

Monitoring of digital communications platforms and gatekeepers of the open internet

RTR Telecommunications and Postal Services Division (RTR FB TKP)

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Executive summary

Digital technology is increasingly dominating our lives and day-to-day affairs, while only a few digital corporations are shaping digital space. The conceptual approach presented here highlights how significant major digital corporations have become and identifies the need for monitoring. In the ensuing analysis, this paper distinguishes in detail between services and their functions, ecosystems, and platforms. What mainly distinguishes platforms is multi-sidedness and the capability of generating indirect network effects. Individual services or sides belonging to one platform are already subject to existing electronic communications regulation. An incomplete picture nonetheless emerges when an isolated view is taken of specific communications services, without considering how they link into platforms and ecosystems.

Differing competitive dimensions become apparent depending on the particular topic examined (for example, communication services and platforms or specific gatekeepers). Services compete with one another through their functions in each case. Platforms often organise competition between individual platform sides and set prices, in particular depending on indirect network effects. Platforms in turn compete with other platforms. Both services and platforms usually belong to larger ecosystems. Ecosystems in turn compete with one another at least in subcategories, even though often originating in differing sectors (e.g. Apple in user devices, Amazon in retailing, and Google in web searching). Ecosystems take competitive decisions aimed at optimising the positive external effects within the particular ecosystem, as well as at prevailing over other ecosystems and expanding at their expense.

Ultimately, ecosystems strive in many instances to achieve gatekeeper status, assuming a key position as intermediaries that enjoy a superior position when negotiating with suppliers or buyers upstream or downstream in the chain. In Germany, the draft bill for the tenth amendment to the GWB (German Competition Act 2020) seeks to specifically define ecosystems as having 'paramount significance across markets' while proposing to define the 'power of intermediation' as a specific factor in market power.

Key factors potentially restricting competition include: the bundling of functions; the cost structures favouring a comparable scale; access to extensive data collections; direct and indirect positive network effects; single-homing (supported by phenomena such as pre-installation and simultaneous consumer lethargy), switching costs; as well as the breadth, financial strength and monetisation of ecosystems and their scope for action in relation to complementary services. Factors potentially promoting competition are: multi-homing, interoperability and data portability, as well as a large degree of change and innovation and product differentiation.

The definition of a relevant market is usually a precondition for assessing competition. In the case of platforms, however, market definition poses methodological difficulties and challenges, which are initially not considered in this monitoring exercise. Thus, market shares can be determined only to a limited extent;

in interpretation, attention needs to be drawn to the lack of a market definition while elaborating the specific frame of reference used to determine market shares.

Whether market power exists is ultimately determined by considering all these factors in their entirety and, especially, in how they interact. To assess services with similar functions—such as instant messaging—a matrix is presented that includes indicators for each factor relevant for competition. RTR's Telecommunications and Postal Services Division (RTR FB TKP) has acquired data, based on a representative sample of Austrian subscribers, allowing ongoing monitoring of how various applications are used in detail (frequency, amount of time etc.). The results of the assessment are to be shared with the Federal Competition Authority (BWB) and jointly evaluated on an ongoing basis. The BWB can later specifically address aspects relating to abuse of market power. Also, with regard to methodology, the BWB has been closely consulted. The ultimate goal of the monitoring exercise is to establish an initial means of assessing digital platforms and ecosystems with a view to competition, possibly serving also as basic input for further action by other authorities (such as the BWB, KommAustria or the Data Protection Authority), for example to address any emerging competition/regulatory issues.

This methodology is to be subsequently put to consultation. Another task is to expand the scope of the competition methodology to include gatekeepers who might restrict open internet access.

Non-Binding Translation

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1 Introduction: motivation and goal

1.1 Motivation

People spend approximately 20 per cent of their internet time using services provided by two major digital corporations, specifically Google and Facebook.¹ The open internet is accessed through channels including search engines, browsers, mobile operating systems, app stores and voice assistants. Communications platforms and social networks are the main ways of staying in touch with others via the internet. Several large digital providers collect vast data, apply artificial intelligence and generate appreciable added value. In particular the two corporations mentioned above lead the global market in online advertising,² which is increasingly displacing conventional advertising. Estimates predict one half of global advertising expenditure to be spent on online advertising by 2021.³

The main focus of the monitoring methodology described here is platforms. What do platforms do? They assume a role in aggregation and coordination. In doing so, digital platforms reap enormous benefits from dramatically reduced transaction and information costs in the internet. Thus, platforms occupy the space between supply and demand, assuming a coordinating role and making themselves ‘irreplaceable’.

Many services belonging to those corporations also act as intermediaries between various user groups and enable indirect (and mostly positive) network effects. This means that the value of the platform for users on one side rises with the number of users active on the other side. In many cases, significant direct (and often positive) network effects are also created, meaning, the more users on one side of a platform, the greater the benefit for an additional user on the same side. The platform operator, or the intermediary, decides on optimum pricing, considering factors in particular such as indirect network effects and the price users on the various sides of the platform are willing to pay in each case.

In the digital world, a company’s size and the breadth of its product line enable it to achieve huge scale and synergy effects. Platforms are therefore a highly attractive business model for companies already having a large customer base.

Platforms usually belong to larger digital ecosystems. Through backward and forward integration, the owners of major digital ecosystems expand into new markets, both vertically and—by means of market power transfer—horizontally. Expanding in this way supports the collection of additional data, which in turn improves the ecosystem’s competitive position and can ultimately lead to sole access to and monetisation of data, for example through personalised advertising. Digital ecosystems undeniably have yielded and continue to yield benefits for the economy

¹ Figures for Australia, ACCC (2019), page 6. The average Austrian online user spends between 20 and 30 minutes daily in each of the ecosystems of Facebook and Google (source: Reppublika).

² Cf. CMA (2019)

³ Zenithmedia (2019)

at large—including reduced transaction costs and targeted supply. At the same time, they pose risks for the economy, with specific digital ecosystems and their conglomerate structures potentially becoming invulnerable and thus systemic platforms in many sectors. They can suppress competition and innovation from other parties, resulting in appreciable harm over time, even or especially with regard to innovation.⁴ The planned monitoring system is aimed at identifying early on any potential harm and the need to respond with action.

Finally, these factors favour strong concentration and the establishment of single providers holding vast market power in the case of specific services. The European Commission refers in this context to systemic platforms and to acting as gatekeepers to markets, consumers and information.⁵

RTR FB TKP ensures competition among telecoms providers as well as open internet access. Meanwhile, there is a risk of major digital ecosystem providers and their platforms becoming gatekeepers, restricting access to the open internet and distorting competition with and/or among telecoms providers. This results in the need for active monitoring of major digital ecosystem providers in the markets affected. Responding to this undisputed need is part of the Commission's strategy for shaping Europe's digital future.⁶

1.2 Rationale and purpose of monitoring

Monitoring aims to provide a structured overview of digital platforms and a structured methodology, facilitating a description of such platforms along competitive dimensions as well as assessment based on competition economics. A rapid initial assessment is to be made possible, allowing a determination of the main aspects and any potentially detrimental economic development.⁷ The focus of monitoring is to be platforms and ecosystems, their market power and, finally, their conduct—including conduct aimed at suppressing competitive pressure from third parties in or near a market.⁸ In the final instance, it will often be necessary to weigh any detrimental economic impact against the efficiency gains induced by certain types of conduct.

By the same token it needs to be seen that, measured on current standards of competition law, monitoring of this kind does not yield an analysis adequate for defining a market, or for identifying any participant having significant market power or abusing market power. This would require more detailed analysis by the institutions charged with the related tasks. Among the aims is to provide the data

⁴ Cf. German Federal Ministry of Economic Affairs and Energy (2020); other potentially problematic developments relating to competition can also be linked to platforms (such as hub-and-spoke cartels).

