

Discussion Paper Series – CRC TR 224

Discussion Paper No. 365
Project B 05

Market Power of Digital Platforms

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August 2022

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Funding by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)
through CRC TR 224 is gratefully acknowledged.

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26 August 2022

Abstract:

Digital platforms have reshaped many product markets and play an increasingly important role in economies around the globe. Some of these platforms have become powerful players and may possess a lot of market power. Economists use a number of indicators to assess market power. In this article we discuss to which extent these indicators are helpful in the context of digital platforms. In particular, we focus on assessing entrenched market power and the role of potential competition to constrain this power. Finally, we discuss some cross-border issues of platform market power.

Keywords: market power, digital platforms, Big Tech, potential competition, Brussels effect

JEL-Classification: K21, L40, L13

I. Introduction

Around the globe, there is growing concern about entrenched market power and its abuse by several large digital platforms that serve as matchmakers and gatekeepers, controlling entire ecosystems. In Europe and the US, 'Big Tech' is associated with the names of Google (Alphabet), Amazon, Facebook (Meta), Apple, and Microsoft, and possibly a few others. Those firms are accused of, among other things, foreclosing or absorbing potential competitors, erecting barriers to entry, leveraging their entrenched market positions, and exploiting users. The immediate effect of their actions on consumers is often positive or difficult to assess, but the claim is that there is long-term harm to innovation and consumers.

Big tech firms operate as multi-sided platforms in some of their most important activities and cater to multiple interconnected audiences or user groups featuring within-group and cross-group network effects (see, e.g., Belleflamme and Peitz, 2021). A priori it is unclear how to define market power in a multi-sided platform context. The reason is that markets on the multiple sides are linked with each other and an assessment of the overall market power of a platform has to take these linkages into account. What is more, some of their offers are bundled (think of Amazon Prime) and others are virtually bundled, offering convenience benefits to users consuming those virtually bundled offers (think of several consumer services offered by Google such as Gmail, Google Calendar, and Google Hangouts). In this article, we address the question of how to assess the market power of

¹ We are grateful for comments by Simon Cowan. Funding by the German Research Foundation (DFG) through CRC TR 224 (project B05) is gratefully acknowledged. The article draws on Section 4 of Franck and Peitz (2019), a report prepared for the Centre on Regulation in Europe (CERRE, www.cerre.eu). Verbatim quotes from this report are not marked.

digital platforms, drawing on bodies of literature in industrial organization and competition law.²

Competition law is concerned with protecting competition from distortions resulting from the use of market power; it is *not* about addressing every kind of market failure. To apply EU competition law, one has to demonstrate a certain degree of market power (Franck and Stock, 2020, p. 324). Therefore, assessing the market power of digital platforms is a task regularly required by competition law in the EU (and beyond) that precedes the analysis of anti-competitive conduct and competitive effects of mergers.

In Section II we discuss how to assess the market power of digital platforms. In particular, we discuss the informativeness of various indicators used in competition practice. A defining feature of digital platforms is the presence of network effects and the scalability of their activity. This immediately raises the issue of market tipping and its link to market power, which we address in Section III.

An important question with respect to market power is whether it can be preserved over time. Understanding barriers to entry and potential competition is key to addressing this question – we look at these in Sections IV and V. If potential entry is much easier in some jurisdictions than in others (e.g. because of easier access to venture capital), competitive threats are more likely to arise in those jurisdictions. However, if successful entry in one country facilitates entry in another, potential competition in one market spills over into the market with higher barriers to entry or the lack of local potential competitors.

Regulatory interventions (e.g. with competition law instruments or pro-competitive *ex ante* regulation) may affect barriers to entry and the likelihood of entry. Thus, regulatory interventions in one country may affect competition in other countries through the domino effect of entry across jurisdictions. What is more, digital platforms may also change their business practices outside the jurisdiction that triggered the change of business practice. With a focus on mergers involving digital platforms, we discuss international linkages in Section VI.

