THE EVOLVING CONCEPT OF MARKET POWER IN THE DIGITAL ECONOMY

OECD Competition Policy Roundtable Background Note

Please cite as: OECD (2022), The Evolving Concept of Market Power in the Digital Economy, OECD Competition Policy Roundtable Background Note, www.oecd.org/daf/competition/the-evolving-concept-of-market-power-in-the-digital-economy-2022.pdf.

Foreword

This background note explores how the concept of market power is being applied and adapted to digital markets, as well as the implications for competition policy. First, based on competition authority decisions and academic literature, it identifies the main contributors to market power in digital markets, including the role of network effects, economies of scale and scope, data, multi-homing and switching costs. The note also considers whether these contributors are unique to digital markets, and some of the conceptual questions authorities have faced in assessing digital firms' market power.

Next, this note reviews a range of concepts and terms recently applied to digital market dynamics that are related to market power. This includes particular types of "power" held by firms in digital markets (e.g. bottleneck power), and designations developed to capture the influence of specific firms in the context of new regulatory initiatives (e.g. gatekeepers).

Finally, the note considers several competition policy challenges related to market power in the digital era, including questions about the relationship between new regulatory concepts related to market power and established enforcement concepts such as dominance. It also highlights the risk of growing divergences in the application of new regulatory designations. This note concludes that market power should remain a core guiding principle as the competition policy community faces these challenges.

This note was prepared by James Mancini of the OECD Competition Division, with helpful comments and inputs from: Carolina Abate, Antonio Capobianco, Gaetano Lapenta, Federica Maiorano, Richard May and Ori Schwartz also of the OECD Competition Division. It was prepared as a background note for discussions on "Market Power in the Digital Economy and Competition Policy" taking place at the June 2022 session of the OECD Competition Committee, *https://www.oecd.org/daf/competition/market-power-in-the-digital-economy-and-competition-policy.htm*. The opinions expressed and arguments employed herein are those of the authors do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

Table of contents

1. Introduction

Market power, the ability of a firm to maintain prices above, or quality below, a competitive level,[1] is a fundamental concept for competition law and policy: it can make the difference between procompetitive and abusive firm conduct, and the difference between beneficial and harmful mergers. In the wake of digitalisation, it has become a particular concern: evidence such as growing mark-ups suggests that market power is on the rise and potentially becoming more durable, in digital-intensive sectors (Calligaris, Criscuolo and Marcolin, 2018[1]; Calvino and Criscuolo, 2019[2]).

Assessing the degree of market power in digital markets can present a range of challenges for authorities. They must carefully scrutinise claims about the importance of data access and network effects as entry barriers, and thus sources of market power. Further, authorities must grapple with multi-sidedness and the need to incorporate the relationship between demand and competitive constraints in multiple markets. Such markets may also feature services provided at a price of zero, requiring non-price factors to play a particularly important role in the assessment. Proposals have also been made to adjust the way authorities approach market power in digital markets, namely addressing tipping risks in markets that do not yet feature a dominant player, and considering the risk of market power being leveraged into other markets.

At the same time, there are questions about whether the concept of market power itself needs to be adapted to digitalisation. A range of concepts have been introduced to capture particular forms of, or alternative concepts to, market power, specifically the power held by digital platforms as intermediaries between firms and end consumers. They include terms such as gatekeepers, bottleneck power, platform power, intermediation power and strategic market status, among others. These related concepts have been a particular focus of recent regulatory proposals.

The link between these concepts and market power is not always clear, and certainly not always explicit. This note aims to explore this link, and its implications for the future direction of competition policy. It is organised as follows:

Section 2. discusses the evaluation of market power in digital markets, and in particular how competition authorities have approached this challenge so far, as well as some guidance from academic literature. This section covers indicators of market power, contributors to market power, and some key conceptual questions that have arisen about the assessment of market power.

Section 3. explores the new concepts that have been proposed or developed to replace or supplement the concept of market power in digital markets. These include wholly new concepts, established concepts that are being re-emphasised, and designations created in the context of new digital sector regulatory measures.

Section 4. highlights some of the challenges on the horizon for competition policy with respect to the assessment of market power in digital markets. It explores the relationship between new and established concepts of market power in legislation, and highlights the risk of divergences across jurisdictions.

Section 5. concludes.

This note builds on past work done at the OECD on digital competition issues, summarised in the OECD Handbook on Competition Policy in the Digital Era (OECD, 2022[3]). Specifically, work on adapting competition analysis to multisided markets provides practical guidance, including how to take into account

interrelationships in the demand on different sides of the platform, and how to adapt market power assessments (OECD, 2018[4]). Other work has explored the new regulatory frameworks being proposed to address digital competition issues, comparing the rationale and scope of these frameworks, including how they relate to market power (OECD, 2021[5]). Accordingly, this note will not focus in detail on either the adaptation of analysis to multi-sidedness, or the precise features of all the current regulatory proposals focused on digital competition issues.

2. Evaluating market power in digital markets

Competition authorities across the OECD have accumulated significant experience in the assessment of market power in digital markets. While these markets have evolved dramatically since the US Department of Justice's complaint against Microsoft in 1998[2], the main contributors to market power identified in digital sector cases remain the same. The entry barriers identified in the 1998 complaint, specifically network effects and economies of scale, continue to be a major focus today.

The core economic foundations of market power assessments have also remained consistent in digital cases, namely a focus on barriers to entry and substitutability. So what is unique about the assessment of digital market power relative to more traditional sectors? First, market shares, which have never on their own been complete proof of market power (or a lack thereof), may be even more limited in providing a complete picture. They fail to capture the potential for rapid tipping of markets into monopoly, accelerated by network effects. They also risk overemphasising conditions within defined product markets without considering the potential for dynamic competitive pressure, or indeed a lack of potential challengers, in related markets. Further, when digital markets are multisided, and especially when they feature products provided at a price of zero, no single market share metric can adequately capture the realities in a market.

Second, there are certain market characteristics that contribute to digital firms' market power in new ways. Network effects, which have traditionally been considered in the context of physical infrastructure and capacity limitations, have taken on a wholly new dynamic in dematerialised digital markets. With experience, authorities have begun to identify the situations in which they contribute to market power, and those in which their effects on market structure are minimal. The ability of consumers to multi-home also features prominently, as it may be an important mechanism for enabling market entry and contestability. Further, linkages between products (and the corresponding ability to leverage market power across markets) have been a growing area of interest for authorities, particularly given the importance of ecosystem business models and conditions in digital markets that may amplify the risk of harm. Finally, while the assessment of data may in some ways be similar to that of any other scarce resource or essential facility, authorities have also begun to incorporate the role of feedback loops,[3] which serve to strengthen first-mover advantages.

At the same time, many other potential contributors to market power have been assessed by authorities as they would be in any other markets – contributors like economies of scale, switching costs, brand effects, and a lack of countervailing buyer power.

This section will examine the main contributors to market power in digital markets that have been assessed by authorities and researchers, and it will identify areas where assessments have been tailored to digital market dynamics. It will then explore some of the key conceptual questions that authorities have, or are beginning to, grapple with when evaluating digital firm market power.

2.1. Market shares and other preliminary indicators used by competition authorities to assess market power in digital markets

Market shares are a near-universal feature of any competition enforcement decision or market study assessing market power, including those involving digital firms.[4] They give an initial picture of the size of the firm relative to its competitors, and the overall structure of the market. Given that they are calculated with respect to a defined market, they theoretically reflect one of the key contributors of market power – a lack of ready substitutes available to consumers. Indeed, a lack any real alternative for consumers can be a powerful indicator, as highlighted for instance by the Australian Consumer and Competition Commission in its digital platform services inquiry with respect to app stores (ACCC, 2021, p. 26[6]).

However, as well documented elsewhere, the picture provided by static market shares is incomplete, given they can only provide a preliminary indication of limitations to substitution, and do not provide any information on the potential for supply-side substitution or new entry (OECD, 2018[7]). The limitations of market shares are especially pronounced with respect to digital platforms.

Multisidedness is a particular challenge – picking one side of the market to measure will give an incomplete picture, especially when one side's consumption is cross subsidised by another, such as with advertising. Further, developing a platform-wide market share may also obscure important details. For instance, a platform-wide market share would not capture the competitive dynamics of a market if some firms are not active on all sides. This could occur if firms are at different levels of maturity, or have different business models (e.g. advertisement-funded, sale of premium subscriptions, or early-stage firms establishing a foothold in users without earning revenue yet) (Franck and Peitz, 2019[8]). In addition, high-level market share figures will fail to capture any important differences in user characteristics (within a side of the platform) that drive competition, including heterogeneity in usage patterns, level of activity and multi-homing.

A narrow focus on market shares within a given defined market could also generate particularly misleading conclusions with respect to ecosystems of interconnected digital products. The linkages between these products could affect the degree of market power held by a firm, in particular if there are limitations to the interoperability of products from different ecosystems (Petit and Teece, 2020[9]; OECD, 2021[10]). While in the extreme this effect may be addressed through a narrower market definition focused on products within an ecosystem (digital ecosystem products may impose a limited competitive constraint on one another if switching them would imply switching core operating systems and devices), more subtle product interlinkages may also be relevant and distort the picture from market shares (e.g. default settings or bundled discounts).

While market shares appear in most authority decisions assessing digital firms' market power, the limitations of these measurements have also been made clear in several decisions. For example, the European Commission indicated in its 2011 decision regarding the Microsoft/Skype merger[5] that market shares were of limited explanatory value given the market was nascent and subject to rapid changes. It also noted that the price of zero for some services necessitated alternative metrics. The Commission similarly observed how "frequent market entry and short innovation cycles" meant that high market shares did not necessarily indicate market power in its Facebook/WhatsApp merger decision.[6] The German Bundeskartellamt has also highlighted that network effects naturally lead to higher market shares, but the presence of these network effects on its own does not necessarily indicate a lack of competition (Bundeskartellamt, 2016[11]).

Some authority decisions that discuss market shares go beyond observations about the *level* of market shares. In particular, given the particular concerns about durability of market power in digital markets, some authority decisions consider not just the level of a firm's market share, but also its **stability over time**. Market share stability can help establish a lack of dynamic competition – especially in markets featuring frequent innovation and new product development where stability is unexpected, potentially indicating

insurmountable entry barriers. The French Competition Authority's 2020 Google Search decision,[7] the US Department of Justice's 2021 complaint against Amazon[8], and the European Commission's Google Shopping decision[9] all make particular note of the stability of those firms' market shares in the relevant markets.

The **distribution** of market shares has also been considered. The German Bundeskartellamt has indicated that, while revenue-based market shares may be less meaningful in dynamic markets, the possession of a significant lead in the share of users covered by a platform could indicate the potential for market tipping (Bundeskartellamt, 2016[11]). The authority cleared a merger between the #2 and #3 online real estate platforms in Germany specifically because it would increase the **symmetry of market shares** relative to the leading firm in the market, thus mitigating the risk of network effect-induced tipping.[10]

In cases involving digital platforms, the need to consider several different metrics is also frequently recognised. Specifically, market shares calculated on the basis of revenue may need to be considered in context with other indicators, such as the share of users, share of transactions, and usage or installation statistics that cover all sides of the platform. The Korean Fair Trade Commission's decision in the Delivery Hero/Baemin merger illustrates this, since it considered not only revenue shares but also shares in the number of transactions on different sides of the platform, and the number of app or website visits.[11] The Italian Competition Authority discussed the importance of distinguishing users from active users when considering market shares in its Amazon decision.[12] In its Google Shopping decision, the European Commission focused on market shares by search volume as an indicator, given: the zero price nature of general search services; challenges with obtaining verifiable data about revenues associated with individual searches; and the fact that volumes were a key criterion for advertisers when choosing where to place their advertisements.[13]

Other high-level metrics that have been or could be used by competition authorities as a complement to market shares include:

- **Price levels:** An indicator considered in the Australian Competition and Consumer Commission's Digital advertising services inquiry was the level of prices, and the proportion of advertisement spending that was paid to ad tech providers. The Commission found that this pricing level indicated a lack of competition in the market (ACCC, 2021[12]).
- **Profit stability:** While not a theme of the decisions and market studies consulted for this note, the stability of profits and profitability could also serve as a potential indicator, and provide greater information than simply the level of profits and profitability, which could be an artefact of the high fixed and low marginal cost structure of many digital services (see, for instance, Oxera (2018[13])).
- **Entry patterns:** Some authorities have identified certain indirect indicators of market power based on observations of competitive dynamics in markets. In its AdSense decision, the European Commission emphasised a lack of entry over a significant period of time as an indicator of entry barriers contributing to market power.[14] The US Department of Justice's Amazon complaint notes that Amazon's ability to impose most-favoured nation clauses on its sellers is indicative of its market power.[15]

2.2. Key contributors to digital sector market power identified by competition authorities

To complement the preliminary indicators noted above, competition authorities and the academic literature have assessed a range of factors in evaluating digital firms' market power. Specifically, these factors can constitute barriers to entry, limitations on substitutability, or both, in digital markets. They include novel concepts, and well-tested ones from traditional markets.

2.2.1. Network effects

Network effects have been a central theme of competition authority cases in digital markets.[16] Specifically, network effects have been assessed as a contributor to market power both in reducing substitution by consumers and creating barriers to entry that limit competitive constraints. Illustrating this importance, the Japan Fair Trade Commission's updated merger guidelines make explicit reference to both direct and indirect network effects.[17]

Digital markets can exhibit certain characteristics that may amplify the impact of network effects on market power. In particular, the existence of positive feedback loops that strengthen network effects have been the focus of some authorities.[18] These feedback loops can be observed with respect to both direct and indirect network effects. In the case of the direct network effects, an increase in usage of a digital service will increase the value of the service, thus attracting more users and creating a self-perpetuating cycle – a process the Australian Competition and Consumer Commission observed for example with respect to online search engines (ACCC, 2019, p. 66[14]). With respect to indirect network effects, the mechanism may be more complicated but involves the same dynamics: for instance, a growth of users on one side of a platform can increase the value to advertisers, which enables further investments in the platform, attracting more users on the original side, thus continuing the cycle (see, for instance, OECD (2016[15])). When sufficiently strong, these feedback loops can lead a market to "tip" into monopoly, in particular if no competitor or potential entrant can match the attractiveness of the platform (as enhanced through network effects).

