

1. The interrelated effects of a merger involving online platforms

Digital platforms operate in multisided markets providing services through the internet to two or more distinct groups of users, between which there are indirect network effects.¹ Direct network effects are also frequently present within each group. Direct network effects arise if the users of one service (i.e., one side of the platform) directly benefit when more people use the same service as well (e.g., communication or social network services). Indirect network effects exist when the value of a service for a specific group of users increases with the number of users of another group (i.e., platforms with more users of each group are more valuable to the other groups). Therefore, online platforms usually present both direct network effects, between individual members of the same group, and indirect network effects, between members of distinct groups.²

Network effects may reduce competition leading to a greater concentration and strengthening entry barriers on the one hand and, on the other, put forward significant efficiencies. Digital platforms have minimised search and transaction costs and contributed to the dynamic development of an increasing number of markets, thus improving consumer welfare. They have already brought undeniable efficiency gains, increased consumer choice, improved competitiveness and enhanced consumer welfare in activities like advertising, search engines, communications services, payment systems and platforms for the collaborative economy. Simultaneously, network effects might constitute a barrier to entry or expansion and lead to a higher level of concentration in the relevant market. In the case of online platforms, this trend is reinforced by the use of information and communications technologies to collect and process large amounts of data, as by their capacity to reach their users almost instantly. Both direct and especially indirect network effects tend to lead to concentrated markets. Consequently, digital platforms have attracted the interest of the competition authorities.³

As the recent practice of the Commission has stressed, the special competitive dynamics of online platforms – underlined by the huge difference between the purchase price and the revenues generated by the acquired firms⁴ – represent a challenge from a competition policy

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¹ See Bundeskartellamt, “Working Paper – Market Power of Platforms and Networks” (2016): 13.

² See Michael Katz and Carl Shapiro, “Network Externalities, Competition, and Compatibility”, *American Economic Review* 75 (1985): 424-440; Michael Katz and Carl Shapiro, “Systems of Competition and Network Effects”, *The Journal of Economic Perspectives* 8 (1994): 93-115.

³ See the Commission communication of 25 May 2016 on “Online Platforms and the Digital Single Market – Opportunities and Challenges for Europe” (COM(2016)288) and the accompanying Commission staff working document (SWD(2016)0172); House of Lords. Select Committee on European, “Online Platforms and the Digital Single Market”, April 2016; Bundeskartellamt, “Power of Platforms and Networks” (2016).

⁴ See Daniel Zimmer, “Digital Markets: New Rules for Competition Law”, *Journal of European Competition Law and Practice* 6 (2015): 627-628; Monopolkommission, “Competition policy: The challenge of digital

perspective and, in particular, in order to assess the foreseeable impact of a merger on the relevant market.

Although market shares only provide first indications for the assessment, the larger the market share, the more likely the merged entity is to possess market power. Absent exceptional circumstances, very large market shares are in themselves evidence of a dominant position.⁵ However, the importance of market shares may vary in the light of likely market conditions of the particular relevant market. Since digital markets are highly dynamic and their market structure is usually unstable due to innovation and growth, the Commission has established that a high market share only provides a limited indication of competitive strength, but it is not a reliable indicator of market power in the case of online platforms.⁶ This view has been confirmed by the General Court.⁷ For this reason the market dominance should be assessed giving a particular weight to the specifics of platform and network markets, notably the relevance of direct and indirect network effects, the economies of scale, the prevailing types of use on the opposite market side (single-homing/ multi-homing) and the degree of differentiation, the access to data and the innovation potential of digital markets.⁸ In particular, to determine the impact of a merger that involves a two-sided platform on market power, one has to take into account the interrelated effects on both customer groups served by the platform. The interdependency between their distinct sides means that the adjustment of the price charged to one group of users affects the demand level of the other groups; i.e., the platform may influence the production level not only changing the price level, but also its structure. This link between the users of distinct sides affects the price elasticity of demand and, consequently, the profitability of a price increase on either side of the platform. An increase in the price (or a reduction of quality) to one side reduces the value that the costumers of other sides receive from the platform, which, therefore, reduces in turn the demand and price they are willing to pay.⁹ This implies that some of the traditional tools for merger analysis do not apply unless appropriately reformulated to account for the two-sidedness of the market.¹⁰

