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The Internet has profoundly changed the way in which we engage in economic activity. It has reduced search and transaction costs and contributed to the significant expansion of supply and the dynamic development of markets and competition.

From a competition policy perspective it is mainly the special characteristics of multi-sided platforms and networks which represent a challenge. In many cases the alleged paramount market position of firms active in the digital economy has raised concerns. In their competition law assessment of cases, competition authorities and courts have to consider the underlying principles and the complexity of business models and economic relations in these markets.

In early 2015, the Bundeskartellamt set up its "Think Tank", assigned to the 6th Decision Division, in order to be able to deal with the challenge posed by the digital economy for antitrust enforcement. The Internet plays a role in many current cases. Large US Internet businesses such as Google, Facebook and Amazon also have a strong presence in Germany and Europe. Their competitive conduct and strategies have provoked intense discussion about the competitive harm caused by such strategies and the question of whether they are legal or should be dealt with under a regulatory framework. Many of the problems identified in this debate lead to the question of whether they can be solved by means of the competition rules in place or by a revised competition law regime. This is a relevant question because the Internet businesses concerned are considered to be dominant and their conduct is seen as problematic and possibly as an abuse of a dominant position within the meaning of competition law.

The main focus of the Bundeskartellamt's Think Tank is on online platforms and networks as the most common digital business models. The objective is to develop examination models which will enable the Bundeskartellamt to quickly and efficiently assess cases involving the digital economy. The Bundeskartellamt draws the following conclusions from the Think Tank's deliberations and the corresponding case practice of the 6th Decision Division in the past year:

I. Relevant definition of platforms and networks for the purpose of this paper

The Bundeskartellamt confines its deliberations on "platforms" in the economic meaning of the term. Economic theory defines a platform as a "multi-sided market". Multi-sided businesses are a key part of the digital economy which is why any antitrust concept developed in this context has to focus in particular on this kind of business model. The same is not true, however, for businesses and online services that fit the definition of one-sided markets. Even if such businesses are also predominantly active on the Internet, the usual rules on market dominance seem sufficient for them and need not be expanded.

Networks, on the other hand, have been included in the deliberations presented here, as the economic theories on multi-sided markets are based on network models and direct network effects. The concepts for the antitrust assessment of platforms and networks are therefore very much alike.

The **media policy implications** of Internet businesses are not subject of this paper, as they are not relevant for the antitrust concept of market dominance. The definition of a platform as discussed among media professionals, which focuses in particular on the fact that the platform aggregates online content and filters it for distribution¹ (thus influencing diversity of opinion) does not consider market dominance aspects and is therefore not relevant for the economic deliberations described here.

The Bundeskartellamt has considered at length existing definitions² of multi-sided markets and networks and has intensely discussed how to adequately describe them for the purpose of antitrust law. In order to be of practical relevance for antitrust enforcement, a definition of networks and platforms needs to focus on market power aspects and to allow for a differentiation from trading markets for the purpose of market power assessment. Accordingly, Internet businesses are considered a platform in competition law terms if they provide intermediation services which allow for *direct* interaction between two or more distinct groups of users that are connected by *indirect network effects*.

There is large consent that networks, on the other hand, are defined by *direct network effects*.³ In line with the platform definition described above, an antitrust-related definition of networks would therefore be as follows: Businesses are to be viewed as networks if they provide intermediation services which allow for interaction between users of the same group, which results in direct network effects. As many products or Internet services contain both platform and network elements, it seems reasonable to define networks in close analogy to

¹ Cf. expert opinion "Konvergenz und regulatorische Folgen" commissioned by the Broadcasting Commission of the German *Länder*, p. 32; available at http://hans-bredow-institut.de/webfm_send/1049.

² Cf. Caillaud/Jullien, „Chicken & egg: competition among intermediation service providers“ RAND Journal of Economics, 2003, 34(2), 309-328; Armstrong, „Competition in two-sided markets“, RAND Journal of Economics, 2006, 37(3), 668-691; Rochet/Tirole, „Two-sided markets: a progress report“, RAND Journal of Economics, 2006, 37(3), p. 645-667. Hagiu/Wright, „Multi-sided platforms“, Working Paper, 2015, Harvard Business School, http://www.hbs.edu/faculty/Publication%20Files/15-037_cb5afe51-6150-4be9-ace2-39c6a8ace6d4.pdf.

³ Cf. for example Katz/Shapiro, „Network Externalities, Competition, and Compatibility“, The American Economic Review, 1985, 75(3), p. 424-440; Farrell/Saloner, „Standardization, Compatibility, and Innovation“, The RAND Journal of Economics, 1985, 16(1), p. 70-83; Shy, „A Short Survey of Network Economics“, Review of Industrial Organization, 2011, 38, p. 119-149.

the definition used for platforms. A prominent example of a product with both platform and network characteristics are computer operating systems.⁴

1. Direct and indirect network effects

In the Bundeskartellamt's view an appropriate platform definition requires a *wide* definition of **indirect network effects**. Accordingly, indirect network effects exist when *the value of a service or product for a specific group of users increases* (positive network effects) *or decreases* (negative network effects) *with the number of users of another group*. This wide definition covers both platforms with *bilateral positive* indirect network effects and platforms with *unilateral* indirect network effects.