That being said, authorities have also recognised that the potential contribution of network effects to market power should be assessed in context. A recent Compendium issued by the G7 Competition Authorities emphasises that network effects can serve either as an incentive to compete aggressively and acquire scale, or as a deterrent to entry that insulates market power from competitive pressure (G7 Competition Authorities, 2021[16]). The German competition authority has also observed that network effects may in fact be a mechanism for small new entrants to expand rapidly, and have an "ambivalent" effect on competition (Bundeskartellamt, 2016[11]).

Thus, while most competition authority decisions refer to network effects as a contributor to market power, they have also explicitly recognised that this may not always be the case. Academic literature suggests that network effects can not only contribute to the growth of new entrants, but also incentivise vigorous competition in order to acquire users, leading to lower mark-ups (Calvano and Polo, 2021[17]). Further, the network effects observed in digital markets are different from those in traditional network industries, in the sense that they are not connected to specific network infrastructure and may therefore be more fleeting as a source of market power. In this vein, Tucker (2018[18]) argues that network effects may even be a source of instability in digital markets. At the same time, many recognise that network effects may lead to tipping into a monopoly when sufficiently strong (Armstrong, 2006[19]), echoing the concerns summarised above about durable market power. So what determines the strength of network effects for a given product? Several factors can be considered:

- **How important is the overall usage of a digital product or platform for the value it provides to consumers?** This obvious first question requires understanding both what drives consumer decision-making (e.g. the presence of friends and loved ones on a given social media platform), and the inputs to the product (e.g. the importance of past queries in refining a search algorithm). This can determine if a new entrant without a user base will be able to produce a viable alternative product. The experience of past entrants can be instructive in this regard. Users' expectations and preferences can play an important role in making this barrier more formidable: if users believe none of their connections will try a new service, or resist being an early adopter, even services offering significantly better quality may struggle to enter a market (Calvano and Polo, 2021[17]) (see also the discussion on consumer behaviour below).

- **How significant are switching costs, and is there interoperability between competing products?** If network effects play a central role in determining the value of a digital product, they may not necessarily translate to market power if (i) there is a high degree of interoperability between digital products, meaning it is possible to benefit from network effects across competing products, and (ii) if it is easy and costless to try new services when users benefit from direct network effects. These characteristics will be discussed further below as contributors or limiters to market power in their own right, but they can also have a determinative impact on whether network effects translate to market power.
- **In what direction do externalities flow?** Network externalities that flow in two or more directions on a platform (i.e. when more than one side benefits from participation on the other side) could constitute a more significant barrier to entry than externalities that flow only in one direction. This is because a new platform may find it exceptionally difficult to attract different groups of users whose demand depends on each other's usage – a "chicken and the egg" problem (Bundeskartellamt, 2016[11]). In contrast, a platform where externalities run in only one direction (e.g. content services funded by advertising) may find it easier to enter by using subsidies or other benefits to lure users to the side of the platform that does not benefit from indirect externalities, which would then in turn lure users on the other side.
- **Do all firms' products exhibit the same type of network effects?** If only some firms in a market can fully leverage network effects to improve service quality (e.g. because others do not have the capacity to use data to improve future quality), then the potential for network effects to result in tipping and market power may be enhanced. If all firms in a market can benefit equally from network effects, the emergence of potential challengers could be significantly more likely. Similarly, it may be worth asking whether there are any alternative business models for which some network effects are less important (e.g. those less reliant on advertising), which would suggest network effects are a less important potential source of market power.
- **Is there already one platform in the market with a significant lead in terms of user base?** Network effects may be the most relevant for market power, and the most formidable entry barrier, when they translate into a significant advantage for a single incumbent that cannot be easily matched. In fact, the German competition authority has indicated that network effects would mainly be a focus in markets with two-sided network effects when there is a single platform with a clear lead over others (Bundeskartellamt, 2016[11]).
- **What is the scope of the network effects?** For some platforms, network effects are generated between all users, whereas in other cases, network effects are narrower in scope. Take the example of a hotel booking platform and a ride-hailing platform (as described by Martens (2020[20])). The addition of new cities or countries to the hotel booking platform can generate broad benefits, since travellers have a greater selection of destinations, whereas the addition of a city to a ride hailing network may be of limited value to customers located in cities already served by the platform (unless they travel frequently between destinations). Similarly, users of a social networking platform only care about the presence of their connections or those they wish to connect to, rather than the overall user base of the platform (Calvano and Polo, 2021[17]). Thus, some argue that platform services are becoming more personalised (for consumers) and narrowly tailored (for advertisers), meaning that the scope of network externalities is becoming narrower and thus less important for market power (Tucker, 2018[18]). One implication of this could be narrower market definitions that are more reflective of the pattern of network effects, however it would not rule out the potential for significant market power across multiple such markets – particularly given the potential for strong economies of scope and conglomerate effects, described below.
- **How are network effects generated?** In particular, if network effects are generated simply by a user signing up to a service or installing an application (e.g. a messaging application that allows the user to be contacted), then they will be a much less significant entry barriers than when they

are generated for each use (e.g. by inputting queries into a search engine), in which case incumbents will build up a significant advantage (Calvano and Polo, 2021[17]).

- **Are there limitations to the benefits of the network effects?** In some cases, network effects may exhibit decreasing or even negative returns to scale. For instance, users may experience choice overload beyond a certain number of product options, or they may prefer to have a more limited network on a platform for privacy purposes (Tucker, 2018[18]). Thus, network effects may be spread more evenly across the market and not be an important contributor to market power.

The questions identified above help structure an assessment of network effects and their contribution to market power (or lack thereof). However, competition authorities still face significant uncertainty. Consider the decline of Myspace and the rise of Facebook. Myspace undoubtedly offered significant network effects in the form of social connections at its peak, and so its decline demonstrates that these network effects are not sufficient to insulate completely an incumbent with a high market share from competition. Other contributors must therefore also be considered – network effects are only part of the story.

2.2.2. Costs and economies of scale

Digital products may involve significant fixed costs, in terms of product development, and low or zero variable costs, since adding an additional user can be done without additional cost. Significant fixed costs, and the ensuing economies of scale, have been recognised in a range of competition authority decisions in digital markets.[19] Unlike network effects, the analysis of economies of scale and costs as a contributor to market power does not appear to have required significant adaptations relative to more traditional markets. The German competition authority has also identified internal learning processes as a contributor to economies of scale, although this is also not unique to digital markets (Bundeskartellamt, 2016[21]; Bundeskartellamt, 2016[11]). Nonetheless, the particular importance of economies of scale has been recognised through changes to the German competition law, which now explicitly mention economies of scale as a contributor to market power.[20]

As more fully explored in OECD (2020[22]), the idea that significant fixed costs always constitute a barrier to entry has been a controversial one among academics. In an environment with sufficient access to capital, fixed costs need not necessarily prevent new entry. Specifically, while they may affect the efficient number of firms in a market, they need not necessarily give rise to market power. Some propose focusing on sunk costs, while others emphasise costs facing entrants that were not borne by incumbents. However, in the context of competition enforcement, authorities seem, quite reasonably, to have avoided these debates and focused on factors affecting the potential and timing of potential entry, regardless of the precise label applied.

Some potential cost-based contributors to digital firm market power that could be considered include: an inability of new entrants to match the scale of incumbents; potentially favourable financing conditions for incumbents (see Khan (2017[23])); costs of acquiring data to match first-mover advantage (as further discussed below); and costs of product subsidisation needed to generate sufficient network effects. At the same time, the presence of numerous smaller firms in a digital market would suggest the absence of substantial fixed costs, and that alternative explanations, such as barriers to expansion stemming from network effects, may be more important factors in contributing to a given firm's market power in that market.

2.2.3. Multi-homing

Multi-homing (the use of multiple competing digital products at the same time) has also been considered by competition authorities when assessing digital firms' market power. This is because the ability and tendency of consumers to engage in multi- versus single homing can significantly shape the dynamics of competition in a market. With single homing, users select only one digital product, meaning firms compete to acquire an exclusive share of a user's activities (OECD, 2019[24]). This contrasts with multi-homing,

where consumers may use several different digital products, meaning firms compete not for users but on a more granular level, for instance on the basis of an individual transaction, or a share of a user's attention.

The analysis of single and multi-homing can be relevant in non-digital markets (e.g. the use of multiple credit cards by consumers, and the acceptance of multiple cards by merchants). While this analysis may not necessarily look different in digital markets, it may be required more often, which may explain the frequency with which homing patterns are discussed by competition authorities.

Network effects, switching costs, and limitations to interoperability, which on their own can contribute to market power, will significantly shape the effect of homing patterns on a market. For instance, single-homing combined with strong network effects and switching costs may lead to a single firm acquiring durable market power that is insulated from the threat of new entry – in other words a significant incumbency advantage (Calvano and Polo, 2021[17]). Reflecting this, the Japan Fair Trade Commission's recently updated merger guidelines specifically indicate that network effects may have a greater effect on competition if consumers tend to single-home.[21] However, in the absence of these characteristics, single homing may be accompanied by vigorous competition for the consumer.

Several authorities have highlighted the presence of multi-homing as a factor that may mitigate the durability of market power. The German competition authority has noted that multi-homing can lower consumer lock-in and barriers to entry – it can be easier for new digital services to enter a market and encourage users to try when it does not mean they must deactivate their existing services. It can also allow multiple differentiated platforms to exist in a market (so that users may use different products for different purposes, for example), improving consumer welfare. Further, the Authority noted that even where there are competition-for-the market dynamics, multi-homing can facilitate competition, since new entrants do not need to "poach" users from the incumbent to obtain a foothold (Bundeskartellamt, 2016[11]).

However, multi-homing is not a guarantee of dynamic competition. The German and French competition authorities highlight in a joint study that in zero-priced markets, even with multi-homing, new entrants may find it difficult to attract consumers without the ability to use pricing as a strategy to attract an initial user base (Autorité de la concurrence and Bundeskartellamt, 2016, p. 30[25]). Further, the threat to incumbents may be minimal if the new entry enabled by multi-homing comes primarily from specialised services that, while beneficial to consumers, may verge on being part of a separate market, and which are thus not likely to impose competitive discipline on the incumbent by threatening its core product. In other words, multi-homing may be indicative of either significant substitutability or significant differentiation, with different implications for competitive dynamics (OECD, 2018[4]).

An assessment of the specific context of multi-homing in a market is therefore necessary, since the mere potential for multi-homing is not likely to be decisive on its own. Single homing in a market may simply reflect a lack of alternatives available to consumers, rather than an unwillingness to multi-home. Further, to the extent that consumers do multi-home, it may be necessary to assess the extent of such multi-homing. Do consumers simply have multiple competing apps installed on their mobile device? Or do they actually use multiple apps, as measured for example by their transactions or interactions (OECD, 2018[4])?

Users may be prevented from multi-homing for various reasons: the cost of multiple services, technical and practical limitations (e.g. barriers to using multiple operating systems on a device), exclusivity conditions imposed by suppliers, and a lack of data portability and interoperability (contributing to switching costs, and lost data as well as network effects), among others. Even if there are no barriers to multi-homing, users may also exhibit a tendency to single home, potentially related to the "free effect" described further below. For example, the EU's Google Shopping decision considered that a lack of multi-homing contributed to Google's dominant position in general search result, basing this assessment on surveys from consumers regarding their usage habits.[22]

Multi-homing is not only relevant for final consumers' purchasing patterns. In an abuse of dominance case against Apple regarding its app store's practices relative to dating apps, the Netherlands competition

authority noted the necessity for dating app providers to be able to multi-home between Android and Apple operating systems. This is because a dating app's value would be significantly compromised if its reach were limited to either Android or Apple users (given that mobile device users do not multi-home across operating systems).[23] A similar dynamic is at play in advertising-funded markets. When consumers on one side of a platform single home, advertisers may not consider different platforms to be substitutes given they will reach a different set of consumers. This may lead advertisers to multi-home, or even to the creation of separate markets for competition analysis purposes (Armstrong, 2006[19]), although some advertisers may single home if they opt to focus on a specific subset of users of a single platform (Franck and Peitz, 2019, pp. 71-72[8]).

2.2.4. Data

The idea that exclusive access to a rare input grants market power is well established in competition law (even if cases about leveraging that market power to foreclose competition downstream remain subject to debate). In digital markets, data are often identified by competition authorities as such an input, and thus a contributor to market power. For instance, the Australian, Canadian, European Commission, UK and US competition authorities have all indicated in case decisions that the accumulation of data by an incumbent represents a significant barrier to entry, given the associated network effects and economies of scale.[24] German competition law has also been amended to include data as a contributor to market power.[25] Economies of scope, and the potential for market power stemming from data to be leveraged in new markets, have also been considered by the European Commission in recent merger decisions.[26] For example, in the Google/Fitbit decision, the Commission noted the potential for Fitbit data to strengthen Google's dominance in online search advertising, stating:

> *"…none of Google's competitors in online advertising has access to a database or data collection capabilities equivalent to those of Fitbit and it is not likely that they would acquire such assets without incurring into significant costs and in timely manner."*[27]

Data exhibit some characteristics that set it apart from some more traditional important inputs. Understanding the contribution of data to market power may therefore require considering several attributes:

- **The precise scope of data being considered:** The data relevant in a given market may be just a subset of a larger database, or it may be contained in multiple different databases, and the structure of data may differ significantly across firms. Further, the types of data used by different market participants may vary. Thus, relevant data can be amorphous and difficult to define relative to more traditional inputs.
- **The importance of a specific dataset for competing in a market:** The objective importance of a given dataset for a firm's ability to compete, and thus its contribution to market power if held exclusively, is a fundamental question. It can be divided as follows:
  - ***Are data an indispensable input in the market?*** In other words, can the product be offered to consumers at a competitive level of quality without this type of data? This assessment can consider whether there are alternative types of data or approaches that can be used to provide the product.
  - ***Are there substitutes for the specific dataset held by the firm being assessed?*** In particular, the identification of potential substitutes for competitors, or alternative approaches not requiring the data in question, can be particularly challenging – especially in rapidly developing markets where firms collecting data may not themselves know exactly how it will be applied in the future. One factor that may be considered is whether comparable datasets can be purchased from third parties, including data aggregators, and at what cost (Autorité de la concurrence and Bundeskartellamt, 2016[25]).