2. The definition of the relevant market in a multi-sided context

The proper identification of the relevant product market presents a greater complexity in multi-sided markets than in the case of one-sided markets. In multi-sided markets, the link between the users of distinct sides affects the price elasticity of demand and, consequently, the profitability of a price increase on either side of the platform. An increase in the price (or

markets”, Special Report No 68 (2015): 105-108, accessed July 2, 2017: http://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf.

⁵ See Judgment of 13 February 1979, *Hoffmann-La Roche & Co. AG v Commission of the European Communities*, C-85/76, paragraph 41.

⁶ See Microsoft/Skype, paragraphs 78, 98; Facebook/Whatsapp, paragraph 99.

⁷ See Judgment of the General Court, 11 December 2013, Case T-79/12, *Cisco Systems Inc.*, paragraph 69.

⁸ See Bundeskartellamt, “Market Power of Platforms and Networks”, 43-85. In the case of networks, the same assessment criteria should be taken into account along with direct network effects. See Bundeskartellamt, “Market Power of Platforms and Networks”, 86-102.

⁹ See Jean-Charles Rochet and Jean Tirole, “Platform Competition in Two-Sided Markets”, *Journal of the European Economic Association* 1 (2003): 990-1029; Bernard Caillaud, and Bruno Jullien, “Chicken and Egg: Competition among Intermediation Service Providers”, *RAND Journal of Economics* 34 (2003): 309-328; D. S. Evans, “The Antitrust Economics of Multi-Sided Platform Markets”, *Yale Journal on Regulation* 20 (2003): 325-381; David S. Evans and Richard Schmalensee, “The Industrial Organization of Markets with Two-Sided Platforms”, *Competition Policy International* 3 (2007): 151-179.

¹⁰ See Julian Wright, “One-Sided Logic in Two-Sided Markets”, *Revue of Network Economics* 3 (2004): 44-64. But see also Dirk Auer and Nicolas Petit, “Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy”, *The Antitrust Bulletin* 60 (2015): 426-461.

a reduction of quality) to one side reduces the value that the costumers of other sides receive from the platform, which, therefore, reduces in turn the demand and the price they are willing to pay. Moreover, online platforms frequently offer services and contents free of charge (e.g. search engines, social network services) to users on one side of the market in order to benefit of indirect network effects on the other. Therefore, the two interrelated aspects of how many relevant markets must be defined and the incidence of gratuity in one side of the platform must be ascertained.¹¹ Since the nature of the product offered to each side of the platform leads to different types of indirect network effects,¹² a systematic distinction can be made between transaction and non-transaction markets.¹³

The precise relevant product market definition is considered less important than making sure that the interdependence between the two sides is adequately taken into account.¹⁴ However, the Commission defines as many markets as the products being offered to each group, even if they are offered free of charge, and subsequently assesses the competitive position of the platform independently in each of them. This could lead to erroneous results if the said interdependence is ignored.

3. Network effects as a barrier to entry or expansion

Network effects are considered as a potential barrier to entry or expansion, which thus constitutes an important element of the overall competitive assessment.¹⁵ As the Federal Trade Commission stated, “two-sided network effects may enable a large platform to become dominant and insulated from competition from smaller platforms with fewer participants. Because they afford buyers and sellers fewer transacting options, smaller platforms may be far less attractive than a larger platform, limiting the extent to which they serve as viable competitive alternatives. Two-sided network effects could also create a barrier to entry, thereby protecting a dominant incumbent from a new entry. A new platform would be unappealing to buyers unless it has attracted numerous participating sellers, and unappealing to sellers unless it has attracted numerous participating buyers. In other words, it must solve the chicken-and-egg problem noted earlier”.¹⁶ However, “the existence of network effects as such does not *a priori* indicate a competition problem in the market affected by a merger. Such effects may however raise competition concerns in particular if they allow the merged entity to foreclose competitors and make it more difficult for competing providers to expand their customer base. Network effects have to be assessed on a case-by-case basis”.¹⁷