In the case of *bilateral* positive indirect network effects the *members of one group benefit indirectly* from the growth of their group because it provides an incentive for the other group to grow as well, which in turn has a positive effect on the first group. The growth of one user group thus creates a "ping pong effect". Bilateral positive network effects occur in particular where the platform serves to connect two or more user groups for the purpose of direct interaction. Such platforms can be referred to as *matching platforms*. If a matching platform connects distinct user groups for a specific transaction it is called a *transaction platform*. The transaction can be conducted either via the platform or outside the platform. Examples are real estate platforms⁵, where the transaction (the purchase or rental of a property) is carried out outside the platform or hotel booking platforms where the transaction (the reservation of a hotel room) is carried out via the platform. Typical non-transaction matching platforms are online dating platforms whose objective is not to facilitate a specific transaction but to enable direct private contacts between their users.⁶

In the case of unilateral indirect network effects only one side benefits from the growing number of users on the other side, while there is no benefit to the users whose number has increased (in fact they might even experience adverse effects). This concerns in particular platforms where the actual platform business is financed by providing access to potential customers for advertising purposes. Such platforms enable one group of users to get the attention of another user group (as a whole and not filtered according to individual preferences). They could be referred to as 'audience providing' platforms or advertising platforms.

⁴ Commission, decision of 24.03.2004, file ref. COMP/C-3/37.792, para 428 ff. – *Microsoft*.

⁵ Cf. Bundeskartellamt – Immonet/Immowelt B6-39/15, case summary of 20.04.2015; see attachment.

⁶ Cf. Bundeskartellamt – Parship/Elitepartner, B6-57/15, decision of 22.10.2015 available at www.bundeskartellamt.de and case summary of 30.03.2016; see attachment.

The objective of an audience providing platform is not to achieve the best individual matching results possible but to generate widespread attention in a specific target group. More specifically, an audience providing platform provides advertisers as one customer group with an opportunity to attract the attention of the opposite customer group. Contrary to a matching platform, this opportunity to attract the attention of the other side is only intended by one side (the advertisers). From the users' perspective the growth of the advertising side is not necessarily beneficial. Consequently, while audience providing platforms also generate indirect network effects (analogue to non-transaction platforms), these only have an impact on one of the two platform sides. Typical traditional audience providing platforms are newspapers and magazines where one-way indirect network effects are also referred to as "advertising circulation spiral". Numerous services in the digital economy constitute audience providing platforms because they fund themselves by providing advertising space. This applies in particular to the services offered by Google (including its search engine).

Direct network effects arise if the users of one product directly benefit if more (positive network effects) or less (negative network effects) people use the same product as well. In other words, the effects occur between the individual members of one group rather than between two distinct groups. The connection between the users that leads to the network effects can be direct or indirect. Typical examples of networks whose main characteristic is the presence of direct network effects are telecommunication networks or social networks.

In practice, business models often combine platform and network elements. Social networks like Facebook that finance themselves through advertising are also audience providing platforms. Computer operating systems also have both platform and network elements. The use of platforms, in turn, can also generate direct network effects within the individual user groups. These can also be negative if a growing number of users diminishes the value of the platform use, e.g. because it aggravates competition among the users.

Just like indirect network effects, strong direct network effects can also generate a feedback loop if there is no compatibility or connectivity with other networks.

2. Direct interaction

A significant characteristic of a platform is the fact that it allows for direct interaction between its users. This element distinguishes platforms from trade relations and vertical trading or value chains, in which multiple market relations also occur. In the Bundeskartellamt's view it is useful to differentiate between platforms and vertical relations with regard to indirect network effects. While it is true that the definition of indirect network effects largely is a differentiation criteria in itself, the portfolio effects of a supermarket or department store can be quite similar to indirect network effects. Transaction platforms (where the transaction is conducted via the platform) are also not so very different from trade relations in that they

serve a distribution purpose as well. For these reasons a second differentiation parameter is helpful. This parameter can be found in the *direct interaction* between the individual user groups of a platform. This does not necessarily mean that the platform cannot qualify as a 'buyer' within the meaning of the Vertical Block Exemption Regulation.

Direct interaction in this context means that the platform is not involved (in economic or legal terms) in the interaction or transaction that takes place between the users of the different groups. It cannot directly control the specifics of the transaction (prices, conditions, etc.) and is not a party to the contract in legal terms. Consequently, even where the transaction between the user groups is carried out via the platform (as in the case of hotel booking platforms) this scenario should be distinguished from a typical trade relationship.

Pure online retailers (often non-technically referred to as "trading platforms") can be assessed under the traditional concepts of market dominance. Some of the big Internet players are not only active as retailers but also operate their own platforms. A prominent example is Amazon Marketplace which is integrated into Amazon's retail business. In these cases the businesses cannot merely be assessed under traditional market dominance aspects but the implications of their platform activities for their position in the market need to be considered as well.