- **The date of collection and the nature of data flows:** In some instances, a fixed static dataset may be sufficient, whereas in others it is the continual flow of data that is most valuable, and data may in fact have an expiration date in terms of usefulness (Oxera, 2018, p. 8[13]).
- **The quality and accuracy of the data:** Datasets that are based on inputs from users, or inferences, may be subject to accuracy limitations. Further, there may be measurement errors or data corruptions. Thus, quality and accuracy is crucial to the comparison of different datasets and the determination of whether a given dataset contributes to market power (see, for example, ACCC (2019[14])).
- **Whether scale is needed for the data to be useful.** Some datasets are useful on an individual consumer level, whereas others only generate value once they attain a given scale. For example, the marginal value of an individual search engine enquiry is likely to be minimal, since the algorithm will require large volumes of data to be able to improve its predictions[28] (OECD, 2016[15]; Autorité de la concurrence and Bundeskartellamt, 2016[25]). In contrast, individual-level data may be of particular value for products like social media platforms, where access to that data is an important part of the platform's value (OECD, 2021[10]). When scale is crucial, or when individual-level data are not portable, data may contribute to incumbent market power.
- **Whether other data, or specific resources, are needed for the data to be useful.** Some datasets may need to be combined with others in order to be useful. For instance, a given dataset may need to be matched to individual user profiles in order to be valuable. Further, not all firms in a market may have access to the requisite skills and resources to be able to handle, process and analyse a dataset.

The degree to which the data held by large digital platforms meets the criteria above, and thus the degree to which it contributes to their market power, is widely debated in the academic literature. Some studies of digital markets have identified situations in which data substitutes are available, data exhibits decreasing returns to scale, and feedback loops in data collection do not arise, suggesting data's contribution to market power may be exaggerated in some instances (Calvano and Polo, 2021[17]). However, when data do contribute to market power, this market power may be more likely to be expressed in an anticompetitive manner: privacy protections could mean the single monopoly profit theorem no longer holds (since they could make internal data-sharing more profitable than sharing data with downstream competitors), and thus that firms will have an incentive to foreclose competitors' access to such data (Graef, 2015[26]; OECD, 2020[27]).

2.2.5. Economies of scope and other linkages across markets

Economies of scope play a key role in many digital markets – particularly those organised into ecosystems of interconnected products, which involve unique dynamics relative to non-digital markets (Bourreau, 2020[28]; Fletcher, 2020[29]). On the supply side, they allow for data, expertise, digital infrastructure, and established sales channels to be shared across different digital products. On the demand side, they can provide consumers with a seamless, convenient "one stop shop" for various needs. Further, interoperability between different digital products can generate significant gains for consumers, for instance when a GPS watch synchronises with a mobile device, which then shares the watch's data with a fitness app. While in many cases it is debatable whether these economies of scope require all of the products to be provided by the same firm,[29] there is a growing recognition that these linkages can allow market power to be leveraged from one market into another.

There are several ways in which competition authority decisions have recognised linkages between products as contributors to market power. First, market power in one market can be leveraged into new markets, since favourable access to data and consumers may constitute a substantial source of competitive advantage. The European Commission found in its Google AdSense case, for example, that challengers would be unable to match to Google's position in online search advertising because this would

require them to develop a rival search engine with similar reach and performance.[30] The Italian competition authority similarly assessed Amazon's dominance with respect to its ecosystem of products, and in particular its influence in relationships with both consumers and firms across multiple markets.[31] Further, the Apple App Store's exclusivity in offering apps on Apple mobile devices, and Apple's corresponding control of app developers' access to Apple mobile device users, was considered by the Competition Commission of India.[32]

Second, linkages between products can be a strategy for protecting market power in a firm's original markets. When, either due to limited interoperability or other means, digital products are bundled together, new entrants may face a particularly formidable entry barrier: in order to compete with incumbents, they may need to offer the entire suite of products in the bundle, which may not be practical (OECD, 2020[27]). In fact, this may be part of an incumbent's overall acquisition strategy when seeking to purchase firms to add to, or protect, its ecosystem, as highlighted for example by the Australian Competition and Consumer Commission (ACCC, 2019[14]). At the same time, ecosystem integration is not a guarantor of success in digital markets, as Tucker notes, citing the example of the Google Plus social network, which benefited from a substantial potential user base from other products in the Google ecosystem (Tucker, 2018[18]).

2.2.6. Switching costs

It is well established that switching costs can contribute to market power. By discouraging consumers from changing products, they can make entry into established markets more difficult, and dampen the intensity of competition between incumbents. However, in digital markets, authorities attempting to assess the existence of switching costs are often faced with the cliché that competition is "only a click away". In practice, consumers can indeed face switching costs as in any other market, and the fact that they are non-monetary does not render them any less impactful. This has been recognised by a range of authorities, including Australia, the European Commission, Italy, Korea and Japan.[33]

In digital markets, switching costs can take several forms: loss of data, the time needed to set up a new account or re-input information, reduced functionality of related products due to a lack of interoperability, the need to repurchase specific content, and even the time needed to learn new systems. For instance, the Australian Competition and Consumer Commission noted that switching between Apple and Google mobile device ecosystems could cause consumers to lose their purchased apps and subscription-based services, lose functionality of additional linked hardware, and spend time re-downloading applications and data (ACCC, 2021, p. 26[6]). Data loss, and complexity associated with comparing and changing digital products, were also highlighted by the UK's Digital Competition Expert Panel as factors causing consumer "strandedeness" – and thus market power (Digital Competition Expert Panel, 2019, p. 36[30]).

The purchasing timelines of the devices and hardware that go along with certain digital products can also constitute a barrier to switching. If a user wished to switch a certain operating system-specific application, or switch app stores, they would need to switch their device, a significant expense that is likely to be incurred only every few years (at the earliest). Further, this switch would involve losing all other non-interoperable applications and connected hardware, strengthening the tendency to stay within a given digital ecosystem. This was, for instance, assessed by the European Commission in its decision regarding Google's acquisition of Fitbit as a contributor to market power.[34]

These concerns are consistent with academic literature, which finds that switching costs in digital markets contribute to a significant incumbency advantage, making it difficult for new entrants, including those offering products with a level of quality or functionality that is better, but not enough to make up for switching costs (Calvano and Polo, 2021[17]). This challenging environment for new entrants can motivate incumbents with market power to be particularly aggressive in response to the threat of entry as well. At the same time, past changes in digital markets, especially with respect to social media (e.g. the movement away from Myspace toward Facebook), suggest that the effectiveness of switching costs in insulating market power

will depend greatly on the specific circumstances in the market, and that significant novelty or new features may overcome the effect of switching costs (Tucker, 2018[18]).

2.2.7. Brand effects and consumer behaviour

Related to the issue of switching costs, there are various demand-side characteristics of digital markets that may affect competition, and in particular brand loyalty and consumer inertia (Competition and Markets Authority, 2018[31]). Brand loyalty in any market can contribute to a hesitancy to switch products, and amplify the links between the products within a firm's ecosystems. When sufficiently strong, loyalty can also limit the response of consumers to the exercise of market power, which the Australian Competition and Consumer Commission has identified with respect to mobile device ecosystems, for example (ACCC, 2021, p. 26[6]).

Beyond branding, consumers may also exhibit certain behavioural characteristics that make entry more challenging. They may be hesitant to switch providers (or multi-home) even if it is possible and would benefit them, due to habit, or due to a tendency not to evaluate different product options when they currently obtain a product at a price of zero (the so-called "free effect", which is relatively unique to digital markets, see for instance OECD (2018[32])). They may be vulnerable to a range of biases, namely: framing bias, or being influenced by the way different options are presented; salience bias, which involves focusing on the most prominent choices; and default bias, a tendency to select the default (OECD, 2021, p. 27[5]). Consumer "stickiness" or inertia has been identified as a contributor to market power by the Australian, Italian and European Commission authorities.[35] It may also amplify the impact of certain incumbent strategies, such as the pre-installation of applications on a device and operating system (ACCC, 2021, p. 26[6]).

The economic literature suggests several causes for consumer inertia. Where network effects are important, consumers may assume that other users will not switch, making it particularly difficult for all but the most aggressive and innovative new entrants to lure new users to their platform (Calvano and Polo, 2021[17]). In other words, not only is there a hesitation among users to be a first-adopter due to network effects, but that hesitation may be even more pronounced if users make decisions assuming their fellow users will demonstrate a high degree of inertia.

These dynamics may be turned on their head in certain situations, for example when novelty is especially valued by consumers, or when there are negative network effects (Tucker, 2018[18]) (do young people want to share social media content with an audience consisting of both their friends and their grandparents?). However, this seems consistent with the overall message – new entrants will need to offer something particularly novel and innovative to lure sticky users away from their current digital products.

2.2.8. Product differentiation

Product differentiation, including differentiation through branding, can have an ambiguous long-term effect on market power regarding digital products, as with any other product. Economic literature suggests that differentiation in the presence of heterogeneous consumers may give rise to market power (i.e. firms may specialise and hold market power over a set of consumers that prefer their products). Franck and Peitz (2019[8]) suggest that for digital platform markets, differentiation can lower concentration but lead to market power. Conversely, they indicate a lack of differentiation may lead to concentration (and even tipping to monopoly in the long term), but also an environment where market power is disciplined by the threat of entry from undifferentiated substitute services.

In its approach to differentiation, the German competition authority has placed a particular emphasis on preventing tipping in markets due to potential entry barriers that could insulate incumbents from competitive pressure. For example, in a merger between two real estate platforms, the Authority determined that, in addition to the prevalence of multi-homing, product differentiation reduced the risk of tipping in the

market.[36] The authority has also indicated that specialisation can counteract the effect of positive feedback loops in digital markets, and in particular keep markets open to multiple firms if there are heterogeneous preferences among firms (Bundeskartellamt, 2016[21]).

Product differentiation will need to be considered in the context of network effects in digital markets. In particular, the likelihood of tipping may well depend on the balance between heterogeneous consumer preferences on one hand, and the gains from aggregating onto a single platform due to network effects on the other hand.

2.2.9. Lack of countervailing buyer power

The presence of countervailing buyer power to discipline market power has been assessed in several cases, particularly cases involving digital platforms on which firms depend to sell to their final consumers.[37] As noted by the UK's Digital Competition Expert Panel (2019, p. 44[30]):

> *"By aggregating a large proportion of consumer demand on one side of the market, platforms have strong bargaining power over the long tail of business users that are dependent on the platform as a route to market."*

While not a major theme of most authority decisions in this area, perhaps because the lack of countervailing buyer power is taken as self-evident, the bargaining imbalances between digital platforms and their client firms has been an area of consideration in developing new concepts for market power, as described in the following section.

2.3. Conceptual questions addressed by authorities regarding market power in digital markets so far

Bringing together all of the individual contributors to market power described above, authorities have had to grapple with several broad conceptual questions when assessing the market power of digital firms. At least some of these questions remain open, and speak to the practical difficulties associated with bringing a digital case forward or challenging a digital merger. They may also be a major reason why new concepts of market power are being developed, and new digital sector regulatory initiatives are being proposed. However, they cannot be avoided when seeking to apply existing competition enforcement tools in digital markets, and thus warrant further reflection.

A first conceptual question is **whether the existence of a price of zero in a market, and a reluctance among consumers to pay a positive price, is evidence of a lack of market power**. While this question attracted controversy at one point, it now seems conclusively settled (OECD, 2018[33]). Nearly all of the cases mentioned so far in this note include at least one zero-priced component, and the competition law in Germany makes explicit that a price of zero does not exempt a market from competition rules (Bundeskartellamt, 2018[34]). This reflects a recognition of the multisidedness of many digital markets: a price of zero on one side of a market will be accompanied by revenue generation on another side of the market. That is, zero pricing can be reflective of the need to generate sufficient data or attention to advertising in order to charge other groups of consumers a positive price. Many authorities have argued that these positive prices are reflective of a platform's overall market power. While it is true that the "free effect" introduces some complexity in terms of the behavioural patterns of consumers and their willingness to pay, it also suggests that firms may have substantial leeway to exercise market power in non-price dimensions, such as data collection. This manifestation of market power has been a focus of some authorities' approach to digital firm market power (OECD, 2020[35]).

A second conceptual question relates to digital ecosystems, and specifically **whether their competitive dynamics lead to market power for the firm at the centre of a given ecosystem.** The competitive constraints facing firms that operate an ecosystem can be divided into two categories: constraints within

an ecosystem, and constraints between ecosystems. With respect to competition within an ecosystem, it is clear that the supplier of the ecosystem's core service can, in at least some cases, insulate itself from challengers offering only an individual product by bundling and tying products together (the central concern in the EU and US Microsoft cases, for example). Further, the characteristics of digital markets may create greater incentives to foreclose competitors within an ecosystem than traditional markets (OECD, 2020[27]). In fact, foreclosure of competitors offering complementary products in an ecosystem can be a strategy for preventing challengers from attaining sufficient size, scale and data to challenge an incumbent's core business at the centre of the ecosystem. This has motivated a range of policy and enforcement measures to encourage interoperability in order to preserve or promote competition within an ecosystem (OECD, 2021[10]).