¹¹ See Bundeskartellamt, “The Market Power of Platforms and Networks”, 25-39.

¹² It may also lead to different geographic markets on each side. See Travelport/Worldspan, paragraphs 60-71.

¹³ See Lapo Filistrucchi, Damien Geradin, Eric van Damme and Pauline Affeldt, “Market Definition in Two-Sided Markets: Theory and Practice”, *Journal of Competition Law and Economics* 10 (2014): 293-339; Florence Thépot, “Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets”, *World Competition*, 36 (2013):95-221; Bundeskartellamt, “The Market Power of Platforms and Networks”, 18-26.

¹⁴ OECD, “Policy Roundtables: Two-Sided Markets”, p. 11.

¹⁵ See Horizontal Guidelines, paragraphs 68-75.

¹⁶ Federal Trade Commission, “The ‘Sharing’ Economy. Issues Facing Platforms, Participants & Regulators” [2016]: 26. In this sense, see Commission Decision of 24 March 2004 relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft): paragraphs 448-464; Maurice E. Stucke and Ariel Ezrachi, “When Competition Fails to Optimize Quality: A Look at Search Engines”, *Yale Journal of Law and Technology* 18 (2016): 70-110.

¹⁷ Facebook/Whatsapp, paragraph 130; Microsoft/LinkedIn, paragraph 342.

Network effects – as market power – are a matter of degree.¹⁸ To become an entry barrier in the sense of the EU merger control, the strength of network effects must reach a sufficient level, which is not easily measured and may vary according to the particular features of the relevant market. From the recent practice of the Commission, it seems possible to identify some relevant factors: the interoperability of the network, its type of use and its function.

3.1. The compatibility of the network

In horizontal cases, network effects arise or are reinforced as a direct consequence of the notified merger when the respective networks of the merging firms are compatible or interoperable with one another. Otherwise, the installed bases of each of them cannot be added, and the preexisting network effects are therefore not increased.¹⁹

Furthermore, when the merging firms compete in the same relevant market, the addition of their market shares may lead to an increased market power. However, network effects represent a competitive advantage – and thus an entry barrier – only as long as the platform or network remains not fully compatible with those of their competitors. Otherwise, all of them would benefit from the same network effects, since it is as if there was only one network.²⁰ Consequently, larger firms have fewer incentives to make their network compatible with the immediate consequence of creating a unique network.²¹

The same reasoning is equally applicable to non-horizontal (i.e., vertical or conglomerate) mergers. Tying and bundling as such are considered common practices usually designed to provide better products or offerings. However, in presence of network effects the dominance over one product is more likely to create dominance over another complementary product. Therefore, larger firms have strong incentives to make their network incompatible through tying, bundling or refusal to deal. By degrading the interoperability of the network (i.e., impeding full compatibility), in certain circumstances they may lead to a reduction in actual or potential rivals' ability or incentive to compete, thus reducing the competitive pressure on the merged entity and allowing it to increase prices. In these cases as well, the competitive advantage derived from the network effects requires that the network created or strengthened in the related market as a consequence of the leveraged market position was not fully compatible with the preexisting networks.²²

Interoperability is therefore recognised as a fundamental value in European competition policy.²³ Consequently, the Commission examines whether the merged firm would have the ability to foreclose its rivals, whether it would have the economic incentive to do so and whether a foreclosure strategy would have a significant detrimental effect on competition,

¹⁸ David S. Evans and Richard Schmalensee, “The Industrial Organization of Markets with Two-Sided Platforms”, 3 *Competition Policy International* 1 (2007): 150-179, 173.

