 1997, this should not surprise too much. Meanwhile, the European institutions had many opportunities to address market definition in the context of two-sided platforms. These cases in particular involved, first, payment systems and second, especially during recent years, internet platforms.

⁷⁹ See *Ohio v American Express Co*, 585 U.S. ____ (25 June 2018), Breyer, J., dissenting, slip opinion, p. 11 ("But while the market includes substitutes, it does not include what economists call complements: goods or services that are used together with the restrained product, but that cannot be substituted for that product").

⁸⁰ See our criticism with regard to the Bundeskartellamt's position in the debate and its adoption of the single-market approach in cases involving matching platforms *infra* sub 3.1.2., pp. 37-38.

⁸¹ See Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5. Note that the Commission stress particularities in regard when considering primary and secondary markets. See para. 56 ("The method of defining markets in these cases is the same [...] but taking into account as well, constraints on substitution imposed by conditions in the connected market").

Payment systems

The European institutions had to address market definition in several cases involving payment systems. In regard to four-party payment card systems such as MasterCard or Visa, the Commission distinguishes three separate markets: an inter-systems market, an issuing market and an acquiring market.⁸² The Commission's view has been explicitly confirmed by the General Court in at least two cases, which will be briefly addressed in turn, while, on appeal, the ECJ in both cases could avoid taking a stand in regard to market definition and left it by stressing that it is necessary to consider cross-group effects in analysing two-party platforms under Article 101 TFEU. Yet, when defining the inter-systems market, the Commission arguably followed a single-market logic.⁸³

In the *MasterCard* case, which involved a decision on interchange fees that are paid between the card-issuing bank and the acquiring bank and which were laid down in the rules of the payment system,⁸⁴ the applicants challenged *inter alia* the Commission's finding that there was a distinct acquiring market. They argued that there was only one product market at issue, namely a market where the payment card systems provided a single service to both cardholder and merchants and where they competed against each other and against all other forms of payment.⁸⁵ The General Court rejected this view:

It is indeed the case that there are certain forms of interaction between the "issuing" and "acquiring" sides, such as the complementary nature of issuing and acquiring services, and the presence of indirect network effects, since the extent of merchants' acceptance of cards and the number of cards in circulation each affects the other.

However, it must be pointed out that despite such complementarity, services provided to cardholders and those provided to merchants can be distinguished, and, moreover, cardholders and merchants exert separate competitive pressure on issuing and acquiring banks respectively.⁸⁶

Thus, the General Court confirmed that the "issuing side" and the "acquiring side" can be considered separate markets. On appeal, the ECJ was not called upon to decide on market definition.⁸⁷ Thus, the Court left it by stressing that "the two-sided nature of MasterCard's open payment system" had to be considered as part of the economic and legal context of the coordination concerned, "particularly since it is undisputed that there is interaction between the two sides of that system".⁸⁸

The interrelation between "issuing side" and "acquiring side" was also subject of the proceedings in *Groupement des Cartes Bancaires* ("CB Group"), where the ECJ set aside a judgment by the General Court. The latter had upheld a decision by the Commission against CB Group, an operator of a debit card system and ATM networks in France. The Commission had regarded CB Group's fee scheme as a restriction of competition by object and, thus, an infringement of Article 101 TFEU. CB Group defended its conditions for membership in the network, arguing they were necessary to reach a balance between two activities: the issuing of cards to customers on the one hand, and the acquisition of card transactions by signing up merchants and installing ATMs on the other hand. The General Court rejected this argument on the grounds that a multi-markets approach applied. The Court argued that the "balancing argument" rested on the wrong assumption that the relevant market was the market of payment systems in France.

⁸² See, e.g., European Commission 24 July 2002, COMP/29.373, *Visa International – Multilateral Interchange Fees*, paras 43; European Commission 19 December 2007, COMP/34.579, *MasterCard*, COMP/36.518, EuroCommerce, COMP/38.580, paras 283–329. See also General Court 24 May 2012, T-111/08, *MasterCard*, EU:T:2012:260, para. 21 ("According to the Commission, it is necessary to distinguish between three different product markets in the sphere of four-party bank card systems: first of all, an 'upstream' market, corresponding to the services provided by a bank card system to financial institutions, a market in which the various card systems compete ('the inter-systems market'); then a first 'downstream' market, in which the issuing banks compete for the business of the bank card holders ('the issuing market'); lastly a second 'downstream' market, in which the acquiring banks compete for the merchants' business ('the acquiring market')").

⁸³ See *infra* note 93 and accompanying text.

⁸⁴ So-called multilaterally-agreed interchange fees ("MIF").

⁸⁵ General Court 24 May 2012, T-111/08, *MasterCard*, EU:T:2012:260, para. 174.

⁸⁶ General Court 24 May 2012, T-111/08, *MasterCard*, EU:T:2012:260, paras 176–177.

⁸⁷ ECJ 11 September 2014, C-382/12 P, *MasterCard*, EU:C:2014:2201, para. 178 ("In the present case the General Court found [...] – and this has not been directly challenged in the present appeal – that the Commission could use the acquiring market as the relevant market for its analysis of the competitive effects of the MIF").

⁸⁸ *Id.*, para. 179.

As, however, the case involved an alleged infringement in the market for the issue of payment cards, CB Group's reasoning could, in the General Court's view, not be taken into consideration.⁸⁹

On appeal, the ECJ held that the General Court had unduly mixed up market definition with the question of whether the agreement restricted competition.⁹⁰ The ECJ stressed that, in determining whether a coordination between firms is by nature harmful to competition, it is necessary:

to take into consideration all relevant aspects – having regard, in particular, to the nature of the services at issue, as well as the real conditions of the functioning and structure of the markets – of the economic or legal context in which that coordination takes place, it being immaterial whether or not such an aspect relates to the relevant market.

That must be the case, in particular, when that aspect is the taking into account of interactions between the relevant market and a different related market [...] and, all the more so, when, as in the present case, there are interactions between the two facets of a two-sided system.⁹¹

Thus, the ECJ rejected the General Court's view that, in appraising the network operator's restrictions on the issuing of cards, the interdependencies with the other side of the payment system had to be excluded from the analysis under Article 101 TFEU. On the contrary, the Court emphasised that indirect network effects between the two sides of the payment system had to be taken into account. Therefore, the ECJ held that the General Court erred when it had characterised the measures at issue as a restriction of competition by object.⁹² To find this conclusion it was, however, not necessary for the ECJ to take a stand on market definition and indeed, considering the aforementioned passage of the judgment, it seems that the Court deliberately avoided confirming the General Court's endorsement of the multi-markets approach – without rejecting it either.

While the Commission does not define an all-embracing market for payment systems but distinguishes between the inter-systems market, the issuing market and the acquiring market, it arguably follows a single-market logic to define the inter-systems market. The latter has been described as an "upstream" market, corresponding to the services provided by a bank card system to financial institutions, a market in which the various card systems compete [...].⁹³ This definition excludes the possibility of also defining at this "upstream" level separate markets for services provided to card-issuing banks on the one hand and to merchant banks on the other hand. While many banks are active both for merchants and for buyers, fees in the inter-system market will, however, play an important role as to which payment system is preferred by a particular bank, given the bank's composition of its customer pool (which may well be different across banks).

Digital platforms

During the last decade the Commission handed down a number of decisions that involved two-sided digital platforms which provided a variety of services. These cases frequently required different markets to be defined in relation to the platforms.⁹⁴ Yet in none of those cases the Commission did explicitly address the issue "single-market approach vs. multi-markets approach", and no clear statements can be inferred from the decisions as to whether and under which conditions a single-market approach might be preferable. This is arguably because these cases involved no transaction platforms and no platforms which exclusively

⁸⁹ General Court 29 November 2012, T-491/07, *Groupement des cartes bancaires*, EU:T:2012:633, para. 105 ("L'argument du requérant selon lequel l'analyse des exigences d'équilibre entre les activités d'émission et d'acquisition au sein du système de paiement aurait dû être effectuée dans le cadre de l'article 81, paragraphe 1, CE ne saurait prospérer dans la mesure où cet argument repose sur la prémisse selon laquelle le marché des systèmes de paiement serait le marché pertinent. Or, la Commission a constaté une restriction de concurrence non sur le marché des systèmes de paiement en France, mais sur celui de l'émission de cartes de paiement en France. Les exigences d'équilibre entre l'activité d'émission et celle d'acquisition au sein du système de paiement n'avaient pas à être examinées dans le cadre de l'article 81, paragraphe 1, CE, dès lors que le seul marché retenu était le marché en aval de l'émission de cartes").

⁹⁰ ECJ 11 September 2014, C-67/13 P, *Groupement des cartes bancaires*, EU:C:2014:2204, para. 77.

⁹¹ *Id.*, paras 78–79.

⁹² *Id.*, para. 87.

⁹³ General Court 24 May 2012, T-111/08, *MasterCard*, EU:T:2012:260, para. 21 (summarising the Commission's approach).

⁹⁴ See the overview provided *supra* notes 34 et seq. and accompanying text.

served a matching function. Thus, the statements on market definition focus essentially on the substitutability of certain services provided by different platforms.

However, the Commission's approach in the relatively early decision in *Travelport/Worldspan*⁹⁵ has partly been interpreted as following a single-market logic.⁹⁶ This case involved Global Distribution Services (GDS), which facilitated bookings of hotels, flights and other travel services by travel agents. On one side of the market were the providers or travel services (including airlines, hotels, car rental companies) and on the other side travel agents. While in its decision the Commission spoke of a "market for electronic travel distribution services through a GDS",⁹⁷ it explored the different homing decisions of users on both sides of the platform and considered the different substitution possibilities that users on each side faced. This includes the possibilities of bypass.⁹⁸ As the Commission elaborated, most travel service providers multi-home, whereas travel agents (except for the large ones) tend to single-home.⁹⁹ Thus, GDS competed for travel agents, while they did not compete for travel service providers.¹⁰⁰ In Section 3.4., we elaborate on how homing decisions affect market delineation under the multi-markets approach.

The Netherlands Competition Authority as an early proponent of a single-market approach

The (then¹⁰¹) Netherlands Competition Authority (Nederlandse Mededingingsautoriteit) was a frontrunner in explicitly discussing market definition in regard to two-sided platforms other than a payment system and for adopting a single-market approach. In *Bloemenveiling Aalsmeer/FloraHolland*,¹⁰² the competition authority had to deal with a merger of two horticultural platforms. It recognised the two-sided nature of the platforms and raised the question of whether a single product market or two separate ones should be defined. The authority considered that, in order to define a product market following a demand-side-oriented concept, both the buyers of ornamental horticultural products and the growers needed to be taken into account as they were both customers of the platform. Consequently, referring to the European Commission's decision in *Visa International*¹⁰³ and the aforementioned definition of the inter-systems market,¹⁰⁴ the competition authority opted for a single-market approach.¹⁰⁵

The EU-wide consideration of price-parity clauses imposed by hotel booking platforms

Competition authorities and courts of various EU Member States have considered whether and which kind of price-parity clauses imposed by hotel booking platforms on its hotel customers had to be regarded an

⁹⁵ European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*.

⁹⁶ See Bundeskartellamt (2016, p. 27): "The case *Travelport/Worldspan* is an exception; in this case, the Commission intensively addresses the phenomenon of two-sided markets in Global Distribution Services (affecting the travel booking system Galileo) and indirect network effects, and in its final analysis, seems to apply a single market definition to Global Distribution Services, a transaction platform. However, the Commission regards both sides as upstream (flight and travel service providers) and downstream levels (travel agents) and compares this constellation (which the Bundeskartellamt views as a transaction platform) with a vertical trade relation on the relevant travel product market; this market is limited to products that are traded via Global Distribution Services only ('GDS only'). The intermediary service as a product, i.e. the matching by the platform, is not considered in the context of market definition."

⁹⁷ European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*, para. 10.

⁹⁸ The Commission did not consider the demand by travel agents as derived demand. Thus, it did not consider bypass opportunities by individual travellers.

⁹⁹ European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*, note 15 ("[...] beyond a certain scale of operation, multi-homing (at least dual-homing) may become interesting in order to reduce the risk of service disruption in case of temporary system failure of one GDS").

¹⁰⁰ European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*, note 16 (noting that travel agents are subsidised when using a particular GDS, while travel service providers have to pay for the services provided by a GDS).

¹⁰¹ As a result of a fusion of the Competition Authority with the Consumer Authority (Consumentenautoriteit) and the Independent Post and Telecommunications Authority (Onafhankelijke Post en Telecommunicatie Autoriteit) on 1 April 2013, the Consumer Markets Authority (Autoriteit Consument en Markt) is now fully responsible for maintaining competition in all markets.

¹⁰² Nederlandse Mededingingsautoriteit 21 August 2007, 5901/184 *Bloemenveiling Aalsmeer – Flora Holland*. See on this decision Filistrucchi et al. (2014, pp. 309–310).

¹⁰³ Nederlandse Mededingingsautoriteit 21 August 2007, 5901/184 *Bloemenveiling Aalsmeer – Flora Holland*, para. 29.

¹⁰⁴ See *supra* note 93 and accompanying text.

¹⁰⁵ Filistrucchi et al. (2014, p. 310) consider that the Dutch competition authority correctly defined only one relevant market as "auction services are a two-sided transaction market".

infringement of competition law. In these proceedings, the question of whether a single- or a multi-market(s) approach should be applied has typically not been discussed explicitly.

The Swedish Competition Authority (Konkurrensverket) submitted in *Booking.com* a preliminary assessment of the relevant market, which it described as:

the market for the provision of online travel agency services with respect to hotels located in Sweden. [...] Online travel agencies thus make hotel rooms available to consumers on behalf of hotels, which in turn provide online travel agencies with the rooms consumers are able to book.¹⁰⁶

The phrase “services with respect to hotels [...] in Sweden” leaves it open whether the hotels and the hotels’ potential customers should be grouped together as receivers of a brokerage service provided by the hotel booking platform. Moreover, the Competition Authority ascertained that Booking.com’s market share “exceed[ed] 30 percent by an appreciable margin”¹⁰⁷ without clarifying whether this statement was based on a single- or a multi-market(s) approach.

It is remarkable that in the follow-up decision concerning Expedia the competition authority slightly changed the wording for the definition of the relevant product market, which it described as “the market for the provision of online travel agency services to hotels located in Sweden”.¹⁰⁸ If we take this wording seriously, the competition authority has assumed a separate market for an agency service provided to hotels and, thus, implicitly adopted a multi-markets approach.

The French Autorité de la concurrence also did not explicitly address whether a single- or a multi-market(s) approach should be adopted. Nevertheless, the authority identified two separate markets: first, an “upstream market”, where the platform offers intermediation services to the hotels and, more particularly, provide them the opportunity to be visible on the internet, and, second, a “downstream market”, where the platform offers to the hotels’ customers the opportunity to search for, compare and book hotel rooms.¹⁰⁹ Thus, the Autorité de la concurrence defined separate markets on both sides of the platform, but stressed that a competition analysis of the relevant market on one side of the platform, i.e. in the *Booking.com* case of the “upstream market” for supply of intermediation services by the platform to the hotels, must take into consideration the interrelations with the market on the other side of the platform.¹¹⁰

The Bundeskartellamt issued two decisions (*HRS* and *Booking.com*) where it regarded price-parity clauses imposed by hotel booking platforms as an infringement of competition law. In *HRS*, the competition authority defined a “hotel portal market” as a market for the brokerage of hotel rooms via hotel portals.¹¹¹ Thus, while the authority did not explicitly discuss the issue, it implicitly adopted a single-market approach, considering the hotels *and* the hotels’ potential customers as the consumers in a market for an intermediation service offered by hotel booking platforms.¹¹² On appeal, the Higher Regional Court in Düsseldorf assumed that “zero-price” markets could not constitute a “market” in the legal sense¹¹³ and, therefore, the Court approved the Bundeskartellamt’s decision insofar as it defined a market for an intermediation service (“hotel booking brokerage”), but regarded only the hotels as consumers in the relevant product market.¹¹⁴ Against this background, the Bundeskartellamt repeated in its subsequent

¹⁰⁶ Konkurrensverket 15 April 2015, 596/2013, *Booking.com*, paras 15–16.

¹⁰⁷ *Id.*, para. 18.

¹⁰⁸ Konkurrensverket 10 May 2015, 595/2015, *Expedia*, p. 3 (emphasis added).

¹⁰⁹ Autorité de la concurrence 21 April 2015, Décision n° 15-D-06, *Booking.com*, paras 96–97.

¹¹⁰ *Id.*, para. 98 (“Les pratiques visées concernent les relations contractuelles entre les OTA et les hôteliers. L’analyse du marché pertinent portera dès lors sur ce côté du marché. Dans la mesure où il s’agit d’un marché biface, il convient cependant de tenir compte de la seconde face du marché et de ses effets indirects éventuels sur le marché en cause”).

¹¹¹ Bundeskartellamt 20 December 2013, B9-66/10, *HRS*, paras 1, 5, 69–107.

¹¹² See Bundeskartellamt (2016, p. 27).

¹¹³ See more in detail *infra* note 213 and accompanying text.

¹¹⁴ OLG Düsseldorf 9 January 2015, VI-Kart 1/14(V), *HRS*, Juris, paras 25–59, see in particular at para. 31 (“Entscheidend für die Frage, ob bestimmte Waren oder gewerbliche Leistungen funktionell austauschbar sind, ist die Sicht der Marktgegenseite, hier also der Hotelunternehmen, die die Vermittlung von Hotelbuchungen nachfragen”). In a parallel civil litigation concerning the same matter, the Regional Court in Cologne (Köln) assumed that the relevant product market was the hotel portal market where the hotel booking platforms provide a service to the hotels. Thus, while the Court appears to have implicitly endorsed a multi-markets approach, it remains unclear whether it would have acknowledged a separate (zero-price) market or whether it considered the “other side” of the platform as not relevant for

decision *Booking.com* that the “relevant product market is [...] the hotel portal market”,¹¹⁵ but left it open whether only the remunerated side should be considered part of a market.¹¹⁶

Two aspects are noteworthy from today’s perspective for the appraisal of these decisions. First, in its later practice, the Bundeskartellamt explicitly confirmed (against the Higher Regional Court’s view) that also “zero-price markets” had to be regarded as “markets” for the purposes of competition law.¹¹⁷ Second, as will be shown, the Bundeskartellamt refined its position in the debate on “single- vs. multi-market(s) approach” only after it had handed down these decisions. Remarkably, in its subsequent Working Paper on Market Power of Platforms and Networks (2016, p. 27) the authority did not elaborate on the question of whether a single-market approach would be feasible in regard to the “hotel portal market”, i.e. it did not expressly defend the position taken in *HRS* and *Booking.com*.

The Bundeskartellamt: in defence of a single-market approach in the case of “matching platforms”

The German Bundeskartellamt is arguably the competition authority that has dealt most extensively with the issue “single-market approach vs. multi-markets approach” – both in its decision practice but also in its Working Paper on Market Power of Platforms and Networks (2016, pp. 25–32), where the authority discusses conceptual issues at length. As a matter of principle, the German authority assumes that separate product markets for each side of a platform should be defined.¹¹⁸ However, in the case of matching platforms, the Bundeskartellamt regards a single-market approach as feasible:

It is the Bundeskartellamt’s opinion that a single market definition would be suitable for matching platforms if user groups essentially have the same need for liaising with the respective other group, and therefore, the group’s views regarding substitutability of function do not differ substantially.¹¹⁹

The Bundeskartellamt regards a platform a “matching platform” if it

enables intermediation between members of two or more user groups tailored to their individual preferences and aspired by all user groups. The liaison facilitated by matching platforms enables direct interaction between the users liaised.¹²⁰

Thus, the term does comprise both platforms that involve transactions but also platforms that enable a different kind of interaction as, for instance, in the case of online dating platforms that facilitate a match between users.¹²¹ The authority reasons the single-market approach by stating that

the appraisal of the price-parity clauses in question. LG Köln 16 February 2017, 88 O (Kart) 17/16, Juris, para. 48 (an appeal is pending before the Higher Regional Court in Cologne (Köln), 6 U 35/17).

¹¹⁵ Bundeskartellamt 22 December 2015, B9-121/13, *Booking.com*, para. 135.

¹¹⁶ *Id.*, para. 141.


¹¹⁷ See *infra* notes 209–211 and accompanying text.

¹¹⁸ The Bundeskartellamt attributes to the German Monopolkommission (Monopolies Commission) the recommendation to follow a single-market approach regardless of the classification of the platform, provided that network effects between user groups are strong (see Bundeskartellamt, 2016, p. 26). However, the Monopolkommission’s statement (2015, para. 58) referred to by the Bundeskartellamt says: “The characteristics of platforms make it clear that the isolated consideration of a single side of the platform is not admissible for the assessment of competitive effects and the market power of a platform. Accordingly, within the scope of the market definition, a platform side may not be defined as a separate market from an economic perspective. Rather, when assessing the market power of a platform, it is always crucial how participants on the other side respond to a change on a particular side” (our translation of the German original: “Die Charakteristika von Plattformen machen deutlich, dass für die Beurteilung wettbewerblicher Effekte und der Marktmacht einer Plattform die isolierte Betrachtung einer einzelnen Seite der Plattform nicht zulässig ist. Entsprechend darf im Rahmen der Marktabgrenzung aus ökonomischer Perspektive eine Plattformseite nicht als eigener Markt definiert werden. Vielmehr ist für die Bewertung der Marktmacht einer Plattform immer auch entscheidend, wie die Teilnehmer der anderen Seiten auf eine Veränderung auf einer bestimmten Seite reagieren”). According to our reading this cannot be understood as advocating the single-market approach and only as a rejection of treating the two sides independently, as the statement in the second sentence is not backed by the subsequent explanation.

¹¹⁹ Bundeskartellamt (2016, p. 28). The authority had already advocated this position in Bundeskartellamt (2015, p. 17) (“Eine einheitliche Marktabgrenzung wäre aus Sicht des Bundeskartellamts jedenfalls dann mit dem Bedarfsmarktkonzept vereinbar, wenn beide Marktseiten im Wesentlichen dieselben Austauschmöglichkeiten haben”).

¹²⁰ Bundeskartellamt (2016, p. 21).

¹²¹ *Id.*



In the Bundeskartellamt's opinion, the concept of demand-side substitutability that focuses on the opposite market side's perspective does not require a separation of both market sides. The opposite market side may in fact consist of two or more user groups, which is the case on many one-sided markets. The Bundeskartellamt, applying the concept of demand-side substitutability, considers it possible to regard a platform as a single market if the platform is understood as a provider of an intermediary service and both user groups are understood as consumers of this service with essentially the same needs. The market definition needs to take into account that bilateral positive indirect network effects occur between the user groups. For the platform's benefit increases for each user group as the number of users in the respective other group grows, so that indirect network effects become relevant to identify users' needs. The platform service may fulfil different functions for different user groups, but how it meets the needs of one user group, depends on whether it meets the needs of the other group as well. This warrants treating user groups as one opposite market side without losing sight of the market's multi-sided nature. It is still necessary to analyse substitutability of services from the perspective of both user groups.¹²²

However, the authority acknowledges situations where a single-market approach is inappropriate in regard to matching platforms:

To the extent that user groups have obvious different possibilities of substitution, market sides have to be considered separately with a view to the function of the market definition, which is to describe existing competition relations. Otherwise essential competitors may possibly be overlooked. In this context, it is particularly relevant to establish whether both sides require the intermediation service as an upstream product of the transaction or whether they can do without it.¹²³

Thus, the Bundeskartellamt distinguishes between three categories of platforms or, to put it more precisely, three ways of characterising the interrelation between different user groups of two-sided platforms: first, non-matching platforms; second, matching platforms that enable an interaction between user groups that have different possibilities of substitution; and, third, matching platforms that enable interaction between user groups that have equal possibilities of substitution. While a multi-markets approach should be adopted in regard to the first and second categories, the authority envisages the adoption of a single-market approach in regard to the third category. The practice of the Bundeskartellamt provides us with illustration in regard to all three categories.

First category: non-matching platforms (multi-markets approach)

The German competition authority identified in various cases a characteristic as a "non-matching platform" and, thus, applied a multi-markets approach.

- *Google/VG Media*. The Bundeskartellamt described Google as an "audience-providing platform" and separated the market for search services from the market for online advertising.¹²⁴ In parallel civil litigation against Google in the same matter, the Regional Court in Berlin defined the relevant product market much in the same way as the market for internet search services.¹²⁵
- *Parship/ElitePartner*. The authority characterised an ad-financed online dating platform as an "audience providing platform" or "advertising platform" and considered the online advertising market separately from the (online) dating market.¹²⁶
- *Facebook*. The Bundeskartellamt identified several users, namely private users, as the "key user group" and advertisers, publishers, and developers, and concludes that "[a]s none of the above

¹²² Id., pp. 28–29.

¹²³ Id., p. 29.

¹²⁴ Bundeskartellamt 8 September 2016, B6-126/14, *Google/VG Media*, paras 124–127; Case Summary, p. 3.

¹²⁵ LG Berlin 19 February 2016, 92 O 5/14 Kart, *Google-Snippets*, Juris, para. 65 ("Der sachlich relevante Markt ist derjenige für Internetsuchmaschinen"). An appeal against this judgment is pending before the Kammergericht Berlin (2 U 5/16 Kart).

¹²⁶ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 71 and 80; Case summary, pp. 2–3.

groups of Facebook users have demands similar to the group of private users, they have to be attributed to other markets".¹²⁷

Second category: matching platforms with differentiated possibilities of substitution (multi-markets approach)

The Bundeskartellamt characterised Amazon's Marketplace as a matching platform but suggested, that the possibilities of substitution may differ significantly for retailers who use Amazon's intermediation service and for consumers who want to shop. As the application of a single-market approach would disregard that competing retailers (online and offline) exert competing pressure on Amazon, the authority indicated that this case should fall under the second category and, thus, a multi-markets approach should apply.¹²⁸ This appears to be the Bundeskartellamt's position in the ongoing proceeding against Amazon, which is suspected of abusing its market dominance vis-à-vis dependent sellers. In a press release, the competition authority stated that it sees "indications" that Amazon dominates the "market for marketplace services for online sales to consumers".¹²⁹

Third category: matching platforms with equal possibilities of substitution (single-market approach)

The most interesting category is the third one as it encompasses the cases where the Bundeskartellamt assumed that it had identified platforms that allowed the match of different user groups which equal possibilities of substitution and where it, therefore, adopted a single-market approach or considered such an approach as feasible without having to take an ultimate stand.

- *Parship/ElitePartner*. The Bundeskartellamt defined a market for online dating platforms and thus, adopted a single-market approach, assuming that the substitutability of the matching service offered by only dating platforms with other dating options would be the same from the perspective of women and men:¹³⁰

The fact that the product consists of the intermediary activity of matching women and men, and therefore necessarily requires the participation of both sides, suggests that the market can be considered to be a single product market. Also from the perspective of the opposite market side [...] it appears to be unnecessary for the case in question to differentiate between the two market sides. The opposite side of the market in this case is represented by women and men who are looking for a partner and who are currently customers for this intermediation service. If they switched to any of the possible alternative suppliers, both user groups would inevitably meet again.¹³¹

- *Immonet/Immowelt*. The Bundeskartellamt approved a merger between two real estate platforms. While the competition authority left the precise definition of the product market open,¹³² it put forward essentially two reasons why a single-market approach would be appropriate:

Firstly, one argument in favour of this is that the product of an online real estate platform is indivisible and always has to include both user groups. The product is the platform's intermediary service in bringing together (matching) property providers and seekers and therefore by its very nature requires both market sides. [...] Also from the perspective of the opposite market side [...] a separate assessment of the two market sides is not required. [...] the Bundeskartellamt considers it possible to define a single market if demand on the part of both user groups is largely uniform and the possibilities of the user groups to switch provider do not essentially differ. Here the opposite market side consists of property providers and property seekers which both use a property intermediation service. With all

¹²⁷ Bundeskartellamt, 6 February 2019, B6-22/16, *Facebook*, Case Summary, p. 4; see, in detail, paras 232–237.