When competition within an ecosystem is limited due to strategies such as bundling and tying, there may still be the possibility of competition between ecosystems potentially limiting market power. This brings the assessment of market power to a level beyond individual product markets, to the level of multiple interconnected products within a broader ecosystem. Here, the economic literature is mixed. The linkages between products can, as noted above, contribute to consumer lock-in. However, they may also lead to firms competing aggressively to become the consumer's ecosystem of choice at the outset. The literature suggests that when there is a limited number of symmetric firms, the prospects for aggressive competition between ecosystems are better, compared to markets dominated by a single ecosystem with several smaller, more specialised ecosystems on the margins (Bourreau and de Streel, 2019[36]). In practice, competition authorities have assessed the competitive constraints imposed between ecosystems in the context of limiting factors such as brand loyalty, switching barriers, and product purchasing timelines (e.g. for mobile devices).[38] Alleviating some switching costs by for instance promoting data portability has been considered as a measure to facilitate stronger competition between ecosystems (OECD, 2021[10]).

The topic of competition between ecosystems relates to a third, broader question about **whether competition-for-the-market dynamics in a given digital market are sufficient to discipline market power**. While this question can apply equally to non-digital markets, it has been a particular focus in digital market power assessments. As noted above, factors such as strong network effects can lead to more concentrated digital markets, although there is debate about whether this translates to market power, and in particular durable market power. An idealised version of competition-for-the-market dynamics in digital markets would suggest that, while incumbents are virtual monopolists, they are constantly looking over their shoulder at potential challengers who, with the right product, could capture a foothold and rapidly displace them. The nature of the barriers to entry and expansion in digital markets may in fact make the likelihood of "re-tipping" more likely in digital markets than in traditional natural monopolies. For example, a railroad line is not likely to be rapidly displaced by a rival, whereas past experience in at least some digital markets suggest that it could indeed be possible for markets to tip toward new entrants, perhaps due to the nature of the barriers to entry in these markets (e.g. network effects that may be overcome) (OECD, 2019[24]).

At the same time, many of the barriers to entry or substitution described above may remain difficult to overcome. It may be, therefore, that competition authorities must attempt to gauge the likelihood of the market rapidly tipping in favour of a challenger product, and assess this likelihood for instance in the context of potential harms associated with a merger (OECD, 2020[37]). Given the challenging nature of this task, many authorities appear to have focused on the benefits of multi-homing in preserving the likelihood of at least some competition within, rather than simply for, the market, as described above.

A final related question is **whether market power in a given digital market is likely to be temporary, given the potential for innovative dynamic competition.** It is well-recognised that digital markets, like other dynamic markets, feature rapid changes in terms of the introduction of new or improved products, and that innovation plays a central role (OECD, 2019[38]; OECD, 2018[32]). In particular, the threat of potential entry, and the existence of competitive pressure to innovate from rivals outside of product markets, could ensure that market power is temporary. These dynamics can sometimes be used as an

argument that the barriers to entry, expansion and substitution described above are not decisive in a given market – in other words, that a brand new innovation could easily overcome network effects and other challenges. An evolution in consumer preferences over time (such as increased attention paid to privacy and data protection) may also play a role. The past displacement of certain digital firms by new challengers (which have now become the dominant incumbents), and the rapid growth of some new entrants like TikTok in the social media space, are highlighted to support this view. It follows, according to this view, that incumbents' current market power is limited by the constant threat of innovative entry, and the need to continuously innovate to retain their position (Oxera, 2018, p. 9[13]). However, competition authorities must undertake the difficult task of assessing whether there truly is a risk of innovative entry within a reasonable time frame. Further, conditions may have changed since the entry of firms in the past – in a joint study, the French and German competition authorities have indicated that past evidence of entry is not proof of an ability to enter a market in the future (Autorité de la concurrence and Bundeskartellamt, 2016, p. 30[25]). Further, they note that if past entry has mainly come from specialised firms focused on only part of the market, the risk they pose to incumbents may be limited.

This question is particularly relevant when a market displays competition-for-the-market dynamics. Even if firms do engage in fierce competition for the consumer at the outset, this may be followed by an extended lock-in of the consumer and thus significant market power. When public concession markets feature this type of dynamic, they are generally designed with a time limit in mind (OECD, 2019[24]). It is not clear whether the evolution of digital markets will impose their own time limits due to the cycles of innovation and a consumer desire for product novelty.

Key points: how competition authorities evaluate digital firms' market power

- Market shares are a particularly limited indicator of market power in digital markets.
- Network effects play a central role in authorities' assessment of digital firms' market power. The contribution of network effects to market power will depend on, among other factors: the extent of interoperability; whether externalities flow in more than one direction; whether only some firms can benefit from network effects; and whether network effects are broad in scope or localised.
- Authorities also frequently assess data as a contributor to market power. This contribution will depend on: the importance of a dataset for competing in a market; the quality and accuracy of the data in question; whether the value of data can expire; and whether scale or other datasets are needed to use data effectively.
- While not a guarantee of effective competition, multi-homing can in some instances play a role in limiting market power.
- Economies of scope and linkages between products, brand effects, and consumer inertia may play a particularly important role as contributors to market power in digital markets relative to other markets. Other relevant factors assessed by authorities include economies of scale, fixed costs and product differentiation.
- Authorities have grappled with several core conceptual questions when assessing market power in digital markets; namely:
  - whether the existence of a price of zero in a market, and a reluctance among consumers to pay a positive price, is evidence of a lack of market power, to which authorities have answered in the negative
  - whether ecosystems lead to market power for the firm at the centre of a given ecosystem, which will depend crucially on the feasibility of strong competition between ecosystems
  - whether competition-for-the-market dynamics in a given digital market are sufficient to discipline market power, which may not be the case if consumers are locked in to a service for extended periods and multi-homing is limited
  - whether market power in a given digital market is likely to be temporary, given the potential for innovative dynamic competition, which involves significant uncertainty, given past entry cannot guarantee future competitive pressures

3. New concepts and forms of market power

When reviewing the academic literature on digital competition issues, one encounters a flurry of new terminology, including new concepts that are subsets of, related to, or alternatives to, market power. This is reflective of some of the challenges posed by these markets. As noted above, the nature of network effects, linkages between complementary products and even competition-for-the-market dynamics are all somewhat unique in digital markets. Multi-sided markets, vertical integration, and conglomerate business models, which were never a core focus of competition authority attention, have become the norm and the source of a novel set of concerns. Beyond the need to adapt competition analysis, this uniqueness has also posed challenges for competition enforcement, in terms of the types of conduct covered by established theories of harm, the length of proceedings, and the balance of over- and under-enforcement risks.

These new terms appear to be motivated by both of these factors – that is, both the particular conditions of digital markets, but also the challenges encountered in applying competition enforcement frameworks in these markets. It is no surprise, then, that several of these concepts arise in the context of proposals or initiatives to introduce new regulatory regimes for digital markets (as discussed in a 2021 OECD hearing and background paper (OECD, 2021[5])). This section will introduce the new concepts that have been introduced and consider their relationship to market power. Specifically, it will discuss:

- Particular types of “power” held by firms in digital markets (platform power, intermediation power, bottleneck power and portfolio power).
- Concepts and designations developed to capture the influence of specific firms in the context of new regulation to address digital competition concerns (gatekeepers, strategic market status, paramount significance for competition across markets and unavoidable trading partners).
- Concepts relating to bargaining power that have been discussed in the context of digital competition concerns (superior bargaining position and economic dependence)

Table 1 below summarises the relationship between these concepts and market power.

Table 1. Summary of concepts related to market power

Concept	Relationship to market power
Platform-focused concepts	
Platform power	Equivalent to the market power of digital platforms
Intermediation power	Equivalent to the market power of digital platforms
Bottleneck Power	Equivalent to the market power of digital platforms
Portfolio power	Market power stemming from control over a portfolio of related products
New regulatory designations	
Gatekeeper	No explicit reference, but mention of concepts related to market power including durability of position, contestability, and the intermediation role of platforms.
Strategic market status	Arises when firms have substantial, entrenched market power, and a strategic position making the effects of this market power particularly significant
Paramount significance for competition across markets	No explicit reference, but dominance (substantial market power) is one factor to be considered, and other factors may also be associated with market power
Unavoidable trading partner	Direct link - refers to a dominant position (substantial market power) stemming from a lack of substitutes for trading partners
Concepts related to bargaining power	
Superior bargaining position and economic dependence	Do not require market power, relate to certain characteristics of the contractual relationship between a firm and a customer

3.1. Platform power

Platforms have been a particular focus of competition policy discussions regarding digital markets. In fact, platform business models are at the core of many digital products, including those funded by advertising, and those that provide a marketplace or platform for firms to sell their products to their end consumers. Platforms also exhibit many of the potential contributors to market power described above, including network effects, a central role for data, and linkages across products that generate strong economies of scope. In fact, multi-sidedness was identified by the German competition authority as the main factor differentiating those digital markets that could be clearly tackled using the abuse of dominance rules in existence in 2016, from those markets that posed particular challenges and competition concerns (Bundeskartellamt, 2016[11]).

In order to capture the importance of platforms, and the potential for platform providers to significantly influence the conditions across multiple sides of a market (or multiple interrelated markets), some have used the term “platform power.” The precise definition of the term is unclear – some suggest that it could be a replacement for market power that captures the “infrastructural and strategic power” of platforms (Broughton Micova and Jacques, 2020[39]), however these concepts appear to focus on the same fundamental parameters as market power, including barriers to entry. Thus, some consider the two terms to be equivalent (Jacobides, 2021[40]). To this end, Jacobides (2021[40]) proposes assessing platform power according to similar contributing factors to those described above, including whether the platform is unavoidable due to the degree of exclusivity and limited multi-homing, the strength of network effects, and whether having an ecosystem of products contributes to consumer “stickiness”.

To the extent that the term platform power simply refers to the market power of a firm in a multisided market, its assessment will certainly be distinct from that of single-sided markets. As explained in further detail in OECD (2018[4]), the magnitude of cross-platform externalities will need to be taken into account, either quantitatively when conducting tests such as the Upward Pricing Pressure (UPP) test, or qualitatively by attempting to consider cross-network elasticities of demand. In other words, estimating the impact of a hypothetical exercise of market power on one side of the market will need to take into account the reaction on other sides of the market. Further, market power need not manifest itself only in terms of prices, and thus other parameters of competition should be considered, including product quality, advertising

exposure, and potentially the magnitude of data collection or the presence of intermediation bias (e.g. providing an advantage to one's own products in ecommerce product listings – see Calvano and Polo (2021[17])).

Given its overlap with market power, some have questioned whether a focus on platform power is needed, particularly in the context of new regulatory initiatives. Notably, while some initiatives explicitly focus on platforms (such as the EU's Digital Market Act), others focus on digital markets more broadly (as explored further in OECD (2021, p. 22[5])). In particular, while platforms play an important role in digital markets and exhibit some contributors to market power such as network effects, it is not clear that a focus on platforms fully encompasses the full range of competition concerns that may arise in digital markets. For instance, Lynskey (2017[41]) indicates that regulation aimed explicitly at platform power would be based on vague and contested concepts. She notes the example of an online streaming provider for which the switch between a subscription model to an advertising-funded model could be the trigger for coverage under regulations focusing on platform power, even if this transition on its own is not necessarily meaningful for competition purposes (Lynskey, 2017, p. 5[41]).

3.2. Intermediation power

The term intermediation power evokes the role of a platform in bringing together different groups of consumers. Schweitzer et al (2018[42]) characterise intermediation power as a third form of market power (the other two being market power with respect to demand, and market power with respect to supply or buyer power). The idea is that, as intermediaries, platforms offer access to a given proportion of final demand, and that both the size of this proportion and the tendency of consumers to single or multi-home will determine the extent of intermediation power. For example, in an oligopoly with a small number of platforms, Schweitzer et al indicate there may be several platforms with intermediation power in a market. This would arise if each offers exclusive access to a subset of consumers that firms on the other side of the platform require (i.e. the loss of any one subset would significantly impair their ability to compete) (Schweitzer et al., 2018, pp. 3-4[42]; Competition Law 4.0 Commission, 2019, p. 30[43]).

The fact that intermediation power is equivalent to market power in a specific context is also reflected in recent amendments to the German competition law. In particular, the law now makes specific reference to the situation of intermediaries when assessing dominance:

> *"In assessing the market position of an undertaking acting as an intermediary on multi-sided markets, account shall be taken in particular of the importance of the intermediary services provided by the undertaking for accessing supply and sales markets."*[39]

As OECD (2018[4]) notes, the market power of a platform must be assessed with respect to all sides given the existence of cross-network externalities – thus it is impossible for a platform to hold power only over one side of a market. Thus, the concept of intermediation power seems to be an attempt to recognise that, as opposed to traditional forms of market power relative to consumers (which focus on the ability to influence a single price or set of product characteristics), platforms with market power have influence over the prices and terms offered across all sides of a platform (including the relative balance of prices paid and quality offered on different sides).

In sum, the concept of intermediation power seems, for practical purposes, to be equivalent to platform power. An EU expert panel has also suggested it is equivalent to the concept of unavoidable trading partner (Crémer, de Montjoye and Schweitzer, 2019, p. 49[44]), although as noted above, it appears that firms with intermediation power may be unavoidable trading partners, but not all unavoidable trading partners are platforms (and thus hold intermediation power).

3.3. Bottleneck power

The term bottleneck power refers to the control by a firm of a "…point of congestion which has the potential to lead to objective inefficiencies" (Alexiadis and de Streel, 2020, p. 4[45]). Specifically, a bottleneck can stem from a limited flow of resources, or an important piece of infrastructure with limited capacity. In digital markets, the concept of bottlenecks has been applied to markets that feature single-homing by consumers, meaning that for instance a monopolistic incumbent holds bottleneck power over access to consumers, limiting the ability of rivals to compete (Scott Morton et al., 2019[46]).

A particular form of bottleneck that may arise in digital markets is an attention bottleneck: consumers only have so much time to spend on content, and so mergers of content providers could, for example, give rise to bottleneck power in terms of access to consumer attention (Armstrong, 2006[19]; Calvano and Polo, 2021[17]).