Networks, on the other hand, do not need to be distinguished from trading platforms or other services with regard to *direct* interaction. Under competition law aspects it is of no relevance to what extent the network operator or product manufacturer participates in the interaction between the network users. Such interaction can even be indirect, if (for example in social networks) content from other users is shared with a recipient who has no connection to the user who originally posted the content.

II. Market definition

1. Market definition concepts/ defining one or two markets

The general market definition concepts (demand-side substitution complemented by supply-side substitution) are in principle also applicable to platform cases.

This is relevant for the debate on whether a platform should be seen as one market. It is argued that, considering the indirect network effects and the feedback loop triggered by them, the two sides of a platform should not be separated and the platform offer should be treated as one product. The Bundeskartellamt holds the view that at least in the case of *matching platforms* where the connection of the two user groups is the actual product offered by the platform it can be reasonable to define only one market.

A separation of the two sides would tear apart the product of the matching platform (thus annihilating the product objective of the platform operator) and would not take sufficient

account of the strong bilateral positive indirect network effects typical of this platform type. If one defines only one market, however, this definition must take into account the principles of demand-side substitution. Consequently, there can only be one market if both user groups view the functional substitutability of the platform service alike and therefore have a largely uniform demand. In such a case the two sides can be treated as one opposite market side of the platform.⁷ There are, however, also cases conceivable where the user groups find that they have different options to substitute the platform offer. This is in particular the case if one side does not depend on a successful matching result to satisfy its demand. In these cases a definition of just one market would fail to cover competitive relations that are potentially important. The question of whether one should define one or two markets therefore needs to be decided on a case-by-case basis. Such a case-by-case analysis could also consider the risk distribution agreements between the platform and one of the user groups under vertical block exemption aspects.

Audience providing platforms always require a separate consideration of the two sides.

2. No cash flow, no market?

The Bundeskartellamt holds the view that the use of online platforms for free can under certain circumstances still constitute a market under competition law aspects. The general rule of "no payment no market" should not be applied per se to such forms of platform use. From an economic (and antitrust) perspective a user group that uses the platform service for free should at least be considered a market under competition law terms *if it is connected to a paying user group*.

Previous (national) case law has not recognized free platform use as a market because it considered monetary turnover and price-setting essential competitive parameters without which a market did not exist. In a recent decision the Düsseldorf Higher Regional Court confirmed this view also with regard to an online transaction platform.⁸ The same approach is reflected in the current criteria for determining whether a merger is subject to merger control proceedings (i.e. turnover thresholds and the representation of market volumes in terms of turnover or revenues).

In the Bundeskartellamt's view this approach is no longer adequate for the specifics of the digital economy and fails to take account of the interdependencies of platform sides. This is particularly true for audience providing platforms. On account of the indirect network effects

⁷ Thus BKartA – Parship/Elitepartner, B6-57/15, decision of 22.10.2015, para 71 ff.; BKartA – Immonet/Immowelt, B6-39/15, case summary of 20.04.2015; BKartA – P7S1/Verivox, B8-67/15, case summary of 05.08.2015; BKartA – HRS, B9-66/10, decision of 20.12.2013.

⁸ HRS, decision of 9 January 2015, Ref. VI Kart 1/14 (V), para 43 – HRS, available at http://www.justiz.nrw.de/nrwe/olgs/duesseldorf/j2015/VI_Kart_1_14_V_Beschluss_20150109.html.

there is a close connection between the activities of the platform towards the advertising side and towards the "audience" side. The activities of the platform therefore pursue one and the same business purpose irrespective of the side towards which they are directed. Where a transaction platform can be regarded as catering to one market, what seems to be a free use of the platform by some users is in fact a subsidised use for a nominal price of zero. The free use of the platform by one side and the funding of the platform through advertising are both part of a pricing strategy pursued by the platform operator which serves the same business purpose and therefore does not alter the fact that the platform generates market relations on both sides.

Free advertising-funded platform services are quite common on the Internet. In fact, many Internet services enter the market offering their services completely free of charge. The decision on the funding and pricing of the use of the services is usually only taken once a sufficient number of users has been reached. The companies either chose between funding through advertising or payments or they combine the two options. Both modes of funding can be introduced and interchanged at any time. Often the monetisation of platform services occurs gradually, starting with ad-funding measures and continuing with the introduction of additional functionalities the user has to pay for. Companies that wish to monetise their online services need to take account of the prevailing 'everything for free' culture of the Internet and of (direct and indirect) network effects. The introduction of user fees can slow down the growth of a platform and is therefore only an option where sufficiently large user groups have already been achieved. At the same time an innovative product can quickly lead to user groups of a size where even a small fee generates relatively high turnover.

To consider the side of the platform that does not pay for the platform offer in the antitrust assessment of the paying side is, in the Bundeskartellamt's view, a "crutch" which unnecessarily complicates the antitrust assessment.⁹ The behaviour of the consumers who do not pay for the platform services is taken out of context ignoring the fact that even if there are no payments for the services there are other competition parameters (such as quality) that may very well influence the consumers' choices. Price competition is given a higher priority over innovation and quality competition. Ultimately, the assessment under competition law and the legal scope of protection is limited to just one customer group.