⁵ Communication from the European Commission (2020), page 6. Cf. the term introduced in Art. 19a of the tenth amendment to the German GWB: undertakings with 'paramount significance across markets'.

⁶ Cf. Communication from the Commission (2020).

⁷ Cf. the request by the Group of Socialists and Democrats in the European Parliament in the Position Paper on a Digital Europe, S&D (2020), page 7: "This review should include ... alert mechanisms ... when systematic anti-competitive behaviour is identified. The European Commission should consider ex-ante rules for dominant digital companies as well as for closed ecosystems exercising a gatekeeping activity."

⁸ Competitive pressure could be suppressed across individual markets, of course.

base for any analysis of the kind referred to, or a system yielding an initial overview or evaluation, in the latter instance where issues of competition law emerge in other contexts (for example in the case of a merger or suspected abuse of market power). Under this approach, the findings of any analysis are to be shared continuously with the BWB, to allow that authority to tackle suspected abuse of market power where, based on competition law, irregular developments are identified. Monitoring of platforms operated by communications services and digital gatekeepers is thus to be seen in the broader context of closer cooperation on digital issues between RTR FB TKP and the BWB, as agreed through forming a task force.⁹ This information is also to be used as a *preliminary system*, where appropriate, by other related decision-making bodies and institutions (such as in data protection and administration) in decisions and in meeting responsibilities.

Finally, the findings produced should also provide a basis for potential corrective action. Here it will be important to distinguish between the retail level and any level involving input. Corrective action should, where possible, be focused on ensuring the necessary access to input required for the market, thereby adequately facilitating competition in the retail market.¹⁰

2 Background and context

As a prerequisite for any discussion of the relevant issues, Figure 1 provides a potential classification of platforms in summary form. Communications platforms in the narrow sense,¹¹ such as WhatsApp and WeChat¹², support instant messaging and usually voice calling. Social platforms offer virtual rooms for social interaction and usually for conventional communication; media platforms facilitate the sharing of media content within a community not limited in scope a priori, but without supporting any response options; development platforms provide an environment entailing the prospect that developers' applications will be used by others, in many cases worldwide; and financial platforms process transactions including payment services. Platforms also serve as intermediaries between providers of various services and retailers on the one side and demand-side users.

⁹ The UK government follows a similar approach in the terms of reference for the digital markets taskforce, published on 11 March 2020, which includes the following term: The taskforce will focus its expert advice on how to promote competition, and how to address the anti-competitive effects that can arise from the exercise of market power in digital platform markets: online services that intermediate between different groups to buy, sell, share and exchange different goods and services, typically collecting and using vast amounts of data to deliver their services."

¹⁰ Cf. Communication from the Commission (2018), recital 21.

¹¹ See the detailed discussion below towards a definition of platforms. Not all platforms in the narrow sense are platforms as defined in this methodology paper.

¹² In the case of WeChat, instant messaging was the starting point for a digital ecosystem that has since come to encompass virtually all of the platform types described here. Cf. OECD (2019)

Eine mögliche Form der Klassifikation von Plattformen

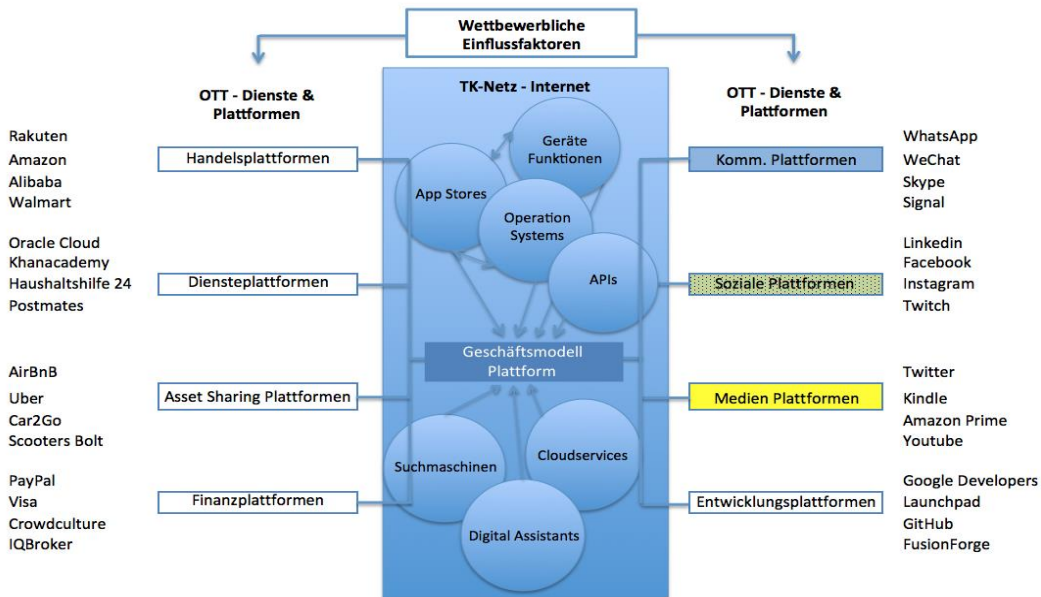


Figure 1: Potential platform classification¹³

2.1 Topic of study

Key concepts relating to the methodology presented here are described in detail in the following.

2.1.1 Services, functions and ecosystems

Figure 2 shows the structure and context of the key terms used in this paper. The smallest unit is an individual *function* of a service that is made available to users and potentially represents the core customer offering. A set of functions usually forms a service.¹⁴ By offering highly varied functions, a product or service entails value for users. Illustrated with reference to instant messaging, such a set of functions might encompass sending and receiving text, voice, image and video messages.

¹³ It needs to be seen that precise classification is not always possible since platform categories overlap. This is represented in Figure 1 by shading and highlighting in the case of social platforms. The classification is illustrative and not exhaustive.

¹⁴ Many services initially consist of only a single function.