¹²⁸ Bundeskartellamt (2016, pp. 31–32).

¹²⁹ Bundeskartellamt 29 November 2018, Press Release, Bundeskartellamt initiates abuse proceeding against Amazon.

¹³⁰ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 71, 75–78.

¹³¹ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, Case Summary, p. 2.

¹³² See Bundeskartellamt (2016, p. 30).

the feasible possibilities to switch to an alternative intermediary, both user groups would inevitably be brought together again. The close interdependency between the groups due to bilateral positive indirect network effects does not justify separating the market sides but instead leads to a largely uniform demand.¹³³

- *Verivox/ProSiebenSat1*. The Bundeskartellamt had to consider the takeover of Verivox, the leading online comparison platform for the brokerage of, *inter alia*, electricity and gas contracts for final consumers in Germany. The competition authority assumed that online comparison platforms had to be characterised as transaction platforms and considered a single-market approach as appropriate:

This view is supported by the argument that the product of a transaction platform is not divisible, but always involves both user groups. The brokering activity is what constitutes the product, i.e. bringing together (suitable) suppliers and customers, and it therefore requires two sides. This distinguishes transaction platforms from advertising platforms, which add the second side of the market on the basis of a strategic financing decision without that second side necessarily being a constituent part of the product offered to the user side. In many cases, limiting the activities of a transaction platform to one side or assessing the sides separately would fail to fully represent the economic activity and the pronounced interdependences of the sides.¹³⁴

We see that the authority puts forward – just as in *Immonet/Immowelt* – an argument of “indivisibility”, claiming that a service of intermediation offered to two (or more) “market sides” could not be split up into two markets as such a multi-markets approach could not fully do justice to the interdependencies of the “market sides”. The authority then continued by stating that the platform could be considered as a single market

if both user groups have largely uniform requirements and their possibilities for exchanging information do not differ significantly from one another. In the present case, the opposite sides of the market consist of suppliers and customers, each of whom requires the brokerage of certain products. Considering the conceivable alternatives to brokerage, the two user groups would have to meet again. The connections between the groups resulting from reciprocal positive indirect network effects do not justify separating the two sides of the market; on the contrary, they lead to largely uniform requirements.¹³⁵

- *Google/VG Media*. The Bundeskartellamt emphasised again the special status of “transaction or matching platforms” in contrast to “advertising and audience-providing platforms”. The former type of platform provides a “specific intermediation service”, which constitutes “the very product of the platform[s]” as this service “needs both sides and is indivisible”. The Bundeskartellamt acknowledged that Google is principally an audience-providing platform and thus, the authority recognised that the search services and the advertising activities had to be considered separately.¹³⁶ However, the authority regarded it as possible to characterise the intermediation of a contract between the user of the search engine and the linked websites as a “matching or transaction platform”, but also considered the assumption of a procurement relationship possible, according to which “the snippets and preview images of the websites represent an input product for the search engine”.¹³⁷

¹³³ Bundeskartellamt 20 April 2015, B6-39/15, *Immonet/Immowelt*, Case Summary, p. 2.

¹³⁴ Bundeskartellamt 24 July 2015, B8-76/15, *Verivox/ProSiebenSat1*, Case Summary, p. 2.

¹³⁵ *Id.*, pp. 2–3.

¹³⁶ See *supra* note 124.

¹³⁷ Bundeskartellamt 8 September 2016, B6-126/14, *Google/VG Media*, para. 127; Case Summary, p. 3.

Exemptions from the single-market approach: matching platforms acting as sales agents and single-homing/multi-homing setting

Matching platforms as sales agents (CTS Eventim/Four Artists). The Bundeskartellamt assumed that the relevant product market encompassed matching platforms for ticketing services which are provided both to organisers of events and to booking offices.¹³⁸ While this, according to the authority's view, would basically have allowed the adoption of a single-market approach, the Bundeskartellamt decided to apply nevertheless a multi-markets approach.¹³⁹ The authority considered this appropriate in order to do justice to the fact that ticketing platforms typically act at the same time as commercial or commission agents on behalf of the event organisers and sell tickets to final consumers or participate as agents in the distribution via external booking offices.¹⁴⁰

On appeal, the Higher Regional Court in Düsseldorf confirmed the Bundeskartellamt's market definition. While the Court did not discuss the "single- vs. multi-market(s) approach" issue in detail, it stipulated straightforwardly that even if there are cross-group external effects between different "market sides", the merger analysis has to be based on the assumption that there are two separate markets which have to be considered independently but having regard to interrelations.¹⁴¹ While the Court had not to take a stand on the Bundeskartellamt's concept of a matching platform that allegedly allows a single-market approach, the Court's plain statement indicates that it is not quite clear whether it will be ready to accept the competition authority's position.

Single-homing/multi-homing framework. If one group of users of two-sided platforms are single-homers while the users on the other side multi-home, each platform provides monopoly access to its set of users on the single-homing side. This enables a platform to exercise market power vis-à-vis the multi-homing side.¹⁴² In such a setting, the competition conditions on both sides of the platform differ significantly. Therefore, the Bundeskartellamt (2016, p. 62) has identified this scenario as a (further) potential exemption from its single-market approach to matching platforms.

Critical review

If one takes a critical look at the position of the Bundeskartellamt, one will, first of all, notice that the authority has not provided any compelling reason why it might be worth the effort to identify those exceptional scenarios where a single-market approach might be adequate for a competition analysis. It remains unclear what would be lost if the authority uniformly applied a multi-markets approach.¹⁴³ As will be laid down in detail below, "zero-price markets" are acknowledged as "markets" within the meaning of competition law,¹⁴⁴ and, thus, the single-market approach cannot be defended on the ground that otherwise "zero-price markets" are otherwise overlooked. In addition, cross-group external effects must and, indeed, can be taken into consideration regardless of whether a single- or a multi-market(s) approach is applied.¹⁴⁵

Moreover, while the Bundeskartellamt emphasised that it would consider a single-market approach only if both sides of the market had essentially the same possibilities of substitution,¹⁴⁶ we do not actually see a detailed analysis of this condition in those decisions where the authority identified a "matching platform" and adopted a single-market approach.¹⁴⁷ Instead, the authority basically just referred to the nature of the "matching platform" as it stipulated, for instance, in its decision involving online dating platforms, that the two user groups, i.e. men and women who are looking for a partner, would inevitably meet again if they

¹³⁸ Bundeskartellamt 23 November 2017, B6-35/17, *CTS Eventim/Four Artists*, paras 63, 67–69.

¹³⁹ *Id.*, para. 89.

¹⁴⁰ *Id.*, paras 76–85.

¹⁴¹ OLG Düsseldorf 5 December 2018, VI-Kart 3/18(V), *Ticketvertrieb*, NZKart 2019, 53, 54 ("Auch wenn zwischen diesen beiden Marktseiten Wechselbeziehungen bestehen [...] handelt es sich im Ausgangspunkt um zwei getrennte Märkte, die unter Berücksichtigung dieser Wechselwirkungen gesondert zu betrachten sind [...]") (references omitted).

¹⁴² See *infra* sub 3.4. for more detail.

¹⁴³ See Lohse (2018, p. 333).

¹⁴⁴ See *infra* sub 3.3.2.

¹⁴⁵ See in particular *infra* sub 3.2.

¹⁴⁶ See *supra* notes 119 and 122.

¹⁴⁷ See *supra* notes 130 et seq. and accompanying text.

switched to conceivable alternatives.¹⁴⁸ This statement does, however, beg the question of the respective possibilities of men and women to do so without the use of an online dating platform. If, for example, the inclination to use an online dating platform or the user behaviour (e.g. the frequency of usage) of men and women is asymmetric, this will result in different possibilities of substitution. In particular, it appears that there are specialised platforms where both groups are very asymmetrically distributed. Yet, when a user considers switching from a platform with an imbalanced gender ratio to one with a balanced gender ratio, this implies that the attractiveness of such a switch is likely to depend on the user's gender. Certainly, online dating platforms may have a self-interest in achieving a balanced gender ratio, and there are instruments available which may be used for this purpose, such as advertisements which target specifically one user group or an adaptation of the price structure for using the service. But, then again, it seems rather doubtful to assume without hesitation equal opportunities for substitutability.

Furthermore, the Bundeskartellamt's approach does not adequately do justice to the fact that different people may use a platform for different purposes and with different intensity; thus, a platform that may be seen as a good substitute by some may be seen as a bad substitute by others and there may be systematic differences between the two sides. Also, users on one side may typically be active on multiple platforms, while users on the other side may be active only on one; this will affect substitution possibilities. The intermediary offers fundamentally different services to the two sides.¹⁴⁹ It would be quite a coincidence if the substitution pattern were symmetric on the two sides of the platform.¹⁵⁰ What is more, competition analyses often draw on market prices or price changes, such as in the case of merger control by means of pricing pressure tests. But, if the prices differ between the respective user groups (as apparently in the case of online dating platforms), it remains unclear which is the single price that should be relied upon following the single-market approach.

In the unlikely case that an investigation came to the conclusion that the two sides were symmetric (in terms of characteristics and the way the platform sets prices), the single-market approach does not offer any benefits over the multi-markets approach because the economic analysis of the latter could simply consider two identical markets that are characterised by symmetric indirect network effects. However, symmetry may be observed in the status quo and disappear in a counterfactual, e.g. when evaluating the competitive effect of contractual restrictions imposed on users on one side. To study such effects in a meaningful way it would be necessary to use the multi-markets approach.

3.1.3. Conclusions

(1) Competition authorities and courts are well advised to uniformly use a multi-markets approach when they define markets in the context of two-sided platforms. The multi-markets approach is the more flexible instrument as it naturally accounts for different substitution possibilities by the user groups on the two sides of the platform. While one might think of conditions under which a single-market approach could theoretically be feasible, the necessary conditions are so severe that it would only be applicable under rare circumstances. Moreover, to recognise that a single-market approach might be applicable under certain conditions would create substantial risks that an authority or a court would adopt it erroneously. A critical analysis of cases where a single-market approach has been applied reveals that this concern is indeed well founded.

(2) Doing justice to the interrelation between the different sides of a platform does not require adopting a single-market approach.¹⁵¹ Cross-group external effects can and should be considered for market definition and at subsequent stages of a competition law analysis. First, those effects are important to appraise the significance of market shares as an indicator of market power.¹⁵² Second,

¹⁴⁸ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, para. 78 ("Beide Nutzergruppen würden sich bei den denkbaren Ausweichmöglichkeiten des Matchings oder der Vermittlung wieder treffen müssen"); Case Summary, p. 2.

¹⁴⁹ To make this explicit for the case of dating sites, heterosexual men are simply not interested in the intermediation service offered to women; correspondingly, in the case of heterosexual women.

¹⁵⁰ Using the same web design and matching algorithm does not imply that substitution pattern is symmetric since, for example, the format chosen by the intermediary how users of the two groups can exchange messages may be more attractive for members of one than the other group.

¹⁵¹ See *infra* sub 3.2.

¹⁵² See *infra* sub 4.2.

cross-group external effects may be taken into account, in particular when appraising the existence of anti-competitive effects under Article 101(1) TFEU or the conditions of an exemption under Article 101(3) TFEU, when applying the SIEC test under Article 2 of the EU Merger Regulation, or when ascertaining an abuse under Article 102 TFEU.

(3) Competition authorities should clarify their position by way of guidelines.

3.2. Independent vs. Interdependent Markets

In the previous subsection, we have argued that, for defining markets, the consistent adoption of a multi-markets approach is preferable, and that relevant cross-group external effects should be taken into account for market definition and at subsequent stages of the competition analysis. We need to substantiate this conclusion in two respects.

First of all, the question arises whether a competition analysis in the context of two-sided platforms does always require considering (potential) cross-group external effects or whether we may identify scenarios where authorities and courts can analyse the separate markets independently. Second, we need to clarify what conclusions have to be drawn for the application of competition law from the findings that cross-group external effects should *not* be considered through the application of a single-market approach but should be considered at subsequent stages of a competition law analysis.

3.2.1. Are there scenarios in which cross-group external effects are insignificant?

Consider a platform on which there are economically significant and mutual cross-group external effects (both positive or one positive and the other negative) between the two sides on a platform. In this case, analysing markets on the two sides independently, i.e. ignoring their interdependence, may lead to erroneous conclusions regarding market power and the effects of potentially anti-competitive practices, as we will explain below. We start with the simpler case, in which cross-group external effects go in one direction only.


Platforms with cross-group external effects in one direction

Consider first the case that there are economically significant cross-group external effects in one direction but not vice versa. Whether a market on one side can be analysed in isolation depends on whether or not this side *exerts* an external effect on the other side. Only if this is not the case is it appropriate for competition purposes not to worry about feedback effects (since they are negligible). Such situations can arise in which the activities of one side are immaterial for users on the other side in their decision whether and how much to use a platform. For example, in the case of print newspapers, readers may be rather indifferent about the amount of advertising coming with the content part of the newspaper. If this is the case, profit-maximising platforms make their decision on the advertiser side regarding ad volume and ad price independently of what is happening on the reader side. Thus, one may be tempted to investigate the advertising opportunity offered by platforms as an independent market. For example, if a single platform offers advertising this platform is a monopolist vis-à-vis advertisers.

Looking at the issue of market power, even in such a case it may be necessary to look beyond the advertiser side. While it is true that the platform that offers advertising as a monopolist will make monopoly profits on the advertiser side (as it offers exclusive access to its readers), this does not imply that the platform will be necessarily very profitable, as it may have to spend a lot to attract readers.¹⁵³

Following a multi-markets approach, in an assessment of a merger, one may first investigate its effect on the advertising market in isolation. (For instance, it may be the case that a merger facilitates multi-homing.) If the merger is deemed to raise advertising prices, as part of an efficiency-defence, the platform

¹⁵³ We are not claiming that a monopolist in a traditional market is necessarily very profitable, as such a monopolist may have to engage in investments to make its offering available or incur high per unit cost. The standard finding that a monopolist controlling all products in the market makes higher profits than competing firms offering these products rests on a comparison within the same market environment and, to be meaningful, requires that competition is viable.



may be able to show that there is partial or full pass-through of profits obtained on the advertiser side to readers in the form of lower prices or higher-quality bundled content.

This means that whenever cross-group effects are important (and thus an undertaking is classified as a two-sided platform) looking at one market in isolation can at most be a first step, even in cases in which activity on this market does not generate external effects on the other side. This will have to be followed by an analysis of the impact of performance in this market on the market outcome on the other side. Such an analysis can only be avoided if the stated goal of the authority is to ignore welfare effects on the other side.¹⁵⁴

There would, however, be a misunderstanding in assuming that, if cross-group effects are relevant, a firm could only be considered market-dominant on one side of the platform if it also had a certain degree of market power on the other side of the platform.¹⁵⁵ To illustrate this point, imagine a scenario where two firms compete for consumers. In the eyes of consumers, both firms offer identical services. Firm 1 charges consumers directly for its service. Firm 2 also charges consumers directly but, in addition, derives revenues through advertising. Furthermore, suppose that consumers are indifferent about the level of advertising. Firm 1 is not willing to sell below the incremental cost of serving an additional consumer; firm 2 is willing to charge less since it derives advertising revenues for each consumer it serves. The outcome will be that firm 2 sets a price slightly below the incremental cost of serving an additional consumer; consequently, it sells to all consumers and obtains monopoly advertising revenues. While, thus, firm 2 is dominant in the market for advertisers since, by assumption, it is the only one providing advertising opportunities, there is no reason why one should assume that it must have a certain degree of market power in the market for consumers – even though it may attract all consumers with a price slightly below marginal cost.¹⁵⁶

Platforms with mutual positive cross-group effects

If cross-group effects are mutual, the effects, e.g., of a merger on prices on both sides will always have to be considered simultaneously in the markets on each side. To look closer into this issue, consider a platform with mutually positive cross-group external effects and a subsequently vertically integrated firm that competes with such a platform. Finally, we mention what changes if one considers a platform characterised by a positive cross-group external effect in one direction and a negative one in the opposite direction.


If we examine a hypothetical case in which a two-sided e-commerce platform competes with an online retailer who sells directly to consumers, one has to ask whether the market for intermediation services provided to buyers can be viewed in isolation or whether the behaviour of both user groups – buyers and sellers – of the e-commerce platform must be taken into account.¹⁵⁷ Let us assume that the e-commerce platform charges both buyers and sellers for access. Consider the hypothetical situation of a price increase on the buyer side. Then, neglecting the interaction with the seller side, it follows that the online retailer limits the market power of the e-commerce platform. It can then be determined how many buyers the sales platform loses for a given price increase, assuming that the number of sellers does not change. When considering behaviour on the seller side, it should be noted that a price increase on the buyer side and the associated drop in the number of buyers on the e-commerce platform makes seller participation less attractive. Given the price on the seller side, this leads to a decrease in the number of sellers on the e-commerce platform. This, in turn, makes the e-commerce platform less attractive to buyers. Thus, because of the feedback effect, the e-commerce platform loses more sellers than would be the case in neglecting the interaction between buyers and sellers. Such neglect therefore overestimates the pricing

¹⁵⁴ In our newspaper example, this would mean that the stated goal of the competition authority is to go against practices and mergers that harm advertisers.

¹⁵⁵ But see Körber (2015, p. 241), who maintains that “some degree of market power must be present in all sides of the market/platform in order to establish a ‘dominant position’ in the sense of art. 102 TEFEU”.

¹⁵⁶ See also *infra* sub 4.2.3.

¹⁵⁷ Besides, there is also a market for products sold from sellers to buyers. The online retailer sells these products to consumers, whereas the e-commerce platform only provides the intermediation service; the selling is done by sellers on the platform. In practice, the e-commerce platform may perform a number of services that are needed for the ordering and delivery of products and charge sellers for them. It may also include add-ons such as speedy delivery and charge consumers for them.



power of the e-commerce platform. To assess market power, a demand analysis that abstracts from the interaction between buyers and seller can therefore be used as a screen in a first step. A determination of market power, however, requires a second step, in which the interactions are accounted for. To do so, the definition of the market must include both markets in the analysis.

For certain business practices imposed on one side that affect demand behaviour on the other side, it is essential to understand how platforms adjust their overall price- and non-price strategy on both markets. For example, consider the imposition of a price-parity clause by a large hotel booking platform. It is then important to understand the overall strategy of a competing platform on which, owing to the contractual clause, hotels cannot offer better deals. It may be argued that an entrant platform that charges lower transaction fees to hotels is unable to attract customers since they will not benefit from the lower transaction fees. Thus, ignoring possible reactions of the competing platform on the customer side leads to the conclusion that the platform under investigation has undermined platform competition through the imposition of a price-parity clause. While competing platforms do not have an incentive to charge lower transaction fees as long as hotels consider listing on all platforms as essential, a competing platform may have an incentive to compete more fiercely for customers. If it can offer coupons, it may effectively undermine price parity.¹⁵⁸ An independent market approach would not consider such a mechanism.

Firms competing against two-sided platforms

Let us now consider the reverse situation in which the online retailer is the subject of the investigation. What is the relevant market of this company? The answer is supposedly simpler and obvious here, since this company serves only one market side. As we shall show, to be able to properly assess market power, it may also be necessary to consider that the two-sidedness of the business models of competitors may limit the market power of a company that has itself chosen a traditional one-sided business model.

This insight should be taken into account when using the SSNIP test (for more on this, see below sub 3.6). If a supposedly powerful company offering its products to buyers raises its prices by say 5% or 10%, it will lose some customers to competitors. Let us assume that there is only one such competitor and that this competitor operates as a two-sided e-commerce platform. In a first step, the impact of this price increase on the demand of the company under consideration could be quantified, assuming that the number of sellers on the e-commerce platform remains constant. However, the increase of the number of buyers on the e-commerce platform will attract more sellers. This increases the competitive pressure on the supposedly powerful online retailer. It is therefore possible that neglecting the two-sidedness of the competitor's business model overestimates the market power of the company under consideration. In the situation described, this means that the simplified analysis can well be used as a screen, but that, in a second step, the determination of market power requires an in-depth analysis that takes into account the two-sidedness of the competitor's business model. This statement applies in markets with positive indirect network effects.


If negative instead of positive indirect network effects prevail, then, conversely, an isolated view of the market on one side leads to an underestimation of the market power of an undertaking.

3.2.2. Implications for competition practice

If, on the one hand, a single-market approach is inappropriate for an adequate competition analysis of two-sided platforms, while, on the other hand, cross-group external effects need to be taken into account, this has essentially two consequences for the proper role of market definition. First of all, where market shares are used to measure market power, the law should allow including platform-specific characteristics, which may shed another light on a market share that has been determined based on a certain market definition.¹⁵⁹ Furthermore, whenever the application of competition law requires an appraisal of the effects a measure has or will have on competition, on the welfare of consumers etc., it should not be the

¹⁵⁸ Even including such a response, such clauses may well be welfare-detrimental. See Edelman and Wright (2015) for an economic assessment of the potential competitive harm even when platforms can adjust the quality offered to customers. (As a side remark, anti-competitive effects may arise even in a rather fragmented industry.)

¹⁵⁹ See *infra* sub 4.2.4.



definition of the relevant market that finally determines whether or not certain effects can be included in the analysis.

Market definition must not (finally) determine the scope of a competition analysis

The consideration of cross-group external effects is essential for an appropriate competition analysis of two-sided platforms. Yet, as a multi-markets approach is generally preferable, such effects have to be taken into account, in particular when appraising the existence of anti-competitive effects under Article 101(1) TFEU or the conditions of an exemption under Article 101(3) TFEU, when applying the SIEC test under Article 2 of the EU Merger Regulation, or when considering an abuse under Article 102 TFEU.

One of the most contentious aspects of competition practice is whether and to what extent the competition law rules require or allow the balancing of pro- and anti-competitive effects, or a netting of efficiency effects that concern different groups of market participants. The latter aspect attracts particularly controversial discussion as it requires intersubjective comparisons and, thus, entails severe measurement problems and involves distributional issues.¹⁶⁰ The European Commission's statements in *VBBB/VBVB*, a case which involved the system of collective resale price maintenance for the trade of Dutch-language books, are illustrative of the difficulties in finding a coherent approach in this regard. The Commission rejected the argument that those vertical restraints enabled the booksellers to provide ancillary services and, hence, benefitted consumers:

[T]his system denies the consumer the opportunity of deciding for himself whether to buy books at a price that includes a service charge or to take his custom to a bookseller who does not provide any services and from whom he can buy books more cheaply.¹⁶¹

Thus, the Commission refused to engage in a discussion on the aggregate effects that resale price maintenance would have been on consumer welfare. Instead, the Commission straightforwardly declined the argument as it would have required accepting a redistribution of wealth among the consumers who buy books. In a similar manner, yet using a different reasoning, the Commission then also rejected the proposition that price maintenance would allow publishers to cross-subsidise books which were published in small print runs:

A further result of the system of collective resale price maintenance [...] is that the main group of consumers, which tends to favour the more popular books, is forced to contribute to the cost of publishing short-run titles, which are generally intended for a smaller part of the population. In assessing the relative advantages and disadvantages of any agreement such as that concerned in this case, it cannot be accepted that the advantages it involves for a small minority of the population outweigh the disadvantages for the majority of consumers.¹⁶²

Remarkably, at this point the Commission did not reject from the outset the relevance of the net efficiency effects the policy had on buyers. Instead, it argued that these effects were in sum certainly negative as the advantages to the group of buyers who potentially benefitted from cross-subsidisation could not outweigh the disadvantages to the main group of consumers, who would prefer popular books, the prices of which would be relatively higher because of the measure.

It is also worth noting that, although it is generally accepted that not only final consumers but also merchants and firms acquiring inputs have to be considered "consumers" within the sense of Article 101(3) TFEU, it was the General Court's view that the welfare implications on the final consumers were the primary concern of that provision. Thus, when the General Court considered the effects of a pharmaceutical manufacturer's measures to prevent parallel trade by wholesalers, the Court argued:

That practice [...] is characterised by the fact that the intermediary leaves the role which he traditionally plays in the value chain and becomes an arbitrageur and thus obtains a greater part of the profit. The legitimacy of that transfer of wealth from producer to intermediary is not in itself of

¹⁶⁰ See, e.g., Kjølbye (2004, p. 572).

¹⁶¹ European Commission 25 November 1981, IV/428, *VBBB/VBVB*, para. 54.

¹⁶² *Id.*, para. 56.

interest to competition law, which is concerned only with its impact on the welfare of the final consumer.¹⁶³

The Court then went on to argue that final consumers might benefit from restrictions on parallel trade as the manufacturers would invest at least part of the extra-profits in R&D:

The fact that the profit is retained by the producer will in all likelihood give rise to a gain in efficiency by comparison with the situation in which the profit is shared with the intermediary, because a rational producer which is able to ensure the profitability of its innovations and which operates in a sector characterised by healthy competition on innovation has every interest in reinvesting at least a part of its surplus profit in innovation.¹⁶⁴

Thus, the Court effectively engaged in a cross-market analysis of consumer welfare effects, arguing that the potential benefits that a ban on parallel trade may have for the final consumers would in any event outweigh disadvantages suffered by the wholesalers as the immediate consumers of the pharmaceutical manufacturer.

For the purposes of this report, we do not have to take an ultimate stand in these matters. However, we submit that, to ensure an adequate competition analysis of two-sided platforms, it is of the utmost importance that market definition must not (finally) decide on the question of whether or not pro- and anti-competitive effects or the welfare effects on different groups of consumers can be balanced. Thus, when it is acknowledged that a weighing of different and diverging effects is allowed or even required where these effects relate to a single market, then it must be allowed or required in just the same way if it concerns cross-group external effects on different sides of a two-sided platform that belong to different markets. Therefore, adopting a multi-markets approach to a two-sided platform must not exclude the possibility of taking into account effects which could be considered if a single-market approach applied. Anything else would amount to a misconception of the legal function of market definition. Market definition serves, first and foremost, as the first step of a mechanism to measure the market power of a firm.¹⁶⁵ Moreover, it can serve as a useful tool to identify market entry barriers.¹⁶⁶ Aside from that, it may also in many instances be reasonable to focus an impact analysis on a defined market.¹⁶⁷ However, this does not mean that any effects outside the boundaries of a defined market must be ignored for the purposes of a competition analysis. Such an understanding would assign a legal meaning to market definition that is not appropriate to it. This insight is certainly not new, but it is of particular importance in the context of two-sided platforms.

Competition practice

A glance at the relevant competition practice at EU law level shows a fundamental willingness to take into account cross-market effects, albeit possibly under only exceptional circumstances, in particular in the case of related markets.