II. Assessing the market power of a digital platform

In the EU the assessment of the market power of an undertaking is an essential element in merger control,³ in abuse cases,⁴ and often when appraising the anti-competitive effects of agreements.⁵ Generally speaking, an undertaking is considered to have market power if its behaviour is not, or is only to a limited extent, disciplined by competition or, in the words of the ECJ, ‘a position of economic strength ... affording ... the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers’.⁶ High market shares are typically viewed as a manifestation of market power. Therefore, legal analyses of market power often start with defining the relevant market, an issue that we skip here and that requires more thought in the context of multi-

² Our focus is on market power in specific markets rather than on the power to control an entire ecosystem.

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

⁴ See Article 102 TFEU, which applies to ‘undertakings of a dominant position within the internal market’.

⁵ 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. See also ECJ 28 February 1991, C-234/89, *Delimitis v Henninger Bräu*, EU:C:1991:91, paras 14–16.

⁶ ECJ 13 February 1979, Case 85/76, *Hoffmann-La Roche*, para. 38.

sided platforms (Franck and Peitz, 2021a). We take it as given that a market is defined for each service offered by one platform and acknowledge that these markets are interdependent. For example, an e-commerce platform offers a trading opportunity to sellers and a trading opportunity to buyers and is, thus, active on two interdependent markets. On the buyer side, it often offers both a service that helps buyers discover trading opportunities and a service to enter into a purchasing contract with sellers on the platform. Platforms active in such markets may possess market power. Competition authorities and courts can (and do) use several indicators of market power.

Besides competition law, pro-competitive regulation, which is imposed by legislatures aiming at open markets, also often only applies to firms with a distinctive market position. In contrast to competition enforcement, however, such regulation typically avoids a detailed market analysis⁷ and instead relies on more easily ascertainable criteria for determining its scope of application. A paradigmatic example is section 58 of the German Payment Services Supervisory Act, which provides a right to access technical infrastructure for mobile and internet-based payment services (the so-called ‘Lex Apple Pay’). To ensure that the provision applies only to operators with a relevant gatekeeper position, the right of access requires that the infrastructure is either used by more than ten payment service providers or that the operator has more than two million registered users.⁸ In the EU’s Digital Markets Act, certain cumulative quantitative criteria are employed (namely annual Union turnover and market capitalization as well as monthly active end users and yearly active business users in the Union). These allow a presumption to be established for the qualitative criteria determining whether an undertaking shall be designated as a gatekeeper.⁹

Using 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.¹⁰ As is well known, this is not without problem in standard markets. Additional issues arise in the context of two-sided platforms.

Revenue shares. One possibility for assessing the relative position of a platform is to calculate its revenue shares; revenues can be 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 (i.e. the allocation depends only on the overall price), the 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 operator will choose its price structure to maximize the overall profitability

⁷ This is not true in the case of section 19a of the German Competition Act, the new competition instrument introduced for swift and effective intervention against anticompetitive conduct by selected (large) digital gatekeepers. The provision addresses firms that are of ‘paramount significance for competition across markets’ and, thus, requires a thorough evaluation of a platform operator’s market position. See Franck and Peitz (2021b, pp. 514–17 and 526).

⁸ See Franck and Linardatos (2021, pp. 75–76).

⁹ Article 3 of the Regulation (EU) 2022/... of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act). The latest public version of the text as agreed upon by the institutions is available at <<https://www.consilium.europa.eu/media/56086/st08722-xx22.pdf>>.

¹⁰ For instance, Baker and Bresnahan (1992, p. 745) write: ‘to infer the existence and magnitude of market power, antitrust today relies routinely on market share’.

of the platform. Revenue shares on each market serving one side of the platform can be considered but have to be interpreted carefully.

In the case of a ‘zero-price market’ – that is, all offers that are made free of charge to one group of users – 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 provides only limited information about market power.