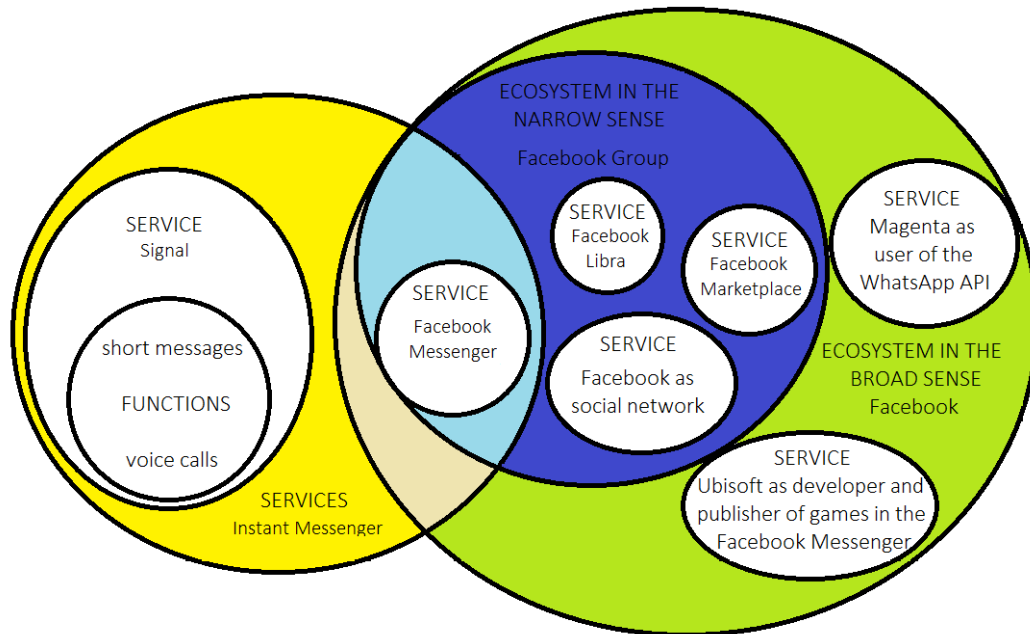


Figure 2: Classification of functions, services and ecosystems

A *service* is therefore an ensemble consisting of this set of functions owned by a certain company. Signal can be seen as an example here. This instant messenger offers functions including the sending and receipt of text, voice, image and video messages. A variety of companies usually offer similar services, in each case a similar set of functions. In providing a similar set of functions as Signal, Facebook Messenger also belongs to the category of ‘instant messenger’ services, that is, a set of similar services. The instant messenger category additionally includes other services—such as WhatsApp, Skype, Snapchat, iMessage, Hangouts, Viber and Telegram, to be examined in more detail below. All these services fulfil similar purposes, having similarly aligned sets of functions as defined above: in the least, the sending and receipt of text, voice, image and video messages.

An *ecosystem in the narrow sense* (shown above by the blue ellipse in Figure 2) refers to the set of all services provided by one specific company. An ecosystem can in many cases own services or have emerged from a service. An example of the latter is Facebook, an ecosystem ultimately arising from Facebook Messenger and the Facebook social network, services both provided by the Facebook corporation. The ecosystem owner has the capacity to set the rules governing the services belonging to the ecosystem and in particular access to those services. In other words, the owner defines how accessible or inaccessible the ecosystem is for components and new services developed by third parties. Here, access to application programming interfaces (APIs) plays a key role. The more limited the access to certain kinds of input, the more inaccessible is the ecosystem. Access to APIs is a decisive factor for third parties. The third party (i.e. not the user and not the platform) in this example might be a company that develops games for Facebook Messenger and uses Facebook data. Such a company, while not strictly a member of the Facebook Group

ecosystem, does belong to that ecosystem in a broad sense (for instance because it uses Facebook's social graphs).

Within the framework of the methodology presented here, an *ecosystem in a broad sense* typically consists of a number of additional companies that supplement one another with services to create new services and functions, ultimately producing goods and services offering superior customer benefit (this kind of broader ecosystem is represented by the green ellipse in Figure 2). An example is game developer and publisher Ubisoft, which uses Facebook ecosystem services, has access to the platform's participants and is integrated with the platform in various ways through APIs. Demand-side parties often benefit from synergy effects arising in the consumption of such services and functions within a uniform ecosystem. Potentially, in such cases companies can compete with one another for providing a specific service.

Digital ecosystems continue to gain in importance as more and more products and services are rooted in digital services and/or platforms. Companies are frequently able to access new markets thanks to a platform-based business model. An example here is smart home developments, involving intelligent building automation. The development of the main protocols and voice assistants used is dominated by major ecosystems. Companies not belonging to an ecosystem are able to manufacture the cameras and sensors and even the software compatible with that ecosystem.

In the example shown in Figure 2, Signal does not belong to Facebook's ecosystem in the narrow or broad sense, since the two companies are not affiliated through ownership rights or through a service offered by one of the two (for example an app store). WhatsApp, owned by Facebook, is part of the Facebook ecosystem both in the narrow and broad sense.¹⁵ Google Hangouts and the Google Play Store (its app store) as well as other services directly from Google all belong to the Google ecosystem in the narrow and broad sense. All of the instant messaging services named above, including Facebook Messenger, are also available from Play Store and thus belong to the Google (or actually Alphabet) ecosystem.

2.1.2 Platforms and indirect and direct network effects

A service becomes a *platform* once it services at least two clearly distinct user groups and thus more than one side, giving way to indirect network effects.¹⁶ It needs to be seen here that a service can have commercial or non-commercial user groups. Non-commercial user groups consist only of consumers. Depending on varying roles, one and the same person can belong to more than one user group and thus in principle participate in more than one side of a platform. Video platforms are an example of this, where a user can both make videos available and consume others' videos. Cases are also observed where a service, initially made available to only one user group,

¹⁵ An ecosystem in the narrow sense can also be expanded through acquisitions, without any API as described above; Facebook's takeover of WhatsApp is an example. The reasons for such an acquisition, be it data collection or strategic value for the ecosystem, are not considered in the definition for the time being.

¹⁶ Strictly speaking, this definition refers to *multi-sided* platforms.

later develops into a platform once a second user group is allowed access or a monetisation function is added. The Facebook social network is an example here: initially it achieved only direct network effects among end users but later became a platform, after advertising space was offered to businesses, for example. Acting as intermediary between the various sides of a platform, the operator enables indirect network effects (usually considered positive at least by some).

In the case of multi-sided platforms, *indirect network effects* occur where the benefit for the individual user on one side of the platform changes with the number of users on the other side. An external effect of a user on other network users is generally also considered a network effect. Positive, indirect network effects are in most cases a factor determining the market power of platforms.¹⁷ Indirect network effects can exist in either or both directions, that is, between the two sides involved. *Indirect network effects* can require *market entry on at least two sides*. An example here is seen in the app stores operated by the two major mobile operating systems, at the same time ecosystems. Massive indirect network effects are precipitated by the unfathomable number of apps developed and made available to users of each of the mobile operating systems. The Facebook social network represents not only a two-sided but a multi-sided platform, in that users, advertisers and game developers simultaneously form various sides of the platform, with indirect network effects potentially arising within all pairs of sides.

Direct network effects are network effects within one user group.¹⁸ Significant positive network effects are seen for the Facebook social network or for platforms inviting user ratings, to name examples.

2.2 Topics of study and existing regulation

To determine whether platforms and ecosystems fall within the scope of current regulation under the EECC,¹⁹ initial discussion will be given to the rules and definitions set out there. The role of these services, as defined in the EECC, as well as of platforms and ecosystems is then considered.

The EECC distinguishes between internet access services, interpersonal communications services and services consisting wholly or mainly in the conveyance of signals (including leased lines). Explicit exemptions from the EECC rules are named for broadcasting content, certain information society services and financial services, among others. Interpersonal communications services and information society

¹⁷ One example of an indirect detrimental network effect is an excessive amount of advertising in a free newspaper.

¹⁸ Cf. Belleflamme/Peitz (2015), page 577. Direct network effects of a detrimental kind also exist of course, for example where a service becomes overtaxed or excessive competition arises.

¹⁹ Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code, PE/52/2018/REV/1, OJ L 321, 17.12.2018, p. 36–214.

services, which build on the internet, are also collectively referred to as over-the-top (OTT) services.²⁰

Examples of interpersonal communications services include voice calling as well as email and instant messaging. Here, communication must target a limited group of recipients as defined by the sending party, while responses must also be possible. Including only one, insignificant secondary function from another service, such as a game, is not enough to qualify as an interpersonal communications service.²¹ A distinction needs to be made in detail between number-based and number-independent interpersonal communications services. The former category connects with publicly assigned numbering resources and uses numbers from the numbering plan, whereas the latter does not. Text messaging, voice calling and Skype Out are dependent on phone numbers, while WhatsApp and Facebook Messenger are not. BEREC (2016) refers to number-dependent interpersonal communications services as OTT-0 services, number-independent ones as OTT-1 and information society services as OTT-2. A feature that is highly significant from a regulatory perspective is that OTT-0 services are generally interoperable, whereas number-independent interpersonal communications services (OTT-1) can be required to support interoperability only under specific, narrowly defined conditions, such as to generate direct network effects across services.