¹⁹ See Facebook/WhatsApp paragraphs 123, 136-140.

²⁰ See Bruno Jullien and Wilfried Sand-Zantman, “Network Effects”, Institut D’Economie Industrielle (June 2016): 9, accessed July 2, 2017, https://idei.fr/sites/default/files/IDEI/documents/conf/trading2016/rapport/network_effect.pdf

²¹ See Commission Decisions of 8 June 2000 (Case No COMP/M.1741 - MCI WorldCom / Sprint), paragraph 154, and 24 March 2004 relating to a proceeding under Article 82 of the EC Treaty in Case COMP/C-3/37.792, *Microsoft*.

²² See Suzanne Van Arsdale & Cody Venzke, “Predatory Innovation in Software Markets”, *Harvard Journal of Law & Technology* 29 (2015) 243-290; Thibault Schrepel, “Predatory Innovation: The Definite Need for Legal Recognition” accessed July 21, 2017: <https://ssrn.com/abstract=2997586>. Compare *Microsoft/Skype*, paragraphs 134-170, and *Microsoft/LinkedIn*, paragraphs 278-352, 407-470.

²³ See Christopher Thomas, “Intel and McAfee – Antitrust is ‘Getting it Right’ in High Tech”, *CPI Antitrust Journal*, January 2011 (2), 3.

thus causing harm to consumers.²⁴ When these requirements are met, it may rely on interoperability remedies to address the risk of foreclosure created by a notified transaction.²⁵ Competition authorities, however, should take into account that the increased compatibility as a consequence of remedies generates more satisfaction for customers *ex post*, but it might lower the incentive to aggressively invest to build an installed base (i.e., to subsidise the users' side) *ex ante*, thus slowing the introduction of the new technology.²⁶

3.2. The type of use of the network

Platforms can usually differentiate themselves from each other by choosing particular levels of quality, features or prices, thus appealing to different groups of customers.²⁷ Since participation in most platforms is frequently free or not too costly, it does not preclude that at least some members of one side of the market may find it easy to participate on several platforms simultaneously (i.e., to “multi-home”).²⁸ Whenever there are several providers of the same type of platform with some degree of differentiation, customers on each side of the platform may choose to subscribe to one provider only (“single-homing”) or to several providers (“multi-homing”) depending on several factors, as the degree of asymmetry of the network effects on the different sides of the platform, the degree of differentiation between competing platforms or the cost to switch between platforms.²⁹

In both horizontal and non-horizontal mergers network effects only represent an entry barrier – i.e., a competitive advantage – as long as the network of the merging entity is not fully compatible with the competing networks. However, multi-homing may reduce barriers to entry or expansion and it has consequently been considered, at least to a limited extent, a substitute of compatibility.³⁰ Since users do not need to abandon the other networks, entry is much easier in markets where they multi-home. Therefore, the form of use of the platform or network has considerable relevance for assessing the existence of market power.

3.3. The density of the network

Since a network is a system of nodes – whether it be airports, cities, computers or customers – connected by edges or links,³¹ the strength of network effects as an entry barrier also depends on the number and the intensity of the relevant links among its users.³² Therefore, when the market is expected to experience high growth in the future, the relatively

²⁴ See Non-Horizontal Guidelines, paragraph 94.

²⁵ See Inge Graef, “How Can Software Interoperability be Achieved under European Competition Law and Related Regimes?”, *Journal of European Competition Law & Practice* 5 (2014): 6-19.

²⁶ See Bruno Jullien and Wilfried Sand-Zantman, “Network Effects”, 11-12.

²⁷ See David S. Evans and Richard Schmalensee, “The Industrial Organization of Markets with Two-Sided Platforms”, 164-166.