What's more, the current case law in Germany and the previous case practice in the traditional media markets are not in line with the *European Commission's* case practice. In its more recent case practice (e.g. the *Facebook/WhatsApp*¹⁰ merger decision) the *Commission* examined several online markets, including (ad-funded) social networks, although practically

⁹ Cf. BKartA – Google/VG Media, B6-126/14 – *Google/VG Media*, decision of 08.09.2015.

¹⁰ European Commission, decision of 3 October 2014, Ref. COMP/M.7217 – *Facebook/WhatsApp*.

all of the services offered there are for free.¹¹ The Commission had already followed a similar approach in the *Microsoft/Skype* case.¹² In the abuse proceedings against *Microsoft* regarding the tying of a web browser or media player to its PC operating system Windows the *Commission* and the *General Court* confirmed the existence of markets for both components despite the fact that they were at least to some extent offered for free.¹³ In its current *Google Search* proceedings the Commission published a press release¹⁴ on 15 April 2015 in which it expressed its preliminary view that Google has a dominant position on the markets for general Internet search services in Europe although such search services are always offered for free. For the sake of homogeneous competition rules within Europe a change of the current practice in Germany therefore seems to be called for.

In the Bundeskartellamt's view it is possible to view the provision of data by a user in exchange for a service as sufficient to qualify as a market relationship (analogue to the payment of money). If the approach suggested in this paper is implemented (i.e. if all activities related to a platform qualify as market activities) it is, however, not necessary to use the provision of data as an equivalent to a monetary consideration.

III. Assessment of market power

1. Concept

In principle the usual approach for the assessment of market dominance also applies to platforms and networks. The decisive criterion is whether or not the company's scope of action is still sufficiently controlled by competition. In particular with a view to the 'everything for free' culture on the Internet an assessment to that intent does not necessarily have to focus predominantly on price competition and whether there is a potential scope for price increases. In the digital economy innovation competition has a significance of its own and needs to be considered alongside price competition. The general benchmark "not sufficiently controlled scope of action" nevertheless remains the key factor of the assessment.

Previous case practice of the Bundeskartellamt suggests that platforms with pronounced (bilateral) network effects tend to produce markets with potentially high levels of concentration. In particular in the case of matching platforms this can lead to tight oligopolies

¹¹ Cf. also para 31 of the decision as well as para 75 of the Commission's decision of 7 October 2011, Ref. COMP/M.6281 - *Microsoft/Skype*.

¹² European Commission, decision of 7 October 2011, Ref. COMP/M.6281 – *Microsoft/Skype*, para 10ff.

¹³ Commission of the European Communities, decision of 24 March 2004, Ref. COMP/C-3/37.792 – *Microsoft*, para 402ff; European Commission, decision of 16 Dezember 2009, Ref. COMP/C-3/39.530 – *Microsoft*, para 17ff; General Court, decision of 17 September 2007, Ref. T-201/04 – *Microsoft*, para 927ff, 1088.

¹⁴ Available at http://europa.eu/rapid/press-release_IP-15-4780_en.htm.

which can be an efficient market type for this sort of product. On account of these high levels of concentration there is a risk that the market will 'tip' (i.e. the positive feedback loops¹⁵ of direct and indirect network effects will lead to a monopolisation of the market). Pronounced bilateral positive indirect network effects exist in particular in the case of matching platforms and incompatible networks. Accordingly, the "tipping risk" is particularly strong in these cases and needs to be closely monitored.

Although Internet markets are inherently dynamic this does not necessarily mean that the large Internet service providers are subject to sufficient competitive pressure. The dynamics of Internet markets should therefore not be regarded as a reason to generally change the thresholds for intervention. A case-by-case assessment which takes account of the actual dynamics in the markets affected is therefore still required. In addition, innovation competition is of particular relevance for the digital economy and therefore warrants specific protection.

For this reason the Bundeskartellamt suggests to examine the market dominance of digital platforms and networks under the criteria laid down in Section 18 of the German Competition Act (which deals with market dominance) but to give the specifics of platform and network markets and the digital economy in general a particular weight in the overall assessment of a case. These specifics are in particular:

- **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**
- **the innovation potential of digital markets.**

Market shares are deliberately not treated as the most relevant factor in the overall assessment. When assessing market shares in platform or network cases one should take account of the general tendency of platform markets with pronounced indirect network effects and of networks with pronounced direct network effects to show high levels of concentration, as explained above. In these markets in particular, high market shares are of less relevance for the assessment of market power than is usually the case. The reason for this can be found in the ambivalent (positive/negative) impact of network effects on competition, the fact that market processes are rather open-ended and the potential dynamics of the Internet. In many constellations these aspects make it impossible to calculate market shares with the usual numeric parameters. The only possible reference point in this context might be a high

¹⁵ Cf. BKartA – Parship/ElitePartner, B6-57/15, decision of 22.10.2015; BKartA – Immonet/Immowelt, B6-39/15, decision of 20.04.2015; BKartA – P7S1/Verivox, B8-67/15, decision of 05.08.2015.

user-based market share lead over other platforms and networks. This can be of relevance for the question of whether there is a risk of a tipping of the market induced by bilateral indirect network effects.