OTT services can in principle also belong to platforms, and many OTT-1 services in particular belong to major ecosystems. Such frequently offer OTT-1 services to customers free of charge for strategic reasons, for instance to gather data or grow a customer base. Examples of OTT services belonging to platforms include email services or instant messaging funded through advertising.

When analysing in detail, it is important to recognise that OTT services often play a central role in platforms and ecosystems, so that isolated consideration of a single service overlooks key aspects. This makes a holistic approach to assessing platforms and ecosystems necessary in many cases.

2.3 Pivotal dimensions of competition

Further analysis needs to discern between the various dimensions of competition, drawing on the definitions of services, platforms and ecosystems as a base.

Competition is most direct where specific services are supplied. From among competing services, the consumer selects and uses one or more that appear suitable for meeting a defined need. Examples of distinguishing characteristics potentially affecting the choice of a service as well as its competitive ranking include: the price (if apparent), the type and scope of functions included, quality (of data management, for example) and design. Some services can be observed over time to diversify the functions included. In selecting a service, the underlying platform or ecosystem can

²⁰ While OTT services in some cases are substituting for conventional communications services such as voice calling and text messaging, they also drive demand for internet access services, over which they are provided (hence 'over the top').

²¹ How challenging such a distinction or categorisation can be is illustrated in Tas and Arnold (2019).

be a major consideration, in addition to the direct network effects expected from that service.

Zero-priced in some cases, services can be monetised or funded in various ways. Besides directly charging a price (though some have none),²² ads can be displayed (thus supporting funding via another website of the platform) or personal data collected, to be used in monetising other services belonging to the ecosystem. A service can also be offered without direct monetisation for strategic reasons, benefiting the ecosystem at large, for example.

A platform, meaning a service having more than one side, will often arrange for competition between specific sides or among all sides. An example here is an app store: it hosts competition among various services and apps, for example communications apps, which are offered to consumers to select from. Retail platforms usually arrange for competition among various retailers, which consumers may then choose from. Marketplaces such as eBay set up competition on both platform sides.

A distinction needs to be made between the competition organised by one platform among offerings and competition between platforms. Credit card systems for example, having cardholders and retailers on each side, compete to a certain extent with those parties' payment platforms, since retailers as well as consumers frequently engage in multi-homing. The platform operator, or the intermediary, determines the optimum price to charge for platform use, considering factors in particular such as indirect network effects and demand elasticity on the various user sides of the platform. Platforms usually need to first attract a critical mass of users before enough direct or indirect network effects are achieved for benefits to become visible. Offering zero-priced or subsidised products is often the preferred strategy for scaling up quickly, that is for reaching a critical mass of end users.

In many instances, both specific services and specific platforms belong to one ecosystem in the narrow sense and are thus affected by the common owner's decisions. When defining the parameters for the ecosystem, the controlling instance or the owner considers competition not just in terms of a particular service or across sides of a platform but with a view to the ecosystem as a whole. After all, ecosystems including their platforms and services also compete with one another, or, specifically, compete for the end user's choice of ecosystems, a choice that in some cases involves single-homing or high switching costs. Services can, for example, be offered free of charge to lure customers into the ecosystem. An ecosystem can also pursue a targeted strategy to lock out other ecosystems, by using services or in order to exclude competition in certain services.²³ Offerings can if required be funded from other areas of the ecosystem in the narrow sense.

²² Examples here include a payable subscription, a 'freemium' model involving a zero-priced basic version and a payable premium version, charging by transaction, or payable supplementary services (ringtones, icons or similar). This means a communication service can also be exclusively linear, in which case it would be an OTT but not a platform.

²³ Cf. Art. 19a of the draft bill for the tenth amendment to the GWB 2020.

Platforms exercise an intermediary function between customers and suppliers. In this capacity, they play a *key role* in the interaction between these two groups, allowing platforms to set the rules for that interaction and, in the case of transaction platforms, to control transactions. An undertaking has a substantial incentive to make investments towards achieving such a position as *gatekeeper*. This is also a main force driving innovation. Such gatekeeper roles are played for example by browsers and the search engines often set in them by default, by operating systems, app stores, and voice assistants, which are expected to gain in importance. Stated in general terms, a gatekeeper for internet access is any system, device or application capable of controlling or limiting a user's or content application provider's (CAP) access to the open internet in any way. This paper does not aim to provide a detailed definition of what constitutes a gatekeeper, or to describe the mechanisms potentially underlying the role or any abuses it might give rise to. Alexiadis and de Streel (2020) refer in this context to gatekeepers controlling access to certain groups and enjoying a privileged relationship with customers (or consumers). Within this relationship, the gatekeeper can take advantage of customers' frequent use of the platform to improve and individualise customer services. In the end, customers are unable to avoid the digital gatekeeper, at least to some extent. The EU does not yet have a final legal definition of the term 'digital gatekeeper', even though competition authorities in some cases use the term in their work.²⁴

Most of the main digital providers own digital ecosystems. The main players relevant for the European and US markets are Google, Apple, Facebook, Amazon and Microsoft, while Baidu, Alibaba and Tencent play a dominant role in China. The one thing these corporations have in common is their capacity to centrally define the rules for their ecosystems, in particular those governing conditions for accessing input or the overall ecosystem. These owners of digital ecosystems develop them in line with targets, diversifying the services offered and expanding the ecosystems through various strategies, including acquisitions, forward and backward integration, and the development of new components and services. The ultimate goal in many cases is to build or consolidate their gatekeeper roles.

3 Key competition parameters

An aim of monitoring is to enable the identification of market power. Factors potentially limiting competition are considered first and those that might favour it afterwards. The hypothesis to be tested here: communications service providers and their respective ecosystems as well as gatekeepers have market power over open access to the internet; as a result, these parties are not exposed to adequate competitive pressure, arising through either the expansion of competitors or the market entry of new competitors. Conversely, many of the factors described below impede competitors' expansion or market entry. Any 'intervention' should therefore be focused on factors limiting competitive pressure. Finally, discussion is given to defining a market and the related challenges in the case of platforms, and to measuring market shares as a way of determining market power.

²⁴ Cf. Bundeskartellamt (2015) by way of example.

These factors were selected based on previous rulings and guidelines under competition law, relevant publications²⁵ and recent (draft) amendments to competition law, in particular in Germany.

3.1 Factors potentially limiting competition

The factors described below have the potential of impeding market entry of new competitors, or the expansion of current competitors, thereby favouring concentration and market power.

3.1.1 Bundling of functions

A prerequisite for assessing competition in a specific service is to first determine the scope of functions offered with that particular service in comparison with other similar services. In many cases, services can be observed to expand their functions over time.²⁶ A new market entrant wishing to provide a similar service will likely need to offer a similarly broad scope of functions in order to utilise cost-side²⁷ or demand-side synergies.

Synergies of demand exist where a user benefits more from using a plurality of integrated services offered by a single provider than from using services provided by different ones. Using integrated services can be easier, simpler and better—for example where signing in at a single point is possible.

To generate effective competitive pressure, a new entrant or a competitor wishing to expand may also have to offer a plurality of integrated services (referred to as ‘multi-market entry’). The need for such a *minimum array of services or functions*—in other words a ‘*minimum efficient scope*’—can be a significant factor impeding market entry or expansion. While it results in higher fixed costs for market entry, some competitors might not be able to replicate such a scope.