Article 101(1) TFEU

The ECJ's statements in *Groupement des Cartes Bancaires* are very meaningful for our purposes. As already mentioned above,¹⁶⁸ in this case the General Court upheld a decision by the Commission which had found that the members of a payment system (Cartes Bancaire) had infringed Article 101 TFEU because its fee structure, which had been considered a restriction of competition by object, impeded the entry of new banks. More particularly, the General Court had argued that because the "issuing side" and the "acquiring side" of a payment card system had to be considered markets in their own rights, a fee structure that disadvantaged those banks that focused on issuing new cards but benefitted those members

¹⁶³ General Court 27 September 2006, T-168/01, *GlaxoSmithKline Services v Commission*, EU:T:2006:265, para. 273.

¹⁶⁴ *Id.*, para. 274.

¹⁶⁵ Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, para. 2. See Motta (2004, p. 102): "market definition is instrumental only to the assessment of market power".

¹⁶⁶ See *supra* note 26.

¹⁶⁷ That is how it should be understood that the ECJ requires that "the relevant market must first be determined" to analyse the effects of, for instance, beer supply agreements, including the cumulative effect of similar agreements. See ECJ 28 February 1991, C-234/89, *Delimitis v Henninger Bräu*, EU:C:1991:91, paras 14–16.

¹⁶⁸ See *supra* notes 89–92 and accompanying text.

that recruited merchants for payment card acceptance could not be justified on the ground that it helped to bring about the necessary balance between issuing activities and acquisition activities. The ECJ rejected this reasoning and emphasised that the General Court had erroneously referred to market definition in order to restrict the analysis of whether a restriction of competition occurred:

In order to assess whether coordination between undertakings is by nature harmful to the proper functioning of normal competition, it is necessary [...] to take into consideration all relevant aspects [...] of the economic or legal context in which that coordination takes place, *it being immaterial whether or not such an aspect relates to the relevant market.*

That must be the case, in particular, when that aspect is the taking into account of interactions between the relevant market and a different related market [...] and, all the more so, when, as in the present case, there are interactions between the two facets of a two-sided system.¹⁶⁹

Thus, while the Court avoided taking a stand on market definition, it made it clear that, in order to establish a restriction of competition under Article 101 TFEU, cross-group external effects had to be regarded as an essential element of the “economic context” in the light of which a coordination between undertakings has to be appraised and, thus, have to be taken into account regardless of whether they occur within one market or across markets.¹⁷⁰

Article 101(3) TFEU

In its Guidelines on Article 101(3) TFEU, the Commission explains that an “assessment [...] of benefits flowing from restrictive agreements is *in principle* made within the confines of each relevant market to which the agreement relates”.¹⁷¹ However, the Commission also acknowledges that “where two markets are related, efficiencies on separate markets can be taken into account provided that the group of consumers affected by the restriction and benefiting from the efficiency gains are substantially the same”.¹⁷²

This approach was implemented, for example, in a decision that involved measures by the Star Alliance carriers that, from the point of view of the Commission, restricted competition in the Frankfurt–New York route (which was considered a separate market) and, thus, caused harm to the passengers using this route. Regarding the application of Article 101(3) TFEU, the Commission was ready to take into consideration not only efficiency gains generated to the benefit of premium passengers on the Frankfurt–New York route, but also cross-market efficiencies on “behind and beyond routes”. The Commission argued that “there is considerable commonality in the consumer groups that travel on the route of concern and related behind and beyond routes, and that there is a two-way flow of efficiencies across these routes”.¹⁷³

Remarkably, in its *Compagnie Générale Maritime* judgment, the General Court took the view that for an assessment of the requirement laid down in Article 101(3) TFEU:

regard should naturally be had to the advantages arising from the agreement in question, not only for the relevant market [...] but also, in appropriate cases, for every other market on which the agreement in question might have beneficial effects, and even, in a more general sense, for any service the quality or efficiency of which might be improved by the existence of that agreement. [...] Article [101](3) of the Treaty envisage[s] exemption in favour of, amongst others, agreements

¹⁶⁹ ECJ 11 September 2014, C-67/13 P, *Groupement des cartes bancaires*, EU:C:2014:2204, paras 78–79 (emphasis added; references omitted).

¹⁷⁰ See Ritter (2019), p. 6, sub III.C.).

¹⁷¹ European Commission, Guidelines on the application of Article 81(3) [now 101(3)] of the Treaty, OJ 2004 C 101/97, para. 43 (emphasis added). See also *id.*, para. 87 (“The decisive factor is the overall impact on consumers of the products within the relevant market and not the impact on individual members of this group of consumers”).

¹⁷² *Id.*

¹⁷³ European Commission 23 May 2013, Case AT.39.595, *Continental/United/Lufthansa/Air Canada*, paras 74–75. There is no good reason to assume that the condition of “considerable commonality in the consumer groups” was meant as broadening the “substantially the same” criterion as it was used in the Guidelines. See Faull et al. (2014), para. 3.463, p. 314).

which contribute to promoting technical or economic progress, without requiring a specific link with the relevant market".¹⁷⁴

Thus, having regard in particular to the consideration of increases in dynamic efficiencies, the Court argued that market boundaries should not define which efficiency effects may be taken into account under Article 101(3) TFEU. The Commission sought to reconcile its restrictive approach with this broad statement of the Court by arguing that in the case at hand the affected groups of consumers – shippers that required both inland and maritime transportation – were actually the same and therefore its narrow criterion was indeed met.¹⁷⁵

We may leave it open at this point whether the significance of the Court's approval of a cross-market consideration of efficiency gains can indeed, as suggested by the Commission, be limited to the underlying constellation. It suffices to repeat here that, if the Commission insists on its narrow position according to which cross-group comparisons should be restricted to situations where the affected groups of consumers are "substantially the same" – apparently motivated by the attempt to reduce difficulties that come along with intersubjective comparisons – it must equally apply this criterion both in scenarios which involve a single market and in scenarios that involve across-markets effects.

Article 2 EU Merger Regulation

When appraising whether or not a merger is compatible with the common market, the Commission shall take into account "the need to maintain and develop effective competition within the common market in view of, among other things, the structure of *all the markets concerned*".¹⁷⁶ The wording and the ratio of the provision indicate that the Commission enjoys leeway to balance pro- and anti-competitive effects a merger might have on different markets.¹⁷⁷ This position was also taken by the General Court in *Energias de Portugal*:

it may be necessary, when examining a particular market, also to examine the competitive situation on the other markets if the decision in question relies, either on a comprehensive assessment of the effects of the concentration on the various relevant markets, or on the mutual strengthening of certain competitive effects of the transaction on those various markets.¹⁷⁸

It should be noted [...] that since the general competitive improvement on the gas markets following the concentration, as modified, does not produce sufficiently significant effects on the electricity markets to resolve the competition concerns previously identified on those markets, the Commission cannot agree to declare the concentration compatible with the common market owing to the beneficial effects for competition on one of the sectors in question while ignoring the negative effects on the other sector.¹⁷⁹

While the General Court, thus, confirmed the possibility to balance pro- and anti-competitive effects across markets, the Commission took a more restrictive view in regard to an efficiency defence. Pursuant to its Guidelines on the assessment of horizontal mergers,

efficiencies [...] should, *in principle*, benefit consumers in those relevant markets where it is otherwise likely that competition concerns would occur.¹⁸⁰

¹⁷⁴ General Court 28 February 2002, T-86/95, *Compagnie générale maritime and Others v Commission*, EU:T:2002:50, para. 343.

¹⁷⁵ European Commission, Guidelines on the application of Article 81(3) [now 101(3)] of the Treaty, OJ 2004 C 101/97, note 57.

¹⁷⁶ Article 2(1)(a) EU Merger Regulation (emphasis added).

¹⁷⁷ Bechtold (1996, pp. 389–91).

¹⁷⁸ General Court 21 September 2005, T-87/05, *EDP - Energias de Portugal v Commission*, EU:T:2005:333, para. 147. But note that the Court at the same time emphasised that the "Commission must prohibit a transaction provided that the criteria of Article 2(3) of the Merger Regulation are satisfied, even in respect of only one of the relevant markets". *Id.*, para. 145.

¹⁷⁹ *Id.*, para. 236.

¹⁸⁰ European Commission, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ 2004 C 31/5, para. 79 (emphasis added).

Although this is not further elaborated in the Guidelines, it seems reasonable to assume that the Commission, as in the case of Article 101(3) TFEU, prefers such a restrictive approach as it seeks to avoid the implementation challenges that come along with interpersonal comparisons of welfare. Yet the wording suggests that the Commission has left the door open to consider cross-market efficiency gains at least in exceptional cases. Therefore, it stands to reason that the Commission would be ready to accept a balancing of efficiency effects across markets if the group of consumers affected by the restriction of competition and benefitting from the efficiency gains are “substantially the same”. Be that as it may, if the Commission accepts cross-group comparisons to show a net efficiency gain within a single market, for reasons of consistency alone, it must also do so across markets.

3.2.3. Conclusions

(1) An adequate competition analysis of two-sided platforms requires that market definition does not (finally) determine whether or not pro- and anti-competitive effects or the welfare effects on different groups of consumers can be balanced.

(2) Thus, when it is acknowledged that a weighing of different and diverging effects is allowed or required if these effects relate to a single market, then applying such a weighing must be allowed or required in just the same way if it concerns cross-group external effects on different sides of a two-sided platform that belong to different markets.

(3) While this is in line with the adjudication of the ECJ on Article 101(1) TFEU (*Groupement des Cartes Bancaires*) and appears to be also in accordance with the (then) General Court’s case law on Article 101(3) TFEU (*Compagnie Générale Maritime*) and on Article 2 of the EU Merger Regulation (*Energias de Portugal*), the EU Commission should clarify these aspects in its publications, in particular in its Guidelines on Article 101(3) TFEU and on the assessment of horizontal mergers.

3.3. Markets Without a Price

In the world of platforms, it is a widespread phenomenon that platform operators do not charge prices vis-à-vis one group of customers or, to take up the metaphor of the “two-sided market”, they provide a product free of monetary charge to “one side” of the market, and make up for this as they charge the “other side” of the market. Thus, viewers may make use of free, advertising-financed television, consumers are not charged a visible price for the use of e-commerce platforms such as Amazon Marketplace or Booking.com, Google charges no search fee and Facebook no membership or usage fee.


3.3.1. Why do “zero-price markets” exist?

There are a number of economic considerations which may shed light on the phenomenon of “zero-price markets” and explain why it may be a rational and sustainable business strategy to provide a product without asking for remuneration.

Static perspective

From a static perspective, a platform may decide to levy a usage fee (on a per unit or a per cent basis) for each transaction carried out on the platform. The platform may decide to levy this fee entirely on the merchant side and thus consumers will not see any visible fee. As in the case of value-added tax, however, part of the burden may be borne by the consumer. This is so if the merchant passes part of the fee onto consumers through higher price. In the event of full pass-through, the fee will be entirely borne by consumers through a corresponding increase of the retail price. While usage fees are common on many e-commerce platforms, the way they split the price differs. For instance, hotel booking platforms simply take a percentage fee from participating hotels. By contrast, Airbnb tells consumers about the fee they have to pay to the platform; on top, landlords also have to pay a fee.¹⁸¹ Thus, charging the full usage fee to merchants is one out of many possible ways, but there is always one market on each side.

¹⁸¹ Other platforms such as Uber do not decentralise price and set prices on both sides. This corresponds to the case in which the platform controls how the usage fee is split between the two sides.



If the price structure is not neutral,¹⁸² then the platform can use prices to internalise externalities. The preferred price structure may then feature a negative price on one side. This is likely to be the case if this side is essential for the functioning of the platform. For instance, if one side exerts a strong and positive cross-group effect on the other side, while the other side exerts a negligible effect, then the platform has a strong incentive to offer a favourable deal to the former so as to ensure a lot of participation of the former leading to strong demand of the latter. Another instance is that there are close substitutes on one side, but no substitutes on the other side. In this case, the platform has to worry more about participation on the former than on the latter side, leading to an asymmetric price structure. The resulting preferred price structure may feature a negative price on one side and a high positive side on the other. If negative prices are not feasible, we are in a situation in which the platform sets a price of “zero”.

“Zero” prices are also often a feature of platforms on which one side exerts a “positive” cross-group effect and the other side a “negative”. Many ad-financed platforms have this feature (e.g. ad-financed radio broadcasting, commercial television, news portals). In this case, consumers pay a price in the form of the attention they dedicate to advertising, which has an opportunity cost for consumers. Thus, in this case, consumers pay a non-monetary price.

Another instance is that consumers “pay” with their data and the platform can use these data to improve services (which may even be a prerequisite for it to succeed) or offer alternative services that the platform can monetise (possibly with different consumers). Thus, in such instances it is possible but not always the case that consumers incur an opportunity cost for providing their data.

Many ad-financed digital platforms benefit from attention and data consumers provide. The data they receive allows them to provide better-targeted ads, which is in the interest of advertisers and, possibly, also consumers. As recognised by Furman et al. (2019, p. 112),

Digital advertising has a particularly important role in several key digital markets. It provides the revenue-generating side of platform services frequently offered at zero price to consumers, for example including general and specialised search markets, social networks, and online video.

Zero prices as part of a freemium strategy

Some platforms choose a “freemium” strategy according to which they offer a menu of contracts that includes a base offer at “zero price”. One rationale for such a strategy is that, owing to own-side external effects, users of the free offer make participation for paying users more attractive. In other instances, users on the other side may benefit from cross-group external effects. For example, several dating platforms use the freemium model on both sides of the market.

Technological constraints

Finally, a “zero price” may be the result of technological constraints or excessive costs of monitoring the activity of users on one side. This may apply not only to usage, but even for monitoring access. For example, television took off as analogue terrestrial television. Initially it was not possible to control access by users and only “free” television was available; subscription-based pay TV was only offered decades later (e.g. Canal+, starting in 1984 in France and in 1990 in Spain). Another example is open-air flea markets and farmers’ markets, where it is impossible or too costly to monitor access (or it may be prohibited by public authorities).

¹⁸² A price structure is neutral if the overall price on the two sides, but not the individual prices charged to each user side matter. If a platform uses subscription fees, membership fees or sign-up fees, the price structure is necessarily non-neutral. If a platform relies exclusively on usage fees, the price structure is said to be neutral if the decisions by users on both sides are only affected by the sum of the two usage fees. For example, in an e-commerce setting, neutrality holds if increasing the fee on the merchant side and reducing it on the buyer side by the same amount leads to a complete pass-through of the fee increase into the price charged by the merchant to the buyer. Whether or not the price structure is neutral is often unclear a priori and requires a careful analysis. It may depend on the non-price instruments chosen by the platform.

Regulated zero price

Platforms may also be forced to set “zero prices”. Such regulated “zero prices” may be imposed by a sector regulator. For example, the “zero pricing rule” is part of net neutrality regulation that may apply to internet service providers (ISPs), which operate as two-sided platforms, enabling transactions between content providers and consumers. The “zero pricing rule” says that consumers’ ISPs are not allowed to charge content providers for the delivery of content.¹⁸³

Dynamic considerations

A “zero price” may also be chosen by a platform for dynamic considerations. It may be part of a dynamic pricing strategy building up a sufficiently large user base to convince late arrivals that it is worth paying. Providing favourable terms to early arrivals may be necessary for the platform to take off. As a platform increases its service offerings, the platform may then make the upgraded offer available at a positive price.

Platforms may offer a zero price as part of their dynamic price strategy unrelated to network effects. For instance, in the presence of switching costs, users who consider accepting a platform’s offer and who understand that doing so will lead to lock-in will have to be convinced to sign up in the first place.¹⁸⁴ This may be achieved by a zero price. A particular example is that users face a set-up cost when using a service for the first time. To convince them to use this service the first time, the platform (or a firm more generally) may set a particularly low price, for example at zero.¹⁸⁵

Our analysis has shown that platforms may decide to set a zero monetary price because the opportunity cost of serving a user at this “zero price” is less than the benefit generated from attracting such a user. Benefits may accrue from concurrent additional revenues on the other side or on the same side from other users, additional revenues in the future (from the same or a different group of users) or additional revenues in some other market (e.g., by using the collected data). Platforms may rely on making services available at a zero price as part of their overall profit-maximising strategy. In this case, from an economic point of view, there is no question that there is a market for such services offered at zero price.¹⁸⁶ Also, in cases in which “zero prices” are regulated prices, there is a market because this side remains part of the business model of the platform (that is constrained by regulatory intervention).

3.3.2. Competition practice

A view on competition practice reveals a certain reluctance on part of authorities and courts to acknowledge that there can be a “market” which deserves consideration in competition law analysis even if the transactions by the parties do not involve a price. A striking example in this regard is one of the early cases brought against Google based on allegations of attempted monopolisation and monopolisation under Section 2 of the Sherman Act. The U.S. District Court dismissed the claim as it held that KinderStart, the plaintiff in the case, had failed to adequately allege the relevant market. Based on a definition which describes a “market” as “any grouping of sales whose sellers, if unified by a monopolist or a hypothetical cartel, would have market power in dealing with any group of buyers”, the Court concluded that KinderStart had failed “to allege that the Search Market is a ‘grouping of sales’.”¹⁸⁷ Focusing on the lack of a price, the U.S. District Court argued:

KinderStart cites no authority indicating that antitrust law concerns itself with competition in the provision of free services. Providing search functionality may lead to revenue from other sources,

¹⁸³ On the economics of net neutrality, see Greenstein, Peitz and Valletti (2016).

¹⁸⁴ See, e.g., Belleflamme and Peitz (2015, pp. 174–184).

¹⁸⁵ In all these cases, zero prices do not constitute anti-competitive behaviour. However, zero prices may also be chosen for predatory reasons, namely to lock-in a sufficient number of users to keep competitors out. Identifying an “abuse” is more complicated in a platform context than it is in a market setting without network effects.

¹⁸⁶ To consider a “zero-price market”, we agree with Crémer, de Montjoye and Schweitzer (2019, p. 44) that “[t]he relevant criterion in multi-sided market settings arguably is the existence of an overarching commercial strategy underlying the zero-price offer.”

¹⁸⁷ *Kinderstart.com, LLC v Google, Inc.*, 2007 WL 831806, 2007-1 Trade Cases P 75,643 (N.D. Cal. March 16, 2007), at *5.

but KinderStart has not alleged that anyone pays Google to search. Thus, the Search Market is not a 'market' for purposes of antitrust law.¹⁸⁸

European Union: silent adaptation to the world of digitised platforms

In the world of the 1990s: the EU Commission doubts whether ad-financed TV comes along with a "viewers' market"

For much the same reason that the U.S. District Court denied the existence of a market for "internet search" in the *Google* case, in some merger cases from the 1990s which involved TV broadcasters the European Commission explicitly left it open whether there is a "broadcasting" or "viewers' market", arguing that:

all tv broadcasters compete against each other for audience shares. However, in view of the fact that there is no direct trade relationship between broadcasters of "free" tv channels, on the "supply side" and, viewers on the "demand side," it might be argued that tv broadcasting does not constitute a market in the strict economic sense of this notion.¹⁸⁹

In two subsequent decisions the European Commission implied a reason why it might be harmless not to consider the "viewers' market" a "market" for the purposes of competition law:

In any event, the audience shares in the TV broadcasting are a determinant factor for the success of the broadcasters in the TV advertising market and have, therefore, to be assessed at least in the context of this market.¹⁹⁰

The Commission essentially reasoned that, as high shares in the market for TV viewers would translate into higher shares in the TV advertising market, it would in all probability not be decisive for the outcome of a merger case if the existence of a market for TV viewers were denied.¹⁹¹

The underlying policy argument to legitimise this approach would seem be that the interests that competition law is meant to protect are properly taken care of by focusing on those "sides" of a platform market where the monetisation takes place. However, if we assume that competition law aims at protecting the economic interests of the consumers, to ignore the unpaid side is typically inappropriate.

In the context of commercial TV financed through advertising, if viewers dislike TV advertising (as evidence suggests) viewer demand will respond to changes in the level of advertising. A merger analysis would thus need to take this directly into account if it cared not only about advertiser surplus but also about viewer surplus, because the merger of two TV broadcasters which are close competitors on the "viewers' market" would give them leeway to increase their advertising volumes. The most straightforward and indeed necessary¹⁹² way to appropriately protect the economic interests of the consumers as viewers against potential negative cross-group effects is to acknowledge the existence of a viewer market.

Suppose instead that the paid side does not exert a cross-group effect on the unpaid side. In the context of commercial TV financed through advertising this only holds if viewers are neutral to advertising. Using

¹⁸⁸ Id.

¹⁸⁹ European Commission 20 September 1995, IV/M.553, *RTL/Veronica/Endemol*, para. 17.

¹⁹⁰ European Commission 3 August 1999, IV/M.1574, *Kirch/Mediaset*, para. 11; European Commission 7 October 1996, IV/M.779, *Bertelsmann/CLT*, para. 15.

¹⁹¹ Cf. Podszun and Franz (2015, p. 122) ("Eine Ablehnung von Zuschauermärkten ist für die Fernsehmärkte risikolos, da eine direkte Wechselwirkung zwischen Zuschauerzahl und Werbeeinnahmen besteht. Je höher die Einschaltquote in der werberelevanten Zielgruppe ist, desto höher ist auch der Marktanteil bei Fernsehwerbung. Zuschauerzahlen sind also ein Proxy für Werbeerlöse und umgekehrt. Diese direkte Beziehung macht es in aller Regel verzichtbar, Zuschauermärkte gesondert zu betrachten").

¹⁹² Given the open wording of the SIEC test and the substantive criteria as laid down in Article 2(1)(b) of the EU Merger Regulation, which states that the "interests of the intermediate and ultimate consumers" have to be taken into account without specifying whether this relates only to the consumers in a given "market" which can be assessed for the purposes of merger control, it appears at least conceivable that the Commission factors these concerns into its overall assessment of whether the merger will lead to an SIEC. Nevertheless, it seems logical to argue that if the "viewers' market" is not a "market" for the purposes of merger control, then the viewers cannot be regarded as "consumers" within the meaning of Article 2(1)(b) of the EU Merger Regulation. Therefore, to avoid this conclusion, it must be accepted from the outset that the "viewers' market" is a "market" even if the viewers are not charged a fee.

commercial TV as an example, a merger between two ad-financed TV channels is likely to affect the profitability of each viewer. This change in profitability per viewer affects the incentives of the merged entity to attract additional viewers. Thus, a merger is likely to affect the content choice of the TV channels, which is likely to impact consumer welfare. Thus, ignoring the unpaid side amounts to ignoring the economic interests of viewers.¹⁹³

In the world of digital platforms: the EU Commission is not hesitant to acknowledge "zero-price markets"

It is quite remarkable that with the advent of the digitised world the European Commission did acknowledge without hesitation that a "market" may also exist where a product is offered without monetary remuneration by the users. Thus, the EU Commission assumed for example in its abuse cases against Microsoft a market for streaming media players¹⁹⁴ and for web browsers,¹⁹⁵ even though these products were typically provided free of charge to the final consumers. The (then) Court of First Instance confirmed this position.¹⁹⁶ In the same vein, the Commission subsequently took for granted in its merger decisions *Microsoft/LinkedIn*,¹⁹⁷ *Microsoft/Skype*¹⁹⁸ and *Facebook/WhatsApp*¹⁹⁹ that remuneration is not an indispensable characteristic for the existence of a market.

Moreover, in the *Google Shopping* case, the Commission concluded that the relevant products market was the market for general search services and the market for comparison shopping services,²⁰⁰ notwithstanding that the use of these services is offered free of charge to the final consumers. Starting from the assumption that "zero-price markets" are not "markets" within the meaning of the competition law rules, the case could never have been pursued by the Commission because Article 102 TFEU requires that Google is a market-dominant firm, which in turn – at least according to the ECJ's jurisprudence²⁰¹ – makes it indispensable to defining a "market". Regardless of whether one finds the Commission's actual theory of harm in the *Google Shopping* decision convincing, the case nicely illustrates how a certain conduct on a "zero-price market" might harm consumers in "paid markets": if a search engine "manipulates" its algorithm to give priority to its own affiliates, this may impede the access to consumer markets and reduce the competitive pressure on those markets.

While it is ultimately the ECJ that has the final say on the proper definition of a "market" within the meaning of the competition law rules of the EU, the Court's case law on the definition of a "service" in the context of the EU Market Freedoms seems to rule out that the Court would contradict the Commission's view on the existence of "zero-price markets". Pursuant to Article 57(1) TFEU, "[s]ervices shall be considered to be 'services' within the meaning of the Treaties where they are normally provided for remuneration". In *Deliège* the ECJ had to appraise whether an athlete with amateur status who did not receive remuneration by the organisers of sport events nevertheless provided a "service" through her participation. In its judgment the Court emphasised the character of a sport event as a platform, arguing that:

sporting activities [...] are capable of involving the provision of a number of separate, but closely related, services which may fall within the scope of Article [56] of the Treaty even if some of those services are not paid for by those for whom they are performed. [...] For example, an organizer of such a competition may offer athletes an opportunity of engaging in their sporting activity in competition with others and, at the same time, the athletes, by participating in the competition, enable the organizers to put on a sports event which the public may attend, which television

¹⁹³ See *supra* sub 3.2.

¹⁹⁴ European Commission 24 March 2004, COMP/C-3/37.792, *Microsoft*, paras 402–425.

¹⁹⁵ European Commission 16 December 2009, COMP/C-3/39.530, *Microsoft*, paras 17–22.

¹⁹⁶ Court of First Instance 17 September 2007, T-201/44, *Microsoft v Commission*, EU:T:2007:289, paras 927–933.

¹⁹⁷ European Commission 6 December 2016, COMP/M.8124, *Microsoft/LinkedIn*, para. 87 ("The vast majority of [social networking] services are provided free of monetary charge. They can however monetised through other means, such as advertising or charges for premium services").

¹⁹⁸ European Commission 7 October 2011, COMP/M.6281, *Microsoft/Skype*, paras 75 and 101–109.

¹⁹⁹ European Commission 3 October 2014, COMP/M.7217, *Facebook/WhatsApp*, paras 31 and 34.

²⁰⁰ European Commission 27 June 2017, COMP/AT.39740, *Google Search (Shopping)*, paras 154–250.

²⁰¹ See *supra* note 32.

broadcasters may retransmit and which may be of interest to advertisers and sponsors. Moreover, the athletes provide their sponsors with publicity the basis of which is the sporting activity itself.²⁰²

As the Court acknowledges the economic rationalities of platforms and “zero-price markets” even in regard to a provision which expressly requires “remuneration”, it seems inconceivable that the Court would restrict the concept of a “market” in the context of Articles 101 and 102 TFEU or the EU Merger Regulation to transactions that involve direct remuneration.

The case of Germany as a paradigm of twists and turns – involving the authority, the judiciary and the legislature

The competition practice in Germany provides us with a fine example of how the rise of digital platforms triggered a gradual change in a competition authority’s mind and a conflict with parts of the judiciary²⁰³ on whether “zero-price markets” should straightforwardly be considered “markets” for the purposes of competition practice.