2. Individual criteria and overall assessment

It needs to be stressed that the examination of market power in platform and network markets also requires an overall assessment of all relevant factors. None of the criteria indicated above can, by itself, indicate or create market dominance. This is particularly true for direct and indirect network effects whose existence says, by itself, very little about the probability of market dominance. The fact that there are direct or indirect network effects, however, has a decisive influence on the decision which factors to include in the assessment of the case.

In the assessment of platform and network market power all the usual relevant factors need to be considered as well. The specific factors indicated here are *additional* elements of market power that are usually not relevant for one-sided markets. Besides that they also serve to *substantiate* the elements indicated in Section 18 (3) of the German Competition Act. This concerns in particular barriers to entry.

The first four of the following aspects of market power tie in with the criteria identified by the economists *Evans/Schmalensee* on how to assess whether or not there is a danger of a platform market to tip.¹⁶ Almost all of these criteria have proved to be relevant in the Bundeskartellamt's case practice.¹⁷ *Evans* and *Schmalensee* assume that platforms with bilateral positive indirect network effects create strong self-reinforcing feedback loops. In addition they consider further enhancing (economies of scale) or counter-balancing (multi-homing, platform differentiation, platform congestion) factors. The Bundeskartellamt holds the view that these are practicable and significant criteria which should be included in the assessment of platform market power.

In the Bundeskartellamt's understanding the term "congestion" as used by *Evans/Schmalensee* refers to the technical and physical limitations of a platform that, once reached, may make it impossible for the platform to accept any more users. Although the possibility of this happening cannot be completely excluded in the case of Internet-based services, it seems a rather unlikely scenario given the present and prospective network and server capacities. What is conceivable is a "virtual" congestion in the sense that the usefulness of a platform declines if its user groups become too large. Physical congestion is conceivable in networks whose cells only allow for a certain number of users at a given time

¹⁶ Cf. *Evans/Schmalensee*, „The industrial Organization of Markets with Two-Sided Platforms“, *Competition Policy International*, Vol. 1, No. 1 (2007), p. 165.

¹⁷ Cf. in particular Bundeskartellamt – Parship/Elitepartner, B6-57/15, decision of 22.10.2015.

(for example mobile communications markets). However, since these scenarios are already covered by (negative) direct network effects, the issue of congestion does not have a significance of its own for the assessment of platform or network market power.

The criteria developed by *Evans/Schmalensee* refer to a market process for which it is irrelevant which of the market players is ultimately able to gain a monopoly on the market and which of the market players will have to leave the market. An assessment of market power under competition law requires, however, that the market position of a specific company in relation to its competitors is determined. The relevant question in this context is whether the addressee of an abuse proceeding or the parties to a merger are the very ones that benefit from the positive feedback loop of indirect network effects and therefore have a secured market position which, in extreme cases, might result in a tipping (monopolisation) of the market. Market power assessment under competition law therefore requires an additional look at the relationship between the businesses and their competitors.

Albeit the criteria established by *Evans/Schmalensee* were defined with a view to the positive feedback loops of matching platforms, they can also be applied for the assessment of market power in networks. This is even more so as they were developed according to findings on direct network effects and complementary products. The recent case practice of the Bundeskartellamt and also of the European Commission has shown that these criteria are also of great relevance for audience providing platforms. They can in particular help to define barriers to entry and can be useful in the definition of the relevant markets.¹⁸

At the same time, the criteria listed by *Evans/Schmalensee* do not cover all relevant aspects of market dominance in the digital economy. Data sources and the potential for innovation closely linked to the digital economy are two factors that must be considered in the assessment of platform and network market power. They should therefore be given a relevance of their own in the assessment of cases.

The following section describes the individual assessment criteria in detail.

¹⁸ Cf. BKartA – Google/VG Media, B6-126/14 – *Google/VG Media*, decision of 8 September 2015; European Commission Facebook/WhatsApp, decision of 3 October 2014, Ref. COMP/M.7217.

Network effects

aa) Indirect network effects

When examining indirect networks effects the type of platform should first of all be considered, in particular the question of whether matching platforms are affected. Matching platforms are characterised by two-sided positive indirect network effects which can have a strong tendency towards self-reinforcing feedback loops. Depending on the market structure this self-reinforcing tendency can trigger the threat of tipping, ultimately leading to a monopolisation of the market. However, with regard to the assessment of market power, this tendency is ambivalent as it generally applies to all platforms active in the market. In particular, if combined with the introduction of innovations, it can lead to the relatively sudden growth even of smaller competitors.¹⁹

The Think Tank therefore only considers pronounced network effects to be a first indication of market power if the platform examined under competition law has a clear lead over other platforms. Currently no exact methods of measuring the effect of network effects on different platforms have been established. However, indices comparable in particular to the quantitative market share can be useful in view of those network effects linked to the number of users. Several different types of such indices are used in the digital economy, mostly by platforms presenting their services. According to the Bundeskartellamt's case practice, the so-called *unique visitor*, for instance, is a standard index used in the market that is most likely to be able to show how often a platform has been used.