3.1.2 Cost structures

In many cases, the development of services, along with the respective functions, is generally associated with high *fixed costs*, and usually *sunk costs* and strong *scale and synergy effects*. To be able to offer a service, providers have to pay one-time *fixed costs*, regardless of whether or to what extent a service is supplied. Covering the resulting fixed costs ultimately means reaching a ‘minimum efficient scale’, in other words building the necessary customer base early on. *Sunk costs* means fixed costs unable to be recovered after reversing a decision—for example after exiting a market. *Scale effects* are generated through lower average costs as quantities increase. With a global user base frequently involved, massive scale effects are associated with digital platforms. Scaling up early on is therefore a key factor in many

²⁵ For example: Furman et al. (2019) and Crémer et al. (2019).

²⁶ In a study of OTT communications services, WIK (2018: 35) identified 73% as having nine or fewer functions in 2016, and only 56% of such services in 2018.

²⁷ See section 3.1.2

cases. *Synergy effects* are generated where several different products can be offered at lower prices or with a higher quality than would be the case if only one product were offered. Such effects can be based in factors including existing customer or supplier relationships, a brand name, technical knowhow, or the capability of using and linking data.²⁸ Where customer relationships already exist, a customer base can frequently be transferred to new markets and, through integrated services, be linked with popular, widely distributed services. Having a corresponding customer base is thus a major factor in being able to scale up a new platform. A new entrant or a competitor wishing to expand will commit to such investment costs only if there is sufficient likelihood of being able to reach the huge volume of customers necessary to recover those costs. Similarly, such a cost structure and the associated *minimum scale* or *minimum scope of services* offered can have the effect of a barrier to market entry or to expanding market share.²⁹

3.1.3 Data

Data play a significant role in assessing whether market power exists. Figure 3 summarises key aspects of the role played by data in ecosystems and the platforms belonging to them.

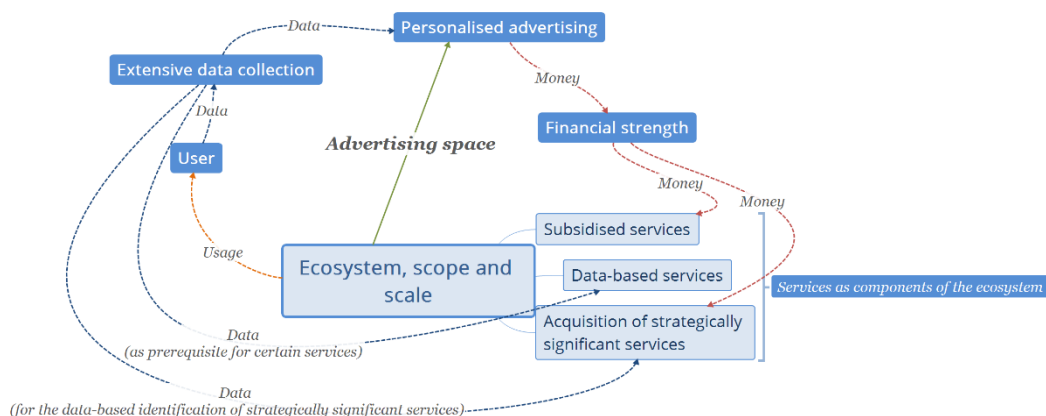


Figure 3: Key aspects of data in ecosystems³⁰

An extensive data collection (at the top left in Figure 3) in exchange for offering one or more services (the scope and scale of the ecosystem shown) will often represent a major competitive advantage.³¹ The concrete value of an extensive data collection is illustrated with reference to personalised advertising (in the figure at the top) on another side (of a market), with the scope of the data collection potentially enabling the ecosystem to build market power over personalised advertising. Market power and charging higher prices for personalised advertising, in other words monetisation of that power, can result in financial strength. This in turn can be used to enlarge the

²⁸ Cf. Furman et al. (2019), recital 1.70

²⁹ Meanwhile, it needs to be seen that options are in fact available for minimising initial fixed costs before or while scaling up, for instance by using cloud-based services or by targeting only specific user groups or regional markets at the outset.

³⁰ Data can also be used or monetised in other ways, for instance through sales to third parties.

³¹ Cf. Art. 18 Par. 3a no. 4 of the German GWB and the explanatory notes in the draft bill for the tenth amendment to the GWB.

scope and scale of the ecosystem, by subsidising the provision of a service, in many cases zero-priced, while simultaneously collecting data. Any potential competitor using a similar business model would need to enter the market on both sides, that is by offering both a zero-priced service and personalised advertising, in order to be able to afford to offer the service.³²

Data and interactions are the prerequisites for providing or optimising certain services (data-based services as shown in Figure 3). Accordingly, being able to access customer data to train the necessary algorithms could mean a significant competitive advantage.³³ Search engines are an example here: search and click data gathered from customers are used as feedback to consistently optimise the algorithm used. With a large number of users, navigation apps are capable of indicating traffic conditions. Voice assistants require numerous customer data sets and interactions to be able to use the integrated algorithms to properly interpret various languages and their variants.³⁴ *A steady, strong flow of customer data for the purpose of developing algorithms* is often available only to major existing market participants, so that *competition is impeded from entering or expanding within the market*. It needs to be seen that the possibilities for competitors to develop such algorithms improve only marginally if individual customer data can be ported.

Access to customer data potentially gives an ecosystem an advantage over the competition in terms of forecasting trends and developments. Consequently, strategic decisions can be taken earlier and based on more information: whether to acquire strategically significant services (see Figure 3 at bottom right) or whether to develop products. An ecosystem interested in strategic acquisitions might offer to exchange data with competitors, to be able to collect additional data, used in turn to identify fast-growing services to ultimately be incorporated into the ecosystem.

Achieving a *very broad and comprehensive ecosystem* with numerous services (see Figure 3 at bottom centre) can provide a substantial advantage for gathering data and offering personalised advertising based on that data. Firstly, as mentioned above, larger data quantities can be collected and interlinked from various sources—from the use of specific services. Secondly, an ecosystem can stipulate by default a broad scope of data use in its terms of service. This, coupled with ‘lethargic’ consumers who rarely bother to change the default setting, allows the ecosystem to collect an even broader scope of data. Thirdly, the time users spend in an ecosystem implies a great deal of attention, potentially devoted to purchasing decisions. This time spent results in vast advertising space (Figure 3, arrow at centre pointing

³² Alternatively, a provider could purchase a suitably large data set, or the personal data derived from it, to offer personalised advertising directly—without additional services for collecting data.

³³ Cf. Biglaiser et al. (2019).

³⁴ Data derived from voice assistants offer additional advantages. Analysing voice characteristics, for instance, can give way to conclusions about the speaker’s emotional state, leading in turn to a further marketing dimension.

upwards) or might occasion concrete purchasing decisions; in both instances, personalised advertising can be displayed.³⁵

Thus, data can serve both as a direct source of market power as well as necessary input for funding an ecosystem through personalised advertising.

3.1.4 Direct and indirect positive network effects

Direct and indirect positive network effects were already described above in section 2.1.2. Due to such effects, services and platforms having the most users from one or more categories in many cases are the most attractive for other users.

A lack of interoperability limits direct network effects to one particular service and raises the threshold for companies wishing to enter the market.³⁶ In such cases, direct network effects represent a switching barrier (see section 3.1.6). Direct network effects can be generated by another service only where significant users switch in a coordinated manner from one service to the other, for example, significant communication partners switching between instant messaging services.

As already noted, where a two-sided or multi-side platform generates indirect network effects, market entry, necessary on more than one side, is more difficult. There will be much less demand for a mobile operating system having an app store but without suitable apps designed by independent developers. Without sufficient numbers of prospective users, on the other hand, developers will have considerably less incentive to develop compatible apps for a specific operating system.