A more reasonable option is to use revenues on all sides. Shares derived from this should not, however, be interpreted as *market* shares as they are aggregated over two (interdependent) markets. Large shares based on revenues generated on multiple platform sides appear to be meaningful if all undertakings under consideration serve the same sides.¹¹ 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.

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

Many market environments involving digital platforms are 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 – that is, 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 (such as Rover.com) targets only dog owners on one side and, thus, their number is the maximum number of platform users on this side, which consists of all dog owners.¹² 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.

¹¹ This approach can be generalized 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 an example, see Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 132–33; see also Bundeskartellamt (2016, p. 71). However, in its analysis of ‘market’ shares, the Bundeskartellamt did not include revenues from advertising.

¹² We acknowledge that the number of actual dog owners may depend on the benefits offered by the dog-sitting platforms. 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, for instance, in the case of dating apps.

Markups and Lerner index. The Lerner index measures the price–cost difference at the margin (i.e. the markup) relative to the price of a product.¹³ This index can be seen as a useful measure to assess market power relative to the competitive benchmark abstracting from dynamic considerations. The use of the Lerner index as a measure of market power becomes more involved in the context of two-sided platforms. Consider the case of a profit-maximizing two-sided platform that sets a subscription or membership fee on each side. 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 that accrues to the other side from attracting this additional user (Armstrong, 2006; Belleflamme and Peitz, 2015, pp. 663–65).¹⁴ 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 – see Franck and Peitz (2019).

Profits. When data on market shares have to be treated with caution, profits might be the preferred way to assess market power. Competition authorities regularly recognize that a firm’s possibility of profitably increasing prices beyond the competitive level indicates that the firm may act independently from restraints by competitors and customers and therefore enjoys market power.¹⁵ However, to transpose this insight into a test suited 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. 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.¹⁶

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.¹⁷ 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 monetize at some later point in time. 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 or as significant to rebut an assumption of market power based on sound

¹³ Following the demand approach, own and cross-price elasticities are estimated, and markups are recovered from first-order conditions of profit maximization within a specific model of competition (e.g. Berry, Levinsohn, and Pakes, 1995). Following the production approach, markups are inferred from production data (e.g. De Loecker and Warzynski, 2012).

¹⁴ 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. 652–57) 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.

¹⁵ See, e.g., Autorité de la concurrence 28 November 2014, Décision n° 14-D-18, *Vente-privée.com*, para. 85.

¹⁶ As formally investigated by Belleflamme, Peitz, and Toulemonde (2022), the more profitable platform may have lower market shares.

¹⁷ 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.

indicators. High market valuation (stock market valuation for publicly traded companies) or, in the case of mergers, a high acquisition price are a sign of high future profits that stem from market power in, at least, some of the markets in which the platform is active (or expected to become active).

Other evidence of platform market power. 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.

If a platform controls data that afford a comparative advantage, such data can be a source of market power. This is recognized in competition law. For instance, section 18 of the German Competition Act lists a firm’s ‘access to data relevant for competition’ as a criterion to assess market dominance and section 19a does the same to establish a gatekeeper position (‘paramount significance of an undertaking for competition across markets’ according to the German law). The Digital Markets Act points to the possibility that gatekeepers may ‘leverage their advantages, such as their access to large amounts of data, from one area of activity to another’.¹⁸

A platform sometimes 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 may be considered an indicator of market power. 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 network 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 an abuse case, an alleged abuse (here, the distortion of the search or matching algorithm) can indicate market power. The idea that certain market behaviour indicates market power (market dominance) is in line with the basic idea of market power as outlined above.¹⁹

III. Market power and tipping in digital markets

Positive within-group and cross-group network effects (as well as supply-side economies of scale) tend to result in market concentration. In extreme cases, a monopolization is the result, so that all interactions take place on a single platform and there is market tipping. Some competition authorities are concerned about market tipping. For instance, in its summary of its case against Facebook about exploitative business terms, the Bundeskartellamt wrote in 2019: ‘The facts that competitors can be seen to exit the market and that there is a downward trend in the user-based market shares of the remaining competitors strongly indicate a market tipping process which will result in Facebook.com becoming a monopolist.’²⁰ Single-homing (where each user uses only one platform) can be perceived to increase the likelihood of market tipping. As a

¹⁸ Recital 3 of the Digital Markets Act, as cited in note 8. On the role of data-driven network effects across markets, see de Cornière and Taylor (2020).