Also, for all platforms and networks, indirect network effects have an effect on the barriers to market entry which already had to be examined under Section 18 (3) GWB. Compared with other markets the barrier to entry is generally higher as a company must have two or more groups of users on board, resulting in the "chicken & egg problem" that is often cited in economic literature. However, the market entry of an online platform must be thoroughly examined under this aspect as the problems could be significantly alleviated by the use of a free or advertising-funded business model and the worldwide visibility of the platform offer.²⁰

In the case of audience providing platforms it should be noted that these involve asymmetrical or one-sided network effects where the advertising side benefits from the users, but not, or not to the same extent, vice versa. This can even result in negative indirect network effects as too much advertising on a website or in a newspaper can reduce the attractiveness of their content. In the latter case, in particular, a crossover effect can be assumed to exist. A strong position on the users' side leads to an incentive to keep the

¹⁹ Cf. in particular Bundeskartellamt – Parship/Elitepartner, B6-57/15, decision of 22.10.2015 (only available in German).

²⁰ Cf. in particular Bundeskartellamt – Parship/Elitepartner, B6-57/15, decision of 22.10.2015.

supply of advertising space tight and a greater scope for price increases on the advertising side.

bb) Direct network effects

Within the framework of assessing market dominance, the examination of (positive) direct network effects under competition law mainly focuses on the issues of barriers to market entry and switching costs incurred by customers. Furthermore, just as for platforms, the possible threat of tipping must be taken into account. Entry barriers and switching costs are important factors in such an assessment. The concept for examining direct network effects is largely similar to the one applicable for indirect network effects. As combinations of platforms and networks are often found in practice the elements of the examination concept can be integrated relatively easily. However, different assessments are possible as to the details of direct network effects.

In the case of networks, the switching costs incurred by users can be high, reducing the incentive to switch to another supplier. The switching costs not only include the costs of connection to a different network, but in particular the opportunity costs that can result from the loss of network effects when customers switch to another supplier. With higher switching costs customers will be less willing to switch to another supplier, all the more so if the installed base of the original network is large. Switching to another network will only be attractive for users if the benefit created by the new network clearly outweighs the switching costs. In the case of a larger installed base the benefit of a new network must be even higher.

Just as for platforms, the exact effect of the (positive) direct network effects must be examined. In this respect a specific aspect of networks is highly relevant, i.e. the question of whether the network is compatible with other competing networks, which would make it easier for users to switch supplier. Depending on its extent, compatibility can counteract tipping and lower the direct network effects' barrier to market entry. Furthermore, the prevailing user behaviour is also relevant in the assessment of direct network effects, in particular in the case of differentiated networks.

The above economic considerations on the threat of tipping in the case of networks only focus on one effect or overall market tendency. They do not, however, deal with the question of which business will ultimately benefit from this. For this reason the relationship between the networks and their competitors must also be taken into account in addition to the above criteria. Pronounced network effects are an indicator of market power in cases where the network or network element of a product examined under competition law has a significant lead over other networks with regard to the installed base.

b) Economies of scale

Economies of scale have always been relevant in the examination of market dominance. They represent one of the aspects to be examined in entry barriers. Economies of scale are often based on cost advantages where increasing output as a consequence of constant fixed costs reduces the average costs. They can be based on specialisation, learning processes, advantages of high capacity utilisation or batch size economies. These advantages can prevent market entries or make them considerably more difficult as a new entrant can only be successful if a specific sales volume is achieved within a short period of time ("minimum scale of entry").²¹

For platforms, and in particular matching platforms, economies of scale play an additional role according to *Evans/Schmalensee* as they can further strengthen the self-reinforcing positive feedback loop that is inherent in platforms.²² Economies of scale are mainly based on specialisation and learning processes of platforms. Other factors, such as advantages of high capacity utilisation which are typical of technical manufacturing processes, are less frequent. Due to their additional relevance in the market tipping process the Bundeskartellamt would like to see these aspects included in the examination concept.

c) Single-homing, multi-homing and the degree of differentiation

In a platform or network market, the type of use can play a role in the self-reinforcing feedback loop and the threat of tipping. The relevant types of use are referred to as "multi-homing" and "single-homing". This feature is part of the concept applied by *Evans/Schmalensee*.²³ Single-homing and multi-homing practices are, however, also relevant in networks and audience providing platforms.

In a **multi-homing** scenario users use several platforms or networks in the market. Multi-homing on matching platforms can be a factor counteracting the self-reinforcing feedback loop effect as customers use several, possibly differentiated platforms in the market, which considerably reduces the lock-in effect possibly involved in network effects, particularly in direct network effects. This can lower entry barriers as a new entrant can establish a platform without having to induce customers to exclusively use its new and still unknown platform.