3.1.5 Single-homing

A significant issue when assessing whether a service or platform holds market power is whether its users practise single-homing.³⁷ *Single-homing* is the case where users make exclusive use of one platform or service, thus only making direct or indirect use of network effects generated through that platform or service. In certain cases, platforms can directly require single-homing to some extent. An example would be where a shopping centre stipulates a radius clause in its leases, for instance with a brand distributor, preventing other stores of that brand from being opened in the vicinity.³⁸ Factors to be considered when assessing whether single-homing is present include: whether users have any other services installed at all or are merely signed up with other services, or whether users have other services installed but in reality use only one. Network effects are usually associated not only with signing up for or installing services but also with the actual amount of time spent using them. This

³⁵ In the case of ecosystems such as Google that are funded through advertising, it makes sense to be open for other services, which potentially provide both additional data and additional space for personalised advertising.

³⁶ In the telecoms industry, interconnection regulations ensure that every network operator has access to all voice service users. This serves to maximise positive external effects across all services while lowering barriers to market entry and market share expansion. Users are not forced to subscribe to the largest network.

³⁷ Cf. Belleflamme/Peitz (2015), page 667.

³⁸ Cf. Amelio et al. (2020), chapter 2.

applies to social networks, for example. Google+ is an example here: everyone having a Google account was a member. Yet the service saw little use as a rule and was later discontinued.³⁹

Another significant factor determining single-homing is the presence of pre-installed applications that potentially give preferred access to certain functions or **application programming interfaces (APIs)** in the operating system. In combination with consumer lethargy, pre-installed apps can benefit certain providers, and usually the established ones. *Pre-installed apps* lead users to prefer the service offered by the app provider. This is probably more true of a zero-priced service, for which consumers are unable to consult another price for comparison.⁴⁰

Single-homing can act as a barrier to competitors wishing to enter the market or expand their market shares—particularly in combination with other factors including direct or indirect network effects. Users' preference for single-homing depends in detail on the costs involved in switching between various services.⁴¹ To access whether consumers engage in multi-homing for specific services in practice, special evaluations are required, such as the one conducted by RTR in early 2019.⁴²

3.1.6 Switching costs

Switching costs generally play a significant role in market power. Specific aspects of this phenomenon are mentioned above in the context of network effects and of single-/multi-homing, noting that it potentially reinforces market power. High switching costs potentially make it more difficult for competitors entering the market or wishing to expand their shares to achieve a certain minimum scale. Such costs can also be an incentive to subsidise consumers initially. Other forms of switching costs include:

- The *loss of personal data or the lack of data portability*⁴³ when switching services, platforms or ecosystems can potentially be associated with direct disadvantages for the customer. For example, the threat of losing photos, specific apps or stored user data (such as search criteria or passwords) during transfer, or even the significant technical effort involved, can act as a barrier.⁴⁴
- Another potential switching barrier is the *risk a user runs of losing a reputation* built through activity on a platform, such as a retailing platform, or the additional costs in terms of reputation resulting from switching platforms. Companies holding market power may also *stipulate switching*

³⁹ Cf. Biglaiser et al. (2019).

⁴⁰ Cf. ACCC (2019), page 68 ff.

⁴¹ Cf. Art. 18 Par. 3a no. 2 of the German GWB.

⁴² Report on the open internet, RTR (2019).

⁴³ The General Data Protection Regulation ensures the transferability only of certain kinds of data. Limitations are already encountered where personal or private data belonging to others are involved.

⁴⁴ Cf. Furman et al. (2019), page 36.

costs by contract, in the form of clauses specifying exclusivity or price parity, for example.

Switching costs potentially have the overall effect of making it more difficult for new or expanding competitors to achieve the required minimum scale and volume soon enough—or ever. Thus effective competitive pressure is impeded or suppressed.⁴⁵

3.1.7 Ecosystems: scope, financial strength, monetisation and conduct towards complementary services

Ecosystems differ in terms of their monetisation strategies. Certain ecosystems gather huge amounts of data while offering zero-priced services in return; Google and Facebook are examples here. In such cases, monetisation takes place on another side of a platform—by offering advertising space and the display of personalised advertising. Other ecosystems finance themselves to a larger extent through sales of hardware or operating systems, offering additional functions or services to enhance customer value. Apple and Microsoft are examples that stand out here. Other ecosystems, such as Amazon, present themselves as retail platforms while financing themselves through sales margins or monthly fees.⁴⁶ A corresponding degree of financial strength is common to all these ecosystems. Where a specific service is subsidised while monetisation is achieved in another area of the ecosystem, potentially only *ecosystems having comparable financial strength* will be able to develop a similar service, and new entrants or minor competitors will have difficulty entering or expanding within that market.⁴⁷ The voice assistants currently under development are an example. Google and Amazon are alleged to make huge investments in such systems while offering them below cost. Their goal is to achieve market power in voice assistants, it is claimed. Costs are purportedly recovered either through the gatekeeper role played by voice assistants when users search the web and make online purchases, or by exploiting the extensive data collected.⁴⁸

Various factors determine whether an ecosystem develops a complementary service directly—that is within the ecosystem in the narrow sense—or whether the ecosystem is open enough to allow others to develop a complementary service—that is within the ecosystem in the broad sense. Significant aspects affecting openness in this case, and in particular the accessibility of APIs, include: competitive pressure, the strategic significance of the service and how it is monetised, potential positive effects of integrating a proprietary service more closely with the ecosystem, and the possibilities offered by contracts to utilise these effects without having to separately develop such a service for the ecosystem. A complementary and per se

⁴⁵ Cf. Art. 18 Par. 3a no. 2 of the German GWB.

⁴⁶ These categories should in the meantime probably be considered as reflecting the past. Empirically, major ecosystems can be seen to expand into new product and service categories at an accelerating rate. Amazon, for instance, is now manufacturing home assistants while Apple is offering TV+ to compete with Premiere. And payment applications appear to attract all ecosystems because of their significance as interfaces and sources of information.

⁴⁷ Cf. review by the Bundeskartellamt of the draft bill for the tenth amendment to the GWB (2020), section A.III on more stringent requirements for undertakings with paramount significance for competition across markets (Art. 19a GWB).

⁴⁸ Cf. House of Judiciary (2020).

independent service, for example, can be bound to an ecosystem through an exclusivity agreement. Participation in monetisation can be ensured by charging high access fees—both the iOS App Store and Play Store charge a 30 per cent fee for in-app purchases. An ecosystem’s preference for its own services is related to this issue. Assessing openness in relation to competition rules is a complex matter requiring detailed examination against the background of the specific issue at hand.⁴⁹ Any impact on future incentives for innovation might need to be considered. *Conduct towards complementary services* is always a potentially relevant factor when assessing market power.

Here we refer to the draft of Art. 19a contained in the proposal for the tenth amendment to the German GWB. Under Paragraph 1, undertakings with “paramount significance across markets” are defined, as well as the criteria to be considered in identifying them. Paragraph 2 sets out ex-ante rules of conduct for such undertakings, relating for example to access to relevant data, with these enterprises saddled with the burden of proof to provide objective justification for refusing access.