The Bundeskartellamt initially regarded remuneration as an essential characteristic of a “market”. Therefore, the authority denied, for example, the existence of a viewer market for free (advertising-financed) television,²⁰⁴ and in a merger case that involved cable network operators the Bundeskartellamt considered that there was no market-based relationship between an operator of a satellite transponder and the customers who receive the direct-to-home satellite broadcasting signal free of charge.²⁰⁵

Yet, in a discussion paper published in 2015, the authority called this position into question, stating that it “might” be possible to assume a “market” even in regard to the relationship between a platform and the group of customers that are not charged for the use of the platform, because and insofar as this user group is linked with another group of users which has to pay.²⁰⁶ Virtually at the same time, in an-abuse-of-dominance case against Google, the Bundeskartellamt ascertained – without taking an ultimate stand – that there are strong arguments for acknowledging the existence of a search market even though Google does not monetise its search services through a fee charged from the users.²⁰⁷ The authority stressed that the operation of the search service is financed by Google’s advertising clients and that there are indirect network effects between the search engine and the online-advertising services.²⁰⁸

Ultimately, in a merger case that involved online dating platforms, the competition authority stipulated clearly that free-of-charge business models must be included in a competition analysis and had to be regarded as a part of a market. The authority explicitly recognised that users on one or both sides might not make a monetary payment, but could pay with their attention or opportunity cost by being exposed to advertising.²⁰⁹ As the authority emphasised that services free of charge constituted an element of

²⁰² ECJ 11 April 2000, C-51/96, *Deliège*, EU:C:2000:199, paras 56–57.

²⁰³ See in particular the judgment of the Oberlandesgericht Düsseldorf in *HRS*, *infra* note 213 and accompanying text. The Bundesgerichtshof stated in a merger case involving hospital operators that a “market” did not require that those who receive a service directly remunerate the service provider. The Court stressed that it was sufficient that the service receivers could autonomously choose among different competing providers. See BGH 16 January 2008, KVR 26/07, *Kreiskrankenhaus Bad Neustadt*, NJW-RR 2008, 1426, 1428, para. 33. This statement has been interpreted as indicating that the Bundesgerichtshof was ready to accept the existence of “zero-price markets” for the purposes of competition law. See Podszun and Franz (2015, p. 123). However, the case involved patients who received treatment in hospital. The costs of those treatments were covered by the statutory health insurance schemes, which would pay the hospital directly. Thus, as the hospitals received payment which directly covered the service they provided, the situation the Court had to consider was indeed different from a “zero-price market” scenario.

²⁰⁴ Bundeskartellamt 19 January 2006, B6-103/05, *Springer/ProSiebenSat.1*, p. 23 (“Ein Fernseh Zuschauermarkt besteht nur bei Pay-TV. Im frei empfangbaren Fernsehen fehlt es wegen des fehlenden Entgelts an einer für den Leistungsaustausch im Marktprozess wesentlichen Voraussetzung”).

²⁰⁵ Bundeskartellamt 3 April 2008, B7-200/07, *Kabel Deutschland/Orion*, para. 138 (“Eine unentgeltliche Leistung kann jedoch nicht als Marktleistung angesehen werden, da letztere begrifflich eine entgeltliche Austauschbeziehung voraussetzt”).

²⁰⁶ Bundeskartellamt 1 October 2015, *Digitale Ökonomie – Internetplattformen zwischen Wettbewerbsrecht, Privatsphäre und Verbraucherschutz*, p. 16 (“Verlangt also die Plattform von einer Nutzerseite für ihre Leistung keine Gegenleistung in Geld, könnte für diese Seite dennoch ein Markt angenommen werden, weil und soweit sie mit einer zahlungspflichtigen Nutzerseite verknüpft ist”).

²⁰⁷ Bundeskartellamt 8 September 2015, B6-126/14, *Google/VG Media*, para. 129.

²⁰⁸ *Id.*, para. 132.

²⁰⁹ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 81–86.

competition which is typical of the internet economy,²¹⁰ it seems to have retained the option to still distinguish cases involving offline platform markets (such as free television). However, the authority stressed at the same time that the inclusion of services free of charge in the competition analysis was necessary in order to appraise indirect network effects.²¹¹ Thus, it seemed in any way clear that the Bundeskartellamt would not simply ignore in its analyses any activity by a firm simply because it is performed for no consideration.

The cautiousness by the competition authority in its step-by-step adoption of a broader concept of “market” was not least because it contradicted established adjudication. And, indeed, the Higher Regional Court of Düsseldorf – which is competent to hear appeals against the Bundeskartellamt’s decisions²¹² – turned out to be hostile toward this new approach. In the *HRS* case, involving hotel booking platforms, the Court stated that business activities could only be assigned to a market if they are performed for remuneration. Where a service – as in the context of a hotel booking platform – is offered for remuneration on one side (for the hotels) but without charging a price on the other side (for the hotels’ customers), only the remunerated side could be considered part of a market.²¹³ While denying that the offer of services for no consideration might constitute a market activity, the Court stated that – given the network effects at work – the influence of the activities on the unpaid side of the market should be considered when analysing the side of the market where paid services are supplied.²¹⁴ It is noteworthy, though, that other (lower) courts had explicitly recognised the existence of “zero-price markets” for purposes of competition law.²¹⁵

Against this background, the Bundeskartellamt sought to avoid a clash with the Higher Regional Court in its follow-up decision concerning Booking.com and thus left it expressly open whether a “market” necessarily requires that a price has to be paid.²¹⁶ In contrast, for instance, the Autorité de la concurrence, the French competition authority, was not hesitant in identifying in the *Booking.com* case a “downstream market” where online travel agencies offered the consumers search, comparison and reservation services free of charge.²¹⁷

Finally, the German legislature sought to put a stop to the legal uncertainty²¹⁸ as it inserted a provision into the German Competition Act with effect from 9 June 2017, which states that:

The assumption of a market shall not be invalidated by the fact that a good or service is provided free of charge.²¹⁹

²¹⁰ *Id.*, para. 134 (“Eine Berücksichtigung der kostenlosen Geschäftsmodelle ist in der Internetökonomie jedoch geboten. Die Produkte sind trotz der Unentgeltlichkeit für die Nutzergruppen wesentlicher Teil des Marktes und gerade für die Funktionsweise von Internetmärkten wie dem Online-Dating-Markt von prägender Bedeutung. In ihnen liegt eine eigenständige und internettypische Wettbewerbskomponente, der mit der Einbeziehung in den Markt und der direkten Zuweisung einer Wettbewerbsposition Rechnung getragen werden sollte”).

²¹¹ *Id.*, para. 135.

²¹² See Section 63(4) 1st sentence and Section 83(1) of the German Competition Act.

²¹³ OLG Düsseldorf, 9 January 2015, VI-Kart 1/14 (V), *HRS*, Juris, para. 35, see also at para. 56 (“Spezialisierte Portale (z. B. Städteportale oder F.) erbringen gegenüber Hotels keine entgeltspflichtige Vermittlungsdienstleistung, so dass zwischen ihnen keine Austauschbeziehungen bestehen”).

²¹⁴ OLG Düsseldorf 9 January 2015, VI-Kart 1/14 (V), *HRS*, Juris, para. 35.

²¹⁵ See, e.g., LG Berlin 19 February 2016, 92 O 5/14 Kart, *Google-Snippets*, Juris, para. 60 (“Entgegen der Ansicht der Beklagten steht die Unentgeltlichkeit der Suchmaschine für die Suchnutzer und die Nichtzahlung eines Entgelts an die Webseitenbetreiber für die Darstellung des Suchergebnisses einem Marktgeschehen nicht entgegen”).

²¹⁶ Bundeskartellamt 22 December 2015, B9-121/13, *Booking.com*, para. 141.

²¹⁷ Autorité de la concurrence 21 April 2015, Décision n° 15-D-06, *Booking.com*, para. 97 (“Sur le côté que l’on peut qualifier de ‘marché aval’, les OTA offrent gratuitement aux consommateurs des services de recherche, de comparaison et de réservations de nuitées d’hôtels”).

²¹⁸ While it has been clarified that a “market” does not require an exchange that involves remuneration, the Bundeskartellamt considered that it has not yet been clarified whether or not a “market” requires a contractual relationship or any other kind of (mutual) exchange between the platform and its users to be present. In *Facebook*, the authority left this question open, arguing that in any case there was a contract between Facebook and its private users. In addition, the authority stated that the transfer of data could also be regarded as part of an exchange between Facebook and its private users. Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, para. 244. Yet, even if one assumes that the German legislature regarded the presence of an exchange (“Vorliegen einer Austauschbeziehung”) as a necessary condition for the existence of a “market” (see quote *infra* note 220), it is not clear why this should require a contractual relationship or a *mutual* exchange of performances.

²¹⁹ Section 18(2a) of the German Competition Act.

In its explanatory notes which accompanied the draft for this amendment, the German government explained that this rule should clarify that there can also be a “market” in cases where one party renders a service without receiving remuneration. This was considered to be relevant in particular for activities of two-sided platforms.²²⁰

In its recent abuse-of-dominance decision against Facebook, the Bundeskartellamt did invoke this newly introduced provision, stating that “[t]he network has to be considered as market service pursuant to Section 18(2a) [of the German Competition Act] despite the fact that its use is not subject to fees for private use”.²²¹ The possibility of an abuse of dominance on a “zero-price” market by way of unfair terms and conditions pursuant to Article 102(a) TFEU or corresponding national legislation such as, for example, Section 19(1) and (2) No. 2 of the German Competition Act,²²² is a clear illustration of why it is not true that the interests of consumers could be sufficiently taken care of incidentally by focusing on the paid “side” of a platform. Irrespective of whether one considers the Bundeskartellamt’s findings of an abuse in the Facebook case convincing,²²³ it would contradict the consumer welfare-oriented purpose of the prohibition of exploitative conduct by dominant firms if Facebook could have escaped any investigation into the quality of the terms and conditions it offers to the private users of its network simply by denying the existence of a social network market.

3.3.3. Conclusions

(1) In order to fully appreciate business activities in platform markets from a competition law point of view, and to do justice to competition law’s purpose of protecting consumer welfare, the legal concept of a “market” should not be interpreted as requiring a price to be paid by one party to the other.

(2) It is not sufficient to consider the activities on the “unpaid side” of the two-sided platform only indirectly by way of including them in the competition law analysis of the “paid side” of the platform. Such an approach would exclude certain activities and ensuing positive or negative effects on consumer welfare altogether from the radar of competition law.

(3) Instead, competition practice should recognise straightforwardly that there can be “markets” for products offered free of charge, i.e. without monetary consideration by those who receive the product. While it is well understood that the supply of personal data and/or the attention to the platform can be

²²⁰ See Gesetzentwurf der Bundesregierung, Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen, Drs. 18/10207, 7th November 2018, p. 47 (“Absatz 2a stellt klar, dass auch im Fall einer unentgeltlichen Leistungsbeziehung ein Markt vorliegen kann. Aus wirtschaftswissenschaftlicher Perspektive entsteht ein Markt durch das Zusammentreffen von Angebot und Nachfrage und ist durch das Vorliegen einer Austauschbeziehung gekennzeichnet. Ein Markt liegt demzufolge nicht nur vor, wenn für die angebotene Leistung eine Geldzahlung verlangt wird, sondern kann auch gegeben sein, wenn bei der Transaktion kein Entgelt übertragen wird. Die Regelung erfasst damit Geschäftsmodelle, bei denen Leistungen ohne direkte monetäre Gegenleistung angeboten werden. Das betrifft vor allem Sachverhalte, für die die ökonomische Wissenschaft die Bezeichnung zwei- oder mehrseitige Märkte geprägt hat”).

²²¹ Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, Case Summary, p. 4; see, in detail, paras 238–48.

²²² Note that the Bundeskartellamt invoked (only) Section 19(1) of the German Competition Act but did not rely on Article 102 TFEU. The authority justified this by stating that there is no established adjudication at EU law level as to the role of fundamental rights or legal standards set, for example, by data or consumer protection law, for the establishment of an exploitative abuse. See Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, para. 914.

²²³ The most critical aspect is arguably which kind of connection is legally required between the quality of the conditions offered to the users (which have to be regarded as “unfair” and “exploitative”) and the market-dominant position as it is required for the application of Article 102 TFEU and Section 19 of the German Competition Act. See Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, Case Summary, p. 11 (“The violation of data protection requirements found is a manifestation of Facebook’s market power. According to the case-law it is not necessary to determine that the conduct, i.e. the violation, was only possible in the first place because of market dominance and that other market participants did not have a chance to behave in a similar way. Instead, it is sufficient to determine that the two aspects are linked by a causality which is either based on normative aspects or the outcome. Both aspects can be assumed to be fulfilled in this case”); see, in detail, paras 871–884. As one of the authors of this report has been argued after the proceedings against Facebook had been opened (Franck, 2016, pp. 145–159), infringements of consumer or data protection standards must only be considered an abuse pursuant to Article 102 TFEU or Section 19 of the German Competition Act if they are inherently connected with a position of market dominance. Such a nexus requires causality of an instrumental nature, i.e. that the firm could not have imposed such a low level of quality but for its market-dominant position. Thus, it is crucial to exclude the possibility that the firm could have imposed the same quality standards even without a market-dominant position, for example because of systematic information asymmetries. See also Körber (2018, pp. 19–30; 2019, pp. 189–190, 192–195).

regarded as consideration because it can be monetised by the platform, it is neither necessary²²⁴ nor even beneficial to transform this insight into a legal concept of “remuneration”.²²⁵

(4) Consequently, a “market” as a concept of competition law should be understood as consisting of transactions between two or more parties of which at least one acts for economic purposes.²²⁶ The latter is apparent in cases where a product is provided for remuneration. Moreover, in cases where a product is offered free of charge, it suffices to demonstrate that the activity is part of a broad or a long-term strategy to generate revenue.²²⁷ This definition of a “market” is meant to exclude essentially (only) activities that involve the exercise of power by public authorities and philanthropic activities.²²⁸

(5) The existing provisions of EU competition law can straightforwardly be construed in the aforementioned sense. The competition practice of the European Commission and the adjudication of the ECJ appear to be on the right track in this regard. Given the primary law character of Articles 101 and 102 TFEU, a legislative intervention is in any case only conceivable as an amendment of the EU Merger Regulation or by way of guidelines on the application of Articles 101 and 102 TFEU. The latter is in particular desirable as it, first, can provide guidance also to the Member States’ authorities and courts which apply EU law²²⁹ and, second, can also motivate a corresponding interpretation of domestic competition law. The example of Germany illustrates that a clear guideline might be helpful, albeit that the German legislature has meanwhile settled the issue through an amendment of the German Competition Act.

3.4. Market Delineation and Homing Decisions

Following the multi-markets approach, there is at least one market for each user side of a two-sided platform. If platforms compete with each other or with undertakings that cannot be characterised as two-sided platforms, the question is whether there is one market on each side or multiple markets on each side. The right answer may depend on the homing decisions by users.

If platforms offer intermediation services (and, possibly, other undertakings offer substitute offers for at least one side of the market and possibly users on both sides can transact outside any commercial platform) it is important for purposes of market definition to understand the decision problem faced by users. The economic literature distinguishes between single-homing and multi-homing (Armstrong, 2006). A user single-homes if she makes a discrete choice between the offerings provided by platforms and possibly other providers of substitute services. A user multi-homes if she may decide to consume multiple offerings. In a media context, viewers are single-homers if in the relevant period the viewer picks one of

²²⁴ This is different if “remuneration” is explicitly required as, for example, in Article 57(1) TFEU, see *supra* note 202 and accompanying text.

²²⁵ See note 218. But cf. Newman (2015, p. 163) (“Whether antitrust markets can exist in the absence of positive prices depends on whether customers—though they do not exchange money—exchange something for zero-price goods or services. Put another way, the question is whether customers incur the type of costs that double as media of exchange”).

²²⁶ Note that a reference to the concept of an “economic activity” as it has been developed in particular by the ECJ as an element of the EU competition law concept of an “undertaking” would not be helpful because this concept for its part presupposes an idea of what constitutes a “market”. See ECJ 12 September 2000, Case C-180/98, *Pavlov*, EU:C:2000:428, para. 75 (“It has [...] been consistently held that any activity consisting in offering goods and services on a given market is an economic activity”; emphasis added). See also Advocate General Maduro, 10 November 2005, C-205/03 P, *FENIN v Commission*, EU:C:2005:666, para. 13 (“The second criterion developed by case-law for the purposes of classifying an activity as economic in nature is that of participation in a market or the carrying on of an activity in a market context. [...] It is not the mere fact that the activity may, in theory, be carried on by private operators which is decisive, but the fact that the activity is carried on under market conditions. Those conditions are distinguished by conduct which is undertaken with the objective of capitalisation, which is incompatible with the principle of solidarity. That allows it to be determined whether a market exists or not, even if the legislation in force prevents genuine competition emerging on that market”).

²²⁷ Cf. Gesetzentwurf der Bundesregierung, Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen, BT-Drs. 18/10207, 7 November 2018, p. 48 (“Allerdings rechtfertigt die Feststellung einer unentgeltlichen Austauschbeziehung nicht stets die Annahme, dass ein wettbewerbsrechtlich relevanter Markt vorliegt. Das gilt insbesondere außerhalb von mehrseitigen Märkten. Werden unentgeltliche Leistungen aus nichtwirtschaftlichen Motiven angeboten, ohne Teil einer zumindest mittelbar oder längerfristig auf Erwerbszwecke angelegten Strategie zu sein, fehlt die entsprechende Relevanz. Das kann beispielsweise bei der Vergabe von privaten Stipendien der Fall sein”).

²²⁸ In the digital sphere, this includes Wikipedia, non-commercial blogs, and non-commercial donation-based crowdfunding platforms.

²²⁹ See Articles 5 and 6 of Regulation 1/2003.

the offerings. For example, a person may watch television only for the news and decides which news show to watch. Such a person is a single-homer. Similarly, a reader may decide which (if any) newspaper to subscribe to and has demand for up to one subscription. Such a reader is a single-homer. Clearly, media platforms compete for such single-homers. Thus, if user behaviour on one side is well described by single-homing, there is one market on this side.

3.4.1. Monopolies in markets in which users multi-home

In general terms, suppose that one side single-homes. Since users on this side make a discrete choice between the services provided by different platforms, these platform services are substitutes belonging to the same market (if sufficiently strong substitutes). If users on the other side multi-home, each platform provides monopoly access to its set of users on the single-homing side. Thus, for given user behaviour on the single-homing side, each platform acts as a monopolist vis-à-vis users on the multi-homing side. This suggests that there is a market for each platform regarding the service provided to the multi-homing side.

It is, *inter alia*, based on this theory that it has been claimed that Apple abuses its monopoly control over the iPhone app distribution market by hindering developers from selling their apps directly to consumers at a lower price or via other distribution channels at a smaller fee.²³⁰ In the same vein, the Commission assumed in the *Google Android* case the existence of a market for app stores for the Android mobile operating system that is dominated by Google's app store.²³¹ Thus, the market definition underlying the plaintiffs' assertion in the *Apple* litigation and the EU Commission's decision in *Google Android* rests on the assumption that consumers are single-homers as they make a discrete choice of either using a device based on Apple's or Android's mobile operating system (while app developers tend to be multi-homers).

However, as already mentioned,²³² it is important to note that the monopoly power on each such market (as, e.g., the market for app stores for the Android mobile operating system) may be mitigated through interaction with the other user group. In particular, it may be the case that large parts of the revenues that are generated on the monopolised side are passed to the users on the other side.²³³

Finally, it should be noted that the identification of a multi-homing/single-homing framework has not always been considered a decisive factor for market delineation. For instance, in *Travelport/Worldspan*, the EU Commission recognised that platforms which offer electronic travel distribution services through a GDS (global distribution system) to travel agents (TAs) and travel service providers (TSPs) typically face multi-homing on the side of the TSPs and single-homing on the side of the TAs.²³⁴ The Commission stated this feature only as part of its general description of the market for electronic travel distribution services through a GDS.²³⁵ Yet when discussing potential theories of harm through non-coordinated effects and

²³⁰ *In re Apple iPhone Antitrust Litigation*, 846 F.3d 313, 315 (9th Cir. 2017). The Ninth Circuit held that consumers have direct purchaser standing to challenge Apple's 30% mandatory commission on all iPhone apps. Yet Apple charges commission based on its distribution agreements with the app developers and, therefore, appears to act rather as a supplier of distribution services to the developers. However, the Ninth Circuit argued that Apple functions as a distributor but not as a manufacturer or producer, according to the distinction established in *Hanover Shoe, Illinois Brick* and subsequent case law. Consequently, consumers must be regarded as direct purchasers (*id.*, paras 322–324). On 18 June 2018, the U.S. Supreme Court accepted Apple's petition for *certiorari*. *Apple Inc. v Pepper*, 138 St. Ct. 2647 (2018).

²³¹ European Commission 18 July 2018, Case AT.40099, *Google Android*. A public version of the decision has not yet been made available. But see European Commission, Press Release, 18 July 2018, Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine, p. 2 ("Google is dominant in the worldwide market (excluding China) for app stores for the Android mobile operating system. Google's app store, the Play Store, accounts for more than 90% of apps downloaded on Android devices. This market is also characterised by high barriers to entry. For similar reasons to those already listed above, Google's app store dominance is not constrained by Apple's App Store, which is only available on iOS devices").

²³² See *supra* sub 3.2.1., in particular text accompanying notes 153–154; see also *infra* sub 4.2.

²³³ The conventional wisdom about pricing in such a situation is expressed by the Bundeskartellamt (2016, p. 58): "this led to a monopolistic price on the multi-homing side, while the price on the single-homing side would be fairly low as a result of platforms competing for users on this side. In this respect, this may result in an inefficient price structure despite potentially intensive platform competition (on the single-homing side)." This suggests that if instead the side which multi-homes were to single-home (e.g., because of contractual restrictions), which for technological reasons the single-homing side continues to do so, prices would rebalance and lead to lower prices on the side that initially was multi-homing. As Belleflamme and Peitz (2019a) show in a formal analysis, prices on the two sides indeed move in opposite directions. However, it is a priori not clear in which direction. The reason is that monopoly prices may actually be rather low as platforms may have an incentive to attract many users on the multi-homing side.

²³⁴ European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*, para. 15.

²³⁵ *Id.*, paras 13–21.

therefore, assessing *inter alia* whether “the merger would allow the merging undertakings to use their strong market position downstream *vis à vis* TAs in order to increase prices *vis à vis* TSPs upstream (‘vertical cross market effects’),²³⁶ the Commission referred to the multi-homing/single-homing framework:

As long as TAs use single-homing, GDS providers have exclusive access to TAs belonging to their respective TA networks. Each GDS provider therefore has a certain degree of monopoly power in relation to TSPs that need to reach the TAs exclusively connected to one GDS. This monopoly power allows the GDS provider to charge higher prices to TSPs. These “monopoly rents” extracted from TSPs are to a large extent used to cover the financial incentives granted to TAs.²³⁷

This illustrates that it is, at least to some degree, functional interchangeable whether the multi-homing/single-homing framework is taken into account at the stage of market definition or (only) when considering the actual or potential effects a merger or any other relevant market conduct of the platform may have on competition. In both ways a competition analysis can consider that this framework enables a two-sided platform to exercise significant market power *vis-à-vis* the multi-homing side. While the former way, i.e. the recognition of a market for each platform, is a straightforward and consistent reaction to this framework, the latter approach is more flexible. Hence, it may be regarded as preferable in cases without a clear-cut multi-homing/single-homing setting but where the homing decisions of the different user groups are to a significant degree in line with this scenario and therefore do not confer monopoly power to the platform, but at least a significant degree of market power *vis-à-vis* the multi-homing side. However, competition practice should not rashly discard the option to acknowledge a market for each platform to do justice to a multi-homing/single-homing framework, because otherwise there is a risk that this characteristic will not be given appropriate weight in the course of a balancing of various factors.

3.4.2. Distinguishing single-homing from multi-homing


Taking a closer look at what counts as a single-homing and what as a multi-homing decision, consider platforms matching transport services to travellers. For example, if a traveller needs transport from an airport to the city centre, this is clearly a discrete-choice problem in terms of which product to consume. However, when we speak of single-homing versus multi-homing in a platform context, we ask whether a consumer has to decide on the particular platform or provider before actually choosing a particular consumption plan. If a traveller makes a decision which mode of transport and associated provider of this transport to choose before deciding on the particular consumption, then we talk of a single-homing traveller. For example, if a traveller who has installed Uber takes Uber as the starting point of its transport decision and checks for available rides on Uber, but for alternative transport possibility only if dissatisfied with the available offers, we may want to classify her as a single-homing user.^{238, 239} Correspondingly, somebody who first checks for the availability of a ride by local train and considers alternative means of transport only if dissatisfied with the local train offer is classified as a single-homer. By contrast, a traveller who checks offers e.g. on Uber and other transport platforms before deciding what to do can be considered a multi-homer in the sense that she uses the information service by all information provider.

²³⁶ *Id.*, para. 72.

²³⁷ *Id.*, para. 81.

²³⁸ Bundeskartellamt (2016, pp. 62 and 66) refers to this user behaviour as “sequential multi-homing”. From a theory point of view, there is indeed a difference between single-homing and sequential multi-homing since in the former case the outside option for a buyer is not to buy, whereas in the latter case, the buyer should continue to evaluate offers on the other platform if the expected value from doing so exceeds the value derived from the best offer on the platform she visited first. In practice, for a seller on the platform that is visited first, there is often little difference between the scenario in which a buyer evaluates all alternative offers on one platform before consulting a different platform and the scenario in which the buyer does not visit another platform at all. Two additional observations deserve attention. If buyers can be characterised as sequential multi-homers, switching costs are likely to be low (see on the relevance of switching costs *infra* pp. 78-79). In other contexts, rather than checking out alternative sellers on the same platform a sequentially multi-homing buyer may first check out an alternative offer by the preferred seller on alternative platforms. Absent no-surcharge and no-steering clauses, this may well apply to payment systems; such user behaviour does not resemble single-homing.

²³⁹ Similarly, a user that constantly uses one platform as default option but has, nevertheless, subscribed with a second platform in order to hedge against the risk of a system failure or the like (see, e.g., European Commission 21 August 2007, Case M.4523, *Travelport/Worldspan*, note 15) should be considered a single-homer.



In our transport example, to the extent that individual providers of transportation services can list on alternative platforms, these transport providers can reach travellers through multiple channels (e.g. this holds if a van service can list on Uber as well as on other transport platforms). Hence, the degree of multi-homing of travellers affects the substitutability of platform listing services from the viewpoint of a provider of transport services.

3.4.3. Endogeneity of homing decisions

To exemplify the endogeneity of homing decisions, consider an area in which two rival ride-hailing apps are available. If most drivers offer their services at any point in time on both apps, there are likely to be few gains for travellers from using both apps simultaneously; thus, travellers have weak incentives to be multi-homers. By contrast, if most drivers single-home (in a given time interval), it is more beneficial for travellers to multi-home – that is, to check for availability and rates of transport offers on both apps.

The general lesson is that homing decisions on one side depend on homing decisions on the other side. Thus, as homing patterns change on the two sides, market delineations may have to respond.

3.4.4. Platform's contractual obligations imposed on users and market definition

A platform may affect the homing decision on one side through contractual clauses (e.g. exclusivity clauses that tie a seller to the platform). If contracts enforce single-homing on one side, an immediate implication is that services provided by platforms (and other undertakings offering substitutes) to this group of users belong to one market.

If, by contrast, such contractual clauses are not used and there is widespread multi-homing among this group, there may be separate markets for users on each platform. To see this, it is useful to return to the media context and consider a fictional setting with two radio broadcasters that is characterised by listener single-homing. Advertisers may decide to advertise with none, one or both broadcasters. If advertiser profit per viewer (gross of payment to the platform) is independent of the demand it faces, the advertiser's decision to advertise on one platform is independent of whether it advertises on the other platform. Thus, there is a market for advertising to consumers on one platform and another market for advertising to consumers on the other platform.