In practical terms, it is not clear whether the concept of bottleneck power reveals any fundamental dynamics at work that would not be captured by market power assessments. Alexiadis and de Streel suggest that the concept is better suited to regulation in areas such as physical communication infrastructure where there are significant physical or technical capacity limitations. Further, they indicate that the concept suggests the presence of an essential facility, and a limited potential for efficiencies such as economies of scope, both of which may not be easily applied in digital markets (2020[45]). Others, however, have indicated that bottleneck power is equivalent to platform or market power (Jacobides, 2021[40]).

3.4. Portfolio power

Portfolio power is another concept that is not new or specific to digital markets (see, for example, OECD (2001[47])), and has in the past been considered primarily in Europe. The term generally arises in the context of conglomerate mergers, and is considered in the context of potential portfolio effects from those mergers. The core idea is that a merger between firms that are not currently product market competitors or in a supply relationship can, under specific conditions, still harm competition. Namely, when at least one of the firms has market power, and the post-merger firm seeks to leverage that market power through bundling or tying products together (OECD, 2020[27]). While assessed in several EU merger cases, these effects have attracted greater scepticism from other authorities in the past (see, for example, US Department of Justice Antitrust Division (2001[48])).

There does not seem to be a commonly agreed definition of the concept of portfolio power, since it appears generally to refer to the potential for portfolio effects stemming from a merger (Church, 2008, p. 1517[49]). However, the term evokes the ability of a firm to exercise market power by virtue of its portfolio or range of products. Even if it is traditionally assessed in the context of exclusionary conduct, portfolio power can be taken to include any expression of market power enabled by having market power in a related market. This can include, for example, the price increases to a given product made possible by conditioning its purchase on another "must have" product.

As noted above, this type of power may be of particular interest in digital markets due to the rise of digital ecosystems (Moss, 2021[50]). In particular, the conditions for harm may be more likely to materialise in digital markets with strong network effects (OECD, 2020[27]), and thus concerns about leveraging may be particularly pronounced in these markets (Competition Law 4.0 Commission, 2019[43]).

The concept of portfolio power is therefore not an alternative to market power, but rather captures a current or potential source of market power – interlinkages between products. It is also one way that a firm may become an unavoidable trading partner in a given market.

3.5. Gatekeepers

The existence of gatekeepers in digital markets has been a major area of competition policy interest, and is at the centre of the EU Digital Markets Act (which sets out a range of obligations for firms designated to be gatekeepers). The term refers to the ability of certain digital firms to "control access by a group of users to some goods or another group of consumers" (Alexiadis and de Streel, 2020, p. 5[45]). Specifically, this can include controlling access by firms to their final customers, based on a gatekeeper's "access to consumer data and capacity to deliver content and services" (Crémer, de Montjoye and Schweitzer, 2019, p. 48[44]).

This concept is not an established one in competition law, and may have different interpretations. In the European Commission's proposal for a Digital Markets Act (Article 3), the designation of gatekeepers is specifically focused on platforms that serve as "an important gateway for business users to reach end users", and which are in an entrenched and durable position (European Commission, 2020, p. 63[51]). Notably, this designation makes no explicit reference to market power, focusing instead of the role of a platform as intermediary, and access point, between firms and consumers. Further, this designation is distinct, and potentially less burdensome to meet, than the competition law concept of an essential facility (Alexiadis and de Streel, 2020, p. 5[45]).

Alternative definitions of the term gatekeeper include those departing even further from the concept of market power, and those more closely related to it. For example, Lynskey proposed focusing new digital legislation on "internet information gatekeepers", with a scope that is explicitly broader than market power, and which captures core policy objectives not normally a focus of competition law, including freedom of expression and privacy (Lynskey, 2017, p. 10[41]). She opines that control over the flow of information, rather than the presence of multisided business models, should determine whether new regulations apply to a given digital firm.

In contrast, in its report, the UK Digital Competition Expert Panel noted that dominant digital platforms are able to act as gatekeepers, giving them "three distinct forms of power: the ability to control access and charge high fees; the ability to manipulate rankings or prominence; and the ability to control reputations" (Digital Competition Expert Panel, 2019, p. 42[30]). Each of these could translate into market power, and indeed the Panel proposed specific measures tailored to firms with significant market power, discussed further below.

Thus, depending on one's interpretation, a firm's status as a gatekeeper can either have a broader societal importance, or be more narrowly interpreted as being a result of a specific kind of market power akin to platform power (but distinct from bottleneck power, which is more focused on limitations to capacity). In either case, this term focuses on a platform's role as intermediary and influence over the terms of transactions and the overall relationship between different sides of the platform.

3.6. Strategic market status

Like the concept of gatekeeper, strategic market status is a concept used to identify a set of digital firms subject to new regulatory requirements. Originally proposed by the UK's Digital Competition Expert Panel with a broad potential scope, the UK Competition and Markets Authority has, after consultation, further refined the concept. The Authority has proposed that firms with strategic market status be subject to a regulatory regime including a code of conduct, procompetitive policy interventions and supplemental merger rules (Competition and Markets Authority, 2020, p. 29[52]).

Specifically, the Expert Panel indicated that firms with strategic market status are those that control market access by virtue of their position as a gateway or bottleneck in digital markets (Digital Competition Expert Panel, 2019, p. 55[30]). The Panel further indicated that the "significant market power" test from

telecommunications regulation (now equivalent to dominance)[40] could be used as a guide for determining the precise criteria for strategic market status. Finally, the panel noted that the designation could also encompass other concepts described below, namely economic dependence and relative market power.

Introduced following the Panel's report, the Competition and Markets Authority's recommendation for the definition of strategic market status may be more closely associated with market power, and in particular makes specific reference to the key determinants of market power: a lack of alternatives for consumers and limited threat of entry (Competition and Markets Authority, 2020, p. 28[52]). Further, it recommended that the designation of strategic market status be applied to firms with :

> *…substantial, entrenched market power in at least one digital activity, providing the firm with a strategic position (meaning the effects of its market power are likely to be particularly widespread and/or significant). (Competition and Markets Authority, 2020, p. 5[52])*

Thus, the concept of strategic market status in its latest iteration in the UK refers to a situation in which a digital firm has a specific level of market power. Further, the proposal, as evident from the name of the concept, emphasises the "strategic" nature of this market power, which could distinguish it from the concept of dominance, which in UK guidance also refers to "substantial" market power.[41]

3.7. Paramount significance for competition across markets

Like the concept of strategic market status, paramount significance for competition across markets is a designation that has been developed in the context of legislative changes to address digital competition concerns. Specifically, this concept has been set out in amendments to the German competition law.[42] The amendment allows the German competition authorities to designate a firm as one of paramount significance for competition across markets based on criteria including[43]:

- its dominant position on one or several market(s),
- its financial strength or its access to other resources,
- its vertical integration and its activities on otherwise related markets,
- its access to data relevant for competition,
- the relevance of its activities for third party access to supply and sales markets and its related influence on the business activities of third parties.

While the possession of a dominant position is one potential factor in the designation, it is not a requirement, and indeed the amendments aim to preserve competition in markets not yet dominated by a single firm, but for which the risk of certain anticompetitive conduct may exist (Bundeskartellamt, 2020[53]). The German competition authority has the power to prohibit certain types of conduct as they would an abuse of dominance, including self-preferencing, using data as an entry barrier, and inhibiting data portability and interoperability, among others.

This amendment does not make explicit mention of market power, even if dominance is one of the factors that could be used to justify the designation. However, it can be tied back to a range of concerns stemming from market power in digital markets, including the risk of markets tipping rapidly into entrenched market power, the presence of entry barriers, and the potential for market power to be leveraged across related markets. Some commentary suggests that these measures could lead to a wholly novel interpretation of conduct that is removed from established notions of market power and dominance, and focused instead on ecosystems and product relationships (Budzinski, Gaenssle and Stöhr, 2020[54]). However, commentary suggesting that only a small number of firms would be subject to these designations (European Commission, 2020[55]), and the close relationship of each of the criteria listed above with barriers to entry and substitution, suggest that market power will remain a core guiding principle. Further, an analysis of potential competition harms within the context of an ecosystem or conglomerate business model need not

depart from established concepts of market power to capture the concerns about digital competition often identified (OECD, 2020[27]; Bourreau, 2020[28]; Fletcher, 2020[29]).

The designation of a firm having paramount significance for competition across markets is broad enough to encompass several of the other concepts noted above, including platform power and portfolio power. Further, the designation also means that provisions regarding relative market power will apply, meaning that a situation of economic dependence on the designated firm may also arise.

3.8. Unavoidable trading partner

While it has not been explicitly defined in legislation, the term unavoidable trading partner is a concept referenced in several cases in Europe, stretching back to a 1979 European court judgment which indicated:

> *"An undertaking which has a very large market share and holds it for some time … is by virtue of that share in a position of strength which makes it an unavoidable trading partner and which, already because of this secures for it, at the very least during relatively long periods, that freedom of action which is the special feature of a dominant position."*[44]

Thus, being an unavoidable trading partner implies a firm is dominant, according to this decision. It places a particular emphasis on an inability of trading partners to switch or make use of alternatives – again, closely tied to key contributors of market power. Consistent with this interpretation, Jacobides suggests that in digital markets, platform power (or the market power of a digital platform) could be established by finding that a platform is both a bottleneck and an unavoidable intermediary (Jacobides, 2021[40]).

The existence of an unavoidable trading partner can have implications for competition *within* and *across* markets, both of which are relevant in the case of digital firms. With respect to the former, network effects, switching costs or "must have" content can make a digital firm an unavoidable trading partner and thus lead to tipping (Alexiadis and de Streel, 2020[45]). An EU expert panel on digital competition emphasised that this type of position can emerge in relatively fragmented markets as well, especially when consumers single-home, suggesting that some digital markets may be akin to traditional newspaper markets where an individual is likely only to subscribe to one newspaper (Crémer, de Montjoye and Schweitzer, 2019, p. 49[44]). In this case, a market may feature intense competition-for-the-market dynamics.

The second implication of being an unavoidable trading partner is that a firm may leverage its market power into new markets, often for complementary products. Specifically, once a firm has a relatively captive consumer base, it can attempt to use tying and bundling strategies to obtain market power in new markets (OECD, 2020[27]). Even absent a specific effort to tie and bundle products together, a lack of interoperability within a digital ecosystem will mean that the status of unavoidable trading partner in one market will significantly affect competition in other markets.

Thus, this concept covers both aspects of market power and portfolio power. While the concept of unavoidable trading partner can certainly be applied to digital platforms active in multisided markets, it does not appear to be limited to multi-sided markets. Rather, its interpretation is relatively broad, and could conceivably apply to the relationship of firms with both final consumers and other firms (which may rely on the firm in question for either inputs or access to markets).

3.9. Superior bargaining position and economic dependence

While not a focus of this note, concerns about the bargaining power of digital firms have also arisen in some jurisdictions. For example, in its Digital Platforms Inquiry, the Australian Competition and Consumer Commission highlighted the existence of bargaining power on the part of certain digital platforms relative to news media businesses (ACCC, 2019[14]).

The related concepts of superior bargaining positions, and economic dependence, more comprehensively discussed in OECD (2022[56]), have also been discussed in the context of digital competition concerns in some jurisdictions. Notably, these designations do not require the existence of market power, and are rooted in the analysis of certain characteristics of the contractual relationship between a firm and a customer (often with an emphasis on business-to-business relationships).

The concept of a **superior bargaining position** is part of competition law in Hungary, Korea and Japan (Moussis and Yamada, n.d.[57]; European Commission, 2020[55]). For example, in assessing whether a party (Party A) has a superior bargaining position in its relationship with another party (Party B), the Japan Fair Trade Commission considers: the degree to which Party B depends on Party A; the position of Party A in the market; the possibility of Party B changing its counterparty (away from Party A); and other factors establishing the need for Party B to transact with Party A (such as brand power).[45] Firms considered to hold a superior bargaining position are prohibited from imposing certain terms of conditions on their counterparties. Some have argued that this relatively unique concept can be considered within the context of a broader contract law framework (Wakui and Cheng, 2015[58]).

Control of superior bargaining positions has been one element of the Japanese competition policy's response to digitalisation. In particular, the Japanese Fair Trade Commission has issued guidelines specific to the relationship between digital platforms and consumers, covering situations where consumers are "compelled" to accept the terms offered by digital platforms, even if it involved detrimental treatment (including "unjustifiable" data collection).[46] Thus, while the concept of superior bargaining position is often considered in the context of the imposition of terms on a firm by its suppliers, it has also been considered in Japan in the context of relationships between a firm and final consumers.

Economic dependence is a somewhat similar concept present in different variations in Belgian, French and German competition law, among others (Alexiadis and de Streel, 2020, p. 7[45]). As with the presence of a superior bargaining position, a situation of economic dependence implies an inability of a customer to switch to another firm (Alexiadis and de Streel, 2020[45]). While the presence of substantial consumer stickiness and limited switching suggests market power (Colangelo, 2022[59]), this designation is not always defined with specific reference to either market power or dominance. One exception is the German competition law, which refers to "relative market power" stemming from a lack of "sufficient and reasonable possibilities for switching" and the existence of a "significant imbalance between the power" of the firm and its counterparty.[47]

These concepts have also been discussed in the context of digital competition concerns. As noted above, when proposing the strategic market status designation, the UK's Digital Competition Expert Panel recommended considering the existence of economic dependence and relative market power. Reforms in Germany in response to digitalisation have broadened provisions on relative market power, by removing the specific mention to small- and medium-sized businesses (implying that firms of any size can benefit from protections from an abuse of relative market power) (Bundeskartellamt, 2021[60]). Further, the German competition law provisions regarding this type of abuse now make specific reference to firms relying on specific intermediaries in multi-sided markets, and the potential for firms to depend on data access.[48] Others have suggested that the abuse of economic dependence can be addressed with greater reliance on exploitative abuse of dominance instruments, and thus focusing on situations where dominance exists (Bougette, Budzinski and Marty, 2019[61]) – using market power as a criteria for pursuing these cases, in other words.