Single-homing users only use one single platform or network. In the case of single-homing on both sides, several platforms or networks can exist in a market. However, users divide

²¹ Bundeskartellamt, Guidance on Substantive Merger Control, 2012, para. 65; cf. also European Commission, *Facebook/Whatsapp*, decision of 03.10.2014, Comp/M. 7217, para. 119 and *Microsoft/Yahoo*, decision of 18.02.2010, Comp/M. 5727, para. 148 ff.

²² Evans/Schmalensee, „The industrial Organization of Markets with Two-Sided Platforms“, Competition Policy International, Vol. 1, No. 1 (2007), p. 165.

²³ Cf. Evans/Schmalensee (2007). The Industrial Organization of Markets with Two-Sided Platforms, Competition Policy International. Vol. 3, No. 1, 151-179. Interim report on this, B II.3.

themselves up between the different platforms or networks. According to the Bundeskartellamt's practical case experience, platforms can also operate in an environment where single-homing is only practised on one side and where the other user group uses several platforms.

The risk of tipping is greater in the case of single-homing activities on matching platforms or networks than in the case of multi-homing, because single-homing can result in suppliers competing for the market and, ultimately, monopolisation. Although single-homing intensifies the competition for single-homing users, it also raises the barriers to market entry. This also applies to networks which cause high switching costs due to their resulting links with specific individual users and can thus have a strong lock-in effect. In such cases new suppliers may have to poach users from the platforms or networks already in place. Moreover, for platforms the incentive to conclude exclusivity agreements with single-homing users can increase, a development which would facilitate or secure concentration in the market.

In practice, however, users behave in many different ways and the effects of their behaviour should be examined in each individual case. There are probably not many markets in which a specific consistent user behaviour can be observed. The Bundeskartellamt therefore believes that assumptions on market dominance can generally only be made on this basis if the vast majority of users behave in the same way. Multi-homing can also take place in several steps or phases if users focus on one single platform and use other platforms in addition to this for shorter periods of time.²⁴ These types of use must be assessed on a case-by-case basis.

It should also be examined first of all whether multi-homing actually takes place in the same market or whether the parallel use of different platforms with different content is more likely to indicate the existence of separate markets. This would be the case if platforms or networks satisfy complementary requirements.

The degree of differentiation of platforms and networks is closely linked to the prevailing type of use. Under the *Evans/Schmalensee* concept, this can represent a further factor counteracting the positive feedback loop effect in matching platforms, but also in networks.²⁵

The degree of differentiation in the market refers mainly to the strategic positioning or market positioning of the platforms or networks on the basis of heterogeneous customer preferences. It can also refer to the size or reach of the platforms and their target group. An increasing degree of differentiation will curb the tendency towards monopolisation.

²⁴ Cf. Bundeskartellamt – Immonet/Immowelt B6-39/15, case summary of 20.04.2015.

²⁵ Cf. *Evans/Schmalensee* (2007). *The Industrial Organization of Markets with Two-Sided Platforms*, Competition Policy International. Vol. 3, No. 1, 151-179. Interim report on this, B.II.4. a). Bundeskartellamt – Parship/Elitepartner, B6-57/15, decision of 22.10.2015.

Differentiated platforms and networks address specific groups of users and aim at accommodating their heterogeneous preferences. Due to the heterogeneous user preferences it appears unlikely that all or at least almost all users will use only one platform or network. As a consequence, multi-homing can be observed in the market. The range of differentiated platforms and networks that can be considered must first of all be investigated within the framework of defining the geographic market and the product market, because widely differentiated platforms and networks can also reflect separate requirements on the demand side.²⁶

Even with heterogeneous preferences the network effects occurring in platforms and networks can still result in situations where users of a larger platform or network benefit from its size. However, if the fulfilment of the users' preferences also depends on quality factors, and not only on the size of the other market side or the size of the network, this will reduce the network effects' tendency towards concentration in the case of matching platforms and incompatible networks.

d) Data sources

In the Bundeskartellamt's view, access to data sources is a factor indicating market power that should be analysed in an overall assessment under competition law, particularly in the case of online platforms and networks. A detailed discussion of this issue is provided in the joint paper by the Autorité de la concurrence and the Bundeskartellamt on data and their implications for competition law.²⁷

Customer and user data, but also third party data, have always been a valuable source of information for businesses. The economic use of the personal data of customers or users is not a new phenomenon of the Internet age, but has been an important economic factor in the "analogue" world as well. Market research, i.e. the systematic collection, processing and analysis of data has always been the basis of business marketing activities. Businesses aim at gaining as much information as possible about their (potential) customers in order to be able to improve their products, offer personalised services or improve their targeted advertising.

Digitalisation and, above all, the Internet have created a new dimension of data collection and use. Digitalised communication networks, for example, have enabled telecommunications businesses to collect data everywhere to find out when and how long consumers communicate with each other - and where they are. The fact that the search for

²⁶ Cf. e.g. Bundeskartellamt *Google/VG Media*, B6-126/14 – *Google/VG Media*, decision of 08.09.2015, on the issue of defining horizontal and vertical search engines (only available in German); Bundeskartellamt – *Parship/Elitepartner*, B6-57/15, decision of 22.10.2015.