²⁸ See Jean-Charles Rochet and Jean Tirole, “Platform Competition in Two-Sided Markets”, 991-993.

²⁹ See Travelport/Worldspan, paragraph 17; Microsoft/LinkedIn, paragraphs 278-368, 345-346; Facebook/Whatsapp, paragraph 133.

³⁰ See Bruno Jullien and Wilfried Sand-Zantman, “Network Effects”, 16; Toker Doganoglu and Julian Wright, “Multihoming and Compatibility”, *International Journal of Industrial Organization* 24 (2006) 45-67.

³¹ See M. E. J. Newman, “The Structure and Function of Complex Networks”, 1-4, accessed July 2, 2017: <http://www-personal.umich.edu/~mejn/courses/2004/cscs535/review.pdf>; Maarten van Steen Version, *An Introduction to Graph Theory and Complex Networks* (2010):1.3-1.13, accessed July 2, 2017: <https://pdfs.semanticscholar.org/9dba/e30f8253791138e6c1031c5b7e4c7b321185.pdf>.

³² See Horizontal Guidelines, paragraph 72; Microsoft/Skype, paragraph 92; Microsoft/LinkedIn, paragraph 343.

small number of existing links in relation to the potential size of the network may consequently lead to consider the entry more likely to be profitable.³³

Communication networks enable direct communication between users who usually already know each other. Social networks, on the contrary, may facilitate indirect communication or interaction between users who did not know each other beforehand.³⁴ Therefore, the scope of network effects may vary depending on the intensity and the number of the relevant links among its users, which are determined by the function of the network.

4. Indirect network effects and power over price

While indirect network effects might contribute to the increase of the level of concentration in the relevant market, the existence of demand interdependencies entails certain particular competitive features related to the ability of the platform to profitably increase prices over marginal costs. In particular, the link between the users of distinct sides affects the price elasticity of demand and, consequently, the profitability of a price increase on either side of the platform. Taking both sides of the market into account is thus also important for analysing market power.

As stated above, the interdependency between the distinct sides of online platforms means that the adjustment of the price charged to one group of users affects the demand level of the other groups. Price structure (i.e., the way prices are distributed between customers on the different sides of the market) is non-neutral, in the sense that it affects the level of transactions. The platform may influence the production level not only changing the price level, but also its structure, charging more one side of the market and reducing the price paid by the other side. An increase in the price (or a reduction of quality) to one side reduces the value that the costumers of other sides receive from the platform, which, in turn, can reduce the demand and price they are willing to pay. Therefore, the platform must design the price structure so as to induce both sides to join the platform.³⁵ The linkage between its different groups of customers thus affects the ability of the platform to profitably increase prices (i.e., it imposes a constraint on the market power) and may lead the profit maximizing price to differ substantially from marginal cost. Therefore, “the price on one side of the market could be well above marginal cost while the price on the other side of the market could be below marginal cost. To analyze market power one therefore has to examine whether the total price is significantly above marginal costs”.³⁶

While the assessment of the competitive position of the platform in each side of the market cannot be done independently, the profitability of a price increase on either side of the platform may vary according to the existing type of indirect network effects.

4.1. Bilateral network effects

In the case of transaction platforms, which connect distinct groups of users for a specific transaction, there are bilateral indirect network effects; i.e., the members of both groups benefit from the growth of the other group. Since the product is indivisible and has to

³³ See C/0802/16 Daimler/Hailo/Mytaxy.

³⁴ See Bundeskartellamt, “Market Power of Platforms and Networks”, 100-101.

³⁵ See Jean-Charles Rochet and Jean Tirole, “An Economic Analysis of the Determination of Interchange Fees in Payment Card Systems”, 2 REV. NETWORK ECON. 69, 71 (2003), accessed July 2, 2017: https://www.researchgate.net/publication/24049673_An_Economic_Analysis_of_the_Determination_of_Interchange_Fees_in_Payment_Card_Systems; OECD, “Two-Sided Markets”, 11.