¹⁹ See note 6 and accompanying text.

²⁰ Bundeskartellamt, 15 February 2019, case summary of B6-22/16, *Facebook*, p. 6.

countermeasure, the Bundeskartellamt prohibited exclusivity clauses imposed on promoters by Eventim, the leading ticketing system for live entertainment in Germany.²¹

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.

In the case of two-sided platforms, if both user groups single-home 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.²² Because of this threat, the incumbent intermediary subsidizes 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.²³

Tipping on one side 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 network 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.²⁴ 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

²¹ Bundeskartellamt, 4 December 2017, B 6-132/14-2, *CTS Eventim*.

²² In particular, the entrant can use divide-and-conquer strategies – that is, one group will be subsidized 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).

²³ 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; see Karle, Peitz, and Reisinger (2020).

²⁴ The question may then arise how the platform that does not attract advertisers may be viable. However, this platform may use other monetization strategies such as charging viewers for access to content or collecting data that are valuable for third parties.

this cross-group network effect, the more likely that there is no tipping on the advertiser side.

IV. Persistent market power of digital platforms

Barriers to entry are at the heart of persistent market power. Why do some digital platforms feature high barriers to entry? The standard reply is: ‘network effects’. While network effects do not necessarily lead to barriers to entry, under some conditions they do. 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 user miscoordination.²⁵ 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. The lack of coordination may alternatively refer to the users on different sides of a two-sided platform, who are linked through mutual positive cross-group network 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 subsidize early users (in the case of a two-sided platform, on at least one side). The extent of such subsidization represents the level of entry barriers.

If, by contrast, 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. 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.²⁶

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 – see the example in the following section of Facebook conquering the German market. For example, a platform that is popular in the US 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

²⁵ Biglaiser, Calvano, and Crémer (2019) review the economic mechanisms that lead to network effects-induced barriers to entry.

²⁶ This assessment is more nuanced than has been stated in some policy reports or decisions by competition authorities. For example, the German Monopolkommission (2015, para. 220) associated network effects in a general way with barriers to entry. See also Autorité de la concurrence 21 April 2015, Décision n° 15-D-06, *Booking.com*, para. 122.

markets. This also applies if switching costs apply not 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 had 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).

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 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 article, then multi-homing does not require additional fixed payments and, thus, is more attractive for users.

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 News Corporation, 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 in 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.²⁷ 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.²⁸

As markets mature and platforms make only incremental updates of their offerings, barriers to entry become a growing concern. Then, 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 only be eroded 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.

²⁷ This also applies to video games played via consoles. Here, incumbency was more difficult to sustain since users had to be moved from one game console generation to the next.

²⁸ 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.

However, even in mature markets, specialized entrants may be able to make major improvements on the incumbent's offer and, thus, overcome the lack of an installed user base. An interesting example is the US 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.²⁹

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 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, people of a certain profession (e.g. farmers), or vegetarians.³⁰ Moreover, the authority emphasized that a focus on users that are searching for a date in a certain region may also enable market entrance. 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. This argument carries over to expansion across countries.

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.³¹ 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'.³² 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,³³ a user on a social network such as Facebook is unlikely to be able to port all material since

²⁹ 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.

³⁰ Bundeskartellamt, 22 October 2015, B6-57/15, *Parship/Elitepartner*, paras 33–69 and 128.

³¹ See, e.g., Belleflamme and Peitz (2015, pp. 579–81). 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.

³² 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.

³³ 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.