²⁷ Competition Law and Data, 10th May 2016 published on www.bundeskartellamt.de.

information as well as the trade in goods and services now take place online has enabled businesses to build profiles of (potential) purchasers by means of so-called 'tracking methods'. Only the process of digitalisation has made it possible to analyse particularly large amounts of data (*volume*) from different sources and formats (*variety*) as fast as possible (*velocity*).²⁸ For this reason it appears to be useful to take this development into account in the examination of market power.

Many Internet products are essentially based on data. If such data are part or input of an Internet offer, the exclusive control over specific data can represent a barrier to the market entry of competitors. This applies in particular if the market affected is characterised by indirect reciprocal network effects. Control over data *per se* is not an indication of market power. However, in an overall assessment of all circumstances this can play an important role. It must be examined on a case-by-case basis which data are collected, what is their relevance for competition in the market, whether they can be duplicated and which options are available to a business wishing to combine data from different sources.²⁹

e) Innovation potential of digital markets

The criterion of Internet-related innovation potential is meant to emphasize the importance of innovation competition in the examination of online platforms and networks and to adapt the concept of potential competition to the digital economy.

The Bundeskartellamt considers that the existence of market dominance of online platforms and networks with substantial market positions or even monopolies cannot be denied simply by pointing out that these positions can be challenged by the Internet's innovative power and that the possibility of disruptive changes is inherent in the Internet. The innovation potential of the Internet must be examined in each individual case. In all markets the Internet is generally highly dynamic and characterised by a large amount of innovations. Innovative products and services can create and establish new digital markets within a short period of time. However, these dynamics can also result in online services rapidly losing their significance. Crucial factors in this process are characteristic features of the Internet, i.e. global networking and accessibility, but also high-speed innovations.

The examination under competition law, however, requires detailed indications that such dynamic or disruptive processes will take place within the forecast period relevant for each individual case. An abstract challenge expected to take place at some unspecified point in

²⁸ The three terms are mainly referred to as characteristics of the term "big data". They stem from a research report by Doug Laney, analyst at the Gartner consulting firm; cf. also Monopolies Commission, Special Report on "Competition Policy: The challenge of digital markets", 2015, p. 44 with further references.

²⁹ Cf. Google/VG Media, B6-57/15, decision of 22.10.2015, para. 160 ff. (only available in German).

the future will not be sufficient. This also applies to the control of abuse of dominant positions in particular, which focuses on a specific current market situation. In the Internet market positions are possible that are secured at least temporarily by (direct and indirect) network effects. For these periods the abuse of a dominant position in view of possible future processes is not acceptable.

Moreover, the Internet's innovative power in itself is a process that must be protected as it can be adversely affected by concentration and the scope for action or conduct resulting from this. Innovation competition plays an important role in online markets. This is at least equally important as price competition in view of the global 'everything for free' culture prevailing in the Internet. It should therefore be examined in each individual case whether concentrations or other practices are likely to result in a restriction of innovation competition.

The examination of market dominance can focus on two aspects: the existing innovation competition in the market and the potential competition from innovative businesses:

The existing innovation competition refers to the innovation-driven competitive pressure on and between the businesses currently active in the relevant market. According to the Bundeskartellamt's case practice the extent of this pressure can vary which is why its effects in the market should be analysed in detail. This analysis should also take into account important dynamic or disruptive effects from other markets which have an influence on the market under examination.

The analysis of potential competition should differentiate between the two scenarios of possible market power restrictions through potential competition (positive outcome) and the elimination of potential competition (negative outcome). The concept of potential competition applied so far for merger control purposes is also suitable for the examination of online services, but should take into account the specific features of the digital economy:

Within the context of the *likelihood of market entry* the examination should focus on the *actual* entry barriers in the market affected. It cannot always be assumed that entry barriers in the Internet are low. In many cases, gaining entry into a multi-sided market for online services may be easier than in the case of traditional multi-sided markets. On the other hand, however, in online markets in particular, some factors can act as entry barriers and reduce the likelihood of new businesses entering the market. In specific markets it may be necessary to spend significant amounts on marketing to support a product in the phase of market entry by advertising campaigns aiming to improve customer awareness and build up brand recognition. Further significant investment may be necessary in the case of technically sophisticated products, e.g. in order to develop a database or a complex algorithm and to cover distribution costs.

The examination of the *extent and effectiveness* of market entry raises the question of whether and to what extent market entries by free online services without any monetarisation, which can frequently be observed in the Internet, should be taken into consideration. It can also be observed in the Internet that many operators of free online services enter the market with the specific aim of being taken over by established firms. However, in the view of the Bundeskartellamt, unpaid business models that are seen as a characteristic feature of the digital economy and thus as an element of competition in the market, should be generally taken into account. If potential competition from neighbouring platforms or network markets is under consideration, it must be examined whether the market entry is effective, i.e. whether the business can actually transfer the reach of its platform/network to the new market. The mere existence of reach does not allow any conclusions as to the ability of potential competition to limit market power.