3.4.5. Conclusions

(1) If users on one side of the platform multi-home, while users on the other side of the platform single-home, it is appropriate to define a monopoly market on the multi-homing side as the platform is the unique access provider to its single-homing users on the other side.

(2) The degree of multi-homing on one side is relevant not only for the substitutability between platform services in this market but also for the substitutability in the market for platform services on the other side.

(3) Multi-homing decisions often depend on the degree of multi-homing decisions on the other side, which in turn may be affected by contractual clauses imposed by platforms.

3.5. Multiple Markets on One Side of a Platform

Following the multi-markets approach, an intermediary offers intermediation services on each side. However, in many real-world cases, the intermediary offers intermediation services for many different products and caters to heterogeneous user groups on each side. This observation is not restricted to platforms: for instance, electronic retailers typically offer a wide variety of products to heterogeneous consumers.

3.5.1. Multi-purpose platforms

Most e-commerce platforms make offerings in multiple product categories and consequently consumers may assess a number of products in different product categories and offered by a variety of vendors. An intermediary who offers intermediation services to consumers operates then in multiple markets, offering intermediation services for different product categories.

For example, eBay carries a large variety of different product categories. Each of those may be considered a separate market if users visit eBay in search for a product of a certain category. For example, if somebody wants to buy furniture online, she may decide to search via eBay, Amazon, Google Shopping or some online store such as the one provided by Ikea. Market conditions may be very different compared to somebody looking for collector coins on eBay, as alternative channels through which such items can be purchased are different. If this is so and consumers tend not to search for furniture and collector coins at the same time,²⁴⁰ there are independent markets for the intermediation service for collector coins and furniture. Very much in the same vein, the Bundeskartellamt recently ascertained in the context of the clearance of a merger that involved the two largest department store chains in Germany that “there is no department store market as such”, but instead defined retail markets for approximately 20 product categories.²⁴¹

3.5.2. Regional markets

Digital platforms often scale up and serve a whole country and, in many cases, multiple countries. User behaviour on the two sides of the platform is decisive for whether there are multiple regional markets on each side. For instance, a dog-sitting platform caters to dog owners and dog sitters. These are typically local markets (as the dog stays put) from the dog owner’s perspective, as she is seeking somebody to do the dog sitting in her home town and uses the platform to find a match. These are also local markets from the dog sitter’s perspective as she is unlikely to change town to be able to do the dog sitting somewhere else. Thus, there are multiple regional markets on each side.

The same may be correct for the services offered by online dating platforms. As we have explained above, it is preferable to assume two separate markets for the two user groups, i.e. for men and women who are looking for a partner.²⁴² If we further assume that the typical user will not be willing to move or to start long distance commuting for a relationship and therefore, the Bundeskartellamt was correct to note that users commonly restrict their search to the locality or the region where they live,²⁴³ one can distinguish multiple regional markets.²⁴⁴ This market definition also takes account of the observation that platforms may enter the market by initially offering their services only to users in one agglomeration, with the prospect of then extending their services to other cities and regions.²⁴⁵

²⁴⁰ See *infra* sub 3.5.3. on “one-stop vs. multi-stop shopping”.

²⁴¹ Bundeskartellamt 9 November 2018, B2-106/18, *Karstadt/Kaufhof*, Case Summary, pp. 2–3.

²⁴² See *supra* pp. 37–38.

²⁴³ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, para. 125 (“Zwar liegt der Beschlussabteilung kein detailliertes Zahlenmaterial zu den Suchradien der Nachfrager vor, aber nach Angaben der Beteiligten stellt die Entfernung zu möglichen Partnern ein häufig gewähltes Such- bzw. Sortierkriterium bei der offenen Suche durch Plattformnutzer dar. Insofern ist anzunehmen, dass diese Suchradien sich regelmäßig auf den Wohnort, die Region oder das Bundesland des Nachfragers beschränken”).

²⁴⁴ Despite this observation and even though it identified regional platforms, the Bundeskartellamt opted for a national market delineation. Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, para. 126 (“Die vom Zusammenschluss betroffenen Plattformen sowie die weitaus größte Zahl der Wettbewerber sind jedoch nicht regional positioniert. Das Produkt der Plattform selbst, also die angebotene Vermittlungsleistung, ist zunächst schon durch die Internetpräsenz nicht regional beschränkt”). This entails, however, the risk to underestimate market power at the regional level. See also *infra* sub 4.2.1. (“Identifying tipping and the granularity of markets”) and *id.*, para. 128 (“Inwieweit wegen der regionalen Positionierung Plattformen wie *fischkopf.de* oder *MuenchnerSingles.de* nicht dem bundesweiten Markt für Online-Dating-Plattformen zuzurechnen sind, kann offenbleiben”).

²⁴⁵ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, para. 128 (“Darüber hinaus haben die Ermittlungen ergeben, dass ein Marktzutritt zum Online-Dating-Plattformmarkt häufig durch das sukzessive Ausrollen des Dienstes in den Städten erfolgt. So betreibt der Anbieter der *MuenchnerSingles.de* inzwischen auch die Plattformen *BerlinerSingles.de*, *HamburgerSingles.de*, *KoelnerSingles.de* und *StuttgarterSingles.de*”).

Consider local newspapers²⁴⁶ as a further example. From the readers' perspective, these are separate local markets, as readers tend to be more interested in the local news of the place where they live than in the local news of some faraway place.²⁴⁷ In the good old days in which local newspapers carried a lot of classified ads, this also applied to these ads as the associated transactions or interactions typically took place at the local level because of preferences or transaction costs. On the advertiser side, the substitution possibilities are likely to depend on the type of advertiser. For advertisers with a local business there is typically no rationale to advertise outside their region. For national brands, the situation is different. A reader in one region is worth as much as a reader with similar characteristics in another region. To the extent that the advertiser had unlimited supply even national advertisers may view these newspapers offering advertising in different local markets as belonging to separate markets, as they provide access to distinct sets of readers. The European Commission generally characterises advertising markets as national in scope. However, in regard to the market for radio advertising it has considered (but left open), "that there are distinct regional markets within one country since numerous radio stations are essentially directed to a specific region".²⁴⁸ Following this logic, one would also have to consider local (or regional) markets for advertising in local (or regional) newspapers. This is indeed the position repeatedly been taken by the Bundeskartellamt which in a number of cases assumed that the geographical dimension of the advertisement market was identical with the area where a local or regional newspaper was distributed.²⁴⁹ However, with a limited advertising budget there remains some degree of substitutability for national advertisers in local newspapers, as an advertiser trades off the gains from increasing the amount of advertising in a region in which he is already present to placing ads in local newspapers in which it previously did not advertise.²⁵⁰

A different example are local portals that offer accommodation for vacations. If for owners of a vacation home a condition to be active on the platform is to be based in a particular region, then from the owners' perspective there is a separate market for each region. This is also the case if travellers have a particular destination in mind. In this case, they search for a vacation home only in that region and those portals that provide listings from different regions belong to different regional markets also from the travellers' perspective. However, if depending on the characteristics of the vacation home a traveller is considering offers from different regions there is substitutability between platforms active in different regions.

In the previous example, platforms operated at the regional level. However, they may allow for listings from multiple regions. Demand substitution on the two sides may still be of the sort as described above. If platforms have different and partially overlapping coverage (e.g. in terms of listing of vacation homes) the

²⁴⁶ Competition authorities typically differentiate product markets for national daily newspapers and for newspapers that contain (also) regional or local news. See, e.g., European Commission 7 July 2005, COMP/M.3817, *Wegener/PCM/JV*, para. 16 ("the market investigation has shown that, from a reader's perspective, although loyalty to newspapers is particularly high, competition exists to some extent between national newspapers and national newspapers having a regional edition and the latter and regional newspapers. [...] competition between national newspapers without regional editions and regional newspapers appears to be almost inexistent"). See also BGH 26 May 1987, KVR 3/86, (*Niederrheinische*) *Anzeigenblätter*, Juris, paras 23-24; Bundeskartellamt 10 December 2002, B6-98/02, *Tagesspiegel/Berliner Zeitung*, p. 16 ("Sachlich betroffen ist hier der Lesermarkt für Abonnement-Tageszeitungen mit lokaler und regionaler Berichterstattung" ["The product market affected is the readers' market for subscription dailies that contain regional and local reporting"]).

²⁴⁷ See, e.g., European Commission 7 July 2005, COMP/M.3817, *Wegener/PCM/JV*, para. 16 ("Regional newspapers of different regions do not compete with each other").

²⁴⁸ European Commission 7 October 1996, COMP/M.779, *Bertelsmann/CLT*, para. 22.

²⁴⁹ See, e.g., Bundeskartellamt 21 April 2009, B6-150/08, *NPG/Detjen (Haller Tagblatt)*, para. 74 ("Ausgehend von dem Vorstehenden ist im vorliegenden Fall der lokale Anzeigenmarkt [...] im Altkreis Schwäbisch Hall (Verbreitungsgebiet des „Haller Tagblatt“) betroffen"); 26 January 2006, B6-138/05, *Süddeutscher Verlag/Lokalzeitung*, pp. 25-26 ("Der räumliche Markt wird gebildet entsprechend dem Verbreitungsgebiet des erworbenen Anzeigenblattes. Die räumliche Marktabgrenzung nach dem Verbreitungsgebiet ist dadurch begründet, dass das Anzeigenblatt mit seiner Anzeigenbelegungsmöglichkeit für sein Verbreitungsgebiet ein Angebot für die Verbreitung von Anzeigen macht. Dieses Angebot wird von den Anzeigenkunden auch angenommen. Da der 'Südost-Kurier' in sechs verschiedenen lokalen Ausgaben angeboten wird, sind insofern im vorliegenden Fall diese sechs Anzeigenmärkte sowie die Märkte, die durch alle Kombinationsmöglichkeiten bis hin zur Gesamtkombination der Ausgaben gebildet werden, vom Zusammenschlussvorhaben betroffen").

²⁵⁰ This observation relates to the position by Wismer and Rasek (2018, p. 63) that "determining catchment areas on the basis of customer locations can be meaningful when defining the geographic market; however, in multi-sided markets additional insights can be gained from analysing whether indirect network effects depend on the location of customers from other groups. If advertisers, for example, are predominantly interested in targeting customers of a platform who are resident in a certain region, this may lead to a corresponding segmentation of the market by regions, even if the advertisers themselves may be based in different regions or countries."

extent to which they operate in the same market on the traveller side depends on the demand characteristics of this side of the market. If owners of vacation homes are not restricted in their listing decision (but consider listing at most on one platform), traveller behaviour determines the degree of substitutability between platforms covering multiple regions.

In a hypothetical example with two regions (A and B) and two platforms (1 and 2), this can be seen as follows: if travellers have a particular destination in mind and platform 1 has most listings in region A and platform 2 has most listings in region B, travellers with a preference for destination A will tend to focus their search on platform 1, while travellers with a preference for destination B will tend to focus their search on platform 2. Hence, an owner with a vacation home for rent in region A who enters the market has a strong incentive to list on platform 1. There is little substitutability between the services offered by the two platforms also from this owner's perspective. In this case, while both platforms offer their service in each regional market, platform 1 may be deemed dominant in region A and platform 2 in region B (for the services offered to user groups on each side). By contrast, suppose that travellers are quite indifferent between the two destinations and visit the two platforms in equal numbers. Then, the owner from region A who thinks about where to list – suppose that she lists on at most one platform – considers the two platforms to be highly substitutable (presuming that they do not differ in other dimensions). One would then have to define a national market for the user groups on each side. This example tells us that the degree of substitutability between platforms may depend on the composition of users on the other side (and it may be very different for the particular type of user from one side – in the example, there is a big difference whether the owner has her property in region A or B). Thus, whether a platform is active in multiple regional markets or in one national market depends on user behaviour on this side and this behaviour may depend on user behaviour on the other. In other words, substitutability on each side depends on platform differentiation; this differentiation may be endogenous, e.g. each platform attracts users with particular characteristics as a result of a self-selecting process. Clearly, this differentiation may differ across regions.

3.5.3. One-stop vs. multi-stop shopping

Markets may need to be considered in connection with each other if consumers substitute between product categories or buy bundles. This has been acknowledged by Schweitzer et al. (2018, p. 72), who according to our translation state:

Depending on market conditions in the distribution, in particular the habits of those demanding goods or services via the platform, intermediation power would be rather product- or product group-specific or, if assortment effects are significant, with a view to a whole range of goods.²⁵¹

The issue is similar to shopping in physical stores. If one-stop shopping is predominant,²⁵² markets for different product categories that consumers consider buying are interdependent.²⁵³ In e-commerce, since there are no physical transport costs and checking out is simpler online than offline, there are reasons to expect less one-stop shopping than in offline retailing. However, lower delivery costs per unit may be a reason for consumers to go for one-stop shopping. Whenever there are successful specialised shops, this suggests that (unless there are other advantages of being specialised) at least an important fraction of

²⁵¹ In the German original: "Je nach den Marktgegebenheiten im Vertrieb, insbesondere den Gewohnheiten derjenigen, die über die Plattform Waren oder Dienste nachfragen, wäre Intermediationsmacht eher produkt- oder produktgruppenspezifisch oder aber, wenn Sortimentseffekte erheblich sind, mit Blick auf ein ganzes Warensortiment zu ermitteln."

²⁵² Note that the Bundeskartellamt, clearing a merger of two department store chains, ascertained that "[i]n department stores consumers are able to buy products of various product categories during their visit but generally do so *only to a very limited extent* as examinations have shown (emphasis added)." Bundeskartellamt 9 November 2018, B2-106/18, *Karstadt/Kaufhof*, Case Summary, p. 2.

²⁵³ One-stop shopping is, for instance, an important precondition for a retailer to carry loss leaders. An important observation is that one-stop shopping may make products that are substitutes conditional on consumers being at the shop can become complements after endogenising the consumers' decision whether to show up in a particular marketplace. In other words, a price decrease for one product may increase overall demand for another production. Consider two products A and B. A price decrease of product A reduces the relative attractiveness and thus the demand of product B. However, under one-stop shopping consumers, find visiting the marketplace more attractive. The demand for product B from additional consumers visiting the marketplace may overcompensate the demand lost to product A from consumers who were to visit under the initial prices. If this is the case, products that are substitutes under multi-stop shopping become complements under one-stop shopping.

consumers are not one-stop shoppers or consider only very specific product categories because otherwise specialised shops would be at a disadvantage. Understanding purchase behaviour is essential to identify which intermediation services provided to consumers are interdependent and which ones are independent.

This issue of market definition also arises in the context undertaking that are not necessarily characterised as two-sided platforms. In particular, when the demands for different products are linked, market definition should reflect this. A hypothetical example is communication networks in which part of the communication is between subscribers within a given region (or country) and the rest across regions (or countries). If communication across regions accounts for a significant part of the overall value for at least some participants, a regional market demarcation treating those markets as independent should be rejected because the interaction between regions plays an important role in determining market outcomes. Let us consider a hypothetical situation in which there is a regional communication platform in each region and a supra-regionally active platform competing in each region with the respective regional platform.²⁵⁴ Consumers are assumed to exclusively use a single platform (i.e. they are single-homers). In such a case, an a priori restriction to regional markets appears problematic because the competitive behaviour of a platform in one regional market depends on its situation and the behaviour of other market participants in other regional markets. This applies regardless of whether a regional or supra-regional platform is in the centre of interest.

In particular, imagine an economic environment with two regional markets. One firm is active in both regional markets ("North" and "South") and, in each regional market, there is another firm that operates exclusively in this market. As an extreme case, communication is only possible on each firm's network, but no communication terminating on another firm's network. Consumers care about the number of consumers they can reach: the more the better. Thus, there are positive direct network effects. Suppose that all firms serve positive numbers of users. Consider now the effect of a price reduction by one of the two firms with regional coverage. For example, let the affected region be region "North". As a result of this price reduction, this firm attracts additional subscribers and reduces the number of subscribers of the firm with interregional coverage in region "North". Since consumers care about the total number of subscribers, this also makes the firm with interregional coverage less attractive to consumers in region "South", resulting in more subscribers for competing firm with only regional coverage in region "South". This shows that demand in region "South" is affected by prices set in region "North" and vice versa. Clearly, if these linkages are strong, both markets should not be considered in isolation, but network effects across regional markets need to be taken into consideration. We note that this example is akin to an environment in which a two-sided platform competes against two one-sided platforms – one on each side.

The general takeaway is that, even though there may be multiple markets on one side of a platform, these markets may well be interdependent, which should be taken into account in an assessment of, e.g., a merger or an allegedly anti-competitive practice.

3.5.4. Conclusions

(1) There may exist multiple markets on each side of the platform; for example, a platform may offer different categories of services or may be active in different regional markets.

(2) Multiple markets on one side may be linked with each other if users have positive opportunity cost of visiting a platform. Consequently, these markets should not be analysed in isolation, but their interdependence should be accounted for.

²⁵⁴ A historical example of this sort are telephone networks in the early 1900s in the U.S., where the Bell system competed against local competitors. See, e.g., Shapiro and Varian (1999, pp. 212–214).

3.6. SSNIP Test (“Hypothetical Monopolist Test”)

European competition authorities (among others) use the hypothetical monopolist test to identify the substitutes to a given product or service that are part of the relevant market.²⁵⁵ The General Court regarded the SSNIP test as “a recognized method for defining the market at issue”. Yet the Court emphasised that the EU Commission may also rely on “other tools [...] such as market studies or an assessment of consumers’ and other competitors’ points of view.”²⁵⁶ The Commission has to make an overall assessment of indicative factors without assuming a hierarchy between different types of available evidence. In particular, there is no requirement to prioritise technical evidence over non-technical evidence.²⁵⁷

According to the SSNIP test, the relevant market is defined as the smallest product group such that a hypothetical monopolist in control of this product group could profitably sustain a *small but significant non-transitory increase in price*.²⁵⁸ To answer the question of whether a hypothetical monopolist could impose a price increase, one needs to ask whether such a price increase would be profitable. Hence, the issue is whether selling a smaller quantity at a higher price would be more profitable than selling the initial quantity at the initial price. Whether this is the case depends on how sensitive demand reacts to a price change, i.e. it depends on the elasticity of demand.²⁵⁹ We can then define the critical elasticity of demand as the value of elasticity of demand that would leave profits unchanged following a price increase, i.e.

$$e = \frac{1}{M + T}$$

where $M = P - C'$ is the initial price–cost margin (defined as the gap between initial price and marginal cost) and T is the price increase considered significant, i.e. usually between 5% and 10% of the initial price.²⁶⁰ If the firm’s own price elasticity of demand is less than this critical elasticity, the price increase would be profitable and the market is defined.²⁶¹ If not, then this is seen as indication that the firm does not have sufficient market power to raise price.²⁶² The next closest substitutes are then added to the relevant market (for this it is important to know to which products demand is diverted) and the test is

²⁵⁵ The SSNIP test can also be used as a first step in merger control. It then gives answer to the question whether a proposed merger makes an increase in prices (of 5% or 10%) under control of the merged entity profitable compared to profits under pre-merger prices, holding prices of all outsider firms fixed.

²⁵⁶ General Court 11 January, Case T-699/14, *Topps Europe Ltd v Commission*, EU:T:2017:2, para. 82.

²⁵⁷ See General Court 6 July 2010, Case T-342/07, *Ryanair v Commission*, EU:T:2010:280, para. 136 (“Furthermore, the applicant’s assertion that the ‘non-technical evidence’ cannot be taken into account unless it is supported by ‘technical evidence’ cannot be upheld. There is no need to establish such a hierarchy. It is the Commission’s task to make an overall assessment of what is shown by the set of indicative factors used to evaluate the competitive situation. It is possible, in that regard, for certain items of evidence to be prioritised and other evidence to be discounted. That examination and the associated reasoning are subject to a review of legality which the Court carries out in relation to Commission decisions on concentrations”); 9 March 2015, Case T-175/12, *Deutsche Börse v Commission*, EU:T:2015:148, para. 133.

²⁵⁸ European Commission, Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, paras 15–19 and 40 (“Reasoned answers of customers and competitors as to what would happen if relative prices for the candidate products were to increase in the candidate geographic area by a small amount (for instance 5% to 10%) are taken into account when they are sufficiently backed by factual evidence”). In its merger decisions, the Commission does regularly refer to the SSNIP test. See, e.g., 26 July 2000, Case M.1806, *AstraZeneca/Novartis*, paras 35 and 59; 17 October 2001, Case M.2187, *CVC/Lenzing*, paras 25–26; 30 October 2001, Case M.2420, *Mitsui/CVRD/Caemi*, para. 11; 30 July 2003, Case M.3149, *Procter & Gamble/Wella*, para. 38.

²⁵⁹ The European Commission refers to the SSNIP test only in regard to demand substitution. See European Commission, Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, paras 15–19. It is noteworthy, however, that supply-side substitutability could be assessed correspondingly. See Di Mauro (2003, p. 385).

²⁶⁰ See European Commission, Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, para. 17 (“in the range 5% to 10%”) and para. 40.

²⁶¹ Alternatively, the critical loss can be defined as the loss in sales resulting from a price increase that would leave profits unchanged following a price increase profitable, i.e. $y = T/(M + T)$. If the critical loss exceeds the likely loss of sales in a given case, then a price increase would be profitable and the market would be defined.

²⁶² It is worth remembering that already in standard markets the SSNIP test has its conceptual problems. A monopolist sets its price in the elastic part of the demand curve. A price increase above the monopoly price by definition does not increase the monopolist’s profit. Hence, starting at the monopoly price level, applying the SSNIP test leads to a too broad market definition; this is the so-called cellophane fallacy that has been pointed out by Stocking and Mueller (1955). To avoid the cellophane fallacy, one needs to consider counterfactual “competitive” rather than prevailing prices as the starting point.

repeated for the larger set of products (with a price increase on all these products). The process continues until the point is reached where a hypothetical monopolist could profitably impose a 5% price increase on the set of products under its control.

In its *Booking.com* decision, the French Autorité de la concurrence relied on the SSNIP test²⁶³ to define the product market on the side of the platform where intermediation services are supplied to the hotels. The competition authority started with the hypothesis that the relevant product market comprises the reservation of overnight stays in French hotels via online reservation platforms and online travel agencies.²⁶⁴ The authority then, first, argued that the hotel keepers did not consider other distribution channels such as the hotels' websites, meta-search engines (including hotel comparison sites²⁶⁵) and search engines as substitutes for the use of an internet reservation platform.²⁶⁶ Second, the authority referred to a statement by Booking.com, which had argued that most hotels would not have sufficient means to ensure their visibility on the internet through meta-search engines and search engines.²⁶⁷ Based on these considerations by the hotels and Booking.com, the Autorité de la concurrence drew the conclusion that a small but significant increase of the commissions charged by a hypothetical monopolist platform would not result in such a significant shift of demand to other distribution channels as to make the price increase unprofitable.²⁶⁸ Thus, the authority saw its hypothesis on the definition of the product market confirmed. The Autorité de la concurrence applied the SSNIP test to the market on one side of the platform without considering interrelations with the other side of the platform. In the following, we will address how the SSNIP test should be adapted if applied in the context of two-sided platforms.

3.6.1. SSNIP test for two-sided platforms

The SSNIP test is applicable to two-sided platforms, but requires additional considerations. As pointed out in Belleflamme and Peitz (2015, p. 676), in the case of a two-sided platform charging both user groups, different ways of increasing prices can be considered: "Different scenarios can then be envisioned to perform a SSNIP test. The hypothetical monopoly intermediary could be thought of as raising (i) the sum of prices while optimally adjusting the price structure, (ii) all prices together while keeping the price structure fixed, (iii) each of the prices separately allowing the other prices to be adjusted optimally, or (iv) each of the various prices while keeping the other prices fixed."

We propose to follow (iv) as a default option and consider the price change for one user group on a two-sided platform, keeping all other prices fixed.²⁶⁹ If there are mutual positive cross-group effects, then a drop in user participation as a result of this price generates a feedback loop that further reduces participation. As Filistrucchi (2018, p. 46) correctly notes for the case of mutual positive cross-group external effects, "the risk of applying a one-sided SSNIP test, which does not account for these feedback effects, is that in such cases the two markets may be defined too narrowly".

²⁶³ Autorité de la concurrence 21 April 2015, Décision n° 15-D-06, Booking.com, paras 99 ("Pour définir le marché pertinent au cas d'espèce, il faut s'interroger sur la rentabilité, pour une OTA se situant dans une situation hypothétique de monopole, d'une augmentation, légère mais significative et permanente, de 5 à 10 % des taux de commission exigés des hôteliers au-dessus de leur niveau concurrentiel, sachant que des reports de demande sont possibles vers d'autres substituts, à la fois du côté des hôtels et du côté des clients d'hôtels").

²⁶⁴ Id., para. 100 ("Le marché pertinent pourrait être, dans ces conditions, le marché de l'offre de services de réservation de nuitées seules d'hôtels français sur des OTA (plateformes de réservation d'hôtels en ligne (PRH) et agences de voyage en ligne), à l'exclusion du canal direct des hôtels et notamment de leur site Internet, des méta-moteurs de recherche et des moteurs de recherche").

²⁶⁵ Id., para. 45.

²⁶⁶ Id., para. 100 ("En effet, les hôteliers n'envisagent pas ces différents canaux comme étant substituables au canal des OTA").

²⁶⁷ Id. ("Par ailleurs, Booking.com explique que la plupart des hôtels n'ont pas les moyens d'assurer par eux-mêmes leur visibilité sur Internet, en se référant directement sur des méta-moteurs de recherche et des moteurs de recherche").

²⁶⁸ Id. ("Ainsi, en cas de hausse légère mais permanente des taux de commission des OTA, le report de la demande des hôteliers sur ces autres canaux ne serait pas suffisant pour rendre cette augmentation de prix non rentable pour un monopoleur hypothétique").

²⁶⁹ This stands in contrast to the view expressed by Crémer, de Montjoye and Schweitzer (2019, p. 45), who write: "Suffice it to say that increasing one price without modifying the price on the other side does not make much sense, and there is no clear theoretical guide to know which way price changes on both sides should be balanced." They do not further elaborate on their view. In line with our view, Katz and Sallet (2018, p. 2159) suggest "consider[ing] price changes on one side of the platform while holding prices on the other side constant and examining whether there are significant, plausible feedback effects. If there are no such effects, then focusing on a single side manifestly will give a clear overall picture. But if there are feedback effects, then they must be taken into account to avoid reaching misleading conclusions."

To assess the profitability of a price increase on one side, information on the price elasticity of demand on each side and information on the strength of cross-group external effects is needed. In principle, the test can also be applied if there is a negative price on one side of the market. One could then analyse the effect on profit of reducing the payment to the respective users by 5% or 10%.

If price adjustments on the other side are likely to arise this should be complemented by going for option (iii), which requires an assessment how a subset of platforms optimally adjusts its price structure. In either case, cross-group external effect and their interplay should be included.

As we have argued against the use of a single-market approach, we do not follow Filistrucchi (2018, p. 45) in his differential treatment of transaction and non-transaction platforms. He suggested that

[i]n a two-sided non-transaction market, one should check the overall profitability of a rise in price on each side of the market. In a two-sided transaction market, one should instead check the profitability of an increase in the price level (i.e. the sum of the prices paid for the transaction by the two sides). Ideally, in both cases one should allow the hypothetical monopolist to re-optimize the price structure following the price increase.