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. On two-sided platforms, the switching cost may depend on the number of users on the other side of the market. An example is sellers on e-commerce platforms who would like to migrate from an incumbent to an entrant platform but cannot carry over 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.³⁴ Thus, sellers' switching costs may be higher the larger the number of past users on the other side.

V. Potential competition

Potential competition may mitigate the significance of indicators of market power such as market shares, profits, and profit margins. Potential competition is closely related to barriers to entry. With potential competitors around the corner, market tipping does not provide much comfort to the currently successful platform. Nascent 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 are large in size (and currently may enjoy high profits and profit margins). 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 less likely that a platform is able to restrict competition over an extended period. Note, however, that the effect is to the contrary in merger analysis insofar as the target firm is identified as a potential competitor.³⁵ This suggests that, in countries with easy access to venture capital, merger control must take this into account by lowering the threshold for intervention. Also, foreclosure strategies that work against potential competitors require particular attention.

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 digital platforms. 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 characterized 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.

³⁴ 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 that manages to attract some sellers may suffer from a negative selection of sellers.

³⁵ For theoretical frameworks addressing mergers as the removal of potential competitors in digital markets, see, for instance, Cabral (2021), Katz (2021), and Motta and Peitz (2021).

Competition in the presence of strong network effects is likely to lead to competition *for* the market rather than competition *in* the market.³⁶

As recognized 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. Depending on whether or not inactive competitors are around and waiting, 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.

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 market for video calls,³⁷ it assumed that market shares 'may not be the best proxy to determine competitive strength in markets for consumer communications services'³⁸ 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; (2) the importance of continuous innovation; 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'.³⁹ 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.⁴⁰

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.⁴¹ 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

³⁶ 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. 604–8).

³⁷ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 108

³⁸ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 121.

³⁹ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 123.

⁴⁰ European Commission 7 October 2011, Case M.6281, *Microsoft/Skype*, para. 124.

⁴¹ Evans and Schmalensee (2016) tell the story of how social networks made different decisions on their governance structure, which contributed to the success and failure of Friendster, MySpace, and Facebook.

former market leader and the exit of Google+ from the market for private users, the Bundeskartellamt assumes that the market has tipped, making Facebook a monopolist.⁴²

It is left open to the imagination of the outside observer 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.⁴³ Entrants may limit the market power of incumbent dominant platforms if the latter cannot simply acquire the latter.

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.⁴⁴ 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.⁴⁵

Combined with a lack of entry, this suggests that potential entrants (and their funders) do not see profitable opportunities. We note that, first, market definition obviously affects the assessment about size and persistence of market shares and, second, the assessment that there is a 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 for certain search purposes. Including such vertical search engines in the relevant market may give a more nuanced picture of the market power of Google in search.

VI. Cross-border aspects of platform market power

Many digital platforms have established a presence in multiple jurisdictions. Indeed, they are compelled to also exploit network effects across borders. Thus, entry into a different jurisdiction is facilitated if there are cross-jurisdictional network effects. For example, if people establish many international links and communicate in the *lingua franca* an internationally operating social network enjoys an advantage over a social network operating in one jurisdiction. Another example is hotel booking platforms, given that the proportion of users who travel internationally is significant: an internationally operating

⁴² Bundeskartellamt, 6 February 2019, B6-22/16, *Facebook*, paras 432–39.

⁴³ See for the clearance of Facebook's acquisition of WhatsApp by the European Commission 2 October 2014, Case M.7217, *Facebook/WhatsApp*; 17 May 2017, Case M.8228, *Facebook/WhatsApp*. The acquisition of Instagram was cleared, for instance, by the Office of Fair Trading, then the UK competition authority. See 14 August 2012, ME/5525/12.

⁴⁴ In their report to the CMA in the UK, Furman et al. (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.