³⁶ David S. Evans, “The Antitrust Economics of Two-Sided Markets”, 65, accessed July 2, 2017: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=332022.

include both groups of users, the interdependence of the two sides of the platform must be adequately taken into account. In this sense, marginal revenue associated with any new customer has a direct component if it generates revenues in form of fees, and an indirect component by increasing the value of the platform to consumers on the other side, thus enabling the platform to charge more to them. While the group of consumers that generates the highest level of indirect network effects might be charged a price well below marginal cost, consumers on the other side will be charged prices considerably above marginal cost.³⁷ In this way, the type of use of the platform affects its ability to profitably increase prices.

(a) *Multi-homing on one side*

If single-homing prevails on one side while the other predominantly practices multi-homing, existing market power would be assumed for the multi-homing side if both market sides are considered separately. Platforms that serve large portions of users who predominately practice single-home might be considered virtually indispensable for the other user side, especially taking into account the asymmetrical pricing strategy. While the multi-homing side pays considerably higher fees or is the only side paying fees at all, more favourable conditions or even free services may often be found on the single-homing side, where intensive competition may actually be established as platforms need to poach these single-homing users from each other in order to get them to join their own platform.³⁸ In this sense, the Commission tends to ignore the constraints that the key activity of an online transaction platform (i.e., to act as an intermediary between providers and demanders) imposes upon its ability and incentives to increase prices in order to get the two sides together.³⁹

(b) *Multi-homing on both sides*

Taking account of the interdependence of the two sides of the platform, market power of a platform is even more unlikely when multi-homing – along with platform differentiation – prevails on both sides. On the contrary, separating the two sides of the market without taking account of their interdependence allows legitimate competitive activities in one of them to be penalised no matter how output-expanding such activities may be. In order to retain users of one side, a platform may need to increase their benefits – or, viewed another way, “decrease their prices” –, which may call for an increase in fees on the other side to fund the increased rewards. Therefore, increases in one side’s fees are a concomitant of a successful investment in creating output and value. An increase in the value of the rewards of one group of users –which attracts customer loyalty – is “equivalent to a price decrease”, and thus it brings down the net price across the entire platform. A firm that can attract customer loyalty only by reducing its prices does not have the power to increase prices unilaterally. By attracting users on one side, the platform delivers a significant benefit to service providers on the other: customers.⁴⁰ Therefore, since market power is the ability to increase prices through *the reduction of output*, when the extra charge applied to one group of users of the platform is used to promote the demand of the users of the other group, in such a way that *total output*

³⁷ OECD, “Policy Roundtables: Two-Sided Markets”, 12.

³⁸ See Bundeskartellamt, “Market Power of Platforms and Networks”, 63-64.

³⁹ See Bruno Jullien, “Two-Sided Markets and Electronic Intermediaries”, *CESifo Economic Studies* (2005) 51 (2- 3): 233-260, also accessible at https://ideas.repec.org/p/ces/ceswps/_1345.html; OECD, “Policy Roundtables: Two-Sided Markets”, 11; Travelport/Worldspan, 73-81, 82-101.

⁴⁰ See Judgment of 11 September 2014. C-67/13 P, *Groupement des Cartes Bancaires (CB)*, paragraph 74 ; *United States v. American Express Co.*, No. 15-1672 (2d Cir. 2016); *Ohio v. American Express Co.*, 585 U.S. ___ (2018).

increases, the price increase in one side of the platform should not be considered a sign of market power.⁴¹