Key points: new concepts and forms of market power

- The concepts of **platform power** and **intermediation power** both refer essentially to the market power of a platform. The assessment of this market power is different from that of one-sided markets due to the need to take into account cross-platform externalities. In particular, market power in multisided markets will be manifested in the overall set of prices and other competitive parameters across the platform, and so each side of the platform should not be assessed in isolation.
- **Bottleneck power** traditionally refers to the control over a limited flow of resources or piece of infrastructure with limited capacity. In digital markets, this concept may be stretched with reference to the limited attention and time of users. When no capacity or resource limitation applies, this term appears to be equivalent to platform or intermediation power.
- **Portfolio power** refers to the ability of a firm to exercise market power by virtue of the portfolio or range of products it has. Thus, this concept attempts to capture a potential source of market power, and may be particularly relevant in digital markets given the importance of ecosystem and conglomerate business models.
- The terms **gatekeeper**, **strategic market status** and **paramount significance for competition across markets** are all legislative designations introduced to address digital competition issues. The relationship between each of these designations and market power is either explicit (in the case of strategic market status) or implicit (in the case of the other two designations).
- The concept of an **unavoidable trading partner** is an established one that could be applied to digital markets due to network effects, switching costs or “must have” content. It can refer to a firm that either has market power only within one market, or portfolio power, as a result of its position.
- **Superior bargaining power** and **economic dependence** are both established concepts that have been identified as being relevant to digital concerns (both business-to-business and business-to-consumer) in several jurisdictions. Neither relies on dominance or market power, although some have suggested considering these concerns in the context of exploitative abuse of dominance frameworks (and thus market power), where relevant.

4. Looking forward: challenges in the assessment of market power on the horizon

The preceding sections have explored how the determinants of market power (as assessed by competition authorities) may, in at least some cases, be unique in digital markets, and how a range of new concepts related to the influence of digital firms have been developed. These concepts can either be tied directly to market power, or indirectly linked to it based on the parameters they consider (especially those related to barriers to entry or substitution). However, this relationship is not always explicit, leading to ambiguity in the way these new concepts are interpreted. Competition policy therefore faces two significant challenges related to market power in the digital era: adapting its assessments of market power to digital markets, and considering the precise role of market power when faced with the need to assess and make decisions based on new concepts of firm influence. The latter challenge is especially pronounced given that competition enforcement is being complemented with new regulatory measures in several jurisdictions (OECD, 2021[5]). Competition authorities will be at the forefront of addressing this challenge, whether they are directly responsible for implementing new regulations, or are engaging in advocacy for the most procompetitive design of such measures. This section will explore some of the key questions they may face in this process.

4.1. Does market power need to be assessed or treated differently due to digitalisation?

As shown in Section 2, competition authorities have already acquired significant experience in assessing the market power of digital platforms, and addressing certain fundamental questions about the nature of market power in digital markets. However, there has been a range of proposals for authorities to adjust their approach and assessments.

One particular area of focus is the **relationship between market power and dominance or monopoly positions**. Competition law provisions regarding abusive conduct focus on firms with either a dominant position, or monopoly position, and these provisions are often defined by explicitly referencing a given amount of market power (OECD, 2020[22]). The core idea is that certain types of conduct are only harmful for competition when firms have sufficient market power to engage in exclusionary or exploitative conduct.

The pace of evolution of digital markets, the nature of the contributors to market power in these markets (such as network effects), and the potential for market power to become entrenched have all led to some proposals to adjust this approach. In particular, some have suggested that conduct by firms that are not yet dominant may need to be prevented given the risk of tipping into monopoly (Competition Law 4.0 Commission, 2019, p. 84[43]). The question, then, is what limiting factor should be applied, since it is clear that not all firms with market power that stops short of dominance are capable of abusive conduct. One particular area of focus could be non-dominant “platform operators in tight oligopolies”, who may engage

in conduct such as limiting multi-homing and switching to encourage tipping (Schweitzer et al., 2018, p. 3[42]).

The proposals and measures for new regulation on gatekeepers, or firms with paramount significance for competition across markets, seem to reflect this view, since both could notionally be applied to firms that are not necessarily dominant. These concepts, particularly that of gatekeepers set out in EU legislation, are at the same time significantly broader than those relating to dominance (in terms of both the scope of application and potentially the types of conduct covered). An alternative approach could consist of adjusting abuse of dominance frameworks to capture conduct likely to, due to market characteristics, lead to a dominant position, and once such a position is gained, to lead to exclusion and tipping (which may be, at least in theory, similar to a monopolisation approach). However, regardless of the specific approach used, it may be difficult to establish the risk of rapid tipping in a market based on observing patterns in digital markets.

A second area of discussion is related to **how market power is assessed in digital markets,** and encompasses a range of proposals to adapt the types of analysis described in Section 2 above. These include:

- **The need to assess carefully whether certain commonly cited contributors do in fact lead to market power.** For example, Tucker (2018[18]) opined that network effects are often not as important or significant contributors to market power as normally claimed. At the same time, Cabral et al indicate that multi-homing may not always be a procompetitive signal. For example, they indicate the need for app developers to multi-home is in fact indicative of the market power held by different app stores, since developers cannot afford to ignore the entire user base of a given operating system (Cabral et al., 2021, p. 9[62]). In practice, these observations reconfirm the need to engage in a case-by-case assessment rather than automatically applying formalistic criteria when assessing market power.
- **The need to further adapt market power measurements to digital markets.** As noted above, multisidedness introduces a range of complications to the measurement of market power. In fact, it may cause certain indicators to be misleading. For example, a digital platform may have high market shares and price-cost margins on one side of a market, but exhibit a lower level of profitability level than competitors (Belleflamme, Peitz and Toulemonde, 2021[63]). Authorities may therefore need to be up-front about such contradictory indicators, and explain their implications for market power in the context of the overall dynamics of a multisided market.
- Some measurements that may be particularly helpful in digital markets have been identified. OECD (2018[4]) notes how an adjusted Lerner index can be computed in multisided markets using data that is likely to be available. Another potential measurement that may be particularly helpful in multisided markets relates to the routes for users to access a given product – specifically the proportion of referral traffic for online services from different sources, such as search engines and direct advertising (Cabral et al., 2021[62]). At the same time, non-price dimensions of competition, which play a central role in digital markets, may continue to evade easy quantification techniques (OECD, 2020[22]; Prado, 2021[64]).
- **The need to pay particular attention to certain dynamics which, while not new, may be relatively important in digital markets.** In particular, the analysis of potential competition, and innovation as a parameter of competition is a fundamental issue that cannot be ignored (Bourreau and de Streel, 2019[36]; Teece and Kahwaty, 2020[65]), despite criticisms that raise issues such as uncertainty and subjectivity. Other factors that may need to be considered as potential sources of market power could include regulatory arbitrage (which may grant a firm a competitive advantage over those subject to more substantial regulatory frameworks regarding labour or pricing, for example), the risk of data being leveraged into related markets, the potential for predatory pricing, or restrictions on consumer choice (Bamberger and Lobel, 2017[66]).

4.2. What is the relationship between established concepts of market power and new ones set out in regulation and legislation?

There is a clear conceptual link between market power and various new concepts or initiatives to introduce new regulatory measures addressing digital competition concerns. However, this link is not always made explicit, and can be complicated by the existence of other motivating factors for new measures, including the existence of multi-sidedness or vertical integration (OECD, 2021, p. 27[5]). The explicit criteria used in several proposals or initiatives to designate firms subject to the regulation can become even further removed from traditional market power assessments; namely thresholds based on turnover, market capitalisation or user base (OECD, 2021, pp. 28-29[5]). At the same time, it should be noted that there remains significant flexibility in terms of the specific criteria used to justify a designation in many cases.

These discrepancies between market power and the criteria set out in new regulations could be suggestive of several different things. First, they may reflect the need to translate broad economic concepts in legislation that requires greater clarity, specificity and certainty than economic literature can currently provide. This is not a new challenge: dominance, for example, is fundamentally a legal concept that attempts to codify the level of market power that will cause certain conduct to have an exclusionary or exploitative effect (OECD, 2006[67]; OECD, 2020[22]). When setting out dominance thresholds, merger notification requirements, or various other requirements, competition law also frequently reflects a policy judgment that it is worth using imperfect indicators from an economic perspective to minimise uncertainty, and prevent an undue administrative burden on firms and competition authorities. This is the principle behind safe harbours in competition law, for example (OECD, 2006[67]). At the same time, the broad flexibility and use of multiple potential criteria included in several proposals or initiatives suggest that any legislative precision provided may not guarantee practical certainty or clarity about these criteria.

A second potential explanation regarding the discrepancy is that at least some new regulations attempt to address some of the practical challenges associated with market power-based competition enforcement in digital markets. In particular, abuse cases can be lengthy and ineffective in addressing rapid market changes stemming from alleged anticompetitive conduct. By introducing a more formalistic set of criteria, a new regulation could do away with the ambiguities and in-depth assessment required to assess market power in a given case. However, the flexible and tailored assessment contemplated in most proposals, as well as the need to explicitly define a market in at least some cases, suggests that these benefits may be minimal (OECD, 2021[5]). Rather, the speed and decisiveness that may come from new regulatory proposals may come from greater ease in proving the harmful effects of market power (or relieving the authority of proving any such effects at all, as in the case of the EU Digital Markets Act), rather than from forgoing the assessment of market power.

A third potential explanation for the discrepancy between market power and new regulatory concepts is that market power and dominance are too narrow to address the concerns that new regulation seeks to address. As discussed above, some concerns relate to the conduct of firms that are not yet dominant, and it may be the case that a designation based on a firm having any degree of market power is too broad to be meaningful. Proponents of new regulatory measures have also explicitly called for a broader perspective to be taken in new regulations (see, e.g. Lynskey (2017[41])).

However, while it is true that there are many new regulatory proposals to address a broad set of policy concerns related to digitalisation (such as media plurality, the control of extreme or violent content, and privacy protection), the focus of designations regarding gatekeepers, strategic market status, or paramount significance can still be tied back to fundamental concepts regarding market power. When they seek to address risks from anticompetitive self-preferencing, or the hampering of data portability and interoperability, or the bundling of products together, these regulatory measures all reflect a concern with market power at their core. After all, if these practices do not generate or entrench market power, why are they an issue? The alternative policy objective is not clear.

This leaves us with the possibility that challenges associated with meeting the threshold for dominance or monopolisation could be a key justification for new regulations that continue to have some measure of market power as their core motivating principle. Indeed, in a recent paper, Crémer et al highlight two fundamental objectives in the European context: fairness and contestability, with the latter being defined as: "the ability for non-dominant firms to overcome barriers to entry and to expansion to the benefit of users" (Crémer et al., 2021, p. 14[68]). Similarly, when fleshing out a proposed definition for a firm with strategic market status, it is noteworthy that the UK Competition and Markets Authority highlighted established concepts about "substantial and entrenched market power" (Competition and Markets Authority, 2020, p. 5[52]).

Even measures motivated by fairness, a concept likely to create discomfort among some economists, may ultimately be tied back to market power. After all, exploitative abuses are an attempt outside of sector regulation to address conditions imposed on consumers due to a firm's market power (which reflects a lack of alternatives for said consumers). What is the policy concern about consumers getting an unfair deal from a bottleneck, gatekeeper, unavoidable trading partner, or source of economic dependence, if not an expression of concern about market power?

This suggests a path forward for competition policy when designing, interpreting, and fleshing out new regulatory initiatives in digital markets. Market power can remain the guiding principle, as often seems the case today, unless alternative policy objectives can be clearly defined. It can also contribute to the elaboration of criteria and guidelines, although there may well be a need to balance simple, easy-to-interpret criteria that give certainty to market participants and competition authorities, with the more fact-intensive process of assessing market power. However, competition law frameworks already include such a balancing, suggesting it is not an impossible task. As Teece and Kahwaty (2020[65]) state:

> *One must remember that market power, not size, is a gating characteristic for successful market intervention. With vibrant dynamic competition, even a "winner-take-all/most" outcome is only temporary as entities look for means to develop better, more convenient, or higher value offerings for consumers, while seeking to displace the incumbent platforms (even if these platforms are "large" as measured by the number of users or some other metric)."*

4.3. How will new regulatory designations affect market power assessment under existing competition law standards?

The discussion so far has focused on conceptual and analytical issues associated with market power in the wake of digitalisation. But as new regulations are developed and implemented, there is also a significant practical challenge associated with the interaction between these rules, and existing competition law, in relation to market power. In particular, it remains to be seen whether new market power-related regulatory designations will have a bearing on market power assessments in a competition enforcement context. For instance:

- Will a regulatory designation facilitate the determination that a firm is dominant? It appears that all firms considered to have "strategic market status" would be considered dominant, but that dominance is not necessarily required for the other designations considered here (gatekeepers, paramount significance for competition across markets, unavoidable trading partner).
- Will the fact that a firm has not been designated suggest a lack of dominance, or at least be used by firms to argue for such an outcome? This challenge may be particularly relevant for firms that meet the functional criteria for a regulatory determination; for instance by acting as an important intermediary between a firm and its customers.
- Can a regulatory determination be referenced in merger review proceedings, for example to militate toward greater scrutiny of future acquisitions (other than when the designation regime specifically

contemplates additional merger review requirements, as per the UK Competition and Markets Authority's proposal (2020[52]))? Indeed, a regulatory determination may be helpful in an agency's prioritisation decisions.

These practical questions highlight the risks associated with designations that have an ambiguous relationship to market power, and may take time as well as judicial review to solve.