⁴⁵ European Commission, 27 June 2017, COMP/AT.39740, *Google Search (Shopping)*, para. 274.

hotel booking site can make offers available to all travellers no matter where they come from. This gives it an advantage over hotel booking platforms that operate in a single jurisdiction both from the viewpoint of hotels as well as of travellers. These network effects operating across countries may be data-driven if data collected in one country allow the platform to make more attractive offers or to increase its profit in another country – see de Cornière and Taylor (2020).

The relative advantage of an international instead of a national strategy also depends on the regulatory environment. In case of cross-border activities, irrespective of its place of incorporation or of its main place of business, when a firm is active in a certain market or when its activities have an impact on the conditions on this market, it will have to comply with the domestic competition law rules and other pro-competitive regulatory measures. The firm cannot escape regulation imposed on a market in which it wishes to offer its products by choice of law or by relocation.

Confronted with two divergent regulatory regimes, a firm has essentially three options: it can refrain from operating in one jurisdiction, implement the more stringent regulation in both jurisdictions, or adapt its activities and products to the respective jurisdiction.

The third option of differentiated activities and products, however, may not be practically available due to (1) legal, (2) technical, or (3) economic reasons (Bradford, 2020, 53–62): (1) a single national competition authority might require a firm to globally end a certain practice, such as exclusive dealing contracts; (2) a behavioural remedy restricting the use of certain data applicable to activities in one jurisdiction may not be divisible if the platform cannot distinguish with sufficient certainty which jurisdiction a user belongs to; and (3) a uniformity of a platform's activities across markets may be indispensable to benefit from the network effects or scale economies that drive international expansion in the first place.

If, therefore, differentiation according to jurisdictions is not feasible, the platform can either comply globally with or withdraw from one or several jurisdictions with the most demanding regulatory standards. This decision requires a balancing exercise in which the economic importance of the relevant jurisdictions and, thus, the number of potential users and the per user profit will be an important factor. Jurisdictions with many affluent users may be viewed as being able to unilaterally impose stringent regulation globally.

As it appears to be the European Union that, among the large jurisdictions, most often has a preference for the highest regulatory standard, this effect of (supposedly) unilateral rule-making with global effects has been coined the 'Brussels effect' (Bradford, 2020). Bradford describes firms' global application of the EU standard in the case of non-divisibility of regulation as the 'de facto Brussels effect'. From this she distinguishes the 'de jure Brussels effect', according to which other jurisdictions model their law on that of the EU ('copy-cat law-making').⁴⁶ Bradford identifies these two types of the Brussels effect for the regulatory areas that are most important for internationally operating digital

⁴⁶ The distinction between the two variants of the Brussels effect does not appear free of doubt if we consider 'anticipation effects': a firm may expect that a regulation from Brussels will spread around the globe, in particular in the event that the firm does not adjust its policy outside the EU. In that case, non-EU countries obtain compliance in their countries even without the regulation being copied. While this may then appear to be the 'de facto Brussels effect', it is arguably better understood as 'de jure Brussels effect' since there is divisibility across countries.

platforms: competition enforcement and digital regulation (data protection and hate speech online).⁴⁷ The Brussels effect is conceived foremost as a descriptive concept and is meant to identify the conditions of extra-jurisdictional effects that are driven by a cross-border adoption of standards either by firms or lawmakers.

Regarding merger review – which is a crucial instrument to address challenges of market power of digital platforms – the European Commission, from a global perspective, arguably has not shown itself to be a champion of strict standards. One reason for this is simply that many acquisitions by the big digital gatekeepers cannot be taken up by the European Commission because of the revenue-based thresholds as enshrined in the EU Merger Regulation. The EU Commission has so far declined to strive for an extension of EU merger control through the introduction of a transaction-value-based threshold. Instead, it relies on voluntary referrals of relevant cases by Member States.⁴⁸ But also, when mergers have been taken up, the European Commission does not appear to apply the strictest standard: while it cleared Google’s acquisition of Fitbit subject to behavioural remedies,⁴⁹ the Australian competition authority (ACCC) did not consider those remedies sufficient to avoid a competitive threat.⁵⁰ As Google completed the acquisition before the ACCC had finalized the merger review, the authority considered taking legal action on the matter⁵¹ but appears to have ultimately refrained from this option. One may speculate that it might have played a role that the authority was not confident that Australia was a jurisdiction with sufficient economic weight to unilaterally prohibit and force a rewind of an acquisition completed by Google (Alphabet) with global effect. Remarkably, with its decisions in *Sabre/Farelogix*⁵² and *Meta/Giphy*,⁵³ the British CMA seems of late to be taking on the role of the ‘most stringent merger reviewer’. Should this really be seen as an exercise of a ‘de facto global veto’ by the UK? Are we on the trail of a ‘London effect’?