3.2 Factors potentially encouraging competition

Competition is ‘just one click away’:⁵⁰ this argument is often put forward in discussions of the economics of competition. This section examines in detail specific factors encouraging competition.⁵¹

3.2.1 Multi-homing

In contrast to single-homing, multi-homing is the case where direct or indirect network effects are achieved in parallel through multiple services or platforms. Thus, users make simultaneous use of several services or platforms. Depending on the scope of such use, competition will exist among those services or platforms. User-side multi-homing can support market participants in exerting competitive pressure through market entry or expansion. It is also important to see that multi-homing can exist on several sides of one platform—for example, on the supply side and the demand side of a transaction platform. The factors deciding whether multi-homing is in fact present are described above in section 3.1.5 in the context of single-homing. Multi-homing depends in the final instance on the type of service as well. Multi-homing exists to a certain extent in relation to communications services, yet multi-homing is also deployed to separate certain social groups from one another.⁵²

In advertising markets, multi-homing can result in competition, where users can be reached through advertising presented on different platforms or ecosystems. At the same time, the companies purchasing advertising could prefer single-homing

⁴⁹ Cf. Zhu (2019) and AdIC and CMA (2014).

⁵⁰ Google CEO Eric Schmidt at a United States Senate hearing on antitrust conduct, 21 September 2011. <https://www.nbcbayarea.com/news/national-international/schmidt-on-antitrust-competition-is-one-click-away/1901637/>

⁵¹ The sources mentioned in particular at the outset of section 3 were consulted.

⁵² Cf. RTR (2019).

because of the reduced effort; here the biggest platform, being the one of preference, would enjoy a unique position in some respects.

3.2.2 Interoperability and data portability

Interoperability enables direct network effects without dependence on a specific service. An example is where different fixed and mobile networks are interconnected to enable interoperability. From a consumer viewpoint, the fixed or mobile network chosen as service provider does not affect the capability of reaching another party.⁵³

A significant factor in this context is the development of standardised products such as short message service (SMS) texting. Full interoperability of the protocol underlying this service enables competition and direct network effects.⁵⁴ On a more general plane, open and consequently interoperable ecosystems make numerous components or services possible, giving way to competition among them. Scale effects can be achieved across various open ecosystems. Conversely, closed and consequently non-interoperable ecosystems operate with only selected components or services. This allows such components and services to be better attuned to one another and ensures reliable interoperability within the ecosystem. Meanwhile, innovation generally progresses at a more rapid pace while incentives for innovation are higher in closed systems.⁵⁵

Data portability refers to the capability of transferring data from one service or platform to another. The GDPR requires undertakings to ensure that users' personal data can be transferred. Yet the scope of this requirement is limited, in particular where the data protection rights of others are affected. Apart from personal data, portability of other kinds of data is also a potential boon for competition. Switching smartphones serves as an example here. The capability of easily transferring personal data (such as calendar entries, app user data and numerous other items of information) greatly simplifies switching phones.

Mention should be made here of the Data Transfer Project, aimed at allowing users to “easily move their data between online service providers whenever they want”.⁵⁶ Apple, Google, Facebook, Microsoft and Twitter are currently cooperating in the project—not least to disarm potential criticism of a lack of data portability.⁵⁷

⁵³ It nonetheless should be mentioned here that the regulatory authority does in fact enable effective retail competition, through a basic interconnection requirement and the necessary supplementary provisions, and through set prices for the wholesale level.

⁵⁴ Cf. Crémer et al. (2019), pages 83–85. This report also notes, in contrast, the potential for sweeping standardisation to encourage collusion and impede innovation. SMS messaging is an example here, with demand consistently weakening over a longer period. The main reason is the rise of instant messaging services, which are significantly more innovative products and zero-priced for the most part.

⁵⁵ The factor determining any competitive effect is ultimately whether the competition between various ecosystems is strong enough to limit the market power of a closed ecosystem. Cf. AdIC and CMA (2014) for a detailed analysis of competition in open and closed ecosystems.

⁵⁶ <https://datatransferproject.dev/>

⁵⁷ It would be desirable for competition if the Data Transfer Project enabled data portability not just among the major, established providers but with small start-ups as well. Further developments in this area remain to be seen.

The capability of users to port personal phone numbers between mobile networks illustrates effective data portability. Facilitating switching between networks encourages competition, as afterwards consumers can still be conveniently reached under their previous numbers even in other networks.⁵⁸

3.2.3 Change and innovation

A high level of change and/or innovation in a market allows newly entering and expanding competitors who take a leading role in innovation to exert competitive pressure on existing companies with market power. There is a greater likelihood of recovering investments when entering a market expected to grow rapidly in future. Such *dynamic competitive pressure*, if sufficiently present, makes it unlikely for a company to maintain market power over time.⁵⁹

3.2.4 Product differentiation

The presence of various user groups preferring different services potentially favours the formation of a plurality of different platforms. Yet, in order for an array of mutually competing services to emerge in the place of one large service, the effect triggered by varying preferences has to be of a greater magnitude than any positive network effects.⁶⁰ Nonetheless, where differentiation is overly pronounced and clearly distinguishable customer segments are served, differentiation could be an indication of market power in specific segments.

3.3 Market definition and market shares

In the normal case, the definition of a market, subsequently serving as the basis for calculating market shares, is the foundation of any evaluation under competition law. Yet, when applied to platforms, market definition faces special challenges and in the usual form is not feasible.⁶¹

The main issue in market definition, and thus in applying the SSNIP test, is whether at least one small but significant, permanent price increase would be profitable. Here it needs to be seen, firstly, that, if internalised, direct network effects influence users' willingness to pay for a service. Direct positive network effects decrease with every user who discontinues use of a service, so that the remaining users are potentially less willing to pay for the service. Consequently, the impact of a price increase also depends on reduced direct network effects (if internalised). Secondly, in multi-sided markets, platform pricing takes indirect network effects into account. Free offers and even subsidies on one side of a platform are fairly common.⁶² In applying the hypothetical monopolist (SSNIP) test, the level of price increase and the side on

⁵⁸ In this instance as well, the regulatory authority encourages retail competition, by imposing number portability at the wholesale level, thus creating the prerequisite for abolishing switching costs.

⁵⁹ Cf. Art. 18 Par. 3a no. 5 of the German GWB.

⁶⁰ Cf. Biglaiser (2019).

⁶¹ Cf. in particular Crémer et al. (2019), section 3.III.

⁶² A price increase of 5–10% is meaningless where the price is zero. Other approaches, such as assumed changes in quality, imply a complex methodology and render less accurate results in some cases. Consumers' preferences do not necessarily increase monotonically with defined quality parameters. A general preference does exist, however, for a lower price.

which it is to be applied are not clear from the outset. Relationships between different markets therefore need to be considered, while a single market can often not be isolated from multi-sided markets.⁶³ Thirdly, patterns of substitution and consequently the markets affected change relatively quickly as a result of innovation. Fourthly, both competition between ecosystems and downstream competition within one specific ecosystem each need to be defined as separate markets. The European Commission also plans to revise its publication on defining relevant markets, particularly with a view to better cover the business models used in digital platforms.⁶⁴ In certain cases, monitoring market power directly might be sufficient, especially where assessment based on a market definition and calculating market shares would prove difficult. An indication of market power in such cases might be a significant drop in quality without users having another option as an alternative.⁶⁵

To assess whether a company has market power, market shares as one of the most significant indicators are usually determined.⁶⁶ Market shares allow estimates of the relative sizes of companies, as well as of the competitive pressure both emanating from companies and to which they are exposed. Based on case-law, a large market share exceeding 50 per cent is sufficient proof of a company's dominant market position.⁶⁷ Calculating market shares usually presupposes market definition. In detail, the products are determined that belong to the relevant market within a defined geographic dimension. Market definition is not fully implemented as part of this monitoring system.⁶⁸ This might take place in a more in-depth analysis following a preliminary assessment based on competition law. It also needs to be seen that this monitoring system refrains from determining any 'market shares' in relation to a clearly defined relevant market.