4.4. Divergences among jurisdictions in terms of their approach to digital market power

This note has highlighted the proliferation of new concepts tied, at least loosely, to market power in digital markets. While this proliferation can lead to confusion in the academic literature, its consequences may be more severe when it leads to significant divergences across jurisdictions in terms of new regulatory approaches. For instance, even within the European Union, the European Commission observed:

> *"The divergences in regulation of economic power are likely to deepen due to the current initiatives at [the Member State] level to address specifically imbalanced relationships between digital platform and their business users. In a series of Member States legislative projects are under discussion and/or have been proposed within the legislative process." (European Commission, 2020, pp. 111-112[55])*

Divergences across jurisdictions have long been observed in competition law, reflecting different legislative contexts, policy decisions, and interpretations of economic evidence. However, it is particularly notable that many new digital regulatory initiatives and proposals seem to have similar concerns about market power at their heart: the risk that firms may entrench their market power within a market by creating new entry barriers and limiting substitution, the risk that firms may leverage their market power into other markets, and the risk that firms may use their market power to impose certain terms on consumers. Nonetheless, significant variations exist in terms of the definitions of regulatory designations, the evidence considered in reaching those designations, the nature of prohibitions regarding firms with those designations (in particular whether they are subject to an analysis of effects), and the types of prohibited conduct (OECD, 2021[5]). These divergences may ultimately compromise the effectiveness of new regulations in promoting competition in international digital markets, or at the least lead to a complex regulatory environment.

5. Conclusion

Market power has been the lodestar of modern competition policy, and recent developments regarding digital markets are no exception to this. The influence of this concept can be found even in new competition-focused regulatory proposals and initiatives, which focus, even if indirectly, on conduct by firms with market power on competition. This is not to say, however, that the application of market power concepts to digital markets is without challenges.

This note has reviewed the evolving concept of market power in the digital economy by first exploring how competition authorities have assessed indicators of, and contributors to, the market power of digital firms to date. In particular, it has explored the unique nature of network effects in digital markets, and identified the situations in which network effects contribute to market power (based on the extent of interoperability, whether externalities flow in more than one direction, whether all firms benefit from network effects equally, and whether network effects are localised or broad in scope). It has set out the situations in which data and multi-homing contribute to market power, and emphasised the particularly important role that economies of scope and linkages between products play in digital markets.

In their case experience to date, competition authorities have grappled with several core conceptual questions when assessing market power in digital markets. They have clearly determined that market power can exist even if firms offer products at a price of zero. The question of whether ecosystems lead to market power has been addressed by a more limited set of competition authorities, and remains highly case-dependent. In addition, the question of whether competition-for-the-market dynamics are sufficient to discipline market power is of growing interest, and has been answered in the negative in at least some cases when consumers are locked in for extended periods.

Next, this note explores a range of concepts and terms applied to digital markets. Some, like platform power and intermediation power, can be treated as equivalent to market power held by platforms. Bottleneck power may be most meaningfully applied when there are significant capacity constraints in a market, whereas portfolio power can be considered a potential source of market power stemming from the possession of a range of products. The concept of an unavoidable trading partner is an established one that could be applied to digital markets due to network effects, switching costs or “must have” content.

Of most relevance to new regulatory proposals and initiatives already in place are the terms gatekeeper, strategic market status and paramount significance for competition across markets. These terms all reflect the challenge of codifying specific concerns about a given level of market power and particular anticompetitive conduct into legislation. They also reflect the specific policymaker judgments and legal frameworks of the jurisdiction in which they have been proposed. While they exhibit some differences, including in terms of whether they make explicit reference to market power, they share many similar determinants. Given these similarities, market power remains a reliable principle for designing, interpreting and elaborating new regulations focused on digital competition issues, except for situations where clear additional policy goals have been identified.

While competition authorities can continue to refine their analysis of market power in the context of enforcement activities, it is also clear that they could face challenges if existing frameworks are affected by new ones. For example, they may need to grapple with the relationship between new regulatory designations and dominance. Advocating for new measures to be clearly defined with respect to market power, and considering a balance with the need for simple-to-apply criteria, may therefore be an important

task ahead. Finding strategies to address growing divergences across jurisdictions in terms of new regulatory concepts is another such task. Thus, there is a long road ahead for digital competition policy development and co-operation, but market power is, as always, a reliable compass to help find the way.

Endnotes

[1] Defined as the ability to raise prices above the level that would prevail under competition (OECD, n.d.[71]), generally defined as short-run marginal cost (OECD, 2006[67]), although it may also be manifested in the ability to keep quality below the competitive level – particularly relevant in digital markets with zero-priced products (OECD, 2020[22]).

[2] United States of America v. Microsoft Corporation, Civil Action No. 98-1232, Complaint filed May 18, 1998.

[3] Feedback loops in digital markets are self-reinforcing processes in which a change to the conditions on one side of the market are amplified, due to data collection or network effects (OECD, 2022, p. 9[3]).

[4] See, for instance: the European Commission's decisions in the Google Shopping (AT.39740), Android (AT.40099) and Microsoft/LinkedIn (M.8124) cases; the Korean Fair Trade Commission's decisions in the Naver shopping (2021-027), Google Android (2021-329), Delivery Hero/Baemin (2021-032) cases; the US Federal Trade Commission's complaint regarding the CoStar Group/RentPath Holdings merger (Docket No. 9398).

[5] European Commission Case No. COMP/M.6281 – Microsoft/Skype, Article 6(1)(b) Non-Opposition, 7 October 2011, https://ec.europa.eu/competition/mergers/cases/decisions/m6281_924_2.pdf.

[6] European Commission Case No. 139/2004 – Facebook/WhatsApp, Article 6(1)(b) Non-Opposition, 3 October 2014, https://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf.

[7] Autorité de la concurrence, Decision 19-D-26 of 19 December 2019 regarding practices employed in the online search advertising sector, https://www.autoritedelaconcurrence.fr/sites/default/files/attachments/2020-04/19d26_en.pdf

[8] District of Columbia v. Amazon.com Inc., 25 May 2021, https://oag.dc.gov/sites/default/files/2021-05/Amazon-Complaint-.pdf.

[9] European Commission Decision in Google Shopping (AT.39740), 27 June 2017, https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf.

[10] Bundeskartellamt Decision Ref. B6 – 39/15, 20 April 2015, English summary available at: https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Fusionskontrolle/2015/B6-39-15.pdf?__blob=publicationFile&v=2

[11] KFTC Decision 2021-032 – Delivery Hero/Baemin.

[12] Autorità Garante della Concorrenza e del Mercato, Amazon decision, 20 November 2021, para 672-673, https://www.agcm.it/dotcmsdoc/allegati-news/A528_chiusura%20istruttoria.pdf.

[13] European Commission Decision in Google Shopping (AT.39740), 27 June 2017, para 275 https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf.

[14] European Commission, Antitrust Procedure Decision in Case AT.40411, Google Search (AdSense), 20 March 2019, https://ec.europa.eu/competition/antitrust/cases/dec_docs/40411/40411_1619_11.pdf.

[15] United States Department of Justice, Complaint versus Amazon Inc., 25 May 2021, https://oag.dc.gov/sites/default/files/2021-05/Amazon-Complaint-.pdf.

[16] See, for instance: the European Commission's decisions in the Google Shopping (AT.39740), Microsoft/LinkedIn (M.8124), Google/Fitbit (M.9660), Google Search (AT.40411) cases; the French Competition Authority's Google Search case (19-D-26); the Italian Competition Authority's Amazon case (A528); the Korean Fair Trade Commission's decisions in the Naver shopping (2021-027) and Google Android (2021-329) cases; the US Federal Trade Commission's complaint regarding the CoStar Group/RentPath Holdings merger (Docket No. 9398); the US Department of Justice's 2021 Amazon complaint and 2013 Bazaarvoice/PowerReviews complaint, and the US Federal Trade Commission's CoStar/Rentpath complaint.

[17] Japan Fair Trade Commission Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination, revised as of December 17, 2019, https://www.jftc.go.jp/en/legislation_gls/imonopoly_guidelines_files/191217GL.pdf.

[18] See, for example, the European Commission's decision in the Google Shopping (AT.39740).

[19] See, for instance: the European Commission's decisions in the Google Shopping (AT.39740), Google Android (AT.40099) and Adsense (AT.40411) cases; the Korean Fair Trade Commission's decision in the Naver shopping (2021-027) cases; and the US Department of Justice's 2020 Google complaint and 2021 Amazon complaint.

[20] Act Against Restraints of Competition, Section 18, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[21] Japan Fair Trade Commission Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination, revised as of December 17, 2019, https://www.jftc.go.jp/en/legislation_gls/imonopoly_guidelines_files/191217GL.pdf.

[22] European Commission Decision in Google Shopping (AT.39740), 27 June 2017, https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf.

[23] Autoriteit Consument & Markt (ACM), Decision in Apple (ACM/19/035630), 24 August 2021, English summary: https://www.acm.nl/sites/default/files/documents/summary-of-decision-on-abuse-of-dominant-position-by-apple.pdf.

[24] See, for instance: the Australia Competition and Consumer Commission's Digital Platforms Inquiry (ACCC, 2019[14]); the Competition Bureau of Canada's statement regarding Thoma Bravo's acquisition of Aucerna (30 August 2019); the European Commission's decision in the Google Shopping (AT.39740) case; the UK Competition & Markets Authority's Final Report on the Anticipated Acquisition by Sabre Corporation of Farelogix Inc. (9 April 2020), and the US Department of Justice's 2013 Bazaarvoice Inc. complaint, 2021 Amazon complaint.

[25] Act Against Restraints of Competition, Section 18, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[26] See the European Commission's Microsoft/Linkedin (M.8124) and Google/Fitbit (M.9660) merger decisions.

[27] Paragraph 457, European Commission decision in Case M.9660 – Google/FitBit, Article 8(2) Regulation (EC) 139/2004 Merger Procedure, 17 December 2020, https://ec.europa.eu/competition/mergers/cases1/202120/m9660_3314_3.pdf.

[28] While scale may not always improve a search algorithm's results, it may be particularly important for dealing with rare inquiries that have a higher chance of appearing with large volumes (Graef, 2015[26]).

[29] OECD (2021[10]) describes how data portability and interoperability standards can promote competition and the mixing and matching of different firms' services.

[30] European Commission, Antitrust Procedure Decision in Case AT.40411, Google Search (AdSense), 20 March 2019, https://ec.europa.eu/competition/antitrust/cases/dec_docs/40411/40411_1619_11.pdf.

[31] Autorità Garante della Concorrenza e del Mercato, Amazon decision, 20 November 2021, https://www.agcm.it/dotcmsdoc/allegati-news/A528_chiusura%20istruttoria.pdf.

[32] Competition Commission of India, decision in Case No. 24 of 2021 regarding Apple Inc. and Apple Distribution International Limited, 31 December 2021, https://www.cci.gov.in/sites/default/files/24-of-2021.pdf.

[33] See: ACCC (2021[12]), The European Commission's decision in the Google Android case (AT.40099), the Italian competition authority's Amazon case, the Korea Fair Trade Commission's decision in the Google Android Case (2021-329), the Italian competition authority's Amazon case, and the report of the Japan Fair Trade Commission's Expert Study Group on Data and Competition (JFTC, 2017[70]).

[34] European Commission decision in Case M.9660 – Google/FitBit, Article 8(2) Regulation (EC) 139/2004 Merger Procedure, 17 December 2020, para 797, https://ec.europa.eu/competition/mergers/cases1/202120/m9660_3314_3.pdf.

[35] See the Australia Competition and Consumer Commission's digital platforms (ACCC, 2019[14]) and digital advertising services (ACCC, 2021[12]) inquiries, the Italian competition authority's Amazon case, and the European Commission's decision in the Google Shopping (AT.39740) case.

[36] Bundeskartellamt Decision Ref. B6 – 39/15, 20 April 2015, English summary available at: https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Fusionskontrolle/2015/B6-39-15.pdf?__blob=publicationFile&v=2

[37] Specifically, the European Commission's Google Shopping (AT.39740) and Google Android (AT.40099) decisions.

[38] See, for instance, ACCC (2021[6]) and the EU's Google Android (AT.40099) decision.

[39] Act Against Restraints of Competition, Section 18, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[40] European Commission, Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (2018/C 159/01), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018XC0507%2801%29#ntc47-C_2018159EN.01000101-E0047.

[41] See: UK Office of Fair Trading Guidance, "Abuse of a dominant position: Understanding competition law", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/284422/oft402.pdf.

[42] Act Against Restraints of Competition, Section 19a, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[43] Act Against Restraints of Competition, Section 19a, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[44] Judgment of the Court 13 February 1979, Hoffmann-La Roche & Co. AG v Commission of the European Communities, Case 85/76, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61976CJ0085.

[45] Japan Fair Trade Commission, Guidelines Concerning Abuse of Superior Bargaining Position under the Antimonopoly Act, Tentative English Translation, 30 November 2010, https://www.jftc.go.jp/en/legislation_gls/imonopoly_guidelines_files/101130GL.pdf.

[46] Japan Fair Trade Commission, Guidelines Concerning Abuse of a Superior Bargaining Position in Transactions between Digital Platform Operators and Consumers that Provide Personal Information, etc., Tentative English Translation, 17 December 2019, https://www.jftc.go.jp/en/pressreleases/yearly-2019/December/191217DPconsumerGL.pdf.

[47] Act Against Restraints of Competition, Section 20, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

[48] Act Against Restraints of Competition, Section 20, as amended at 9 July 2021, English translation available at: http://www.gesetze-im-internet.de/englisch_gwb/englisch_gwb.html#p0100.