While it is true that competition enforcement (including merger review) may often entail significant extraterritorial effects, it appears to be misleading to interpret the making of non-divisible rules by the (large) jurisdiction with the preference for the strictest regulation – be that the European Union or any other lawmaker in the world – as an act of

⁴⁷ Bradford (2020, ch. 4, pp. 99–129, and ch. 5, pp. 131–69).

⁴⁸ The broad interpretation of Article 22 of the EU Merger Regulation, which allows Member States to refer merger cases to Brussels even if they all outside the scope of national merger control, has now been confirmed by the EU General Court, 13 July 2022, Case T-227/21, *Illumina v Commission*, ECLI:EU:T:2022:447, paras 85–185. However, the shortfall remains that based on referral requests under Article 22 of the EU Merger Regulation the Commission can evaluate an acquisition only in terms of its impact on the markets of the Member States that actually refer the case to the EU Commission.

⁴⁹ European Commission, 17 December 2020, Case M.9660, *Google/Fitbit*.

⁵⁰ Australian Competition & Consumer Commission (ACCC), Media Release of 22 December 2020 (‘ACCC rejects Google behavioural undertakings from Fitbit acquisition’) <<https://www.accc.gov.au/media-release/accc-rejects-google-behavioural-undertakings-for-fitbit-acquisition>>

⁵¹ Reuters, 14 January 2021, ‘Google closes Fitbit deal as U.S., Australia probe continue’, quoting the ACCC chair Rods Sims: ‘depending on the results of our investigation, we will consider whether to take legal action on this matter’. <<https://www.reuters.com/article/us-fitbit-m-a-alphabet-idUSKBN29J1WR>>.

⁵² CMA, 9 April 2020, ‘Anticipated acquisition by Sabre Corporation of Farelogix Inc.’ Final Report, <https://assets.publishing.service.gov.uk/media/5e8f17e4d3bf7f4120cb1881/Final_Report_-_Sabre_Farelogix.pdf>. An appeal launched on jurisdictional grounds was rejected. Competition Appeal Tribunal, 21 May 2021, [2021] CAT 11 <https://www.catribunal.org.uk/sites/default/files/2021-05/1345_Sabre_Judgment_210521.pdf>.

⁵³ CMA, 30 November 2021, ‘Completed acquisition by Facebook, Inc (now Meta Platforms, Inc) of Giphy, Inc’ Final Report, <https://assets.publishing.service.gov.uk/media/61a64a618fa8f5037d67b7b5/Facebook_Meta_GIPHY_-_Final_Report_1221_.pdf>.

(quasi-)hegemony. First, this would underestimate the effectiveness – actual and potential – of political resistance from rule-makers with preferences for lower levels of regulation. And it would be naïve to assume that the EU legislature, with regard to the Digital Markets Act, would not have considered the political price to be paid for imposing on the major digital gatekeepers a level of regulation (with at least some extraterritorial effects) that is in large parts stricter than is preferred in the US and elsewhere.⁵⁴ Thus, it should not be underestimated that competition authorities and legislatures establishing pro-competitive rules take into account the interests and policies of other jurisdictions, even if often only partially and implicitly.