As we argued before and illustrate below for the credit card market,²⁷⁰ substitution possibilities may be quite different on the two sides of a payment platform. No matter whether a platform (or a group of platforms) can be classified as transaction or non-transaction platforms, we suggest checking the profitability of a price rise on one side and correspondingly on the other side of the platform (or of the group of platforms) under consideration.

3.6.2. SSNIP test and pass-through

Using the credit card market for illustration, we want to point out the importance of contractual clauses for substitution possibilities for each group of users and, therefore, the application of the SSNIP test. Consider that merchants can and do use surcharges if consumers use a credit card with an increased transaction fee. This means that there is partial (or even full) pass-through, when merchants pass a fee increase partially or fully on to consumers. The SSNIP test would then need to account for such pass-through to properly allow for substitution behaviour of merchants and consumers. Take as an extreme case full pass-through. In this case, one would expect little substitution on the merchant side, as they do not suffer a direct financial loss from a higher transaction fee. Rather, we should expect substitution on the consumer side as they may want to change the mode of payment in response to higher surcharges. Thus, consumers will be decisive to assess substitution between alternative forms of payment. In the intermediate case of partial pass-through, we may expect some substitution away from the card with the increased transaction fee on both sides.²⁷¹

Under a no-surcharge rule there is a zero surcharge on a transaction carried out with a credit card that is costly to use for a merchant.²⁷² Then, absent any other instruments available to the credit card company and absent any actions taken by the merchant, consumers are indifferent with respect to which card to use. By contrast, merchants have an interest to steer consumers to alternative cards. Thus, merchants' effectiveness to steer consumers' card use will be decisive to assess substitution between alternative forms of payment. However, since settling a transaction becomes more profitable for the credit card company with a higher fee, the credit card company may want to entice consumers to use more frequently its card and reward such behaviour. Thus, part of the profit made from merchants is shifted to consumers. Under stable market conditions, credit card companies will have settled on a price structure that maximises their profits given their competitors' choices. The relevant market on the consumer side will then include substitute credit cards and possibly other means of payment.

²⁷⁰ See *infra* sub 3.6.6.

²⁷¹ Of course, the degree of pass-through is endogenous and depends on the characteristics of the populations of merchants and consumers.

²⁷² An increase of the transaction fee may lead to overall higher uniform prices charged by the merchant.

3.6.3. SSNIP test, platform access and usage

Platforms may charge non-linear prices, in which case the question arises how a SSNIP test can be carried out. In general, a platform may charge for access and transactions. The overall payment will then determine whether a particular user signs up. Thus, we may consider a change of the subscription or membership fee to investigate substitutability across different access possibilities. By contrast, once users have signed up to a subset of platforms offering a certain type of service, their substitution possibilities to carry out a certain transaction may be much more limited. Returning to the example of payment systems. A consumer may decide to sign up for one or several credit cards. In the former case, a consumer has the possibility to conclude a transaction using this credit card or some alternative form of payment. In the latter case, a consumer can, in addition, choose one of the alternative credit cards she carries with her. Thus, if the vast majority of consumers have only one credit card (and do not hold debit cards), when transacting with offline merchants the only substitution possibility may be cash. However, under a no surcharge rule, these consumers do not make any payments to settle the transaction via a credit card. Thus, the SSNIP test cannot be directly applied; see below for the application of the idea of the SSNIP test in zero-price markets. Taking a look at merchants who accept multiple cards, there are in principle substitution possibilities if consumers hold multiple cards. However, under no surcharge and a general no-steering agreement (that includes not only credit cards but all forms of payment), merchants cannot direct consumers to a card with lower transaction fees (or some other form of payment). Given the adoption decision, this suggests that the market has to be defined narrowly on the merchant side, as merchants have a hard time switching to an alternative form of payment in response to a SSNIP regarding the transaction fee. It also suggests that the market on the consumer side is to be defined narrowly, as they do not have an incentive to substitute away from the card that is pricier for merchants. In the medium term, merchants can drop cards; here, a SSNIP test can be carried out to assess to which extent merchants drop a card in response to higher fixed or variable fees. The opportunity cost of dropping a card depends in particular on the degree of multi-homing regarding card holding and the willingness to use other forms of payments on the consumers.

3.6.4. SSNIP test and “zero-price markets”

If there is a zero price on one side of the market, the SSNIP test would need to consider an increase of the price in absolute terms (a percentage increase clearly will not do) or would require additional modifications according to which not price but product characteristics such as quality are varied to understand substitution patterns. In particular, if users are expected to react very sensitively to price, this does not necessarily imply that a broader market has to be defined. The reason is that a platform may not even consider charging consumers but rather aims at getting their attention by making attractive offers. Such a strategy may be highly profitable if a platform is able to convert attention into revenues made from other market participants.

Purely ad-financed platforms are a case in point. For example, applied to an ad-financed social network with an alleged dominant position, to understand substitution patterns the question is: by decreasing the quality of service offered by this social network, how much traffic would it lose (e.g. to other social networks or different offerings such as video streaming or online games)? Such an alternative test has been called SSNDQ (small but significant decreases in quality). Recently, it has been applied by the Chinese Supreme People’s Court.²⁷³ However, a quantification is challenging, as it is often unclear how to operationalise a certain quality reduction.²⁷⁴ The implementation problems are arguably the reason why the Commission in the Google Shopping case did not consider the option to adapt the SSNIP test (at least not explicitly) but simply stated that “the SSNIP test would not have been appropriate in the present case because Google provides its search services for free to users”.²⁷⁵ The Commission could rely in this matter on the General Court’s adjudication since the latter had held that the “SSNIP test may also prove

²⁷³ See, David Evans and Vanessa Zhang, “Quhoo 360 v Tencent: First Antitrust Decision by the Supreme Court,” 21 October 2014, <https://www.competitionpolicyinternational.com/quhoo-360-v-tencent-first-antitrust-decision-by-the-supreme-court>.

²⁷⁴ See the proposal by Hartman et al. (1993) on how to perform an SSNDQ test.

²⁷⁵ European Commission 27 June 2017, COMP/AT.39740, *Google Search (Shopping)*, para. 245.

unsuitable in certain cases, for example [...] where there are free goods or goods the cost of which is not borne by those determining the demand".²⁷⁶

3.6.5. SSNIP test and different business models

If undertakings with different business models offer substitute services the application of the logic of the SSNIP test becomes particularly challenging. Consider dating apps and restrict attention to heterosexual users. These apps possibly offer substitute services (the degree of substitutability depends on user behaviour). Some platforms charge subscription prices for male and female users. Others offer matching services at zero prices and run an ad-financed business model with advertisers as the third side.

For concreteness, consider a hypothetical example of four apps, two subscriber-financed and two ad-financed. To assess whether the offer(s) of, first, one and, second, both subscriber-financed apps to male users define the relevant product market one may ask whether a 5% or 10% increase of subscription fees charged by the respective app to male users is profitable.²⁷⁷ Suppose that the answer is negative.

The question is then whether the two subscriber-based and one ad-financed app belong to the relevant market. To assess whether some apps using such a different business model belong to the same market among male users, it is necessary to consider a 5% or 10% increase of price or a 5% to 10% reduction in quality. The following approach can then in principle be considered: a price increase of 5% (or 10%) in subscription price for male users on subscription-based dating apps and a 5% (or 10%) increase in ad levels experienced by male users on the ad-financed dating app under consideration. The corresponding issue arises when asking whether ad-financed apps (together with a subscriber-financed app) constitute the relevant market for male users or when asking these questions for female users.

3.6.6. Implications for competition practice

In a recently handed down judgment, the Higher Regional Court in Düsseldorf upheld the Bundeskartellamt's decision²⁷⁸ to block a merger involving platforms for ticketing services. In regard to the SSNIP test, the Court formulated as a guiding principle that the test was not "sufficiently conclusive in case of two-sided markets because it cannot adequately capture the feedback effects between different market sides".²⁷⁹ But this does not hit the nail on the head – for the problem of capturing the cross-group external effects is not a problem specific to the application of the SSNIP test but arises in general when assessing demand-side substitutability in two-sided markets. It is true, however, that the implementation of the SSNIP test needs adaptation and is significantly more difficult in the context of two-sided platforms. But even this is only an expression of the general challenges for an assessment of demand-side substitutability in two-sided markets.

What is more, problems to operationalise the SSNIP test (or the SSNDQ test, for that matter) should remind us that the test is already useful as an experiment²⁸⁰ that serves the clarity of thought in the application of demand-side substitutability. In this sense, the hypothetical monopolist test may be used "as a framework [...] onto which qualitative evidence is applied (for example views on substitutability from consumer groups, industry analysts or firms that are informed by verified observations on previous experience)".²⁸¹ In fact, the Bundeskartellamt considered taking such evidence, as it concluded in regard to the applicability of the SSNIP test to two-sided markets:

²⁷⁶ General Court 11 January, T-699/14, *Topps Europe Ltd v Commission*, EU:T:2017:2, para. 82.

²⁷⁷ Here, we presume that the other subscriber-financed app is the closest substitute to the subscriber-financed app under investigation.

²⁷⁸ Bundeskartellamt 23 November 2017, B6-35/17, *CTS Eventim/Four Artists*.

²⁷⁹ OLG Düsseldorf 5 December 2018, VI-Kart 3/18(V), *Ticketvertrieb*, NZKart 2019, 53 ("Der Preisheraufsetzungstest (SSNIP-Test) ist bei mehrseitigen Märkten nicht hinreichend aussagekräftig, weil er die Rückkopplungseffekte zwischen den Marktseiten nicht zuverlässig erfassen kann").

²⁸⁰ See European Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ 1997 C 372/5, para. 15 (SSNIP test as a "speculative experiment").

²⁸¹ Pike (2018, p. 15).

[w]hat would be conceivable are surveys on the switching behaviour of platform users under certain modified overall conditions based on the SSNIP test's fundamental idea.²⁸²

A look at the practical application of the SSNIP test logic by the European Commission demonstrates how it may be useful even without considering empirical evidence. In *Visa International*, the Commission defined the inter-system market based on an analysis of demand for payment instruments from both merchants and cardholders.²⁸³ Hereafter, the Commission assumed, *inter alia*, that neither cash nor cheques should be considered substitutable for payment cards. To justify this assumption with regard to merchants, the Commission argued that

such non-card payment instruments are not at all substitutable with cards, since the loss of revenue for merchants from ceasing to accept all cards would be far greater than the loss of revenue from increasing their general level of prices by the amount of any small but sustained increase in merchant fees for all cards.²⁸⁴

This application of the SSNIP test logic shows nicely, albeit only implicitly, the interrelation with the general considerations on demand-side substitutability in two-sided platforms and, more particularly, provides us with an example of how demand-side substitutability may be asymmetric between two user groups of a (matching) platform. A consumer who wants to purchase a certain product may ask herself (a) which payment system she prefers (e.g. cash or payment card) and (b) from which merchant she would like to purchase the product. If there is a whole range of merchants that offer a comparable quality of customer service and if among those there are only some who do not accept the preferred payment system (e.g. a certain payment card), there will be no problem for a consumer to avoid that merchant and still purchase the product (including with the desired service quality). In contrast, in the same scenario, a merchant that does not accept the use of the payment system preferred by a certain group of potential customers will inevitably lose the option to do business with those persons. Thus, the Commission was certainly right to assume that in many (but not all) real-world markets merchants cannot afford to accept only cash and to refuse payment cards, while the same is not true for their customers.

3.6.7. Conclusions

(1) The SSNIP test, as a concept, is applicable to two-sided platforms, albeit in an adapted form. Significant cross-group external effects and their interplay must be included.

(2) The SSNIP test is to be applied on each side of the platform. If an increase in price on one side of the platform is likely to cause an adjustment on the other side, this requires an assessment of how the respective platforms optimally adjust their price structure.

(3) The SSNIP test serves conceptual clarity in the application of demand-side substitutability. Therefore, although it is difficult to empirically implement the test in the context of two-sided platforms, it is a useful instrument for competition practice even if only applied as a thought experiment.

²⁸² Bundeskartellamt (2016, p. 41).

²⁸³ European Commission 24 July 2002, COMP/29.373, *Visa International – Multilateral Interchange Fees*, para. 46 (“Consequently, in order that two different payment instruments be considered as substitutable and therefore included on the same relevant inter-system market, they must be substitutable for both consumers and merchants. If one or the other user of payment instruments considers two different payment instruments as not substitutable, then those two instruments are not substitutable on the inter-system market”).

²⁸⁴ *Id.*, para. 48.

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MARKET POWER IN MARKETS WITH PLATFORMS

4. Market Power in Markets with Platforms

The assessment of market power is an essential element in merger control,²⁸⁵ in most types of abuse cases,²⁸⁶ and when appraising the anti-competitive effects of agreements.²⁸⁷ Competition authorities and courts can use a number of indicators of market power. When dealing with two-sided platforms, particular care is needed, as the markets on the two sides are linked and an assessment of the overall market power of a platform has to take this link into account.

We advocate a critical assessment of multiple potential indicators of market power with a particular emphasis on the assessment of barriers to entry. Table 1 summarises a set of indicators and the level to which the indicator applies,²⁸⁸ i.e. whether there is such an indicator for the whole platform ("platform") or whether there is one on each side of the platform ("market").

Table: Indicators of platform market power

Indicator	Level
Revenue share	platform
User share	market
User share relative to number of potential users	market
Share of usage volume	platform/market
Mark-up/Lerner index	market

²⁸⁵ See Article 2(2) and (3) EU Merger Regulation.

²⁸⁶ See Article 102 TFEU which applies to "undertakings of a dominant position within the internal market". Note that, pursuant to some competition laws, the prohibition of abuse may also apply to firms that do not enjoy market power in the strict sense. See, e.g., Section 20(1) of the German Competition Act, according to which the prohibition of abusive conduct equally applies "to undertakings and associations of undertakings to the extent that small or medium-sized enterprises as suppliers or purchasers of a certain type of goods or commercial services depend on them in such a way that sufficient and reasonable possibilities of switching to other undertakings do not exist (relative market power)."

²⁸⁷ See references to the European Commission's Guidelines and the case law of the ECJ *supra* note 27. In contrast, competition authorities and plaintiff parties are spared from assessing market power if agreements have by its very nature the potential to restrict competition and, therefore, are regarded restrictions of competition "by object" pursuant to Article 101(1) TFEU. See references to the adjudication of the ECJ and the European Commission's Guidelines *supra* note 29.

²⁸⁸ We do not claim to provide a complete list, but merely report some indicators that are discussed below. Other factors include, for example, a firm's access to supply or sales markets. In regard to the digital economy it has also been remarked that the "development of data collection and usage on those markets may thus reinforce the market power of leading companies on these markets" (Autorité de la concurrence and Bundeskartellamt (2016, p. 13), and "having accumulated large amounts of relevant data over a long period of time often provides a strong competitive advantage to incumbents" (Crémer, de Montjoye and Schweitzer (2019, p. 29)). Yet the importance of access to data for an assessment of market power and entry barriers depends very much on the characteristics of the relevant market, the type of data (in particular whether it can be derived from public or commercial sources) and data usage in the case at hand (*id.*, p. 8). See also Bundeskartellamt (2016, p. 83 ("Control over data *per se* is no indication of market power, though it may play an important role in an overall assessment of all circumstances"). It should be noted that the German legislature included a rule in Section 18 of the German Competition Act (where the concept of "market dominance" is defined), according to which "(3a) [i]n particular in the case of multi-sided markets and networks, in assessing the market position of an undertaking account shall also be taken of [...] 4. The undertaking's access to data relevant for competition." The Bundeskartellamt invoked this provision as it considered Facebook's "outstanding access to user data" as an essential element of its market dominance as it, combined with direct and indirect network effects, established an additional barrier to market entry. See Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, paras 481–500; Case summary, p. 7. While the usage of data derived from its users is essential to the business models of certain digital platforms that provide, for example, search engines or social networks, neither the availability of big data nor the dependence on it is a feature which is specific to platforms as opposed to other players in the digital economy. Besides, the policy debate revolves primarily around the question of whether and under which circumstances (potential) competitors should have a right to request access to data under general data regulation, industry-specific regulation, or based on Article 102 TFEU and corresponding provisions under domestic law. See, e.g., Crémer, de Montjoye and Schweitzer (2019, pp. 73–109). A more detailed investigation of control of data as an indicator of market power is beyond the scope of this report.

Profits	platform
Barriers to entry	platform
Direct evidence	platform/market

4.1. Measuring Market Shares

Undertakings that sell a product or service to one user group may be in competition with other undertakings. Their position in the market may be described by their market share, expressed as the ratio of revenues by the undertaking to total revenues, as the ratios of the number of users to total number of users served on each side of the platform, or as the ratios of usage on the platform to total usage on each side of the platform. Assessing market shares as an indication of market power has been popular with competition authorities and courts because they are often relatively easy to obtain and, once the market has been defined, do not require further economic analysis. As is well known, this is not without problem in standard markets. Additional issues arise in the context of two-sided platforms.²⁸⁹

4.1.1. Revenue shares

As pointed out above, a two-sided platform serves two user groups on two separate but interdependent markets. One possibility to assess the relative position of a platform is to calculate its revenue shares; revenues are possibly made on both sides of the market. To assess the relative position of a platform on each market, it is conceivable to use revenue shares derived on each side.

If the price structure is neutral, such revenue shares on one side of a platform do not mean much, as revenues on one side can be substituted one-to-one by revenues on the other side. In such cases only overall revenue shares are meaningful. If the price structure is non-neutral the platform chooses its price structure to maximise the overall profitability of the platform. Thus, also only overall revenue shares are meaningful in this case and revenue shares on each market serving one side of the platform should not be considered in isolation.

In the case of a “zero-price market”, revenue shares obviously become meaningless on this market if all substitute offers are priced at zero. If, by contrast, after assessing substitution possibilities between alternative offerings on the one side the authority comes to the conclusion that some “zero-price” offers as well as other offers with a positive price have to be included, the revenue shares of the “zero-price” offers will be zero. For example, we are in such a situation if “free” purely advertising-based and subscription-based digital media compete with each other. The fact that “free” offers do not have any market share based on revenues on the side under consideration does not provide any information.

Hence, the only reasonable option is to use revenues on all sides. Thus, such shares should not be interpreted as market shares as they are aggregated over two interdependent markets. Large revenue shares based on revenues appear to be meaningful if all undertakings under consideration serve the same sides.²⁹⁰ If, by contrast, some undertakings make integrated offers, whereas others do not or some undertakings offer certain bundles and yet others only a subset or products, such revenue shares are difficult to interpret.

²⁸⁹ See also Section 3.2.

²⁹⁰ This approach can be generalised to market environments in which some platforms raise revenues directly from the users on the two sides and others that are ad-financed and, thus, raise revenues from a third side. An example is dating apps some of which are subscriber-financed whereas others are ad-financed. For a concrete example, see Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 132–133; see also Bundeskartellamt (2016, p. 71). However, in its analysis of “market” shares, the Bundeskartellamt did not include revenues from advertising.

4.1.2. User shares

Rather than considering revenue shares, one may use shares of active users relative to the total number of active users. Here, even if all undertakings operate as two-sided platforms, market shares are to be considered on both sides separately. These market shares show the relative strengths of the different undertakings, which may be different on the two sides. It is important to note that, if the usage of a platform is heterogeneous among users, it is preferable to consider usage volumes rather than number of users.

Shares of active users are less informative the more heterogeneous users are regarding their intensity of use. In this case, numbers of active users have little in common with the amount of activity taking place on a platform. If this is the case, it may be more useful to consider market shares of transactions²⁹¹ or proxies of overall intensity of use. In some environments, these may be data volumes²⁹² or accumulated time spent on a platform²⁹³ relative to numbers summed over all undertakings offering substitute services.²⁹⁴

An important issue is that, depending on the prevailing homing patterns and objectives of users, different comparable offerings may not actually constitute close substitutes. Let us look at a fictional market environment with two ad-financed TV channels. Suppose that viewers single-home, i.e. they watch only one channel. Advertisers can multi-home. If the expected profit from reaching an additional viewer (gross of the ad price per viewer) does not depend on the number of viewers served, the advertiser decision as to whether to advertise on one channel is independent of its decision regarding the other channel. This means that the advertising opportunities offered by the two TV channels are neither substitutes nor complements and that TV channels are monopolists on the advertiser side (this is the “competitive bottleneck” setting that we introduced above; see Armstrong, 2006). This means that there is a distinct advertising market on each platform and the market share of the respective platform is necessarily 100%.

If, however, an advertiser experiences increasing opportunity costs as the number of units sold increases, the two advertising offers are no longer independent because then the average benefit per user from advertising to users on one platform depends on whether this advertiser also advertises on the other platform: it is lower if this advertiser advertises on the other platform than if it does not.

This is similar to a situation in which a seller can auction off one unit of a particular product (say, a piece of art). It attracts bidders by listing on a platform. Listing on one platform gives him an expected payoff.

²⁹¹ See, e.g., Bundeskartellamt 20 April 2015, B6-39/15, *Immonet/Immowelt*. The authority estimated that the leading real estate platform (ImmoScout) had a share of more than 70% in transactions and considered this as evidence of market power (Bundeskartellamt (2016, p. 71)).

²⁹² See, e.g., European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 108. Based on data volume the Commission measured the shares in the market for video communication via the internet. But see also European Commission 2 October 2014, Case M.7217, *Facebook/Whatsapp*, para. 97 (“During the market investigation, the Commission attempted to collect additional metrics to measure the competitive importance of players in the market for consumer communications apps. However, no reliable dataset could be produced. For example, assessing the traffic volumes of consumer communications apps was vitiated by the lack of data from some providers and inconsistent recording methods (for example, in relation to the number of messages sent, messages received, group messages, etc.)”).

²⁹³ Competition authorities often refer to the number of *unique visitors*, i.e. the number of contacts by different devices (identified by an IP address) during a standard period of time, typically a month, as an indicator for the intensity of platform usage. See, e.g., Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 132–133; Case summary, p. 4 (“unique (monthly) visitors” as a “possible key figure”). See also Bundeskartellamt, 6 February 2019, B6-22/16, *Facebook*, Case Summary, p. 6 (“The Bundeskartellamt considers the number of daily active users as the key indicator and relevant measurand for assessing the network’s competitive significance and market success as a social network’s success is measured by the intensity of use”); see, in detail, paras 390–413. See also Bundeskartellamt 8 September 2016, B6-126/14, *Google/VG Media*, paras 154–155 (Google’s market shares calculated on the basis of search queries are clearly important in regard to Google’s position in the market for search advertising).

²⁹⁴ Competition authorities do not always lay down which parameters they consider best suited for calculating market shares. For example, in the *Google Shopping* case (27 June 2017, COMP/AT.39740, *Google Search (Shopping)*), the European Commission used market shares “by volume” to demonstrate Google’s dominant position in the national markets for general search services, stating that “[t]here are several methods to calculate market shares by volume”, including “per number of queries, users, page views or per number of sessions” (id., para. 276 with note 271). The Commission did not engage in a discussion on the relative informative value of these parameters but left it to the statement that “[a]ll the methods indicate that since 2008, Google has enjoyed high market shares in all the relevant general search markets across the EEA, except for the Czech Republic”. More specifically, the Commission then referred to market shares calculated based on page views and site visits (id., paras 277–279).

Adding a listing on a second platform may add some bidders. However, the likely increase in expected payoff per user on the other side is less than the increase in payoff per user when listing on only one platform. Thus, such a seller is considering multi-homing, but because of the property of his expected revenue function is likely to single-home.

This shows that it depends on (sometimes intimate) details of user characteristics when deciding whether or not a platform should be considered monopolist regarding the users it serves on one side. Taking the market share of all comparable offers (even if they turn out to be no or only very weak substitutes) then provides a lower bound on the market share on this side.

4.1.3. Market dynamics

Many market environments involving digital platforms are however dynamic. In particular, the number of users on one or both sides may be increasing over time. A more conservative approach is to relate the actual size of the platform on one side to the potential overall market size. Thus, one has to consider the number of users active on this platform relative to the total number of active and potential users. The latter may not be easy to forecast precisely, but it may well be possible to obtain likely lower and upper bounds. This applies to offers that target a sub-population with specific characteristics. For example, a dog-sitting platform targets only dog owners on one side and, thus, their number is the maximum number of platform users on this side.²⁹⁵ In this sense, a large ratio of the number of active users to the total number of active and potential users may be seen as an indication of market power.

4.1.4. Conclusions

(1) Using market shares as indicators of market power, in addition to all the difficulties in standard markets, raises further issues in the case of two-sided platforms. When calculating revenue shares, the only reasonable option is to use the sum of revenues from all sides of the platform. Then, such shares should not be interpreted as “market shares” as they are aggregated over two interdependent markets. Large revenue shares appear to be a meaningful indicator of market power if all undertakings under consideration serve the same sides. However, they are often not meaningful if undertakings active in the relevant markets follow different business models.

(2) Market shares can be based on subscriber numbers. If multi-homing is pronounced on one side of the platform, there may be little competition among platforms for these multi-homers. Taking the market share of all comparable offers on this side (even if they turn out to be no or only very weak substitutes) then provides a lower bound on a platform’s market share on this side.

(3) If the user number is growing over time, an even more conservative approach is to think that a large platform is not only relatively large compared to what is currently on offer, but also large relative to what the overall market size could be. To do so, the market share on one side can be calculated as the number of users active on this platform relative to the total number of active and potential users.

(4) If usage of a platform is heterogeneous among users, it is preferable to consider usage volumes rather than number of users.

4.2. Market Shares as an Indicator of Market Power – Mitigating and Aggravating Factors

Larger market shares are typically associated with market power. However, a platform may hold large market shares in the market on one side, but pass all revenues on to the users on the other side (see the discussion in Sections 3.2.1. and 3.4.1.). Conversely, a platform that is seen to serve only few users may enjoy a lot of market power. It is, therefore, necessary to take a closer look at some mitigating and aggravating factors.

²⁹⁵ It is more difficult to assess the potential number of dog sitters. In other instances, it may be possible to obtain good estimates on both sides of the platform, as, e.g., in the case of dating apps.

4.2.1. Tipping

Positive direct and indirect network effects tend to result in market concentration.²⁹⁶ In extreme cases, a monopolisation is the result, so that all interactions take place on a single platform and there is market tipping.²⁹⁷ While tipping suggests that the market is concentrated, it is not necessarily an indication of market power.

Market tipping with positive network effects

Market tipping among firms that all serve one group of users means that one firm has a 100% market share, but it is unclear how vulnerable this firm is and how much market power it enjoys. While stronger positive network effects tend to lead to more asymmetric market shares, such large market shares do not necessarily imply that a firm has a lot of market power.

More generally, tipping is the more likely the stronger the (positive) network effect relative to platform differentiation. Keeping the strength of network effects constant and increasing the degree of product differentiation between (one-sided platforms) implies that the number of active platforms increases. At the same time, competition between platforms is relaxed.