Bibliography

ACCC (2021), *Australian Competition & Consumer Commission: Digital advertising services inquiry - Final report*, https://www.accc.gov.au/publications/digital-advertising-services-inquiry-final-report. [12]

ACCC (2021), *Australian Competition & Consumer Commission: Digital platform services inquiry - Interim report No. 2 - App marketplaces*, https://www.accc.gov.au/publications/serial-publications/digital-platform-services-inquiry-2020-2025/digital-platform-services-inquiry-march-2021-interim-report. [6]

ACCC (2021), *Australian Competition & Consumer Commission: Digital platform services inquiry - Interim report No. 3 - Search defaults and choice screens*, https://www.accc.gov.au/publications/serial-publications/digital-platform-services-inquiry-2020-2025/digital-platform-services-inquiry-september-2021-interim-report. [69]

ACCC (2019), *Australian Competition & Consumer Commission: Digital Platforms Inquiry: Final Report*, https://www.accc.gov.au/publications/digital-platforms-inquiry-final-report. [14]

Alexiadis, P. and A. de Streel (2020), *Designing an EU Intervention Standard for Digital Platforms*, European University Institute, Robert Schuman Centre for Advanced Studies, https://cadmus.eui.eu/bitstream/handle/1814/66307/RSCAS%202020_14.pdf?sequence=1&isAllowed=y. [45]

Armstrong, M. (2006), "Competition in Two-Sided Markets", *The RAND Journal of Economics*, Vol. 37/3, https://econpapers.repec.org/paper/wpawuwpio/0505009.htm. [19]

Autorité de la concurrence and Bundeskartellamt (2016), *Competition Law and Data*, https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2. [25]

Bamberger, K. and O. Lobel (2017), "Platform Market Power", *Berkeley Technology Law Journal*, Vol. 32, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3074717. [66]

Belleflamme, P., M. Peitz and E. Toulemonde (2021), "The tension between market shares shares and profit under platform competition", *International Journal of Industrial Organization*, https://doi.org/10.1016/j.ijindorg.2021.102807. [63]

Bougette, P., O. Budzinski and F. Marty (2019), "Exploitative Abuse and Abuse of Economic Dependence: What Can We Learn From an Industrial Organization Approach?", *Revue d'économie politique* 2, https://www.cairn.info/revue-d-economie-politique-2019-2-page-261.htm#re9no107. [61]

Bourreau, M. (2020), *Some Economics of Digital Ecosystems – Note by Marc Bourreau for Competition Committee Hearing on Competition Economics of Digital Ecosystems*, https://one.oecd.org/document/DAF/COMP/WD(2020)89/en/pdf. [28]

Bourreau, M. and A. de Streel (2019), "Digital Conglomerates and EU Competition Policy", http://www.crid.be/pdf/public/8377.pdf. [36]

Broughton Micova, S. and S. Jacques (2020), "Platform power in the video advertising ecosystem", *Internet Policy Review: Journal on internet regulation*, Vol. 9/4, https://doi.org/10.14763/2020.4.1506. [39]

Budzinski, O., S. Gaenssle and A. Stöhr (2020), "Outstanding relevance across markets: A new concept of market power?", *Concurrences Competition Law Review* 3, https://www.concurrences.com/IMG/pdf/04.concurrences_3-2020_law_economics_budzinski.pdf?61727/43a1f7d6a92a6a80816335fae09723d8c326e3a7. [54]

Bundeskartellamt (2021), *Press Release: Amendment of the German Act against Restraints of Competition*, https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2021/19_01_2021_GWB%20Novelle.html. [60]

Bundeskartellamt (2020), *Abuse of dominance in digital markets: Contribution from Germany for OECD Competition Committee Roundtable*, https://one.oecd.org/document/DAF/COMP/GF/WD(2020)32/en/pdf. [53]

Bundeskartellamt (2018), *Quality considerations in the zero-price economy – Note by Germany submitted for a Competition Committee Hearing*, https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Diskussions_Hintergrundpapier/2018/OECD_2018_COMPETITION_COMMITTEE_Directorate_for_financial_and_enterprise_affairs_competition_committee_81_1.pdf?__blob=publicationFile&v=2. [34]

Bundeskartellamt (2016), *Paper on Platform Market Power - Results and Recommendations*, https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Think-Tank-Bericht-Kurzzusammenfassung_Englisch.pdf;jsessionid=A59AF1DE110B50CE03D84DA864D7C185.1_cid390?__blob=publicationFile&v=2. [21]

Bundeskartellamt (2016), *Working Paper: The Market Power of Platforms and Networks (Executive Summary)*, https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Zusammenfassung.pdf;jsessionid=2943DB9B781EDD07FB7CC1BC349C212D.1_cid390?__blob=publicationFile&v=4. [11]

Cabral, L. et al. (2021), *The EU Digital Markets Act: A Report from a Panel of Economic Experts*, European Commission, https://publications.jrc.ec.europa.eu/repository/bitstream/JRC122910/jrc122910_external_study_report_-_the_eu_digital_markets_acts.pdf. [62]

Calligaris, S., C. Criscuolo and L. Marcolin (2018), "Mark-ups in the digital era", *OECD Science, Technology and Industry Working Papers,* No. 2018/10, https://www.oecd-ilibrary.org/industry-and-services/mark-ups-in-the-digital-era_4efe2d25-en. [1]

Calvano, E. and M. Polo (2021), "Market power, competition and innovation in digital markets: A survey", *Information Economics and Policy*, Vol. 54, https://doi.org/10.1016/j.infoecopol.2020.100853. [17]

Calvino, F. and C. Criscuolo (2019), "Business dynamics and digitalisation", *OECD Science, Technology and Industry Policy Papers* 62, https://doi.org/10.1787/6e0b011a-en. [2]

Church, J. (2008), *Conglomerate Mergers*, American Bar Association, Antitrust Section. [49]

Colangelo, G. (2022), *The Digital Markets Act and EU Antitrust Enforcement: Double & Triple Jeopardy*, https://laweconcenter.org/wp-content/uploads/2022/03/Giuseppe-Double-triple-jeopardy-final-draft-20220225.pdf. [59]

Competition and Markets Authority (2020), *A new pro-competition regime for digital markets: Advice of the Digital Markets Taskforce*, https://assets.publishing.service.gov.uk/media/5fce7567e90e07562f98286c/Digital_Taskforce_-_Advice.pdf. [52]

Competition and Markets Authority (2018), *Designing and Testing Effective Consumer-facing Remedies: Background Note for OECD Competition Committee Working Party No. 3*, OECD, https://one.oecd.org/document/DAF/COMP/WP3(2018)2/en/pdf. [31]

Competition Law 4.0 Commission (2019), *A new competition framework for the digital economy: Report by the Commission 'Competition Law 4.0'*, https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3. [43]

Crémer, J. et al. (2021), "Fairness and Contestability in the Digital Markets Act", *Digital Regulation Project Policy Discussion Paper* 3, https://tobin.yale.edu/sites/default/files/Digital%20Regulation%20Project%20Papers/Digital%20Regulation%20Project%20-%20Fairness%20and%20Contestability%20-%20Discussion%20Paper%20No%203.pdf. [68]

Crémer, J., Y. de Montjoye and H. Schweitzer (2019), *Competition policy for the digital era*, https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf. [44]

Digital Competition Expert Panel (2019), *Unlocking digital competition: Report of the Digital Competition Expert Panel*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf. [30]

European Commission (2020), *Commission Staff Working Document - Impact Assessment Report (Annexes): Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in digital sector (Digital Markets Act)*, https://ec.europa.eu/competition-policy/system/files/2021-09/DMA_impact_assessment_part2.pdf. [55]

European Commission (2020), *Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act)*, https://ec.europa.eu/info/sites/default/files/proposal-regulation-single-market-digital-services-digital-services-act_en.pdf. [51]

Fletcher, A. (2020), *Digital competition policy: Are ecosystems different?*, https://one.oecd.org/document/DAF/COMP/WD(2020)96/en/pdf. [29]

Franck, J. and M. Peitz (2019), *Market Definition and Market Power in the Platform Economy*, https://cerre.eu/wp-content/uploads/2020/05/report_cerre_market_definition_market_power_platform_economy.pdf. [8]

G7 Competition Authorities (2021), *Compendium of approaches to improving competition in digital markets*, https://www.gov.uk/government/publications/compendium-of-approaches-to-improving-competition-in-digital-markets#:~:text=Developed%20by%20G7%20and%20guest,taking%20to%20address%20competition%20concerns. [16]

Graef, I. (2015), "Market Definition and Market Power in Data: The Case of Online Platforms", *World Competition*, Vol. 38/4, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2657732. [26]

Jacobides, M. (2021), *What Drives and Defines Digital Platform Power? A framework, with an illustration of App dynamics in the Apple Ecosystem*, Evolution Ltd. White Paper, https://events.concurrences.com/IMG/pdf/jacobides_platform_dominance.pdf. [40]

JFTC (2017), *Japan Fair Trade Commission: Competition Policy Research Center - Report of Study Group on Data and Competition Policy*, https://www.jftc.go.jp/en/pressreleases/yearly-2017/June/170606_files/170606-4.pdf. [70]

Khan, L. (2017), "Amazon's Antitrust Paradox", *Yale Law Journal*, Vol. 126, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2911742. [23]

Lynskey, O. (2017), *Regulating 'Platform Power'*, LSE Law, Society and Economy Working Papers, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2921021. [41]

Martens, B. (2020), *European Commission JCR Technical Report: An economic perspective on data and platform market power*, https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3783297_code368169.pdf?abstractid=3783297&mirid=1. [20]

Moss, D. (2021), *Controlling Market Power in Digital Business Ecosystems: Incorporating Unique Economic and Business Characteristics in Competition Analysis and Remedies*, https://www.competitionpolicyinternational.com/controlling-market-power-in-digital-business-ecosystems-incorporating-unique-economic-and-business-characteristics-in-competition-analysis-and-remedies/. [50]

Moussis, V. and A. Yamada (n.d.), "Abuse of economic dependence: Commentary", *Concurrences Dictionary*, https://www.concurrences.com/en/dictionary/abuse-of-economic-dependence-en. [57]

OECD (2022), *Handbook on Competition Policy in the Digital Era*, https://www.oecd.org/daf/competition-policy-in-the-digital-age/. [3]

OECD (2022), *Purchasing Power and Buyers' Cartels: Background note by the Secretariat [forthcoming]*. [56]

OECD (2021), *Data portability, interoperability and competition: Background note by the Secretariat*, https://www.oecd.org/daf/competition/data-portability-interoperability-and-digital-platform-competition-2021.pdf. [10]

OECD (2021), *Ex ante regulation of digital markets: OECD Secretariat Background Paper*, https://www.oecd.org/daf/competition/ex-ante-regulation-and-competition-in-digital-markets.htm. [5]

OECD (2020), *Abuse of dominance in digital markets: Background note by the Secretariat*, http://www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets-2020.pdf. [22]

OECD (2020), *Conglomerate Effects of Mergers - Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2020)2/en/pdf. [27]

OECD (2020), *Consumer Data Rights and Competition: Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2020)1/en/pdf. [35]

OECD (2020), *Start-ups, Killer Acquisitions and Merger Control: Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2020)5/en/pdf. [37]

OECD (2019), *Competition for the Market: Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP/GF(2019)7/en/pdf. [24]

OECD (2019), *Merger Control in Dynamic Markets: Background note by the Secretariat*, http://www.oecd.org/daf/competition/merger-control-in-dynamic-markets-2020.pdf. [38]

OECD (2018), *Market concentration: Issues paper by the Secretariat*, https://one.oecd.org/document/DAF/COMP/WD(2018)46/en/pdf. [7]

OECD (2018), *Non-price Effects of Mergers: Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2018)2/en/pdf. [32]

OECD (2018), *Quality Considerations in Zero-Price Markets: Background note by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2018)14/en/pdf. [33]

OECD (2018), *Rethinking Antitrust Tools for Multi-Sided Platforms*, https://www.oecd.org/daf/competition/Rethinking-antitrust-tools-for-multi-sided-platforms-2018.pdf. [4]

OECD (2016), *Big data: Bringing competition policy to the digital era: Background paper by the Secretariat*, https://one.oecd.org/document/DAF/COMP(2016)14/en/pdf. [15]

OECD (2006), *Competition Policy Roundtable: Evidentiary Issues in Proving Dominance*, https://www.oecd.org/competition/abuse/41651328.pdf. [67]

OECD (2001), *Portfolio Effects in Conglomerate Mergers*, http://www.oecd.org/competition/mergers/1818237.pdf. [47]

OECD (n.d.), *Glossary of Statistical Terms*, https://stats.oecd.org/glossary/ (accessed on 2021). [71]

Oxera (2018), *Market power in digital platforms*, https://ec.europa.eu/competition/information/digitisation_2018/contributions/oxera/oxera_market_power_in_digital_markets.pdf. [13]

Petit, N. and D. Teece (2020), *Taking Ecosystems Competition Seriously in the Digital Economy: Note prepared for OECD Competition Committee Hearing on the Competition Economics of Ecosystems*, https://one.oecd.org/document/DAF/COMP/WD(2020)90/en/pdf. [9]

Prado, T. (2021), *Assessing the Market Power of Digital Platforms*, International Telecommunications Calgary, https://www.econstor.eu/bitstream/10419/238048/1/Prado-Assessing.pdf. [64]

Schweitzer, H. et al. (2018), *Modernising the law on abuse of market power*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3250742. [42]

Scott Morton, F. et al. (2019), *Committee for the Study of Digital Platforms: Market Structure and Antitrust Subcommittee*, George J. Stigler Center for the Study of the Economy and the State, The University of Chicago Booth School of Business, https://www.chicagobooth.edu/-/media/research/stigler/pdfs/market-structure-report.pdf. [46]

Teece, D. and H. Kahwaty (2020), *Rebooting Digital Market Power*, https://www.competitionpolicyinternational.com/rebooting-digital-market-power/. [65]

Tucker, C. (2018), "Network Effects and Market Power: What Have we Learned in the Last Decade?", *Antitrust* Spring, http://sites.bu.edu/tpri/files/2018/07/tucker-network-effects-antitrust2018.pdf. [18]

US Department of Justice Antitrust Division (2001), *Submission for OECD Roundtable on Portfolio Effects in Conglomerate Mergers*, https://www.justice.gov/atr/department-justice-11. [48]

Wakui, M. and T. Cheng (2015), "Regulating abuse of superior bargaining position under the Japanese competition law: an anomaly or a necessity?", *Journal of Antitrust Enforcement*, Vol. 1-32, https://doi.org/doi: 10.1093/jaenfo/jnv022. [58]

www.oecd.org/competition