Second, the label of ‘unilateral de facto rule-making’ obscures the multifaceted cooperation between competition authorities, even if in a particular case they might ultimately come to (partly) divergent decisions. It has been stated that, in particular between the EU and the US, there is a level of coordination that ‘allows for sharing expertise and developing mutual understanding of the competition issues, and may thus avoid ... frictions ... Such cooperation is the norm.’ Thus, it has been concluded that ‘the veto power exists more in form than in substance’ (Monti, 2019, p. 178).

Even though the ‘Brussels effect’ may not play out in full force, it cannot be ignored that competition authorities make decisions with extraterritorial consequences, but on the basis of laws that restrict them to take into account only home-turf effects. Such dysfunctionalities of domestic competition enforcement (with possibly global reach) can be understood as problems of over- and under-enforcement (Monti, 2019, p. 189). This is particularly apparent with a view to merger review that concerns digital platforms whose business models are typically scalable and rest on network effects (Franck, Monti, and de Streel, 2021, pp. 45–46). Therefore, an acquisition by a large digital firm, even if the target firm is only in a nascent state, may have strong extraterritorial competitive implications. In some cases, it can be the blocking, in others the clearance of an acquisition that hinders the enhancement of competition elsewhere. The first scenario may occur where a prohibited acquisition would have promoted the scaling-up of a business model, making an innovation more readily available everywhere, which would then have facilitated competition in other markets. In the second scenario, it can be precisely the approval of a takeover that might have eliminated an alternative business model that, if scaled, could have intensified competition in other parts of the world.

Which consequences should be drawn from these insights? At the EU level, these and other extraterritorial effects of merger review call for a reform of the EU Merger Regulation that would give the EU Commission the power to review the acquisitions by the big digital gatekeepers based on a transaction-value-based threshold. Unlike now, it would then be ensured that these concentrations, which potentially have a major impact on future (potential) competition and innovation, can be examined by one authority with

⁵⁴ This became apparent, for example, in the fact that after Russia’s attack on Ukraine in February 2022 some Eastern European Member States became more explicit in their demands not to antagonize the United States through the Digital Markets Act, as reported, e.g., by Euractiv, Digital Brief of 25 February 2022, <<https://www.euractiv.com/section/digital/news/digital-brief-data-act-official-the-real-cost-of-semiconductors>>. In contrast, high-ranking politicians in the EU have shown themselves (credibly) unimpressed by threats from Meta to withdraw certain products such as Facebook and Instagram from the EU’s internal market if the EU and the US did not agree on a new data transfer agreement after ‘Privacy Shield’ had been brought down by the ECJ. See Euractiv, 8 February 2022, <<https://www.euractiv.com/section/data-protection/news/habeck-and-le-maire-unfazed-by-facebooks-withdrawal-threats-from-the-eu>>.

a view to the entire EU internal market.⁵⁵ At the global level, as the idea of a global competition authority does not seem to be a realistic option, the remedy left for the time being is to allow a jurisdiction to ‘stretch its law, conceptually to embrace the whole affected market, thus approximating world welfare’ (Fox, 2011, p. 270). However, not only would applying domestic competition law and regulation in such a way that it creates positive externalities on the competitiveness of markets in other jurisdictions require a political will that cannot be taken for granted (Monti, 2019, p. 189); such an attempt would moreover also challenge legal boundaries: those of international law, which mark the borders of different jurisdictions, and those of national law, in particular procedural safeguards for the parties involved in the competition proceedings. In any case, with world welfare in mind, it appears desirable that the competition authorities, which have to assess the same factual circumstances, cooperate as comprehensively as possible and, above all, exchange case-related findings. Thus, authorities would be enabled to exploit existing leeway for taking extraterritorial effects into account in an informed manner.

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⁵⁵ It is within the EU legislature’s competence to amend the EU Merger Regulation accordingly based on the internal market competence as enshrined in Article 114 TFEU. See Franck, Monti, and de Streel (2021, pp. 43–58).

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