4.2. Asymmetric network effects

Audience providing platforms offer services and contents usually free of charge (e.g. search engines, social network services) to users on one side, which constitute the target of the advertising space offered for a price to the advertisers on the other side. The same principles applicable to the assessment of matching platforms are also relevant in the case of audience providing platforms, as long as the fact that indirect effects are unilateral or asymmetrical – i.e., they are present in only one direction – is taken into account.⁴² Asymmetric network effects may lead to market concentration, both on the advertising side and the service side. However, while the advertising side profits from a large group of service users, the latter would not directly profit from more advertising and, therefore, there will be no self-reinforcing positive feedback loops leading to a tipping process.⁴³ Furthermore, potential negative indirect network effects towards service users have to be considered, since they affect market power on the advertising side by limiting advertising capacities that platforms are able to offer to advertisers.⁴⁴

The type of use of the platform is also relevant, since online advertisers tend to multi-home. Different model businesses compete in online advertising market, where there are “a sufficient number of alternative providers of online advertising services” and “a large amount of Internet user data that are valuable for advertising purposes”.⁴⁵ Multi-homing thus constitutes a factor that mitigates barriers to market entry on the advertising market. An increase in the demand of search engines could affect the sales of a firm offering social networks, and *vice versa*. Therefore, although they present different business models, both might be considered competitors for advertisers in the market of online advertising (the paying side of the platform).⁴⁶

As the service users’ side does not directly profit from more advertising on the other side, it thus would grow only as a consequence of the intrinsic value of the service and, as the case may be, of direct network effects. Network effects might constitute a barrier to entry or expansion whose role can also in this case be mitigated by multi-homing. Therefore, to assess the market power of the firm on the users’ side it is also relevant to consider whether users practice single-homing or multi-homing, which in turn depends on the degree of differentiation that can be attained. In this sense, the Commission has considered that in the market for social network services there are a large number of companies offering online services highly differentiated in their nature and focus, and designed with different features and for different aims (e.g. keeping in touch with friends and family, establishing professional contacts, sharing content). Since there is a high degree of differentiation between providers, users of social networks tend to multi-home. Therefore, market power on the

⁴¹ See Julian Wright, “One-Sided Logic in Two-Sided Markets”, *Revue of Network Economics*, 3 (2004): 44-64; David S. Evans and Richard Schmalensee, “The Industrial Organization of Markets with Two-Sided Platforms”, 173-174.

⁴² See David S. Evans, “Multisided Platforms, Dynamic Competition, and the Assessment of Market Power for Internet-Based Firms”, University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 753, 23-31, accessed July 2, 2017: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2746095.

⁴³ Bundeskartellamt, 51-52.

⁴⁴ Bundeskartellamt, 52.

⁴⁵ Facebook/Whatsapp, paragraphs 188-189.

⁴⁶ See Sébastien Broos and Jorge Marcos Ramos, “Google, Google Shopping and Amazon: The Importance of Competing Business Models and Two-Sided Intermediaries in Defining Relevant Markets”, accessed July 2, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2696045.

users' side is not likely.⁴⁷ Conversely, the services provided by search engines are not as easily differentiable and consequently, users tend to single-home. When this is the case, "free platform use could pose an obstacle to switching if the service proved to be 'good enough' for the users' purposes and they decided not even to switch to services of better quality".⁴⁸ However, this obstacle would be caused by users' inertia, but not by network effects.⁴⁹

5. Efficiencies derived from network effects as a countervailing factor

In view of the above, it is possible to conclude that network effects may lead to concentrated markets, but not necessarily to higher prices or reduced quality. On the contrary, online platforms reduce search and transaction costs and contribute to a broader supply and dynamic development of markets and competition. While an increase in concentration may lead to deadweight loss and allocative inefficiency in one-sided markets, in the case of two-sided markets the existence of indirect network effects across groups of consumers provides conceivably more scope for mergers to generate transactional and productive efficiencies.⁵⁰ When network effects exist, market dominance by a small number of firms does not always reduce consumer welfare because any loss of users' surplus from monopolization can be offset by an increased positive network effect. In this sense, the emergence of a dominant platform may maximise consumer welfare since "consumers are better off when they belong to a large network".⁵¹