Tipping on two-sided platforms

There are additional considerations for two-sided platforms. If the market on one side of a two-sided platform has tipped, this implies that one platform has a 100% market share among users of this group. For example, on a pure matching platform (on which users only derive a benefit from the matching service), if all users on one side are on one platform, the market has tipped on this side of the platform. Then there is little reason for users on the other side to stay on a different platform catering to the same types of users, as they do not obtain any benefit. In this case, we would expect that there is also tipping on the other side of the platform.²⁹⁸

Platform differentiation

If both user groups single-home on either one of multiple platforms and platforms offer non-differentiated services to each group, the market will tip, but platforms may not make any positive economic profit. When platforms can set a subscription fee for each group and, in addition, charge for usage, an incumbent platform has to defend itself against any possible pricing strategy by an entrant that does not lead to losses of the latter. In particular, the entrant can use divide-and-conquer strategies, i.e. one group will be subsidised and the other group will be charged a price above marginal costs. Such a strategy solves the coordination problem among the two user groups and would ensure that all users join the entrant platform (see Caillaud and Jullien, 2003). Because of this threat, the incumbent intermediary subsidises participation, charges high usage fees and does not make positive profits. Therefore, in this scenario of non-differentiated services, despite tipping, the incumbent platform does not enjoy market power.

When platforms sufficiently differentiate their services from each other on both sides, the “market” no longer tips and the platforms make positive economic profits.²⁹⁹ Thus, platforms enjoy some market

²⁹⁶ Economies of scale tend also to result in a concentrated market. Since many platform experience scale economies, observed market concentration may be driven by a combination of positive network effects and economies of scale.

²⁹⁷ In case of indirect network effects, this has been explicitly recognised by the German government in its explanatory memorandum accompanying the Ninth Amendment of the German Competition Act. See Gesetzentwurf der Bundesregierung, Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen, Drs. 18/10207, 7 November 2018, p. 56. Clearly, this also applies to positive *direct* network effects.

²⁹⁸ This applies only with regards to platforms with the same business models. If users on the other side have substitutes that do not rely on the same users on former side, the market on the other side does not necessarily tip.

²⁹⁹ Platform services may also be endogenously differentiated if each platform caters to users with different characteristics. Another force against tipping is competition among users on one side. In particular, multiple e-commerce platforms offering listing services to sellers may operate profitably even if they do not offer differentiated services to their users; see Karle, Peitz and Reisinger (2017).

power. Thus, with platform differentiation instead of platforms offering non-differentiated services, the markets on each side may be less concentrated, but platforms enjoy some market power.³⁰⁰

In a merger decision involving two online dating platforms, the Bundeskartellamt discussed in detail the risk that an increasing market concentration might eventually result in a market tipping. The authority regarded platform differentiation (in addition to the prevalence of multi-homing³⁰¹ and to the need to constantly attract new customers³⁰²) as important factor which counteracted market tipping:

The market for online dating platforms is characterized by a high degree of platform differentiation to satisfy heterogenous demands, which renders concentration on just one platform unlikely.³⁰³

The Bundeskartellamt emphasised the role of positive cross-group effects in this regard, stating that it was precisely platform differentiation that enabled those users with specific preferences to benefit from network effects as they can use a platform which is tailored to their particular needs.³⁰⁴ And, with regard to the market realities, the authority stated that “one could find an almost unlimited number of platforms active in the market that address any possible preferences of users [...]”.³⁰⁵ Thus, the Bundeskartellamt maintained that the interplay between heterogeneous preferences among users and positive cross-group effects on the platforms result in a considerable platform differentiation which, in turn, may inhibit market tipping.

Symmetry between platforms

In *Immonet/Immowelt*, the Bundeskartellamt cleared a merger that brought together the second and third largest online real estate platforms in Germany. While the authority admitted that the merger would significantly narrow the market structure from three to two competitors (which together accounted for more than three quarters of the market volume in terms of turnover),³⁰⁶ it approved the merger, *inter alia* because “the merger [...] will prevent so-called market tipping”.³⁰⁷ The Bundeskartellamt relied on two considerations which relate to the “symmetry” of the platforms in the market and thus, effectively characterised and justified the transaction as a “catch-up merger”.

First, the competition authority argued that users of online real estate platforms are likely to multi-home rather than single-home, which reduces the likelihood of tipping. More particularly, as the merged platform would gain “importance” in comparison to the market leader, the Bundeskartellamt expected the merger to strengthen multi-homing (or to increase the merged entities share in the single-homing user market) and thus to reduce further the likelihood of tipping.³⁰⁸

Second, the Bundeskartellamt maintained that the merged platform would be able to achieve joint cost advantages and expand its reach. Consequently, the merger was seen as mitigating the asymmetry between the market leader that had a large lead and the two merging platforms. As the merger, thus, would reduce the asymmetry of the platforms, it would reduce the likelihood of tipping.³⁰⁹

³⁰⁰ For a textbook treatment of a formal model that makes this point, see Belleflamme and Peitz (2015, p. 667–670). It is worth noting that a similar result can occur in standard markets in which firms offer differentiated services and compete in prices. If some firms have different marginal costs, under little differentiation only the most efficient firms will make some sales and profits are low. Under strong differentiation, there is also room for less efficient firms, and the market becomes less concentrated.

³⁰¹ Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 151–154. See also Bundeskartellamt 20 April 2015, B6-39/15, *Immonet/Immowelt*, Case Summary, p. 4.

³⁰² Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 155–158.

³⁰³ *Id.*, para. 147 (“Der Markt für Online-Dating-Plattformen ist durch einen hohen Grad der Plattformdifferenzierung zur Befriedigung eines heterogenen Bedarfs gekennzeichnet, der eine Konzentration auf nur eine Plattform unwahrscheinlich macht”). See also Bundeskartellamt (2016, p. 65).

³⁰⁴ Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, para. 149 (“Dies bedeutet, dass gerade die Plattformdifferenzierung es Nachfragern mit spezifischen Präferenzen ermöglicht, indirekte Netzwerkeffekte zu realisieren, wenn sie die für sie passende, differenzierte Plattform statt einer weniger oder anders differenzierten Plattform nutzen”).


³⁰⁵ *Id.*, para. 150 (“Dementsprechend findet sich eine kaum übersehbare Zahl von Plattformen im Markt, die alle möglichen Präferenzen der Nutzer adressieren”). See also Bundeskartellamt (2016, p. 65).

³⁰⁶ Bundeskartellamt 20 April 2015, B6-39/15, *Immonet/Immowelt*, Case Summary, p. 3.

³⁰⁷ *Id.*, p. 1.

³⁰⁸ *Id.*, p. 3.

³⁰⁹ *Id.*



It should be noted that the significance of the relative market positions of various competing platforms to estimate the likelihood of market tipping illustrates the usefulness of calculating market shares. While market shares are less informative as a measurement of a two-sided platform's market power, they allow to describe the market positions of competing platforms in relation to each other as rather "symmetric" or "asymmetric".³¹⁰

Tipping on one side of the market only

If a platform not only offers a matching service but also provides a stand-alone benefit (that is enjoyed in the absence of interaction, such as a media platform that offers vertically integrated content as a stand-alone utility to viewers and targeted advertising as matching services to advertisers and viewers), then even a platform that does not cater to any users on the other side may still be attractive to users on one side.

Consider such a platform that offers content and targeted advertising that is valued not only by advertisers but also by consumers. If the advertising market tips, for instance, because one platform offers a superior targeting technology (and, thus, cross-group external effects on this platform are strongly positive), this does not necessarily mean that no consumer will join the platform that ends up not featuring any advertising. In particular, if this platform features differentiated content, those consumers more interested in this type of content may decide to stay on the platform that does not attract advertisers. Hence, the market for targeted advertising services provided to advertisers has tipped; however, the market in which platforms offer bundles of content and targeted advertising to viewers has not tipped.³¹¹ In this setting, let us vary the strength of the network effect on the platform on which there is tipping on the advertiser side (i.e. the extent to which advertisers benefit from being able to contact more users). The weaker this cross-group external effect, the more likely that there is no tipping on the advertiser side.

Identifying tipping and the granularity of markets

In practice, to assess tipping it is important to consider the right granularity for market definition.³¹² For example, if several platforms all serve multiple geographic markets and if a first assessment shows that each platform has the same aggregate number of users (e.g. three platforms, each with one third of users on side A and side B), one cannot immediately conclude that markets have not tipped. Indeed, it is possible that in each geographic market exactly one platform is active. Thus, there is tipping in each geographic market.

4.2.2. Entry barriers: network effects and beyond

As pointed out above, from a short-term view, market tipping is socially desirable insofar as network effects have maximum effect. Yet, market tipping may be less benign from a dynamic perspective.


Network effects as barriers to entry

Network effects can mean that the "coordinated" decisions of the economic agents have the consequence that it is not the platform with the highest quality offer that dominates the market, but a different platform. If the latter is the incumbent platform and a higher-quality platform enters the market, the former may still prevail. As Shapiro and Varian (1999, p. 185) nicely put it from the viewpoint of the incumbent platform, "[p]recisely because various users find it so difficult to coordinate to switch to an incompatible technology, control over a large installed base of users can be the greatest asset you can have". The entrant platform must overcome the problem that users have no incentive to switch if they expect most of the remaining users to remain on the established platform. If all users remain in the status quo unless unilateral switching to the new platform is more attractive, barriers to entry will arise owing to

³¹⁰ See Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, para. 304.

³¹¹ The question may then arise how the platform that does not attract advertisers may be viable. However, this platform may use other monetisation strategies such as charging viewers for access to content or collecting data that are valuable for third parties.

³¹² See *supra* sub 3.5.



user discoordination.³¹³ For one thing, this may be the case because of a lack of coordination between the users that entails strong positive direct network effects as they arise, for example in the market for social networking services. For another thing, the lack of coordination may refer to the users on different sides of a two-sided platform who are linked through mutual positive cross-group external effects, as, for example, in the case of matching platforms. In order to convince users to switch in such a situation, the new platform may need to subsidise early users (in the case of a two-sided platform, on at least one side). The extent of such subsidisation represents the level of entry barriers.

If, on the other hand, a new platform (for example, based on its reputation acquired in other markets) influences users' expectations in such a way that all potential users assume that the status quo will be replaced, there are no barriers to entry. As Wismer, Bongard and Rasek (2017, p. 261) write,

[n]etwork effects constitute a barrier to entry and support market power when one firm has reached a clear lead over other firms. Nevertheless, in some cases, network effects can also stimulate competition when possibly disruptive entrants or smaller merging firms benefit from network effects to catch up with large established firms.

The challenge is, thus, to identify the cases where network effects work in favour of the incumbent firm (and, thus, constitute an entry barrier) and those cases where they work in favour of entrant firms.³¹⁴

User expectations, multiple markets, and barriers to entry


How users form expectations may depend on the type of platform entering the market. In particular, if a platform has been successful in other regions or countries, it may in some cases face no (or low) barriers to entry. For example, a platform that is popular in the U.S. and subsequently enters other (small) countries may easily be able to "persuade" users to stop visiting the local incumbent platforms and, thus, quickly displace these incumbent platforms. This is likely if economies of scale and scope can also be exploited on markets demarcated by region or product category (for example, in the form of more advanced algorithms or a particularly user-friendly interface) or if network effects exist across these different markets, in particular, if some users on one side are active in several markets (e.g. travellers using Uber in different cities). This also applies if switching costs do not apply to a specific product but to a specific platform. For example, a user who registered on Amazon in the early days to buy books may use her profile to buy products in other product categories (and may have provided information that allows Amazon to make useful recommendations). Thus, users who in the past have chosen other vendors when purchasing, for example, clothing do not incur switching costs when they purchase this from Amazon (when Amazon enters this other product category).

The role of user single- vs. multi-homing

Entry barriers also depend on how easy it is for users to simultaneously select from offers on multiple platforms. If multi-homing is possible and not associated with higher costs for the users, a user can, independent of his or her expectations, select the better offer and thereby engage with a new platform whenever preferred and remain only for the remaining interactions on the established platform. In such a case, market entry tends to be easier than in a situation where users have to choose either the new or the

³¹³ Biglaiser, Calvano and Crémer (2019) review the economic mechanisms that lead to network effects-induced barriers to entry.

³¹⁴ This assessment is more nuanced than what has been stated in some policy reports or decisions by competition authorities. For example, the German Monopolkommission associated network effects in a general way with barriers to entry. See Monopolkommission (2015), para. 220 ("Es lässt sich zusammenfassen, dass die Konzentration bei Suchplattformen insbesondere durch Größenvorteile und Netzwerkeffekte begünstigt wird. Beide Faktoren sorgen zudem dafür, dass ein Markteintritt erschwert wird und mit entsprechend hohen Investitionskosten verbunden ist"). The Autorité de la concurrence explained in *Booking.com* that significant indirect network effects (mutual positive cross-group external effects) may lead to a high market concentration, which the authority describes as "snowball effect". The authority then continues stating that these network effects raise entry barriers because the size of a market operator as such is a fundamental parameter of its growth. See Autorité de la concurrence 21 April 2015, Décision n° 15-D-06, *Booking.com*, paras 122 ("Dans certaines circonstances, ces marchés marqués par des effets de réseau importants peuvent aboutir à la création de positions fortes liées à un phénomène de concentration autour d'acteurs dominants, voire très dominants (appelé 'effet boule de neige'). [...] Ces effets de réseau, s'ils sont avérés, élèvent les barrières à l'entrée, puisque la taille d'un opérateur est en elle-même un paramètre fondamental de sa croissance. Ainsi, les acteurs de plus petite taille et les nouveaux entrants ne bénéficient pas des mêmes atouts qu'un acteur déjà installé et de grande taille").



old platform. It should be noted that the price structure chosen by the platform has an impact on the costs of multi-homing. For example, if a registration or participation fee is collected from a platform such as, for instance, an online newspaper, this tends to make multi-homing less attractive. If, in contrast, only successful transactions are priced, for instance if a reader of an online newspaper may pay per particle, then multi-homing does not require additional fixed payments and, thus, is more attractive for users.

Barriers to entry and market dynamics

Whether entry barriers are high in markets with dominant platforms must be examined on a case-by-case basis. While network effects typically lead to high market shares for one or a small number of vendors, the contestability of a market is not necessarily compromised. Some of today's dominant platforms have entered the market when there were already other platforms with a large number of users active. For example, Myspace was acquired with high hopes by Microsoft, but did not succeed against Facebook, even though it started earlier. Google's Android has "won" against Symbian to become the preferred mobile operating system. Both examples, however, come with some caveats. Regarding Myspace, Facebook entered the market at a time at which there were many new users arriving. Regarding Symbian, this market has been shaped by new generations of products that made it harder for the incumbent system to continue to dominate.³¹⁵ This suggests that barriers to entry are lower in quickly growing markets (in which many unattached users arrive) and in markets in which new generations of products have to arrive at given dates.³¹⁶ It also matters whether the platform's quality improvement concerns the matching function or the stand-alone value of the platform provided to at least one side of the platform. In the former case, user coordination is still needed to make full use of this improvements; in the latter case, users benefit from it regardless of the decisions of others. Thus, if improvements are of the latter kind, barriers to entry are less of an issue. As markets mature and platforms make only incremental updates of their offerings, barriers to entry become a growing concern.

As markets mature and platforms make only incremental updates of their offerings, barriers to entry become a growing concern. In such situations, a large installed user base can make all the difference and provide a critical advantage to the incumbent platform. This applies in particular if the installed user base can be eroded only slowly. Examples are long-term subscription contracts; seller or product reviews that remain relevant for a long time; and other user-produced content that remains attractive for a long time.

However, even in mature markets, specialised entrants may be able to make major improvement on the incumbent's offer and, thus, overcome the lack of an installed user base. An interesting example is the U.S. markets for the online purchase and sale of handicraft products. Intermediation services for sellers and buyers are provided by eBay, which used to dominate these markets. Within months, a new, more focused platform, Etsy, was able to convince many sellers (and buyers) of these products to switch.³¹⁷ As a result, handicraft products are now more often listed on Etsy than on eBay. One reason for the change was the uniform requirements on the presentation of products across different categories on eBay that apparently did not fit the needs of sellers of handicraft items so well, so that Etsy could offer a format that was more attractive for both sides. This suggests that entry barriers were not very high in this market. Thus, to the extent that large venture capital funds are willing to fund innovative ideas even in markets that are already dominated by a platform, entry barriers are not prohibitively high, as new platforms may enter with tailor-made offerings for niche audiences.

A related example is product differentiation among dating websites and their option to facilitate market entry by catering to specific interests or using a regional focus. General-purpose dating websites coexist

³¹⁵ This also applies to video games played via consoles. Here, incumbency was more difficult to sustain since user had to be moved from one game console generation to the next.

³¹⁶ The role of new product developments is also recognised by Collyer, Mullan and Timan (2018, p. 73): "It may take considerable co-ordination by both consumers and businesses to switch to another platform to restore competition. Such co-ordination may be unlikely in the absence of major technological changes in the sector. For these reasons, establishing whether there is a 'first-mover-advantage' may be important in identifying current market power and the potential longevity and sustainability of this market power." However, the presence of new consumers and the "timing" of new product introduction also merit consideration.

³¹⁷ This observation is important to qualify the claim by Crémer, de Montjoye and Schweitzer (2019, p. 57) that "[a]n entrant platform will often be able to offer only a subset of the services offered by an incumbent platform. Users will therefore be hesitant to switch even if the services it offers are of better quality". If users on one side belong to different subgroups, an entrant platform may succeed by focusing on the needs of one such subgroup.

with dating portals catering to specific user characteristics and preferences. In a merger decision involving two online dating platforms, the Bundeskartellamt identified a variety of platforms that are tailored to specific target groups, such as followers of a certain religion, single mothers or fathers, representatives of a certain profession (e.g., farmers), or vegetarians.³¹⁸ Moreover, the authority emphasised that a focus on users that are searching for a date in a certain region may also enable market entrance, stating the example of one platform that, first of all, had offered its services only to users in the Munich region and that subsequently extended its business activities through further platforms that specifically targeted users in other cities such as Berlin, Hamburg or Cologne. Thus, the Bundeskartellamt ascertained that online dating platforms may enter the market by initially offering their services only to users in one agglomeration, with the prospect of gradually expanding their services to other cities and regions.³¹⁹

Consumer switching costs and network effects

Consumer switching costs can also be important to assess barriers to entry. Although some users on some platforms experience network effects and switching costs, one does not imply the other. The concept of network effects and switching costs are markedly different.³²⁰ In the case of network effects, a user's own benefit (and, thus, a user's decision) depends on the decisions of other users. In the case of switching costs, however, the decision depends on a user's own past decisions and not on those of other users. In an e-commerce setting, consumer switching costs occur if an e-commerce site can use past customer information to provide a more pleasant shopping experience. For example, as Collyer, Mullan and Timan (2018, p. 78) note, "[t]he platform may hold the consumer's payment card details, meaning that these do not need to be re-entered every time a purchase is made".³²¹ An instance of consumer switching costs in the context of digital two-sided platforms is a seller's "investment" in his reputation. For example, it may be impossible for a reputed seller on Amazon to use his rating and the consumer feedback he received on another platform. Another instance is the personal history on a social network in the presence of privacy protection. Even under mandated data portability,³²² a user on a social network such as Facebook is unlikely to be able to port all material since some of that material contains personal data by other Facebook users who did not grant permission to use the material outside Facebook.

While the concepts of network effects and switching costs are different, there are situations in which network effects impact the level of switching costs a user is subjected to. Such an interaction of network effects and switching costs occurs when the level of switching costs also depends on the past decisions of other users. For illustration, we return to the previous example in a world with privacy protection and data portability.³²³ Suppose that there are two social networks, one being the incumbent and the other an entrant. A subset of users may want to migrate from one network to the other. This migration is the more attractive the more information a user can take with her. Some of the information contains personal information pertaining not only to the user but to some other users (e.g. own comments on a post by others, which become meaningless without the original post, feedback on photos and other postings, which are valued by the user). The larger the set of friends on the incumbent platform that does not intend to switch, the less attractive the entrant platform, as this does not allow the user to carry a larger fraction of past data to the entrant platform. This suggests that the more active friends were in the past (and the more friends a user had), the higher the opportunity cost of moving to the entrant's social

³¹⁸ Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 33–69.

³¹⁹ *Id.*, para. 128 ("Darüber hinaus haben die Ermittlungen ergeben, dass ein Marktzutritt zum Online-Dating-Plattformmarkt häufig durch das sukzessive Ausrollen des Dienstes in den Städten erfolgt. So betreibt der Anbieter der MuenchnerSingles.de inzwischen auch die Plattformen BerlinerSingles.de, HamburgerSingles.de, KoelnerSingles.de und StuttgarterSingles.de").

³²⁰ See, e.g., Belleflamme and Peitz (2015, pp. 579–581). However, some authors state that network effects may give rise to "collective switching costs" (Shapiro and Varian, 1999, pp. 184–86), a term that, to avoid confusion, we do not use here.

³²¹ However, with autofill provided by, e.g., Google or Apple, these switching costs have become rather negligible. Thus, this functionality has reduced switching costs in e-commerce.

³²² See, e.g., the Right to data Portability pursuant to Article 20 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 2016 L 119/1.

³²³ Data portability may have been mandated as an attempt to reduce switching costs that arise owing to privacy protection.

network. The amount of the switching costs therefore depends on the history of other users' behaviour. A larger network size in the past then leads to a more entrenched position of the incumbent platform.

On two-sided platforms, switching cost may depend on the number of users on the other side of the market. An example is sellers on e-commerce platforms that would like to migrate from an incumbent to an entrant platform, but cannot carry the reviews posted by customers from the past. The more useful reviews there are for the particular seller on the incumbent platform the higher the opportunity cost of migrating from one platform to another, as a good track record affords a premium.³²⁴ Thus, sellers' switching costs may be higher the larger the number of past users on the other side.

4.2.3. Potential competition

Potential competition may mitigate the significance of high market shares as an indicator of market power. Competitive pressure by firms that are negligible in size may be an important factor in why firms do not actually enjoy great market power even though they hold large market shares. And, even if they do, they may only do so temporarily provided that other firms, which do not actually operate within the defined markets, can easily include activities in the market under investigation. We also discuss circumstances where firms without large market shares or at least without proof of large market shares can be considered as having market power.

Thus, if we identify stronger potential competition this will tend to reduce the need for competition law intervention since it is, for example, less likely that a coordination or a merger results in a restriction of competition. Note, however, that the effect is to the contrary in merger analysis insofar as we identify the target firm as a potential competitor.

Potential competition as a constraint on market power

In markets with frequent technology changes or product quality improvements, competitive pressure may come from firms not yet operating in the market. This also applies to two-sided platforms. As acknowledged by Wismer, Bongard and Rasek (2017, p. 261),

[i]n nascent multi-sided markets, customers may be served by a single firm, facing no competition in the market, but the firm's decisions are constrained by potential competition, i.e. the threat that the firm currently active as a monopolist may be replaced in the future by another (innovative) firm.

Positive network effects tend to lead to a small number of active platforms; this applies to platforms that serve just one user group as well as to two-sided platforms characterised by positive cross-group external effects. In the extreme, a single platform carries all the trade. If this is the case, this platform will be replaced only if all users (on a two-sided platform, both sides) make a coordinated move away from the existing platform. If barriers to entry are low, users may then desert the platform that was initially dominant. Competition in the presence of stronger network effects therefore is more likely to lead to competition *for* the market rather than competition *in* the market.³²⁵

As recognised by Furman et al. (2019, p. 38), "[a]n important question is whether the largest incumbents of digital markets are constrained by competition 'for the market', and could be unseated by innovative entrants in the future". For competition for the market to work, barriers to entry must be low.³²⁶ Depending on whether inactive competitors are around and waiting or not, the platform that carries all or a large fraction of the trade, does not make much profit: inactive competitors are a severe threat if users can easily desert the dominant platform.

³²⁴ Since migration is less problematic for sellers with a relatively bad history (provided that this history tells something of the inherent characteristics of the seller) an entrant platform which manages to attract some sellers may suffer from a negative selection of sellers.

³²⁵ It is implicitly assumed that network effects are platform-specific. If, by contrast, there are industry-wide network effects, it is more likely that competition is in the market rather than for the market. Industry-wide network effects may be the outcome of mandated compatibility or interoperability. For seminal work on compatibility of network goods, see Katz and Shapiro (1985); for an extension, see Crémer, Rey and Tirole (2000) and, for a short summary, Belleflamme and Peitz (2015, pp. 604–608).

³²⁶ For a discussion as to when network effects constitute an entry barrier see *supra* sub 4.2.2.

The European Commission's reasoning in *Microsoft/Skype* is a good case in point. While the Commission ascertained that, following the merger, Microsoft would have a combined market share of 80 to 90% in the market³²⁷ for video calls,³²⁸ it assumed that market shares "may not be the best proxy to determine competitive strength in markets for consumer communications services"³²⁹ as there was strong competition for the market. Three considerations were regarded as decisive in this regard: (1) consumers' willingness to switch in the case of introduction of fees or slowed or stopped product innovation;³³⁰ (2) the importance of continuous innovation;³³¹ and (3) low entry barriers. The Commission noted that "smaller players have succeeded in rapidly entering, and gaining traction in the consumer communications sector with innovative products".³³² Moreover, the fact that two players with strong brands, namely Google and Facebook, had recently entered the markets for consumer communications services and that the parties of the merger provided a "long, non-exhaustive list of recent entries on the market for video calls" convinced the Commission that Microsoft would continue to face strong competitive pressure.³³³

Potential competition and market dynamics

As mentioned above, an installed user base is often an incumbency advantage, which matters more the fewer new users are up for grabs. This suggests that in emerging markets with a quickly growing user base it is more likely that an incumbent platform is replaced by an entrant. A case in point is social networks (connecting with friends and family). In the United States this was dominated initially by Friendster (from around 2002 until 2004), then by Myspace (2004 until 2008), before becoming dominated by Facebook.³³⁴ The Bundeskartellamt notes a similar development in regard to the German market. While Facebook entered the market with a considerable gap in user base to the then market leader, which operated StudiVZ and SchülerVZ, the latter had to record a rapid decline in user activity in 2011, the year when Facebook became market leader in Germany. Meanwhile, following the bankruptcy of the former market leader and the exit of Google+ from the market for private users, the Bundeskartellamt assumes that the market tips making Facebook a monopolist.³³⁵

Even in less dynamic markets the incumbent platform can possibly be displaced despite its advantage in installed base (and, possibly, the advantage in data that comes with it). As an illustration for a successful entrant, we return to the platform Etsy, founded in 2005, on which handcrafted products are traded. It replaced eBay as the leading platform for this type of products in the late 2000s. Currently, Etsy's main competitors are eBay and Amazon Handmade. This illustrates that general-purpose platforms are vulnerable to niche players that provide services tailor-made for certain market activities or particular user groups. For example, general dating platforms coexist with platforms catering to particular taste (e.g. based on ethnicity, lifestyle, or particular beliefs held by the matching partners).³³⁶

In other instances, it is left open to the imagination whether entrants would have displaced an incumbent platform offering a related service. For example, this applies to WhatsApp and Instagram, which were taken over by Facebook – these mergers were cleared by competition authorities on both sides of the Atlantic.³³⁷ Entrants may limit the market power of incumbent dominant platforms if the latter cannot simply acquire the latter.³³⁸ To control the market power of the incumbent platform over some time, the

³²⁷ See on market definition *supra* note 37 and accompanying text.

³²⁸ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 108

³²⁹ *Id.*, para. 121.

³³⁰ *Id.*, paras 121–122 and 130.

³³¹ *Id.*, para. 122 ("Providers of consumer communications services lose traction quickly if they are unable to offer users new and innovative functionality").

³³² *Id.*, para. 123.

³³³ *Id.*, para. 124.