A metric is nonetheless required for determining the competitive pressure which companies exert and to which they are exposed. In the normal case, revenues from products or the numbers sold are allocated to companies. The magnitude of these amounts in relation to the overall size of the relevant market results in the 'market share'. In the case of platforms, market shares can be calculated for various sides of the market. Another peculiarity of platform markets is that many platforms serve one side of the market free of charge, making any assessment of market shares

⁶³ Franck and Peitz (2019) generally recommend a plurality of market definitions in the case of multi-sided platforms. They propose that the market definition question—whether a small, significant and non-temporary price increase would be profitable—be considered separately for each side and price adjustments be made on the other side in each case only where necessary. Defining a single market might be adequate only under certain conditions subject to verification, for instance in the case of transaction platforms.

⁶⁴ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS: Shaping Europe's digital future, Brussels, 19.2.2020, COM(2020) 67 final

⁶⁵ Cf. most recently Franck and Peitz (2019), page 8.

⁶⁶ The European Commission has announced a revision of the market definition system, which might impact how market shares are calculated. Moreover, additional factors, as for example included in the German GWB, play a major role in the case of platforms.

⁶⁷ Cf. Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03).

⁶⁸ The competition procedures conducted by the European Commission demonstrate how difficult and tedious it is to apply the conventional method to digital markets.

based on revenues difficult on that side. As an alternative to comparing revenues as a basis for market shares, platform markets are often assessed by comparing: number of customers active monthly, usage time, reach within the population or, in the case of applications, number of installed instances; this is the method used by RTR FB TKP.

Another significant indicator is provided by changes over time in the relative sizes of companies in the market. Only in this way is it possible to monitor the real success of competitors newly entering or expanding within the market, in other words changes in competitive pressure.

3.4 Merging of factors and initial assessment

A decisive issue in the end is how to merge the various relevant factors to arrive at an initial assessment. In response to this issue, the method presented here is applied in the following to discuss cumulative effects and how they interact. Finally, an overall assessment is proposed in the form of a matrix.

3.4.1 Cumulative effects and interactions

To assess whether market power exists, the factors described above need to be examined in their entirety, as well as how these factors interact. Mobile operating systems represent an apparent case where many factors apply simultaneously: the bundling of functions; the cost structures; significant indirect network effects; the preference for single-homing; high switching costs; and the financial strength of Google and Apple as the two major ecosystems—all of these factors point to market power. These two providers have products that are appropriately differentiated, yet to the extent that two separate segments or markets should probably be distinguished.

It should be noted nonetheless that many of these effects strongly drive incentives for innovation and resulting ex-ante competition. Switching costs, to cite an example, usually lead to dynamic competition—directly for the entire market in many instances—becoming extremely important. The effect is that each player initially offers many services free of charge, in a bid to move ahead of the other in terms of the factors favouring concentration cited above.

3.4.2 Overall assessment in matrix form

In the context of the monitoring system, the overall assessment is to be carried out using a matrix. The matrix is to encompass all of the factors significant in specific cases, as described in section 3. It is subsequently to be completed for each of the service categories (instant messengers, for example).⁶⁹ The chart in Figure 4 of Appendix 1 shows the matrix, illustrating monitoring in the case of instant messaging services. One or more indicators are given for each factor relating to competition. The indicators are intended to measure the factor or at least model metrics relevant

⁶⁹ Instant messengers compete with other interpersonal communications services such as conventional phone service, text messaging as well as emailing (though complementary relationships also exist). Detailed analysis will also need to take this aspect into account.



for it, enabling an initial estimate. Weighting of these factors is also planned in order to derive an ‘overall rating’ of the particular service and of competitive pressure. Quantifying the factors in this way obviously results in only a rough approximation that should be cautiously interpreted and accompanied by qualitative arguments. These could include taking a service’s reach among the population and the share of effective time used as indicators of market share as well as of direct network effects. To measure indirect network effects, qualitative surveys could be used to determine whether customer communication or commercial advertising space are offered, or the integration of developers’ games, to name examples. Additional metrics are to be collected for other factors, with these factors and the underlying metrics then weighted. In the case of instant messaging services, usage time and reach—both also indicators of direct network effects—will probably be especially heavily weighted. This will most likely lead to identifying WhatsApp as having market power. Using this method, a preliminary initial estimate could be reached.

In detail, data will need to be acquired in order to arrive at an empirical estimate of the amount of time spent using various services, platforms and ecosystems. This will give way to observations over time as to whether or to what extent dynamic competitive pressure exists in specific areas.

4 Outlook

The next steps will be to set out this methodology for consultation while considering the new approaches to competition law that are currently developing at a rapid pace. RTR, and specifically FB TKP, wish to further develop this system and we are open for any suggestions. A review and potentially a revision of this methodology paper have been set for early 2021, or as required.

The methodology is to be subsequently applied to specific services such as instant messengers (because of the similarity to conventional communications services), as well as to search engines, browsers, app stores, operating systems or voice assistants. The latter category of services plays a key role in access to the open internet. Gatekeepers to these areas could significantly limit the openness of the internet as well as related innovation in the long term.

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Appendix 1—Analysis matrix illustrated with reference to instant messengers

Factor	Indicator	Service											
		WhatsApp	Facebook Messenger	Skype	Snapchat	iMessage	FaceTime	Google Hangouts, Allo, Duo	Viber	Telegram	Signal	Standard SMS/MMS/Voice call app or service	
Market shares	Usage in terms of population reach	2	1	0	-1	-2	-2	-2	-2	-2	-2	-1	
	Time used	2	-2	-2	1	-1	-1	-2	-2	-2	-2	-2	
Direct and indirect positive network effects	Time used as indicator of direct network effects	2	-2	-2	1	-1	-1	-2	-2	-2	-2	-2	
	Does the service offer customer communication to companies?	-2	2	-2	-2	1	1	-2	2	0	-2	-2	
	Does the service offer integration of games or applications to developers?	-2	2	-2	2	2	2	-2	2	2	-2	-2	
Change and innovation	Market shares	Usage in terms of population reach									2	1	
		Time used									2	-2	
Bundling of function	Direct and indirect positive network effects	Time used as indicator of direct network effects									2	-2	
		Does the service offer customer communication to companies?									-2	2	
Ecosystem	Direct and indirect positive network effects	Does the service offer integration of games or applications to developers?									-2	2	
		Does the service offer advertising space?									-2	2	
Data	Switching costs	perming to another company or based on another standard										-2	
		User identifier of the main protocol is not interoperable with other services	-2	2	-2	2	2	2	2	-2	-2	-2	-2
Interoperability and data portability	Switching costs	Data portability—does not belong to an initiative	-2	-2	-2	2	-2	-2	-2	2	2	2	-2
		Level of single-homing use of this service relative to other											
Single-homing													
Multi-homing													
Cost structures													
Product differentiation													

Figure 4: Matrix used in monitoring similar services

The rows under the first column of the assessment matrix list the factors described in sections 3.1 and 3.2. The second column lists the indicators especially suited to measuring the factors, or at least providing an approximation. Each factor has one or more indicators. The third column contains for each indicator a weighting to be applied in the overall score. The other columns each refer to one service, with the name given as the column label.

The colour-filled cells give a grade for each service, based on a five-point scale, on the particular indicator. The grades reflect the potential market power of the service in terms of the indicator considered. A service judged as having no market power (in relation to that indicator) is given a grade of +2. The grades (-2 to +2) are later weighted depending on the type of service. The grade levels are highlighted with different matching colours for a better overview, with red indicating market power and green an absence.

In the example shown in the enlarged excerpt, WhatsApp has the highest grade of 2 on both “Usage in terms of population reach” and “Time used”. The grades on these scales indicate that WhatsApp has market power.

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