Regulation 139/2004 explicitly clarified that the Commission should no longer limit its analysis to the structural outcome of the notified merger, but consider the effects it would have on consumer welfare. When a merger brings about substantial and timely efficiencies to the consumers' advantage – e.g. reductions in variable or marginal costs, new or improved products or services – there are no grounds for declaring the merger to be incompatible with the common market.⁵² Admittedly, the impact on dynamic efficiency is uncertain, and the presence of network effects makes the market dynamics very difficult to foresee. In fact, economists have only recently begun to develop the appropriate tools to assess network effects, which calls therefore for careful and light-handed public interventions in these very specific markets and consequently for an even more cautious approach in the assessment of a notified operation.⁵³

In this sense, since a monopolistic platform maximizes network effects, it has been considered that competition between platforms does not actually increase welfare. In fact, a higher number of platforms may decrease consumer welfare as the aggregate utility from network effects can be higher with a lower number of platforms. When network effects are present, a high level of concentration in the market can increase consumer surplus. Market concentration reinforces the network effects and, thus, consumer surplus. Even if prices for the services of a dominant platform are higher because of the lack of competition, the

⁴⁷ See Facebook/Whatsapp, paragraphs 147-158.

⁴⁸ Bundeskartellamt, "Market Power of Platforms and Networks", 53. Commission Decision of 27.6.2017 (AT.39740 - Google Search (Shopping)), paragraph 312.

⁴⁹ See Commission Decision of 24 March 2004 (Case COMP/C-3/37.792 Microsoft): paragraph 870.

⁵⁰ See, for a general approach to the different types of efficiencies and the trade-off between them, OECD Policy Roundtables, *The Role of Efficiency Claims in Antitrust Proceedings* (2012): 12-15.

⁵¹ Bruno Jullien and Wilfried Sand-Zantman, "Network Effects", 16.

⁵² See Horizontal Guidelines, paragraphs 76-88.

⁵³ See Bruno Jullien and Wilfried Sand-Zantman, "Network Effects, 23; Justus Haucap and Ulrich Heimeshoff, "Google, Facebook, Amazon, eBay: Is the Internet Driving Competition or Market Monopolization?", *International Economics and Economic Policy* 11 (2014): 49-61.

thickness provided by it may offer greater value to its users.⁵⁴ In this sense, it has been considered that over-fragmentation constitutes a leading problem in platform industries, and that public policies should consequently seek to aid eventual efficient winners of platform competition in consolidating their dominant position as quickly as possible, and subsequently adopt appropriate forms of regulation of dominant platforms.⁵⁵

The reinforcement of network effects that arise from a merger may enhance the ability and incentive of the merged entity to act pro-competitively for the benefit of consumers even when it becomes a monopoly, thereby counteracting the adverse effects on competition which the merger might otherwise have. A merger involving platforms “will affect the relative base of consumers on both sides of the market, and thereby the balance of indirect network externalities across the two sides of the market. This implies that the merger will affect not only the price level but also the price structure. Conceivably, the equilibrium post-merger prices could result in some prices increasing and others falling. In addition, if the merger increases the relative customer base on one side, it increases the value of belonging to the platform to the customers on the other side. Therefore, consumer welfare may increase even though prices increase on one side or in total”.⁵⁶

It remains to be seen hence what weight should competition authorities give to efficiency considerations.

⁵⁴ See United Kingdom’s Merger Assessment Guidelines (2010) 57-58; OECD, *The Role of Efficiency Claims*, 54-55; Federal Trade Commission, “The ‘Sharing’ Economy”, 27-28.

⁵⁵ See E. Glen Weyl and Alexander White, “Let the Right ‘One’ Win: Policy Lessons from the New Economics of Platforms”, 19 *Competition Policy International* 2 (2014): 28-51;

⁵⁶ OECD, “Policy Roundtables: Two-Sided Markets”, 14-15.