³³⁴ Evans and Schmalensee (2016) tell the story of how social networks made different decisions on their governance structure, which contributed to success and failure of Friendster, Myspace and Facebook.

³³⁵ Bundeskartellamt 6 February 2019, B6-22/16, *Facebook*, para. 432–39.

³³⁶ See *supra* note 318 and accompanying text.

³³⁷ See for the clearance of the case by the European Commission 2 October 2014, Case M.7217, *Facebook/WhatsApp*; 17 May 2017, Case M.8228, *Facebook/WhatsApp*.

³³⁸ This provides an argument to adjust merger control so as to prohibit mergers under certain circumstances that include undertakings which, in the short term, offer independent or complementary services, but, in the long term, are likely to become actual competitors if they stay independent. However, the challenge for authorities will be to balance short-term efficiency gains with the risk of less competitive markets in the future. See, e.g., Motta and Peitz (2019) and Crémer, de Montjoye and Schweitzer (2019, chapter 6). As the latter state (*id.*, p. 119), "[i]n the Facebook/WhatsApp merger, the

entrant needs to be viable on its own or enjoy the support of a firm that is willing to provide the needed support (or such support would need to be forthcoming).

The insight is that, in an environment in which potential competitors are likely to appear, large contemporaneous market shares are less likely to be an indicator of persistent market power. By contrast, large and persistent market shares in combination with an observed lack of entry may be seen as indication of persistent market power and, thus, a lack of contestability.³³⁹ For example, in the *Google Shopping* case, the European Commission concluded that:

The Commission concludes that Google has enjoyed strong and stable market shares by volume across the EEA since 2008, and there has been no effective entry in any EEA country during that period. Contrary to Google's claim, this provides a good indication of Google's competitive strength in the national markets for general search services.³⁴⁰

We agree that persistent competitive strength implies strong and stable market shares. Combined with a lack of entry, this suggests that potential entrants (and their funders) do not see profitable opportunities. However, in dynamic markets we also note that there are reasons to be careful in an assessment. First, market definition obviously affects the assessment about size and persistence of market shares. Second, the lack of entry is also conditional on market definition. In the concrete case, the importance of some vertical search engines and e-commerce platforms may limit the market power of a general search engine in some categories. Including such vertical search engines in the relevant market may give a more nuanced picture about the strength of Google in search.

4.2.4. Competition law should avoid employing "hard" market share thresholds

With a view on two-sided platforms, market shares have a relatively low significance for the assessment of market power. Given a firm with a certain market share, cross-group external effects may aggravate³⁴¹ or mitigate³⁴² the market power that follows therefrom.

First of all, this can easily be taken into consideration where the law does not foresee specified thresholds of market shares which are meant to function as indicators for a certain degree of market power. Most prominently, Article 102 TFEU applies to "undertakings of a dominant position within the internal market", and pursuant to Article 2(2) and (3) of the EU Merger Regulation the compatibility of a merger with the common market depends in particular on the question of whether the merger will result in a "creation or strengthening of a dominant position". While market shares have for a long time been used by authorities and courts to implement the concept of "dominance",³⁴³ and the ECJ even established a presumption of dominance applicable to undertakings with market share of 50% or more,³⁴⁴ it has always been clear that

Commission found no documentary evidence that WhatsApp was planning to become a fully-fledged social network in the future. Such proof that the start-up is planning to enter the acquirer's core market will generally also be difficult to obtain in other cases. Clear plans for doing so will rarely exist when start-ups are being bought up at an early point of their life." Bourreau and de Stree (2019, 32-33) make a proposal how to assess when a merger is likely to remove a potential competitor.

³³⁹ In their report to the CMA in the UK, Furman (2019, p. 41) conclude that "[t]he barriers to entry that exist in established digital platform markets mean that they cannot generally be considered freely contestable, and as such the largest incumbents' positions are not imminently under threat." Since firms such as Google, Facebook and Amazon are active in many different markets, we believe that it is important to investigate specific markets on a case-by-case basis to assess whether their market position is entrenched.

³⁴⁰ European Commission, 27 June 2017, COMP/AT.39740, *Google Search (Shopping)*, para. 274.

³⁴¹ See *supra* sub 4.2.2. on network effects as entry barriers.

³⁴² See *supra* sub3.2., see also *supra* text accompanying notes 304 and 305.

³⁴³ ECJ 13 February 1979, C-85/76, *Hoffmann-La Roche v Commission*, EU:C:1979:36, para. 41 ("although the importance of the market shares may vary from one market to another the view may legitimately be taken that very large shares are in themselves, and save in exceptional circumstances, evidence of the existence of a dominant position").

³⁴⁴ ECJ 3 July 1992, C-62/86, *AKZO v Commission*, EU:C:1991:286, para. 60 ("With regard to market shares the Court has held that very large shares are in themselves, and save in exceptional circumstances, evidence of the existence of a dominant position [...]. That is the situation where there is a market share of 50% such as that found to exist in this case" (references omitted)).

market shares are only one of a multitude of factors that have to be considered to substantiate that a firm dominates a market.³⁴⁵

Where the law does provide, however, for specified thresholds of market shares that are used as an indicator of market power, the importance of cross-group external effects makes it clear once again that such provisions should not contain “hard” thresholds. The law should always provide for ways – be it through the structuring of substantive law or by way of procedural rules – to prevent “false positives” as well as “false negatives”.

A good illustration is provisions pursuant to which a certain market share triggers a presumption of “dominance”. This is the case, for example, pursuant to Section 18(4) of the German Competition Act, which states that “[a]n undertaking is considered to be dominant if it has a market share of at least 40 per cent”.³⁴⁶ Under German law, this presumption applies in the context of both merger control and of control against abuse of a market-dominant position. While, on the one hand, the characteristics of platform competition may be put forward to rebut such a presumption and, thus, to prevent “false positives”,³⁴⁷ the rule does, on the other hand, not exclude the option that also a firm with a lesser market share can be regarded as market dominant.

The EU block exemption regulations are another case in point. Their application typically requires that the market share of an undertaking does not exceed a certain threshold.³⁴⁸ But, for one thing, an undertaking that exceeds this threshold may still rely on an exemption pursuant to Article 101(3) TFEU, which, thus, functions as a catch-all provision for scenarios where the market share of a firm erroneously signals a certain degree of market power. For another thing, pursuant to Article 29 of Regulation 1/2003, the European Commission or the national competition authorities of the Member States may withdraw the benefit of an exemption regulation when they find that measures by undertakings that are covered by it have “certain effects which are incompatible” with Article 101(3) TFEU. This, therefore, forms a procedural mechanism to remedy an over-inclusiveness of a market-share threshold.

Instead of a focus on market share, competition authorities concerned about persistent market power should focus their efforts on detailed analyses of current and future barriers to entry.³⁴⁹

4.2.5. Conclusions

(1) Positive direct and indirect network effects tend to result in market concentration. In extreme cases, a monopolisation takes place, so that all interactions take place on a single platform and there is market tipping. While tipping suggests that the market is concentrated, it is not necessarily an indication of market power. Market tipping gives rise to persistent market power if potential competitors are unlikely to challenge the incumbent platform.

(2) Network effects may lead to barriers to entry due to users’ coordination failure. On two-sided platforms, users on both sides of the market have to coordinate their expectations. Switching costs and network effects may go hand in hand: consumer switching costs may increase with the number of

³⁴⁵ See, e.g., European Commission, Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ 2009 C 45/7, para. 15 (“Experience suggests that the higher the market share and the longer the period of time over which it is held, the more likely it is that it constitutes an important preliminary indication of the existence of a dominant position and, in certain circumstances, of possible serious effects of abusive conduct, justifying an intervention by the Commission under Article 82. However, as a general rule, the Commission will not come to a final conclusion as to whether or not a case should be pursued without examining all the factors which may be sufficient to constrain the behaviour of the undertaking”).

³⁴⁶ See also Section 18(6) of the German Competition Act, which provides that “[a] body of undertakings is presumed to be dominant if it (1) consists of three or fewer undertakings reaching a combined market share of 50 percent, or (2) consists of five or fewer undertakings reaching a combined market share of two thirds”.

³⁴⁷ See Bundeskartellamt (2016), p. 68–69 (“The Bundeskartellamt has doubts as to what extent an absolute market share of over 40% (presumption of market dominance in line with Sect. 18 (4) GWB)) or a threshold of 50% established by European jurisprudence can be indicators of market power, though it would not dispute them in general with regard to platforms”).

³⁴⁸ See, e.g., Article 3 of the Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) TFEU to categories of vertical agreements and concerted practices, OJ 2010 L 102/1.

³⁴⁹ As was done, e.g., in Bundeskartellamt 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 184–193.

platform users. In this case, barriers to entry from consumer switching costs increase with platform size.

(3) Barriers to entry are at the core of establishing persistent market power. It is more likely to be present if an industry does not attract new users and if it does not undergo major technological change. In their assessment of market power of a platform, competition authorities should focus their efforts on identifying current and future barriers to entry.

(4) Market shares are less apt in the context of two-sided platforms to indicate market power (or the lack of it). Therefore, where market shares are used as a measure of market power, the law should abstain from defining “hard” thresholds. Instead, either market shares should be considered as (only) one out of a plurality of factors that determine market power or, where it seems nevertheless appropriate to specify market-share thresholds in order to facilitate the application of the law, thresholds should be accompanied by substantive and/or procedural mechanisms that prevent under- or over-inclusiveness through the application of the thresholds.

4.3. Market Power Without (Proof of) High Market Shares: Alternative Mechanisms to Demonstrate Market Power

4.3.1. Mark-ups/Lerner indices

The Lerner index measures the price–cost difference at the margin (i.e. the mark-up) relative to the price of a product. This index can be seen as a useful measure to assess market power relative to the competitive benchmark abstracting from dynamic considerations. Possibly, the Lerner index can be used to assess market power in platform industries.

In standard markets the mark-up (difference between price p and incremental costs C') or the Lerner index (as the ratio between markup and price) are used as measures of market power. The formula for the Lerner index is:

$$L = \frac{P - C'}{P}.$$

Incremental costs are often not directly observable, but may be inferred on the basis of input costs (or estimated using structural models of empirical industrial organisation). A basic result from microeconomics is that a profit-maximising monopolist sets its prices such that the Lerner index is equal to the inverse price elasticity of demand (in absolute value). If demand reacts very sensitively to price, a firm sets its price relatively close to incremental costs, while, if demand barely reacts to price changes, the firm will set a price far above incremental costs. In any case, the Lerner index under monopoly will be strictly positive.³⁵⁰ Under perfect competition, firms set price equal to marginal costs and, thus, the Lerner index is zero.

Using the Lerner index as a measure of market power in the context of digital platforms is fraught with a number of conceptual and, sometimes, measurement problems.

Lerner indices and two-sided pricing

The use of the Lerner index as a measure of market power becomes more involved if we look at pricing by a two-sided platform. Consider the case of a profit-maximising two-sided platform that sets a subscription of membership fee on each side. In such a setting, the price elasticity of demand on one side is conditional on the participation level on the other side. Economic theory tells us that the pricing formula from a standard market has to be adjusted in the following way: a modified Lerner index is equal to this conditional inverse price elasticity of demand (Armstrong, 2006; Belleflamme and Peitz, 2015, pp. 663–

³⁵⁰ The Lerner index in oligopoly with differentiated products will also typically be strictly positive for each firm.

665).³⁵¹ The Lerner index is rewritten to take into account the opportunity cost of serving an additional user. This cost includes not only the incremental cost of serving an additional user, but also the external benefit X that accrues to the other side from attracting this additional user. More precisely, the marginal cost has to be adjusted downward by this external benefit and the opportunity cost of serving an additional user on side A becomes $C'_A - X_B$. Thus, we can write the Lerner index on side A on a platform with user groups A and B as:

$$L_A = \frac{P_A - C'_A + X_B}{P_A}.$$

The external benefit X_B depends on the number of users on side B and the benefit that accrues to all these users thanks to the additional user on side A. The welfare-maximising price would be equal to marginal cost minus this external benefit. Thus, the Lerner index measures the mark-up above this welfare-maximising price relative to the price.

Using this adjusted Lerner index for each side of the platform as a measure of market power on this side comes with a few difficulties.

First, while the Lerner index in the welfare optimum is zero, this is not the case under perfect competition. What could be meant by perfect competition? Suppose that there is a marketplace on which many intermediaries can offer the service to access this marketplace to users of group A and, correspondingly, to users of group B. These intermediaries will not offer their service below marginal costs and, thus, under perfect competition, we must have that prices are equal to marginal costs. Hence, under perfect competition, the Lerner index on side A is X_B/P_A , which is strictly positive if the external benefit is positive. The same holds for the Lerner index on side B. This shows that, in contrast to standard markets, the Lerner index is not zero under perfect competition.

Second, if the external benefit exceeds marginal costs, the Lerner index is not a useful measure and should not be used;³⁵² instead, the adjusted mark-up $P_A - C'_A + X_B$ can be used.

A profit-maximising monopoly intermediary of such a two-sided platform may subsidise one side of the market to encourage participation on this side and to extract benefits by setting a high price on the other side. The side that exerts the stronger cross-group external effects tends to face lower fees.³⁵³ Since there is a Lerner index (or mark-up) on each side and these sides are interrelated, one of them taken in isolation has little meaning. However, in combination these formulas are useful to shed light on market power. If the platform is not able to monetise on one side of the market, the pricing formula has to be adjusted and the Lerner index on the “free” side is not defined.

The simple pricing model has the feature that the cross-group external effect is captured by a function that depends on the number of users. However, often platforms have ways to affect this function through non-price measures. A platform with market power may have an incentive to affect the accruing user benefits differently than what would be optimal for society.³⁵⁴

³⁵¹ Rochet and Tirole (2003) derive a Lerner formula for the case in which users have heterogeneous benefits from interacting with a user from the other side and in which platforms set usage prices. Rochet and Tirole (2006, pp. 652–657) develop an integrated model that encompasses the settings by Rochet and Tirole (2003) and Armstrong (2006). In this integrated model, they derive a single Lerner index that includes a “price” per transaction that is related to how the derived total number of transactions varies with this price.

³⁵² To see that the Lerner index is not useful, consider how the Lerner index on side A changes with price charged to users from this side. Starting from the welfare-maximising price $P_A = C'_A - X_B$ (which is negative), the Lerner index is first a negative number whose absolute value increases, turns to minus infinity when approaching $P_A = 0$, flips to positive infinity on the other side of zero, and, when increasing the price further, the Lerner index then decreases.

³⁵³ In particular, if the price elasticity of demand is constant and the same on both sides, the group which exerts the larger external benefit enjoys the lower subscription fee.

³⁵⁴ A detailed account of how platforms can use rating and recommendation systems to affect within-group and cross-group external effects is provided by Belleflamme and Peitz (2018a). See also our exposition on direct evidence on market power *infra* sub 4.3.3.

Mark-ups and cost measures

In a two-sided platform context, a platform that caters to one user group, will internalise positive cross-group external effects: when deciding about the profit-maximising price it internalises that additional participation and usage by one user makes participation and usage of other users more attractive. Thus, the stronger the network effects, the lower the price set by a monopoly platform. This implies that a monopoly platform may set a price that leads to low mark-ups over incurred costs to provide the product. In calculating the mark-up, the question then is whether to use marginal cost of production or opportunity costs.

As explained above, one may want to consider price equal to marginal cost of production as the competitive benchmark. However, in the presence of network effects, price equal to marginal cost no longer implements the welfare-maximising allocation. Society would be better off if prices were lower than marginal cost of production.

If the mark-up is based on opportunity cost, a large mark-up on both sides of the market reflects market power of the platform that it uses to keep prices “high” on both sides. However, prices are high only relative to this opportunity cost benchmark. Prices at this benchmark would lead to losses.

Lerner indices and mark-ups for platforms: measurement issues

Measuring opportunity costs requires a clear understanding about the interaction between the two sides of the platform. This implies that measuring the Lerner index as given above is more complicated than measuring the Lerner index in standard markets.

A further complication of measurement arises from the fact that in some markets, users on the platform buy a bundle. For example, a subscription on Netflix gives users unlimited access to the whole library. Netflix, however, has to pay content providers based on the number of streams. Since subscribers are heterogeneous, the average cost per consumer from the viewpoint of Netflix is the fees it has to pay to content providers for an average consumer. However, pricing decisions are based on the cost of the marginal user. Thus, the relevant cost is the content consumption of the marginal user. If high-usage consumers are the first to subscribe, this implies that the marginal cost of Netflix is decreasing with the number of users.

Dynamic issues

In a market environment in which there are no network effects and products and tastes are short-lived (and thus demand today does not depend on purchase decisions yesterday), a monopolist would always set price above marginal cost. In other words, the monopolist would not be willing to sell its product at a loss. Therefore, in such a world, prices below marginal cost can be seen as predatory. However, with network effects, the monopolist has to convince users that there will be sufficient participation and usage by other users to convince each user to join. If the monopolist (and any other firm that may operate in this market) knows in advance that it fails to do so there will be a missing market. One way for the monopolist to make sure that there will be a certain level of usage is to offer a low price (possibly below marginal cost and maybe even negative) to a subset of user and charge a high price to the remaining users (see also the economic considerations on “zero prices” above). If these prices are publicly known, users asked to pay a certain price know that a certain usage level is guaranteed, which makes it optimal for them to pay a relatively high price. One way to implement such an outcome is through dynamic prices (if the adoption decision is key to determine the benefit other users derive from joining). The monopolist initially charges a low price (possibly below marginal cost) to make sure that a critical number of user join; those users who arrive later will then be willing and will have to pay a much higher price. Here a price below marginal cost is not set with any predatory intent. Prohibiting such a low price may actually lead to a missing market and, thus, a severe market failure, as users are unsure whether enough fellow users will join.

4.3.2. Profitability

When data on market shares have to be treated with caution, perhaps profits are the preferred way to directly assess market power. Competition authorities regularly recognise that a firm's possibility to profitably increase prices beyond the competitive level indicates that the firm may act independently from restraints by competitors and customers and therefore enjoys market power.³⁵⁵ However, to transpose this insight into a test feasible for competition practice is by no means trivial.

One difficulty is that firms are often active on many markets and, thus, profits would need to be allocated to these different activities. If properly done, high economic profits are an indication of market power.

What profits?

Reported profits of an undertaking are the difference between revenues and accounting costs, while economic profits are the difference between revenues and economic costs; the latter include a market rate of return on capital.

In many industries, high reported profits are the result of non-replicable or difficult-to-replicate factors of production. It is often difficult to assess whether economic profits are supra-normal. Reasons for high reported profits (but not of economic profits) include compensation for past efforts; monopoly rents on intellectual property that is used as an input (where monopoly rights have been assigned by the government); or performance-related pay for skilled labour (in form of payments in stocks or stock options). After recalculating profits to obtain economic profits of an economic activity, if these economic profits are positive (and economically significant, e.g. on a per consumer basis) this indicates that there are barriers to entry and that the firm is in a privileged position. This is, in particular, the case if these profits are consistently high and above an industry benchmark.

If all undertakings have access to the same factors of production, positive profits would not have occurred absent barriers to entry. This is based on the economic mechanism that other undertakings would enter a market in which there are profits to be made. This then leads to a downward pressure on profits of firms in the industry.

If some undertakings are endowed with inherent advantages, they may sustain positive economic profits even in the absence of barriers of entry (which may be obtained on merit or owing to anti-competitive behaviour, e.g. by foreclosing competitors from an essential, non-replicable vertically integrated input). Absent inherent advantage, positive economic profit is the result of barriers to entry (which may be partly exogenous and partly influenced by the undertaking's decisions and, thus, endogenous). However, no matter the source of these economic profits, they are a sign of market power.

Issues specific to two-sided platforms

The above insights apply to all undertakings including two-sided platforms. However, while in standard markets it is, in principle, possible to calculate economic profits in each market (as long as they are not linked through scope economies), this is not possible in the case of a two-sided platform. Here, the only useful profit measure is the joint economic profits from the services it provides on both sides.

In practice, platforms are often active in a variety of product categories serving different user groups.³⁵⁶ Then, it will be challenging to obtain profit measures at the same granularity. In such cases, overall profit measures can only provide an indication that a platform enjoys market power somewhere.

³⁵⁵ See, e.g., Autorité de la concurrence 28 November 2014, Décision n° 14-D-18, Vente-privée.com, para. 85 ("La délimitation du marché pertinent permet d'apprécier la part de marché ainsi que le pouvoir de marché d'une entreprise, c'est-à-dire sa capacité à se comporter indépendamment de ses concurrents, notamment en augmentant ses prix de manière profitable au-delà du prix concurrentiel").

³⁵⁶ See *supra* sub 3.5.

Dynamic issues

The lack of profitability in a particular period is no proof of a lack of market power. This insight applies generally in dynamic markets in which current and future user behaviour are linked.³⁵⁷ For example, in markets in which users initially do not know the quality of a product a monopolist firm may optimally offer low prices initially so that consumers learn about product quality. Another example are markets with lock-in effects. Here, a firm may set low prices initially (and possibly even sell at a loss) to attract consumers in order to extract surplus later on.³⁵⁸

With network effects, an installed user base may be valuable to convince other consumers to join. Thus, early movers obtain low prices, while late movers have to pay more. This may lead to initially low profits. A two-sided platform that launches a new service may attract a substantial number of participants through low prices on one side to convince users on the other side to join. In other words, platforms may initially “invest” in a user base to monetise at some later point in time. As a consequence, the platform may have low profits in its early days (or make losses), but expects to have high profits later on.

In particular in the presence of network effects, initially low profits or losses should not be seen as proof of a lack of market power. However, high profitability is an indication that a platform has market power in some markets in which it is active.

4.3.3. Direct evidence

A competition authority or a court may make observations in its market investigation that may be interpreted as an indication or even “proof” of market power.

Lack of entry

Since market power is related to barriers to entry, the absence of entry attempts may be seen as an indication of market power. However, as discussed before, in markets with network effects there is a natural tendency to concentration. Thus, equally efficient potential competitors may see no reason to try to enter such a market.

A lack of entry with very similar offers may therefore be rather unattractive, but entrants may make rather different propositions to users that pose a threat to the incumbent platform. Thus, the market power of an incumbent platform may be challenged by offers that may look rather different at a first glance but may provide a new home for consumers’ attentions and needs.

Decreasing the strength of network effects or service quality

Under some conditions, it is an indication of market power if a platform reduces the strength of (positive) network effects or reduces the quality of the service it offers to users on at least one side. Absent market power, a platform is more successful the stronger the network effects and the higher the quality. Clearly, if higher quality and stronger positive network effects can be achieved without incurring any cost, a firm will do so. In the context of two-sided platforms, a platform manages interaction on the platform and typically partly controls quality and cross-group and within-group external effects. A platform with market power may have the incentive to impair the user experience through the design of its platform (and, in particular, the algorithms that guide user behaviour). In particular, in an e-commerce context, the platform may manage seller competition on its platform.³⁵⁹

We illustrate this point in the specific setting of a search engine that charges competing sellers for being listed on the search engine. Such a search engine makes profits only on the seller side, as it cannot profitably charge buyers for its service. Therefore, it may have an incentive to distort search results. As explained by Belleflamme and Peitz (2019b, p. 11),

³⁵⁷ Another instance is predatory pricing in which a firm sets low prices to keep out competitors. Such predatory pricing may be the preferred strategy by an incumbent firm to keep out entrants who lack some information.

³⁵⁸ In a setting with rational consumers, a firm must provide a low initial price to convince consumers to join who are aware that they will face high prices later on because of lock-in.

³⁵⁹ For an economic analysis, see Belleflamme and Peitz (2019b).

[i]t is in its best interest that sellers with high value are highly ranked. A seller's value increases, as product market competition with other sellers is relaxed. Therefore, the search engine may distort search results to relax product market competition between sellers. In Chen and He (2011) and Eliaz and Spiegler (2011), the search engine has an incentive to decrease the relevance of its search results and, thus, discourages buyers from searching extensively. This degrades the quality of the platform. The platform faces a trade-off between fewer buyers using the search engine and higher profits on a per-buyer base, which it obtains from fees charged to sellers. The monopoly distortion introduced by the platform consists in fewer buyers on the platform who have to pay higher product prices than absent the distortion of the search results.

A different, but related monopoly distortion may arise in the context of ad-financed matching platforms. A platform maximises the overall value for matched users if it keeps the opportunity cost of using the matching service small and if match quality is high. However, a monopoly matching platform that obtains its revenues from advertising gains from increasing ad exposure at sufficiently low levels of advertising. A very efficient matching process may reduce the time users spend on the platform and, thus, reduce advertising revenues. Therefore, a monopoly matching platform may have an incentive to make users search longer for matches and, thereby, reduce the net benefit to users of the matching services.³⁶⁰ Clearly, the platform has to beware of the users' participation constraint: users may stop using the matching service if the expected benefit is too low. Thus, the monopoly distortion may not be large.

Such distortions are particularly likely in cases in which a monetisation on the consumer side is not possible or not practical. Thus, in an abuse case, an alleged abuse (here, the distortion of the search or matching algorithm) can indicate market power.

In the context of Article 102 TFEU this might be viewed as a circular argument. This is because a certain market conduct (e.g. a specific pricing policy) might be regarded as perfectly legal if pursued by a non-dominant firm but abusive if adopted by a dominant firm. Thus, the legal structure of Article 102 TFEU presupposes that market dominance is established in a first step and then the appraisal of a certain conduct is based on this presumption of market dominance. Yet, to assume circularity is misguided because one can distinguish between the issue of whether a certain conduct could not be explained but for market dominance and whether this conduct should be considered abusive (exclusionary or exploitative). The idea that certain market behaviour indicates market power (market dominance) is in line with the basic idea of market dominance, according to which a dominant position is "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers."³⁶¹

It has also been claimed that the misuse of personal data and privacy infringement are an indication of lack of competition. For example, Furman et al. (2019, p. 43) write that "the misuse of consumer data and harm to privacy is arguably an indicator of low quality caused by a lack of competition". It is correct that the misuse of personal data can be viewed as a quality reduction. However, since the reporting of the misuse of personal data is likely to lead to a reputation loss, it may instead be the case that "small" platforms and other small firms are prone to this behaviour. We are not aware of evidence that confirms the view that the misuse of personal data and privacy infringement happens more often on platforms with market power.³⁶²

³⁶⁰ A more elaborate argument of distortions of the matching process is formalised by Burguet, Caminal and Ellman (2015).

³⁶¹ ECJ 13 February 1979, Case 85/76, *Hoffmann-La Roche*, para. 38.

³⁶² The issue of causality between market dominance and a breach of data protection law is central to the Bundeskartellamt's decision against Facebook. See *supra* note 223.

4.3.4. Conclusions

(1) An adjusted Lerner index on each side reflects the pricing power of a two-sided platform on the respective side. The pricing equation is based on opportunity costs that include cross-group external effects. A high Lerner index on one side is an indication of market power on this side.

(2) Initially low profits or losses should not be seen as proof of a lack of market power. However, high profitability is an indication that a platform has market power in some markets in which it is active.

(3) Since market power is related to barriers to entry, the absence of entry attempts may be seen as an indication of market power. However, entry threats may arise from rather different offers, as long as they provide a new home for users' attention and needs.


(4) If a platform deliberately reduces the strength of (positive) network effects or reduces the quality of the service it offers to users on at least one side, this can be seen as an indication of market power.

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